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: OTIS 2 NE, OR **COOP ID: 356366**

Climate Division: OR 1 **NWS Call Sign:** **Elevation: 150 Feet** **Lat: 45˚02N** **Lon: 123˚55W**

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	47.4	36.7	42.1	65	1961	20	46.4	1981	4	1950	31	35.0	1979	712	0	.0	.0	12.0	.2	9.5	.0
Feb	51.1	38.0	44.6	72+	1968	28	49.3	1991	11+	1989	5	36.7	1989	573	0	.0	.0	17.0	.2	6.6	.0
Mar	54.7	39.2	47.0	78	1987	31	51.2	1992	23+	1991	26	43.4	1985	561	0	.0	.0	25.5	.0	4.4	.0
Apr	58.1	40.6	49.4	84+	1956	20	53.7	1989	28+	1968	13	45.1	1975	470	0	.0	.0	28.5	.0	2.0	.0
May	62.4	44.4	53.4	90+	1999	23	58.2	1997	29	1954	1	50.4	1991	361	0	.0	@	30.9	.0	.1	.0
Jun	65.9	48.0	57.0	99	1995	29	60.8	1978	35+	1976	3	54.5	1984	242	0	.0	.2	30.0	.0	.0	.0
Jul	70.1	50.5	60.3	98	1956	18	62.7	1995	35	1962	2	58.1	1999	148	2	.0	.2	31.0	.0	.0	.0
Aug	71.5	51.1	61.3	98+	1981	10	63.1	1971	39+	1986	16	58.7	1973	118	3	.0	.2	31.0	.0	.0	.0
Sep	70.1	49.1	59.6	92+	1988	1	63.0	1979	32	1999	27	56.3	1986	169	6	.0	.2	30.0	.0	@	.0
Oct	61.7	44.7	53.2	86	1952	1	56.7	1978	23	1949	19	50.2	1972	366	0	.0	.0	30.5	.0	.5	.0
Nov	52.1	40.3	46.2	76	1962	1	51.1	1995	15	1985	24	38.7	1985	565	0	.0	.0	20.7	@	4.2	.0
Dec	46.8	36.6	41.7	64+	1980	27	46.1	1979	4	1972	8	36.0	1990	722	0	.0	.0	10.8	.9	8.9	.0
Ann	59.3	43.3	51.3	99	Jun 1995	29	63.1	Aug 1971	4+	Dec 1972	8	35.0	Jan 1979	5007	11	.0	.8	297.9	1.3	36.2	.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/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

Means/Medians(1)

Month	Mean	Median
Jan	14.13	14.47
Feb	11.81	11.90
Mar	10.81	10.91
Apr	7.22	7.05
May	5.25	5.29
Jun	3.72	3.46
Jul	1.72	1.29
Aug	1.66	1.40
Sep	3.80	4.15
Oct	7.56	6.77
Nov	14.63	14.27
Dec	15.82	15.76
Ann	98.13	93.69

Extremes

Month	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	7.44	1965	28	25.33	1971	1.47	1985
Feb	4.64	1996	7	23.55	1999	1.85	1993
Mar	4.00	1987	3	17.50	1987	2.39	1992
Apr	3.99	1958	20	13.96	1991	2.19	1977
May	2.61	1949	1	9.73	1988	.82	1992
Jun	3.28	1985	7	7.93	1984	.81	1992
Jul	3.05	1974	17	5.78	1983	.11	1973
Aug	2.93	1968	23	5.44	1978	.23	1998
Sep	2.82	1951	30	10.38	1971	.06	1975
Oct	6.81	1994	27	15.37	1975	.72	1987
Nov	5.95	1999	25	27.02	1973	3.25	1976
Dec	4.78	1954	30	30.86	1996	4.28	1976
Ann	7.44	Jan 1965	28	30.86	Dec 1996	.06	Sep 1975

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	23.3	17.7	9.3	4.5
Feb	19.7	15.5	8.0	3.6
Mar	20.6	16.6	8.1	2.6
Apr	18.1	13.4	5.2	1.6
May	16.2	11.0	3.1	1.0
Jun	11.7	7.1	2.5	.7
Jul	7.5	3.7	.9	.3
Aug	7.0	3.7	1.0	.1
Sep	10.2	5.9	2.8	1.0
Oct	14.6	10.3	4.8	2.4
Nov	22.5	17.4	10.0	4.6
Dec	24.0	17.3	10.0	5.3
Ann	195.4	139.6	65.7	27.7

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	4.30	5.64	7.65	9.37	11.04	12.78	14.69	16.94	19.85	24.38	28.58
Feb	4.05	5.17	6.80	8.17	9.49	10.85	12.33	14.06	16.27	19.70	22.85
Mar	4.32	5.32	6.73	7.90	9.00	10.12	11.33	12.72	14.49	17.21	19.67
Apr	2.67	3.35	4.32	5.13	5.91	6.70	7.56	8.55	9.82	11.78	13.57
May	1.75	2.25	2.98	3.60	4.19	4.80	5.48	6.26	7.26	8.83	10.26
Jun	1.09	1.45	1.98	2.44	2.88	3.35	3.86	4.47	5.25	6.48	7.62
Jul	.22	.36	.61	.85	1.10	1.38	1.70	2.10	2.64	3.52	4.38
Aug	.25	.39	.63	.86	1.10	1.36	1.66	2.03	2.52	3.32	4.09
Sep	.13	.29	.69	1.17	1.75	2.46	3.35	4.51	6.18	9.08	12.01
Oct	1.52	2.21	3.32	4.33	5.36	6.46	7.70	9.19	11.17	14.34	17.34
Nov	5.59	6.96	8.90	10.52	12.05	13.62	15.31	17.28	19.78	23.61	27.12
Dec	5.45	6.94	9.12	10.96	12.72	14.54	16.51	18.82	21.78	26.36	30.57
Ann	69.54	75.07	82.15	87.53	92.32	96.94	101.72	107.00	113.40	122.70	130.74

\+ 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: 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	.7	.0	#	0	4.0	1971	12	4.0	1993	6	1971	13	1+	1982	.8	.3	.1	.0	.0	.4	.1	.1	.0
Feb	.1	.0	#	0	1.0	1971	28	1.0	1971	1	1971	28	#+	1985	.3	.1	.0	.0	.0	@	.0	.0	.0
Mar	.3	.0	#	0	3.0	1982	31	3.0	1982	1	1976	1	#+	1983	.2	.1	.1	.0	.0	@	.0	.0	.0
Apr	.0	.0	#	0	.5	1975	4	.5	1975	#+	1982	3	#+	1982	.1	.0	.0	.0	.0	.0	.0	.0	.0
May	#	.0	0	0	#	1983	9	#	1983	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	.3	.0	#	0	2.0	1985	9	3.2	1985	2	1985	9	#+	1986	.3	.1	.0	.0	.0	.1	.0	.0	.0
Dec	.8	.0	#	0	6.0	1972	5	9.0	1972	9	1972	6	2	1972	.4	.2	.1	.1	.0	.5	.3	.2	.0
Ann	2.2	.0	N/A	N/A	6.0	Dec 1972	5	9.0	Dec 1972	9	Dec 1972	6	2	Dec 1972	2.1	.8	.3	.1	.0	1.0	.4	.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	5/31	5/25	5/20	5/17	5/13	5/10	5/06	5/01	4/25
32	5/06	4/28	4/22	4/17	4/13	4/08	4/04	3/29	3/21
28	3/12	3/01	2/21	2/14	2/08	2/01	1/24	1/13	0/00
24	2/23	2/09	1/29	1/19	1/09	12/27	12/05	0/00	0/00
20	2/02	1/19	1/07	12/24	12/03	0/00	0/00	0/00	0/00
16	1/17	12/30	12/05	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	9/24	10/02	10/08	10/13	10/17	10/22	10/27	11/01	11/09
32	10/18	10/27	11/02	11/07	11/12	11/17	11/22	11/28	12/06
28	11/09	11/21	11/29	12/06	12/13	12/20	12/29	1/09	0/00
24	12/02	12/16	12/28	1/07	1/18	2/02	0/00	0/00	0/00
20	12/11	12/25	1/06	1/20	2/10	0/00	0/00	0/00	0/00
16	12/18	1/04	1/27	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	189	178	170	163	156	150	143	135	124
32	245	234	226	219	212	206	199	190	179
28	>365	>365	343	324	312	301	290	278	263
24	>365	>365	>365	>365	>365	>365	345	331	315
20	>365	>365	>365	>365	>365	>365	>365	>365	332
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)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	712	573	561	470	361	242	148	118	169	366	565	722	5007
60	557	433	406	320	211	105	35	18	61	215	415	567	3343
57	464	349	313	233	132	48	7	2	24	137	329	474	2512
55	402	295	257	178	90	23	2	0	10	95	274	413	2039
50	259	170	129	70	22	1	0	0	0	27	154	270	1102
32	7	0	0	0	0	0	0	0	0	0	1	9	17

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	318	351	462	520	662	748	878	908	828	657	427	309	7068
55	0	2	6	8	39	81	166	195	148	39	10	1	695
57	0	0	0	2	19	46	109	135	101	20	5	0	437
60	0	0	0	0	5	13	44	58	49	5	0	0	174
65	0	0	0	0	0	0	2	3	6	0	0	0	11
70	0	0	0	0	0	0	0	0	0	0	0	0	0

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	119	155	215	275	412	506	622	653	579	412	205	118	119	274	489	764	1176	1682	2304	2957	3536	3948	4153	4271
45	41	58	87	135	257	356	467	498	429	260	93	37	41	99	186	321	578	934	1401	1899	2328	2588	2681	2718
50	0	6	26	47	119	206	312	343	279	120	24	3	0	6	32	79	198	404	716	1059	1338	1458	1482	1485
55	0	0	0	8	35	75	159	188	139	37	0	0	0	0	0	8	43	118	277	465	604	641	641	641
60	0	0	0	0	6	17	46	58	40	7	0	0	0	0	0	0	6	23	69	127	167	174	174	174
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	27	44	84	127	197	251	341	366	324	195	56	25	27	71	155	282	479	730	1071	1437	1761	1956	2012	2037

(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