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: SENECA, OR **COOP ID: 357675**

Climate Division: OR 8 **NWS Call Sign:** **Elevation: 4,660 Feet** **Lat: 44˚08N** **Lon: 118˚59W**

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	33.9	9.9	21.9	55	1959	18	29.8	1998	-43	1957	26	7.4	1979	1337	0	.0	.0	.8	11.1	29.8	7.6
Feb	39.1	14.2	26.7	64+	1995	25	36.4	1991	-48	1989	6	15.1	1989	1075	0	.0	.0	3.2	5.1	26.9	4.4
Mar	45.0	21.1	33.1	70+	1994	29	38.5	1978	-25	1955	5	24.2	1985	989	0	.0	.0	9.1	1.2	29.1	.9
Apr	52.4	26.1	39.3	81	1987	28	45.1	1990	5+	1963	21	30.9	1975	773	0	.0	.0	17.6	.2	24.8	.0
May	60.5	31.8	46.2	88+	2001	24	51.3	1993	11+	1954	2	42.7	1977	585	0	.0	.0	26.0	.0	16.9	.0
Jun	69.4	36.4	52.9	95	1961	23	57.4	1988	17	1962	4	49.2	1976	365	2	.0	.3	29.2	.0	7.7	.0
Jul	79.3	38.4	58.9	97+	2000	31	63.8	1998	19	1959	8	51.3	1993	210	19	.0	3.7	31.0	.0	5.1	.0
Aug	80.0	35.7	57.9	100+	1961	22	61.9	1971	14	1992	24	53.3	1980	232	11	.0	4.4	31.0	.0	9.2	.0
Sep	70.7	28.0	49.4	96+	1998	3	55.5	1998	5	1954	30	42.6	1971	473	3	.0	.5	29.0	.0	21.4	.0
Oct	59.4	21.4	40.4	89	1961	17	47.6	1988	-9	1991	30	36.4	1971	764	0	.0	.0	24.6	.2	28.1	.2
Nov	42.6	19.2	30.9	69	1988	1	36.9	1999	-31+	1985	23	20.2	1985	1024	0	.0	.0	6.4	3.4	27.4	1.8
Dec	34.5	11.6	23.1	63	1964	25	29.2	1995	-48	1983	23	10.8	1985	1301	0	.0	.0	1.1	10.5	29.7	6.0
Ann	55.6	24.5	40.1	100+	Aug 1961	22	63.8	Jul 1998	-48+	Feb 1989	6	7.4	Jan 1979	9128	35	.0	8.9	209.0	31.7	256.1	20.9

\+ 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: 1949-2001

(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	1.34	1.25	.90+	1995	30	3.14	1995	.16	1985
Feb	1.09	.87	1.21	1975	2	3.25	1986	.06	1971
Mar	1.28	1.14	1.05	1952	24	3.56	1983	.04	1979
Apr	1.06	1.00	1.10	1954	4	2.36	1990	.27	1999
May	1.60	1.37	1.29	1989	10	4.39	1998	.04	1975
Jun	1.17	1.21	1.18	1997	12	4.11	1982	.02	1973
Jul	.70	.67	.88	1998	30	1.95	1997	.00+	1988
Aug	.72	.44	2.55	1965	3	2.74	1979	.00	1980
Sep	.69	.57	.96	1998	8	2.31	1982	.00+	1999
Oct	.83	.78	1.24	1967	3	2.20	1979	.00+	1988
Nov	1.47	1.31	1.10	1966	20	3.07	1973	.17	1976
Dec	1.63	1.36	1.16	1996	31	4.95	1996	.00	1989
Ann	13.58	12.95	2.55	Aug 1965	3	4.95	Dec 1996	.00+	Sep 1999

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.9	4.2	.4	.0
Feb	9.9	4.2	.2	@
Mar	10.9	4.4	.3	.0
Apr	9.4	3.7	.2	.0
May	9.2	5.3	.7	.1
Jun	7.1	3.5	.4	.1
Jul	4.5	1.9	.3	.0
Aug	4.5	2.2	.2	@
Sep	4.7	2.3	.3	.0
Oct	6.6	2.8	.2	@
Nov	11.7	5.8	.2	.0
Dec	12.1	5.3	.5	@
Ann	101.5	45.6	3.9	.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	.33	.46	.65	.83	1.00	1.18	1.38	1.62	1.94	2.44	2.91
Feb	.20	.30	.46	.61	.76	.92	1.11	1.33	1.63	2.11	2.57
Mar	.19	.29	.48	.65	.84	1.04	1.28	1.56	1.95	2.58	3.19
Apr	.32	.42	.57	.70	.82	.95	1.10	1.26	1.48	1.82	2.13
May	.22	.35	.58	.80	1.04	1.29	1.59	1.95	2.44	3.24	4.01
Jun	.07	.14	.28	.44	.62	.83	1.09	1.42	1.88	2.66	3.44
Jul	.00	.05	.16	.27	.38	.51	.67	.86	1.13	1.57	2.01
Aug	.01	.04	.11	.21	.32	.46	.63	.86	1.18	1.75	2.32
Sep	.00	.00	.08	.22	.36	.50	.68	.88	1.17	1.62	2.09
Oct	.00	.00	.38	.52	.65	.77	.90	1.05	1.25	1.55	1.83
Nov	.36	.49	.71	.90	1.09	1.29	1.52	1.78	2.13	2.69	3.21
Dec	.08	.23	.47	.71	.97	1.26	1.59	2.01	2.57	3.51	4.43
Ann	8.02	9.02	10.34	11.37	12.31	13.22	14.19	15.27	16.60	18.57	20.30

+ 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: 1949-2001
(3) Derived from 1971-2000 serially complete daily data

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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	10.2	7.5	6	4
Feb	9.7	9.0	4	2
Mar	6.4	5.0	1	#
Apr	2.1	.3	#	#
May	.7	.0	#	0
Jun	#	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	#	0
Oct	1.1	.0	#	0
Nov	6.4	4.5	1	#
Dec	17.5	16.0	4	3
Ann	54.1	42.3	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	9.0	1981	28	26.0	1979	27	1982	3	18	1984
Feb	11.0	1975	2	36.2	1975	21	1979	5	16	1984
Mar	7.5	1982	18	17.0	1982	16	1984	1	9	1985
Apr	7.0	1975	5	13.2	1975	7	1977	1	1	1984
May	3.0	1977	6	5.0	1986	3	1982	8	#+	2000
Jun	#	1979	7	#+	1979	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	#	1984	24	#+	1984	#+	1984	24	#+	1984
Oct	6.0	1980	14	7.0	1971	5	1971	31	#+	1999
Nov	10.0	1995	28	24.0	1984	11	1985	29	6	1985
Dec	10.0	1971	12	48.5	1983	28	1983	29	15	1983
Ann	11.0	Feb 1975	2	48.5	Dec 1983	28	Dec 1983	29	18	Jan 1984

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.3	4.2	1.2	.4	.0
Feb	4.6	3.6	1.0	.3	.1
Mar	3.0	2.3	.5	.2	.0
Apr	1.2	.8	.2	.1	.0
May	.5	.3	.1	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.5	.4	.2	.1	.0
Nov	3.3	2.5	.7	.2	@
Dec	6.2	5.2	1.9	.6	.1
Ann	24.6	19.3	5.8	1.9	.2

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	22.5	19.1	13.8	3.7
Feb	16.2	12.4	9.3	7.1
Mar	5.5	3.8	2.8	1.0
Apr	1.1	.4	.1	.0
May	.2	.1	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.4	.1	@	.0
Nov	5.6	2.9	1.3	.4
Dec	14.1	11.4	9.1	4.5
Ann	65.6	50.2	36.4	16.7

+ 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	8/04	8/01	7/30	7/28	7/26	7/24	7/23	7/20	7/17
32	8/01	7/28	7/25	7/23	7/20	7/18	7/15	7/12	7/08
28	7/25	7/17	7/12	7/07	7/03	6/28	6/24	6/18	6/11
24	7/05	6/24	6/16	6/09	6/02	5/27	5/20	5/12	5/01
20	6/02	5/23	5/16	5/10	5/04	4/29	4/23	4/16	4/06
16	5/01	4/24	4/19	4/15	4/11	4/07	4/03	3/29	3/22

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	7/31	8/01	8/02	8/02	8/03	8/04	8/04	8/05	8/07
32	7/30	8/01	8/04	8/06	8/08	8/10	8/12	8/14	8/18
28	8/05	8/10	8/14	8/18	8/21	8/24	8/27	8/31	9/06
24	8/16	8/22	8/26	8/30	9/02	9/05	9/09	9/13	9/18
20	9/01	9/06	9/09	9/12	9/15	9/18	9/21	9/25	9/30
16	9/09	9/16	9/21	9/25	9/29	10/03	10/07	10/12	10/19

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	18	14	12	9	7	5	2	0	0
32	35	29	25	21	17	14	10	6	0
28	76	66	60	54	48	43	37	30	21
24	129	116	106	98	91	83	75	66	53
20	167	156	147	140	133	126	119	111	99
16	199	189	182	176	171	165	159	152	142

***** 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	1337	1075	989	773	585	365	210	232	473	764	1024	1301	9128
60	1182	935	834	623	430	226	105	116	332	609	874	1146	7412
57	1089	851	741	533	338	153	60	67	256	516	784	1053	6441
55	1027	795	679	473	278	113	37	43	210	454	724	991	5824
50	872	655	525	332	147	40	9	11	115	304	574	836	4420
32	380	228	102	24	0	0	0	0	0	10	151	332	1227

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	66	77	136	241	439	626	832	801	520	269	117	55	4179
55	0	0	0	0	4	49	156	131	39	1	0	0	380
57	0	0	0	0	1	30	117	93	25	0	0	0	266
60	0	0	0	0	0	12	69	49	12	0	0	0	142
65	0	0	0	0	0	2	19	11	3	0	0	0	35
70	0	0	0	0	0	0	3	0	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	0	3	24	85	235	405	599	569	317	105	11	0	0	3	27	112	347	752	1351	1920	2237	2342	2353	2353
45	0	0	0	34	128	267	446	416	194	37	0	0	0	0	0	34	162	429	875	1291	1485	1522	1522	1522
50	0	0	0	7	56	151	297	268	98	8	0	0	0	0	0	7	63	214	511	779	877	885	885	885
55	0	0	0	0	15	68	168	140	32	0	0	0	0	0	0	0	15	83	251	391	423	423	423	423
60	0	0	0	0	1	19	69	53	7	0	0	0	0	0	0	0	1	20	89	142	149	149	149	149
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	7	31	90	191	309	455	460	326	178	19	0	0	7	38	128	319	628	1083	1543	1869	2047	2066	2066

(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

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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