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: SILVER LAKE RANGER STN, OR **COOP ID: 357817**

Climate Division: OR 5 **NWS Call Sign:** **Elevation: 4,382 Feet** **Lat: 43˚07N** **Lon: 121˚04W**

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	39.4	21.1	30.3	62	1971	30	35.6	1978	-16+	1980	28	22.9	1979	1077	0	.0	.0	3.5	6.4	27.1	1.8
Feb	44.6	23.0	33.8	74	1995	24	41.3	1992	-30	1989	4	23.2	1993	874	0	.0	.0	7.4	3.1	23.6	.9
Mar	50.3	25.5	37.9	76	1994	28	43.4	1992	-9	1974	8	33.3	1971	840	0	.0	.0	15.9	.2	25.8	.1
Apr	58.3	28.6	43.5	84+	1987	28	49.4	1987	6	1970	13	36.3	1975	647	0	.0	.0	23.0	.0	21.1	.0
May	66.3	34.3	50.3	92+	1986	30	57.5	1992	14+	1990	7	45.5	1977	455	1	.0	.2	29.2	.0	13.8	.0
Jun	75.3	39.9	57.6	96+	1992	25	63.0	1974	19	1996	18	53.0	1996	242	20	.0	1.3	29.9	.0	5.4	.0
Jul	83.7	44.4	64.1	105	1998	28	68.1	1985	23	1986	5	55.8	1993	107	77	@	8.1	31.0	.0	1.7	.0
Aug	84.0	43.8	63.9	102+	1981	9	68.9	1971	22	1985	24	59.0	1976	109	73	.3	7.9	31.0	.0	1.4	.0
Sep	76.0	36.3	56.2	99	1998	3	60.2	1991	12	1970	14	50.9	1986	277	11	.0	1.1	29.8	.0	9.2	.0
Oct	64.7	29.6	47.2	88+	1980	4	53.5	1988	6+	1991	30	43.2	1998	555	0	.0	.0	27.4	@	19.9	@
Nov	46.7	25.8	36.3	72	1980	4	43.2	1999	-12	1993	24	26.9	1985	862	0	.0	.0	10.7	1.9	22.8	.5
Dec	39.4	19.6	29.5	62	1972	1	35.6	1980	-33	1972	8	21.3	1972	1100	0	.0	.0	3.4	6.3	27.0	1.7
Ann	60.7	31.0	45.9	105	Jul 1998	28	68.9	Aug 1971	-33	Dec 1972	8	21.3	Dec 1972	7145	182	.3	18.6	242.2	17.9	198.8	5.0

\+ 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: 1968-2001

(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	.99	.86	1.42	1993	13	2.56	1993	.04+	1991
Feb	.73	.49	1.53	1986	18	2.71	1986	.10+	1992
Mar	.81	.75	.88	1990	26	1.91	1983	.08	1994
Apr	.76	.72	1.04	2000	18	2.16	2000	.01	1977
May	1.11	.76	1.11	1977	10	4.98	1998	.00	1992
Jun	.79	.70	.87	1978	30	2.52	1982	.00+	1974
Jul	.58	.42	1.26	1987	22	3.46	1987	.00+	1989
Aug	.59	.20	1.76	1984	31	2.32	1976	.00+	1995
Sep	.57	.37	1.60	1982	20	1.91	1982	.00+	1991
Oct	.61	.56	.82	1979	25	1.79	2000	.00+	1988
Nov	1.10	.68	1.52	1998	23	3.56	1981	.10	1976
Dec	1.16	.63	1.75	1987	10	3.82	1996	.00	1976
Ann	9.80	9.34	1.76	Aug 1984	31	4.98	May 1998	.00+	Aug 1995

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.7	3.3	.4	.2
Feb	6.2	2.5	.2	@
Mar	6.0	2.9	.1	.0
Apr	6.0	2.6	.2	@
May	5.9	2.9	.5	@
Jun	5.2	2.3	.4	.0
Jul	3.6	1.9	.3	.1
Aug	3.6	1.8	.3	.1
Sep	3.6	1.8	.2	.1
Oct	4.2	2.1	.1	.0
Nov	6.3	3.2	.4	.1
Dec	7.4	3.9	.9	.1
Ann	64.7	31.2	4.0	.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	.08	.15	.28	.42	.57	.74	.95	1.21	1.57	2.17	2.76
Feb	.08	.14	.24	.34	.45	.58	.72	.90	1.14	1.54	1.93
Mar	.12	.18	.30	.41	.53	.66	.81	.99	1.23	1.63	2.02
Apr	.08	.14	.24	.35	.46	.59	.74	.92	1.18	1.60	2.00
May	.03	.10	.25	.41	.58	.79	1.04	1.35	1.79	2.54	3.28
Jun	.00	.06	.18	.30	.44	.59	.76	.98	1.28	1.79	2.28
Jul	.00	.00	.07	.15	.25	.37	.52	.71	.98	1.44	1.91
Aug	.00	.00	.01	.05	.13	.25	.41	.64	1.00	1.65	2.34
Sep	.00	.00	.07	.16	.27	.39	.53	.70	.95	1.36	1.77
Oct	.00	.00	.13	.25	.36	.48	.62	.78	1.00	1.35	1.68
Nov	.09	.17	.31	.46	.63	.82	1.05	1.34	1.73	2.40	3.05
Dec	.05	.14	.31	.48	.67	.87	1.12	1.42	1.84	2.54	3.23
Ann	5.67	6.41	7.38	8.15	8.84	9.53	10.25	11.06	12.06	13.53	14.84

\+ 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: 1968-2001
(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	3.6	3.0	1	#	5.1	1988	4	16.6	1973	14	1982	4	10	1982	2.3	1.3	.4	.1	.0	3.9	1.4	.2	.0
Feb	2.0	1.8	#	#	5.0	1983	10	6.3	1975	6	1986	18	2	1993	1.8	.8	.3	.1	.0	1.9	.8	.2	.0
Mar	1.9	.6	#	0	7.0	1995	3	9.5	1971	5	1985	1	1	1985	1.3	.8	.2	.1	.0	.5	.1	.0	.0
Apr	1.4	.0	#	0	4.0	1982	2	6.3	1985	2	1975	5	#+	1999	.8	.5	.2	.0	.0	.1	.0	.0	.0
May	.5	.0	#	0	7.0	1974	18	8.0	1974	3	1974	18	#+	1991	.2	.2	@	@	.0	.1	@	.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	.2	.0	0	0	1.5	1984	11	4.9	1984	0	0	0	0	0	.2	.1	.0	.0	.0	.0	.0	.0	.0
Nov	1.1	.2	#	0	5.4	1982	22	7.0	1973	3	1983	30	1	1973	.9	.4	.1	@	.0	.7	@	.0	.0
Dec	3.2	2.7	1	#	9.3	1981	29	10.0	1972	12	1983	1	7	1983	1.9	1.3	.3	.2	.0	3.5	2.0	1.7	.0
Ann	13.9	8.3	N/A	N/A	9.3	Dec 1981	29	16.6	Jan 1973	14	Jan 1982	4	10	Jan 1982	9.4	5.4	1.5	.5	.0	10.7	4.3	2.1	.0

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	7/30	7/25	7/22	7/19	7/16	7/13	7/10	7/07	7/02
32	7/21	7/15	7/11	7/08	7/05	7/01	6/28	6/24	6/18
28	7/10	7/02	6/27	6/22	6/18	6/13	6/08	6/03	5/26
24	6/20	6/12	6/06	6/02	5/28	5/24	5/19	5/13	5/05
20	5/24	5/16	5/10	5/05	5/01	4/26	4/21	4/16	4/08
16	5/12	5/01	4/23	4/17	4/11	4/04	3/29	3/21	3/11

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	8/05	8/09	8/13	8/16	8/19	8/22	8/26	9/01
32	8/08	8/15	8/19	8/23	8/27	8/31	9/04	9/09	9/16
28	8/21	8/29	9/03	9/07	9/11	9/15	9/20	9/25	10/02
24	9/06	9/13	9/18	9/22	9/26	9/30	10/04	10/08	10/15
20	9/24	9/30	10/04	10/08	10/11	10/15	10/18	10/23	10/29
16	10/04	10/11	10/17	10/21	10/25	10/30	11/03	11/08	11/16

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	54	46	40	35	30	25	20	14	6
32	80	71	64	58	53	47	42	35	25
28	115	105	97	91	85	79	73	65	55
24	152	141	133	126	120	114	107	99	88
20	192	182	175	168	163	157	151	143	133
16	238	224	214	205	197	189	180	170	156

***** 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	1077	874	840	647	455	242	107	109	277	555	862	1100	7145
60	922	734	685	500	310	135	39	40	158	401	712	945	5581
57	829	650	592	415	229	86	18	18	103	312	622	852	4726
55	767	594	530	360	183	60	10	10	73	257	562	790	4196
50	612	457	377	236	92	19	1	1	23	139	421	635	3013
32	147	88	23	13	0	0	0	0	0	1	68	169	509

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	93	138	206	356	569	768	993	988	725	470	196	93	5595
55	0	0	0	13	38	139	290	285	107	12	0	0	884
57	0	0	0	8	23	105	236	231	77	5	0	0	685
60	0	0	0	3	10	63	164	160	43	1	0	0	444
65	0	0	0	0	1	20	77	73	11	0	0	0	182
70	0	0	0	0	0	4	23	22	2	0	0	0	51

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	10	20	51	147	328	519	747	744	487	240	51	9	10	30	81	228	556	1075	1822	2566	3053	3293	3344	3353
45	0	0	11	71	196	369	592	589	344	129	16	0	0	0	11	82	278	647	1239	1828	2172	2301	2317	2317
50	0	0	0	24	107	236	439	435	213	56	1	0	0	0	0	24	131	367	806	1241	1454	1510	1511	1511
55	0	0	0	5	45	129	291	289	112	14	0	0	0	0	0	5	50	179	470	759	871	885	885	885
60	0	0	0	0	13	56	165	163	41	1	0	0	0	0	0	0	13	69	234	397	438	439	439	439
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	4	21	59	138	259	374	500	510	387	233	42	3	4	25	84	222	481	855	1355	1865	2252	2485	2527	2530

(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