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: SALEM MCNARY AP, OR **COOP ID: 357500**

Climate Division: OR 2 **NWS Call Sign: SLE** **Elevation: 205 Feet** **Lat: 44˚54N** **Lon: 123˚00W**

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	47.0	33.5	40.3	65	1984	4	44.5	1995	-10	1950	31	31.2	1979	765	0	.0	.0	11.8	.8	13.2	.0
Feb	51.2	34.7	43.0	72	1968	28	48.7	1991	-4	1950	3	34.8	1989	623	0	.0	.0	18.1	.3	10.6	@
Mar	56.3	36.6	46.5	80	1947	15	50.5	1992	12	1971	1	41.9	1971	574	0	.0	.0	26.8	.0	8.1	.0
Apr	61.1	38.8	50.0	88	1957	29	54.6	1989	23	1968	13	45.3	1975	452	0	.0	.0	29.4	.0	4.4	.0
May	67.5	43.6	55.6	100	1983	28	60.8	1992	25	1954	1	51.8	1977	301	7	@	.4	31.0	.0	.6	.0
Jun	74.0	48.4	61.2	105	1992	22	65.8	1992	32	1976	3	56.9	1976	141	25	.1	1.5	30.0	.0	@	.0
Jul	81.5	52.0	66.8	108	1941	15	70.3	1996	35	1932	5	63.2	1993	39	95	.7	5.9	31.0	.0	.0	.0
Aug	81.9	52.1	67.0	108	1981	9	70.1	1977	35	1935	16	62.8	1980	34	98	.8	5.8	31.0	.0	.0	.0
Sep	76.6	47.7	62.2	104	1988	2	65.8	1974	26+	1972	27	57.6	1972	116	31	.1	2.5	30.0	.0	.1	.0
Oct	64.5	41.3	52.9	93	1970	2	56.6	1988	23	1971	29	50.1	1972	376	1	.0	.1	30.5	.0	2.4	.0
Nov	52.4	37.9	45.2	72+	1970	2	51.1	1995	9	1955	15	37.3	1985	592	0	.0	.0	21.0	.2	7.3	.0
Dec	46.4	33.9	40.2	72	1929	9	44.8	1979	-12	1972	8	33.3	1985	771	0	.0	.0	10.7	1.1	13.0	.2
Ann	63.4	41.7	52.6	108+	Aug 1981	9	70.3	Jul 1996	-12	Dec 1972	8	31.2	Jan 1979	4784	257	1.7	16.2	301.3	2.4	59.7	.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: 1928-2001

(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	5.84	6.06	3.30	1933	2	10.89	1974	.41	1985
Feb	5.09	4.41	2.99	1937	1	13.01	1996	.75	1988
Mar	4.17	3.73	2.55	1943	31	8.56	1983	.89	1992
Apr	2.76	2.54	2.21	1937	13	5.72	1996	.62	1977
May	2.13	1.92	1.76	1991	17	5.56	1998	.05	1992
Jun	1.45	1.13	1.63	1985	6	4.19	1984	.26	1987
Jul	.57	.33	1.80	1987	18	2.63	1983	.00+	1994
Aug	.68	.41	1.14	1971	31	2.56	1978	.00+	1988
Sep	1.43	1.16	1.76	1969	17	3.98	1971	.00	1975
Oct	3.03	2.62	2.71	1994	31	7.96	1994	.12	1988
Nov	6.39	6.00	2.85	1996	19	15.23	1973	1.13	1976
Dec	6.46	6.67	4.30	1933	6	15.01	1996	1.26	1976
Ann	40.00	39.07	4.30	Dec 1933	6	15.23	Nov 1973	.00+	Jul 1994

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	17.3	12.0	3.8	1.2
Feb	15.8	11.5	3.4	.8
Mar	16.9	11.3	2.4	.3
Apr	14.0	8.3	1.3	.1
May	11.3	6.2	1.0	.1
Jun	7.7	3.9	.7	.2
Jul	3.4	1.6	.2	@
Aug	3.9	2.0	.2	@
Sep	6.7	3.8	.8	.2
Oct	11.0	6.8	1.9	.4
Nov	18.2	12.9	4.3	1.3
Dec	18.0	12.5	4.7	1.5
Ann	144.2	92.8	24.7	6.1

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	1.49	2.04	2.88	3.63	4.37	5.15	6.02	7.05	8.40	10.52	12.51
Feb	1.40	1.88	2.62	3.26	3.89	4.54	5.27	6.14	7.26	9.02	10.66
Mar	1.53	1.92	2.49	2.96	3.40	3.86	4.36	4.94	5.68	6.82	7.86
Apr	.84	1.11	1.50	1.83	2.16	2.50	2.87	3.30	3.87	4.75	5.57
May	.44	.63	.94	1.23	1.52	1.82	2.17	2.59	3.14	4.03	4.86
Jun	.31	.44	.66	.85	1.04	1.25	1.48	1.76	2.13	2.72	3.27
Jul	.00	.01	.06	.13	.22	.34	.48	.67	.95	1.43	1.93
Aug	.00	.00	.04	.13	.24	.38	.57	.81	1.16	1.77	2.39
Sep	.02	.10	.27	.46	.69	.96	1.30	1.73	2.34	3.39	4.45
Oct	.43	.68	1.12	1.54	1.98	2.46	3.02	3.70	4.62	6.12	7.56
Nov	1.83	2.44	3.36	4.15	4.92	5.73	6.63	7.68	9.04	11.18	13.17
Dec	1.98	2.59	3.51	4.30	5.06	5.85	6.72	7.75	9.07	11.13	13.04
Ann	26.08	28.68	32.07	34.67	37.01	39.28	41.65	44.29	47.51	52.23	56.35

\+ 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: 1928-2001
(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	1.4	.0	#	0
Feb	2.1	.0	#	0
Mar	.1	.0	0	0
Apr	.0	#	0	0
May	#	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	#	.0	0	0
Nov	.4	.0	#	0
Dec	2.0	.0	#	0
Ann	6.0	#	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	5.3	1971	13	11.1	1971	8	1971	14	1	1993
Feb	12.0	1993	19	14.1	1993	10	1993	20	2	1989
Mar	1.4	1971	4	1.4	1971	#+	1989	3	0	0
Apr	.1	1972	8	.1	1972	0	0	0	0	0
May	#	1988	3	#+	1988	0	0	0	#	1993
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	.0	0	0	.0	0	0	0	0	0	0
Oct	#	1990	31	#+	1990	0	0	0	0	0
Nov	6.1	1977	22	6.1	1977	4	1977	22	#	1978
Dec	7.5	1972	5	14.6	1972	8+	1972	12	2	1972
Ann	12.0	Feb 1993	19	14.6	Dec 1972	10	Feb 1993	20	2+	Feb 1989

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	1.0	.5	.2	@	.0
Feb	.9	.6	.2	.1	@
Mar	.2	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.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	.0	.0	.0	.0	.0
Nov	.3	.1	@	@	.0
Dec	1.2	.6	.2	.1	.0
Ann	3.6	1.8	.6	.2	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.2	.4	@	.0
Feb	1.2	.6	.2	@
Mar	.0	.0	.0	.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	.0	.0	.0	.0
Nov	.1	@	.0	.0
Dec	1.1	.5	.4	.0
Ann	3.6	1.5	.6	.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	6/12	6/05	5/30	5/25	5/21	5/17	5/12	5/06	4/29
32	5/19	5/12	5/07	5/02	4/28	4/23	4/19	4/13	4/06
28	5/01	4/18	4/09	4/01	3/25	3/18	3/10	3/01	2/16
24	3/16	3/06	2/28	2/22	2/17	2/11	2/05	1/29	1/18
20	2/24	2/11	2/02	1/25	1/17	1/08	12/29	12/14	0/00
16	2/09	1/26	1/15	1/03	12/18	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	9/18	9/24	9/28	10/01	10/05	10/08	10/11	10/15	10/21
32	9/30	10/06	10/11	10/15	10/18	10/22	10/25	10/30	11/05
28	10/14	10/23	10/30	11/04	11/10	11/15	11/21	11/28	12/07
24	11/02	11/12	11/20	11/26	12/02	12/09	12/15	12/24	1/05
20	11/21	12/03	12/12	12/20	12/27	1/05	1/14	1/29	0/00
16	12/05	12/20	1/01	1/15	2/06	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	162	153	147	141	136	131	125	118	109
32	202	192	185	178	173	167	161	153	143
28	280	263	250	239	229	219	208	196	178
24	>365	320	306	295	286	277	268	258	244
20	>365	>365	>365	>365	347	334	322	311	296
16	>365	>365	>365	>365	>365	>365	>365	355	324

***** 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	765	623	574	452	301	141	39	34	116	376	592	771	4784
60	612	477	421	303	169	59	7	7	43	223	445	616	3382
57	519	393	330	221	109	28	1	1	17	144	362	523	2648
55	457	338	272	170	76	15	0	0	8	99	307	461	2203
50	313	210	144	74	22	2	0	0	0	30	185	315	1295
32	17	3	0	0	0	0	0	0	0	0	5	14	39

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	274	313	447	540	729	876	1078	1085	905	649	398	273	7567
55	1	1	2	17	81	193	365	372	221	43	4	1	1301
57	0	0	0	8	55	143	304	310	169	25	1	0	1015
60	0	0	0	3	28	82	215	220	101	9	0	0	658
65	0	0	0	0	7	25	95	98	31	1	0	0	257
70	0	0	0	0	1	6	30	30	5	0	0	0	72

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	97	132	213	310	491	646	838	848	676	412	189	96	97	229	442	752	1243	1889	2727	3575	4251	4663	4852	4948
45	35	50	88	165	337	496	683	693	526	261	82	34	35	85	173	338	675	1171	1854	2547	3073	3334	3416	3450
50	5	10	27	67	190	346	528	538	377	129	25	3	5	15	42	109	299	645	1173	1711	2088	2217	2242	2245
55	0	0	0	19	86	202	373	383	231	49	2	0	0	0	0	19	105	307	680	1063	1294	1343	1345	1345
60	0	0	0	2	35	87	222	229	108	11	0	0	0	0	0	2	37	124	346	575	683	694	694	694
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	34	55	111	177	285	380	517	525	414	238	66	28	34	89	200	377	662	1042	1559	2084	2498	2736	2802	2830

(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