

# Climatology of the United States

No. 20

1971-2000

Station: MADRAS, OR

COOP ID: 355139

Climate Division: OR 7

NWS Call Sign:

Elevation: 2,230 Feet Lat: 44° 38N

Lon: 121° 08W

## 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	43.0	24.0	33.5	68	1989	30	39.3	1992	-40	1930	21	17.4	1979	977	0	.0	.0	9.5	4.7	24.3	1.1
Feb	48.7	27.1	37.9	76	1932	26	43.8	1992	-34	1933	9	26.2	1989	759	0	.0	.0	14.4	1.7	19.8	.7
Mar	56.1	29.4	42.8	82	1966	29	47.6	1986	-1	1955	5	37.9	1975	690	0	.0	.0	25.9	.0	19.8	.0
Apr	62.7	32.0	47.4	91	1934	20	53.0	1994	9	1951	21	40.6	1975	530	0	.0	.0	28.9	.0	16.0	.0
May	70.8	37.5	54.2	101+	1986	31	60.1	1992	11	1954	1	49.8	1977	339	4	.1	1.4	31.0	.0	8.0	.0
Jun	78.7	43.1	60.9	104	1992	23	66.0	1986	20	1955	1	56.5	1976	154	31	.1	4.3	30.0	.0	1.2	.0
Jul	87.5	47.2	67.4	112	1928	25	72.9	1998	27	1932	11	61.9	1993	50	122	1.6	14.5	31.0	.0	.1	.0
Aug	87.4	46.2	66.8	109	1998	4	71.3	1991	26	1937	29	61.5	1975	65	121	1.6	13.1	31.0	.0	.1	.0
Sep	79.2	39.4	59.3	104	1998	1	64.1	1998	16	1932	21	53.6	1985	208	36	.1	4.5	30.0	.0	4.7	.0
Oct	66.3	31.9	49.1	93	1992	1	56.0	1988	0	1935	30	45.4	1972	493	0	.0	.1	29.9	.0	15.9	.0
Nov	51.0	28.1	39.6	77	1999	13	46.6	1995	-15	1955	15	28.4	1985	764	0	.0	.0	18.3	1.0	19.0	.3
Dec	42.9	23.3	33.1	68	1980	30	38.5	1999	-29	1972	8	20.6	1985	990	0	.0	.0	8.7	4.2	24.9	1.0
Ann	64.5	34.1	49.3	112	Jul 1928	25	72.9	Jul 1998	-40	Jan 1930	21	17.4	Jan 1979	6019	314	3.5	37.9	288.6	11.6	153.8	3.1

+ 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/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

Issue Date: February 2004

(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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# 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: MADRAS, OR**

**COOP ID: 355139**

**Climate Division: OR 7**

**NWS Call Sign:**

**Elevation: 2,230 Feet Lat: 44°38N**

**Lon: 121°08W**

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	1.25	1.39	1.29	1980	12	2.55	2000	.14	1985	8.3	4.3	.4	@	.24	.36	.54	.71	.88	1.06	1.27	1.52	1.85	2.38	2.89
Feb	.93	.74	1.38	1956	21	3.09	1986	.04	1990	8.5	3.2	.2	.0	.10	.17	.30	.43	.57	.72	.90	1.13	1.44	1.95	2.45
Mar	.89	.72	.84	1928	26	2.24	1983	.04	1977	7.0	3.3	.1	.0	.14	.21	.34	.46	.59	.73	.89	1.08	1.34	1.76	2.17
Apr	.83	.75	1.12	1978	26	2.23	1978	.03	1977	6.2	2.7	.1	@	.08	.14	.25	.37	.50	.64	.81	1.02	1.31	1.79	2.25
May	.95	.78	1.31	1998	29	5.02	1998	.07	1974	5.9	3.0	.3	.1	.10	.18	.31	.44	.59	.74	.93	1.17	1.48	2.01	2.52
Jun	.58	.50	2.14	1969	9	1.46	1993	.00	1973	4.0	2.0	.2	.0	.01	.05	.13	.21	.30	.41	.54	.70	.93	1.32	1.71
Jul	.53	.28	1.60	1987	24	2.70	1987	.00+	1994	2.7	1.4	.2	.1	.00	.00	.04	.12	.21	.32	.46	.64	.90	1.34	1.79
Aug	.48	.20	.91	1983	1	1.96	1976	.00+	2000	2.8	1.6	.2	.0	.00	.00	.01	.06	.14	.24	.37	.55	.82	1.29	1.78
Sep	.46	.30	1.30	1942	9	1.94	1973	.00+	1999	3.3	1.3	.2	.0	.00	.00	.00	.08	.19	.30	.43	.59	.81	1.18	1.53
Oct	.76	.55	1.08	1991	26	2.21	1979	.00+	1988	5.0	2.3	.3	@	.00	.10	.24	.36	.49	.62	.77	.95	1.20	1.59	1.98
Nov	1.39	1.09	2.01	1996	18	4.29	1984	.21	1990	8.9	3.8	.6	.1	.20	.32	.52	.71	.91	1.13	1.39	1.70	2.12	2.80	3.45
Dec	1.21	.78	1.98	1929	18	4.29	1981	.05	1976	7.9	4.0	.6	@	.08	.15	.31	.47	.66	.88	1.14	1.47	1.93	2.72	3.50
Ann	10.26	9.82	2.14	Jun 1969	9	5.02	May 1998	.00+	Aug 2000	70.5	32.9	3.4	.3	5.97	6.74	7.75	8.55	9.27	9.98	10.73	11.57	12.60	14.14	15.49

+ 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

Complete documentation available from:  
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: MADRAS, OR

COOP ID: 355139

Climate Division: OR 7

NWS Call Sign:

Elevation: 2,230 Feet

Lat: 44° 38N

Lon: 121° 08W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	2.6	1.0	1	#	4.5	1979	14	19.0	1979	11	1979	15	7	1979	1.2	1.1	.3	.0	.0	4.5	2.5	1.7	.3
Feb	2.1	1.0	#	0	10.0	1986	12	16.0	1986	12	1986	14	2	1986	.8	.7	.1	@	@	2.0	1.0	.5	.2
Mar	.2	.0	#	0	1.5	1974	14	1.5+	1978	2	1978	4	#+	1999	.1	.1	.0	.0	.0	.1	.0	.0	.0
Apr	#	.0	#	0	#	1999	8	#+	1999	#	1999	8	#	1999	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	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	2.0	.0	#	0	13.0	1973	5	19.0	1973	13	1973	5	1	1985	.6	.6	.2	.1	@	1.5	.7	.3	@
Dec	2.5	2.0	#	#	5.0	1985	2	9.5	1981	12	1983	27	5	1985	1.3	1.0	.2	@	.0	2.9	2.0	.6	@
Ann	9.4	4.0	N/A	N/A	13.0	Nov 1973	5	19.0+	Jan 1979	13	Nov 1973	5	7	Jan 1979	4.0	3.5	.8	.1	@	11.0	6.2	3.1	.5

+ 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

Complete documentation available from:

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**Elevation: 2,230 Feet**

**Lat: 44° 38N**

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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	7/15	7/08	7/04	6/30	6/27	6/23	6/19	6/15	6/08
32	6/25	6/19	6/14	6/10	6/06	6/03	5/30	5/25	5/19
28	6/02	5/27	5/23	5/20	5/16	5/13	5/09	5/05	4/30
24	5/16	5/09	5/05	5/01	4/27	4/24	4/20	4/15	4/09
20	4/30	4/23	4/18	4/14	4/10	4/07	4/02	3/29	3/22
16	4/16	4/04	3/27	3/20	3/13	3/06	2/27	2/18	2/07
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	8/16	8/21	8/25	8/29	9/01	9/04	9/07	9/11	9/17
32	8/30	9/04	9/08	9/11	9/14	9/17	9/21	9/24	9/30
28	9/15	9/20	9/23	9/26	9/29	10/02	10/05	10/09	10/14
24	9/25	10/01	10/05	10/08	10/12	10/15	10/19	10/23	10/28
20	10/05	10/12	10/17	10/21	10/25	10/30	11/03	11/08	11/15
16	10/23	10/31	11/06	11/11	11/15	11/20	11/25	12/01	12/08
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	87	80	74	70	66	61	57	51	44
32	123	115	109	104	99	94	89	83	75
28	158	150	144	140	135	130	125	120	112
24	193	184	177	172	167	162	156	150	141
20	227	217	210	203	197	191	185	178	167
16	294	277	266	256	247	237	227	216	200

\* 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

Complete documentation available from:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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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	977	759	690	530	339	154	50	65	208	493	764	990	6019
60	822	619	535	387	203	66	12	19	111	340	614	835	4563
57	729	535	442	306	138	32	3	8	68	253	528	742	3784
55	673	479	381	255	102	18	1	4	46	200	472	680	3311
50	528	349	237	149	38	3	0	0	13	92	337	536	2282
32	141	42	3	2	0	0	0	0	0	0	45	134	367

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	187	207	336	462	688	867	1095	1079	818	530	271	167	6707
55	6	0	1	25	76	195	383	369	174	17	8	0	1254
57	0	0	0	15	50	149	323	312	136	7	4	0	996
60	0	0	0	7	23	93	239	230	89	2	0	0	683
65	0	0	0	0	4	31	122	121	36	0	0	0	314
70	0	0	0	0	0	6	46	47	11	0	0	0	110

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	44	70	132	242	452	642	861	845	593	314	100	44	44	114	246	488	940	1582	2443	3288	3881	4195	4295	4339
45	10	22	52	135	307	492	706	690	446	182	40	14	10	32	84	219	526	1018	1724	2414	2860	3042	3082	3096
50	1	2	16	55	177	343	551	535	302	83	7	1	1	3	19	74	251	594	1145	1680	1982	2065	2072	2073
55	0	0	0	18	86	212	399	380	177	25	0	0	0	0	0	18	104	316	715	1095	1272	1297	1297	1297
60	0	0	0	3	37	105	254	233	82	8	0	0	0	0	0	3	40	145	399	632	714	722	722	722
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	27	51	121	205	333	431	542	541	430	266	67	26	27	78	199	404	737	1168	1710	2251	2681	2947	3014	3040

(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:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

## 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.  
Complete documentation for the 1971-2000 Normals is available on the internet from:  
[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/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 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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)