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: REDMOND ROBERTS AP, OR **COOP ID: 357062**

Climate Division: OR 7 **NWS Call Sign: RDM** **Elevation: 3,060 Feet** **Lat: 44˚15N** **Lon: 121˚09W**

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	43.1	23.4	33.3	67+	1999	10	39.5	1999	-27	1962	22	16.6	1979	985	0	.0	.0	7.4	5.2	26.1	1.3
Feb	48.1	25.7	36.9	73+	1995	23	43.4	1991	-19	1989	5	25.9	1989	787	0	.0	.0	11.4	2.8	23.0	.8
Mar	54.5	27.3	40.9	80	1966	29	46.1	1986	-1	1955	5	35.8	1975	748	0	.0	.0	20.8	.1	24.6	@
Apr	61.5	30.3	45.9	89	1968	29	51.8	1990	10+	1972	18	39.6	1975	573	0	.0	.0	26.0	.0	18.9	.0
May	69.1	35.8	52.5	99	1986	30	58.0	1992	12	1964	2	47.6	1977	390	1	.0	.7	30.4	.0	11.0	.0
Jun	77.7	41.8	59.8	101+	1968	26	64.4	1986	24+	1976	2	55.4	1991	186	29	.0	3.0	29.9	.0	2.5	.0
Jul	86.4	47.0	66.7	105+	1968	4	71.9	1985	28	1962	14	58.2	1993	70	123	.9	11.4	31.0	.0	.3	.0
Aug	86.0	46.9	66.5	108	1972	7	70.8	1986	25	1960	28	61.7	1975	67	113	.9	10.5	31.0	.0	.2	.0
Sep	77.8	40.2	59.0	105	1998	2	64.9	1998	16	1961	24	53.0	1985	211	31	.1	2.7	30.0	.0	4.9	.0
Oct	65.9	33.4	49.7	95	1970	3	57.2	1988	4	1971	29	45.2	1984	476	0	.0	.1	28.3	.1	15.6	.0
Nov	50.3	27.8	39.1	76+	1997	5	46.2	1999	-14	1955	15	28.7	1985	779	0	.0	.0	13.9	1.7	22.2	.3
Dec	42.7	22.7	32.7	67	1965	3	39.7	1980	-28	1972	8	24.2	1983	1002	0	.0	.0	6.9	5.2	26.7	1.2
Ann	63.6	33.5	48.6	108	Aug 1972	7	71.9	Jul 1985	-28	Dec 1972	8	16.6	Jan 1979	6274	297	1.9	28.4	267.0	15.1	176.0	3.6

\+ 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: 1948-2000

(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	.97	.92	1.57	1980	12	1.98	1980	.13	1984
Feb	.68	.60	1.07	1973	10	2.37	1986	.00	1990
Mar	.76	.71	.62	1974	14	1.65	1989	.16+	1985
Apr	.65	.56	.95	1978	25	1.75	1989	.02+	1986
May	.95	.86	1.12	1998	29	4.62	1998	.04	1974
Jun	.62	.40	1.81	1969	9	2.47	1982	.00	1973
Jul	.55	.27	.86	1982	2	3.73	1987	.00	1988
Aug	.54	.34	.72	1993	20	2.54	1976	.00+	1994
Sep	.37	.25	.73	1982	19	1.25	1982	.00+	1999
Oct	.56	.54	1.59	1950	28	1.17	1992	.00+	1988
Nov	.98	.76	1.40	1961	22	3.15	1984	.12	1976
Dec	.92	.65	1.39	1964	22	3.57	1981	.00	1976
Ann	8.55	7.92	1.81	Jun 1969	9	4.62	May 1998	.00+	Sep 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	9.2	3.1	.2	@
Feb	8.5	2.4	.1	@
Mar	8.5	2.8	.1	.0
Apr	7.3	2.0	.2	.0
May	6.7	2.4	.6	@
Jun	5.3	1.9	.2	.0
Jul	3.7	1.7	.3	.0
Aug	3.7	1.7	.2	.0
Sep	4.0	1.1	.1	.0
Oct	5.7	1.6	.1	.0
Nov	9.9	2.9	.4	.1
Dec	9.4	3.0	.2	@
Ann	81.9	26.6	2.7	.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	.18	.26	.40	.54	.67	.81	.98	1.18	1.44	1.87	2.27
Feb	.08	.17	.28	.38	.47	.58	.69	.83	1.02	1.32	1.60
Mar	.13	.20	.31	.41	.52	.64	.77	.93	1.14	1.49	1.82
Apr	.06	.10	.19	.28	.38	.49	.63	.80	1.03	1.42	1.80
May	.06	.12	.24	.37	.51	.68	.89	1.15	1.51	2.13	2.74
Jun	.01	.04	.10	.19	.29	.40	.55	.75	1.02	1.50	1.98
Jul	.00	.02	.07	.14	.22	.33	.47	.65	.91	1.37	1.84
Aug	.00	.00	.00	.08	.17	.30	.45	.65	.94	1.45	1.95
Sep	.00	.00	.03	.09	.16	.24	.34	.46	.62	.90	1.18
Oct	.00	.10	.21	.30	.38	.48	.58	.70	.86	1.12	1.37
Nov	.11	.19	.33	.46	.61	.77	.96	1.20	1.51	2.04	2.55
Dec	.04	.11	.25	.38	.53	.69	.89	1.13	1.47	2.03	2.58
Ann	5.37	5.96	6.72	7.32	7.85	8.37	8.92	9.53	10.27	11.37	12.33

\+ 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: 1948-2000
(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	4.0	2.1	1	0
Feb	3.3	2.2	#	0
Mar	1.7	1.0	#	0
Apr	.6	.1	#	0
May	.1	#	#	0
Jun	#	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	.2	.0	#	0
Nov	3.0	1.1	#	0
Dec	3.8	3.1	1	0
Ann	16.7	9.6	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	9.5	1982	3	20.7	1993	18	1982	5	9	1993
Feb	6.6	1986	12	16.8	1986	8+	1993	22	3	1993
Mar	9.5	1974	14	9.6	1974	3+	1993	2	#	2000
Apr	3.5	1978	6	4.2	1978	1+	1982	7	#	1982
May	.5	1977	10	.5+	1986	#+	1999	4	#	1999
Jun	#	1995	19	#+	1995	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	#	1972	24	#	1972	0	0	0	0	0
Oct	1.2	1984	19	2.2	1991	2+	1999	26	#	1999
Nov	14.9	1973	5	21.7	1973	19	1973	6	2	1973
Dec	9.0	1992	31	22.7	1992	13	1985	2	3	1983
Ann	14.9	Nov 1973	5	22.7	Dec 1992	19	Nov 1973	6	9	Jan 1993

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.5	1.5	.2	.1	.0
Feb	3.6	1.5	.1	@	.0
Mar	1.8	.5	.1	.1	.0
Apr	1.0	.2	@	.0	.0
May	.2	.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	.4	.1	.0	.0	.0
Nov	2.1	.9	.3	.2	@
Dec	3.3	1.4	.3	.2	.0
Ann	15.9	6.1	1.0	.6	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.4	3.1	2.0	.7
Feb	3.6	1.0	.4	.0
Mar	.5	.1	.0	.0
Apr	.1	.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	.2	.0	.0	.0
Nov	2.4	1.0	.4	.1
Dec	6.2	2.2	1.1	.1
Ann	19.4	7.4	3.9	.9

+ 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	7/26	7/20	7/15	7/12	7/08	7/05	7/01	6/27	6/21
32	7/07	6/30	6/26	6/22	6/19	6/15	6/11	6/07	6/01
28	6/20	6/13	6/08	6/04	5/30	5/26	5/22	5/17	5/10
24	5/24	5/17	5/12	5/08	5/04	4/30	4/25	4/20	4/14
20	5/10	5/02	4/26	4/20	4/16	4/11	4/05	3/30	3/22
16	4/19	4/07	3/30	3/23	3/16	3/09	3/02	2/22	2/10

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	8/07	8/12	8/16	8/20	8/23	8/26	8/29	9/02	9/07
32	8/24	8/30	9/04	9/07	9/11	9/14	9/18	9/22	9/28
28	9/11	9/17	9/21	9/24	9/27	10/01	10/04	10/08	10/14
24	9/25	10/01	10/05	10/09	10/12	10/16	10/19	10/24	10/29
20	10/04	10/11	10/16	10/20	10/24	10/28	11/01	11/06	11/13
16	10/18	10/27	11/02	11/08	11/13	11/18	11/24	11/30	12/09

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	66	59	53	49	45	41	36	31	24
32	110	101	94	89	83	78	73	66	57
28	147	137	131	125	119	114	108	101	91
24	188	178	172	166	161	155	150	143	134
20	222	211	203	197	191	185	178	171	160
16	288	272	260	250	241	232	222	211	195

***** 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	985	787	748	573	390	186	70	67	211	476	779	1002	6274
60	830	647	593	425	247	91	22	20	113	325	629	847	4789
57	740	563	500	341	172	51	10	8	69	243	541	754	3992
55	683	507	438	287	130	31	5	3	47	192	484	692	3499
50	539	375	290	170	53	7	0	0	13	93	348	540	2428
32	152	51	7	3	0	0	0	0	0	0	44	119	376

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	190	188	282	420	634	833	1076	1069	810	548	255	140	6445
55	7	0	0	14	51	174	367	359	167	27	5	0	1171
57	3	0	0	8	31	134	311	302	129	15	2	0	935
60	0	0	0	3	13	84	230	220	83	5	0	0	638
65	0	0	0	0	1	29	123	113	31	0	0	0	297
70	0	0	0	0	0	7	50	42	8	0	0	0	107

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	31	48	84	185	373	586	819	803	546	286	77	27	31	79	163	348	721	1307	2126	2929	3475	3761	3838	3865
45	4	11	30	93	231	437	664	648	398	166	29	3	4	15	45	138	369	806	1470	2118	2516	2682	2711	2714
50	0	1	4	43	127	296	509	493	264	78	8	0	0	1	5	48	175	471	980	1473	1737	1815	1823	1823
55	0	0	0	12	61	173	357	340	148	25	0	0	0	0	0	12	73	246	603	943	1091	1116	1116	1116
60	0	0	0	0	27	87	222	207	68	5	0	0	0	0	0	0	27	114	336	543	611	616	616	616
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	17	41	86	163	279	397	519	514	390	235	55	20	17	58	144	307	586	983	1502	2016	2406	2641	2696	2716

(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