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: BELKNAP SPRINGS 8 N, OR **COOP ID: 350652**

Climate Division: OR 4 **NWS Call Sign:** **Elevation: 2,152 Feet** **Lat: 44˚17N** **Lon: 122˚02W**

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	27.8	33.6	69	1981	23	40.4	1981	2	1963	12	28.6	1979	975	0	.0	.0	1.5	2.1	25.6	.0
Feb	44.2	29.2	36.7	72	1995	24	42.8	1991	-2	1989	4	28.5	1989	794	0	.0	.0	6.2	1.0	22.0	.1
Mar	50.5	31.1	40.8	76+	1994	30	48.7	1992	6+	1971	2	33.8	1971	751	0	.0	.0	15.2	@	20.9	.0
Apr	57.0	34.2	45.6	93	1987	27	52.6	1987	22+	1975	7	40.1	1975	583	0	.0	.1	20.0	.0	12.2	.0
May	65.1	39.2	52.2	100+	1986	31	61.3	1992	27+	1982	4	46.5	1977	401	3	.1	.9	27.9	.0	3.0	.0
Jun	72.7	44.7	58.7	104+	1961	17	63.2	1992	32+	1991	4	54.0	1971	206	16	.1	1.8	29.7	.0	.1	.0
Jul	81.2	48.8	65.0	106	1961	13	69.8	1998	34	1971	1	58.8	1993	87	86	.5	7.3	31.0	.0	.0	.0
Aug	81.6	48.5	65.1	106	1972	9	68.3	1986	35+	1985	22	61.1	1980	75	76	.7	7.1	31.0	.0	.0	.0
Sep	75.3	43.7	59.5	105	1988	3	63.9+	1991	28+	1999	28	53.8	1986	201	36	.2	3.2	29.7	.0	.5	.0
Oct	63.2	37.9	50.6	92+	1991	12	57.4	1988	19+	1971	30	45.5	1971	450	2	.0	.1	26.8	.0	5.2	.0
Nov	46.5	32.7	39.6	70	1962	3	46.0	1986	8+	1985	23	32.0	1985	762	0	.0	.0	10.4	.4	15.2	.0
Dec	38.7	28.5	33.6	58	1980	31	37.9	1977	-4	1972	9	27.1	1990	974	0	.0	.0	1.1	1.9	25.2	.3
Ann	59.6	37.2	48.4	106+	Aug 1972	9	69.8	Jul 1998	-4	Dec 1972	9	27.1	Dec 1990	6259	219	1.6	20.5	230.5	5.4	129.9	.4

\+ 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: 1960-2001

(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	11.31	12.01	4.43	1972	21	20.15	1971	.23	1985
Feb	9.61	8.73	4.68	1984	13	21.45	1986	2.37	1973
Mar	7.88	7.11	3.21	1983	30	13.20	1983	1.63	1992
Apr	5.73	5.32	3.45	1990	28	11.72	1993	2.01	1999
May	3.99	3.79	2.26	2001	15	7.19	1998	.54	1982
Jun	2.68	2.64	2.80	1981	8	7.31	1981	.66	1986
Jul	1.03	.66	1.48	1987	18	5.03	1983	.00	1984
Aug	1.13	.61	1.07	1989	23	3.46	1978	.01	1992
Sep	2.44	2.27	1.95	1981	27	6.11	1971	.00+	1999
Oct	5.23	4.78	3.02	1994	28	12.45	1997	.28	1987
Nov	12.19	11.41	5.83	1999	26	25.04	1973	3.08	1993
Dec	12.75	12.52	5.32	1964	22	30.64	1996	1.23	1976
Ann	75.97	78.19	5.83	Nov 1999	26	30.64	Dec 1996	.00+	Sep 1999

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	18.0	14.9	7.5	3.6
Feb	16.4	13.7	6.4	2.9
Mar	18.6	14.4	6.1	1.5
Apr	17.6	12.4	3.9	.9
May	14.1	9.1	2.7	.3
Jun	9.7	6.7	1.6	.3
Jul	4.8	2.7	.6	.1
Aug	4.7	3.2	.7	@
Sep	7.4	5.2	1.8	.5
Oct	11.8	8.9	3.6	1.5
Nov	19.6	16.2	8.6	3.8
Dec	18.4	15.7	8.7	4.4
Ann	161.1	123.1	52.2	19.8

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	2.24	3.27	4.93	6.45	7.99	9.65	11.52	13.77	16.76	21.54	26.08
Feb	3.13	4.05	5.39	6.53	7.63	8.77	10.02	11.47	13.35	16.26	18.95
Mar	2.84	3.58	4.65	5.55	6.41	7.28	8.24	9.35	10.76	12.95	14.96
Apr	2.04	2.58	3.36	4.02	4.65	5.29	5.99	6.80	7.84	9.45	10.93
May	1.26	1.64	2.20	2.68	3.14	3.63	4.16	4.78	5.58	6.82	7.97
Jun	.62	.87	1.26	1.62	1.96	2.33	2.75	3.24	3.89	4.92	5.89
Jul	.01	.05	.16	.29	.45	.65	.90	1.22	1.69	2.51	3.34
Aug	.01	.04	.13	.25	.42	.63	.91	1.29	1.85	2.87	3.93
Sep	.00	.00	.43	.89	1.35	1.84	2.40	3.10	4.06	5.57	7.07
Oct	.83	1.28	2.04	2.76	3.51	4.32	5.25	6.39	7.91	10.38	12.74
Nov	3.48	4.63	6.38	7.90	9.38	10.93	12.64	14.66	17.28	21.39	25.21
Dec	2.91	4.10	5.96	7.64	9.31	11.09	13.08	15.47	18.60	23.57	28.26
Ann	50.17	55.02	61.31	66.15	70.47	74.68	79.06	83.93	89.87	98.56	106.14

\+ 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: 1960-2001
(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	14.7	4.0	8	2	18.0	1982	4	71.0	1982	45	1996	29	33	1993	5.2	4.2	2.2	1.2	.4	12.8	10.4	8.6	5.2
Feb	15.2	7.0	8	3	22.0	1990	16	83.3	1990	50	1971	28	28	1989	4.0	3.6	1.9	1.1	.4	10.6	8.7	7.1	4.4
Mar	8.9	5.3	4	1	9.0	1971	5	34.5	1971	51	1971	5	34	1971	3.4	2.9	1.4	.5	.0	6.9	5.4	4.3	2.8
Apr	1.6	.0	#	0	6.0	1972	13	14.0	1982	23	1971	1	7	1971	1.0	.7	.2	.1	.0	1.9	1.0	.8	.4
May	#	.0	#	0	#	2000	11	#+	2000	#+	2000	11	#+	2000	.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	.3	.0	#	0	4.0	1972	29	4.0	1972	4	1972	29	#+	1996	.1	.1	@	.0	.0	.2	@	.0	.0
Nov	5.8	1.7	1	#	15.0	1973	5	43.0	1973	18	1973	5	6	1994	2.0	1.8	.9	.4	.1	3.1	1.9	1.1	.2
Dec	15.9	12.0	4	2	15.0	1971	12	71.5	1971	41	1971	15	21	1971	5.0	4.1	2.1	1.0	.3	12.7	8.9	6.9	3.4
Ann	62.4	30.0	N/A	N/A	22.0	Feb 1990	16	83.3	Feb 1990	51	Mar 1971	5	34	Mar 1971	20.7	17.4	8.7	4.3	1.2	48.2	36.3	28.8	16.4

+ 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	6/25	6/18	6/13	6/08	6/04	5/31	5/27	5/22	5/14
32	6/02	5/26	5/22	5/17	5/14	5/10	5/06	5/01	4/24
28	5/03	4/26	4/20	4/16	4/12	4/08	4/04	3/30	3/23
24	4/01	3/18	3/08	2/27	2/19	2/11	2/03	1/24	1/10
20	3/03	2/19	2/10	2/02	1/25	1/18	1/09	12/29	12/09
16	2/28	2/14	2/03	1/25	1/15	1/05	12/23	11/30	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	9/03	9/10	9/14	9/18	9/22	9/25	9/29	10/04	10/10
32	9/25	10/01	10/05	10/09	10/13	10/16	10/20	10/25	10/31
28	10/10	10/18	10/24	10/29	11/03	11/07	11/12	11/18	11/26
24	11/08	11/17	11/23	11/28	12/03	12/08	12/13	12/20	12/28
20	11/16	11/28	12/07	12/15	12/22	12/30	1/07	1/18	2/07
16	11/27	12/09	12/19	12/28	1/05	1/15	1/28	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	140	129	122	115	109	102	96	88	77
32	176	168	162	156	151	147	141	135	127
28	235	224	216	210	204	198	191	183	173
24	332	314	302	293	284	275	266	255	241
20	>365	>365	361	345	333	322	311	299	282
16	>365	>365	>365	>365	365	340	325	311	294

***** 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	975	794	751	583	401	206	87	75	201	450	762	974	6259
60	820	654	596	435	261	100	27	19	108	305	612	819	4756
57	727	570	503	349	188	56	11	7	67	228	524	726	3956
55	665	514	442	295	148	35	6	2	45	182	466	664	3464
50	510	380	297	175	69	7	0	0	14	91	327	509	2379
32	73	46	14	2	0	0	0	0	0	0	28	65	228

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	121	176	286	410	625	800	1023	1024	825	576	256	115	6237
55	0	0	1	12	60	145	315	314	180	44	3	0	1074
57	0	0	0	7	38	106	259	256	142	28	1	0	837
60	0	0	0	2	18	60	182	175	93	12	0	0	542
65	0	0	0	0	3	16	86	76	36	2	0	0	219
70	0	0	0	0	0	2	27	19	10	0	0	0	58

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	4	30	84	194	391	570	782	786	595	338	70	4	4	34	118	312	703	1273	2055	2841	3436	3774	3844	3848
45	0	4	22	99	247	421	627	631	446	206	18	0	0	4	26	125	372	793	1420	2051	2497	2703	2721	2721
50	0	0	1	44	139	275	472	476	303	100	1	0	0	0	1	45	184	459	931	1407	1710	1810	1811	1811
55	0	0	0	10	65	158	325	322	179	37	0	0	0	0	0	10	75	233	558	880	1059	1096	1096	1096
60	0	0	0	2	29	72	192	188	86	10	0	0	0	0	0	2	31	103	295	483	569	579	579	579
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	1	20	64	135	248	345	478	485	380	219	29	0	1	21	85	220	468	813	1291	1776	2156	2375	2404	2404

(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