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: ILLAHE, OR **COOP ID: 354133**

Climate Division: OR 1 **NWS Call Sign:** **Elevation: 348 Feet** **Lat: 42˚38N** **Lon: 124˚03W**

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	50.1	35.4	42.8	67	1995	30	51.7	1995	14	1962	23	38.6	1982	690	0	.0	.0	17.2	.0	9.0	.0
Feb	54.3	36.9	45.6	76	1968	26	51.7	1991	13+	1989	6	39.6	1989	543	0	.0	.0	20.6	.1	5.2	.0
Mar	58.9	38.1	48.5	83	1960	24	53.1	1993	25+	1969	10	44.5	1985	511	0	.0	.0	27.7	.0	3.1	.0
Apr	65.0	39.0	52.0	94	1957	28	57.8	1989	28+	1972	18	47.2	1975	391	1	.0	@	29.0	.0	1.1	.0
May	72.7	43.3	58.0	98+	1975	31	65.6	1992	29	1968	6	53.8	1977	229	13	.0	1.9	30.8	.0	.1	.0
Jun	79.7	48.6	64.2	111	1955	8	69.1	1992	36	1976	4	59.8	1980	85	59	.2	3.9	30.0	.0	.0	.0
Jul	87.5	52.3	69.9	111	1956	18	74.8	1994	37+	1973	22	65.3	1983	19	171	2.2	12.2	31.0	.0	.0	.0
Aug	87.8	52.4	70.1	110	1978	8	74.9	1996	32	1973	22	64.6	1973	19	177	2.5	13.6	31.0	.0	@	.0
Sep	84.1	48.8	66.5	111	1955	3	72.4	1991	31	1970	14	62.1	1978	64	108	1.3	9.2	30.0	.0	.0	.0
Oct	69.9	44.1	57.0	99	1980	2	63.7	1988	25	1971	29	52.6	1985	266	18	.0	.5	30.9	.0	.5	.0
Nov	54.6	39.7	47.2	75	1962	1	51.3	1976	17	1978	14	40.1	1985	536	0	.0	.0	24.8	.0	2.6	.0
Dec	49.1	35.2	42.2	68	1979	17	46.8	1996	6	1972	10	36.1	1990	709	0	.0	.0	13.9	.3	8.7	.0
Ann	67.8	42.8	55.3	111+	Jul 1956	18	74.9	Aug 1996	6	Dec 1972	10	36.1	Dec 1990	4062	547	6.2	41.3	316.9	.4	30.3	.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: 1948-2001

(3) Derived from 1971-2000 serially complete daily data

Issue Date: February 2004

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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	13.77	13.52	7.17	1953	18	33.14	1996	.43	1985
Feb	11.56	10.22	4.37	1951	4	27.75	1986	1.76	1991
Mar	10.53	9.49	6.56	1972	2	19.02	1983	2.71	2000
Apr	5.51	4.91	2.60	1962	27	14.60	1982	.99	1990
May	3.32	2.72	4.46	1949	1	7.30	1993	.00	1992
Jun	1.31	1.04	2.00	1985	1	5.98	1985	.00+	1999
Jul	.29	.08	1.72	1983	1	3.08	1983	.00+	2000
Aug	.82	.34	1.75	1997	26	3.62	1983	.00+	2000
Sep	2.28	.90	3.25	1986	25	11.34	1986	.00+	1999
Oct	5.12	4.59	5.42	1950	28	12.10	1975	.18	1987
Nov	13.02	11.16	8.85	1996	18	33.75	1973	2.33	1976
Dec	13.30	12.85	5.11	1957	20	34.19	1981	1.50	1976
Ann	80.83	80.70	8.85	Nov 1996	18	34.19	Dec 1981	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	15.8	13.5	8.7	5.4
Feb	15.3	13.7	8.1	4.7
Mar	16.6	14.3	7.0	3.8
Apr	12.3	9.7	4.4	1.6
May	8.1	6.1	2.5	.9
Jun	4.8	3.1	.9	.3
Jul	1.2	.8	@	@
Aug	2.4	1.6	.4	.2
Sep	4.0	3.2	1.7	.9
Oct	7.9	6.4	3.7	2.0
Nov	15.1	13.2	8.4	4.9
Dec	15.6	13.3	8.6	5.4
Ann	119.1	98.9	54.4	30.1

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	2.77	4.02	6.04	7.89	9.76	11.76	14.03	16.75	20.36	26.14	31.62
Feb	2.88	3.97	5.65	7.14	8.62	10.17	11.91	13.98	16.68	20.95	24.95
Mar	3.90	4.89	6.30	7.48	8.61	9.76	11.01	12.46	14.31	17.16	19.77
Apr	1.32	1.83	2.64	3.36	4.07	4.82	5.67	6.68	7.99	10.09	12.05
May	.28	.65	1.19	1.67	2.17	2.72	3.34	4.10	5.11	6.75	8.33
Jun	.00	.13	.35	.56	.78	1.02	1.30	1.64	2.10	2.87	3.61
Jul	.00	.00	.00	.00	.02	.08	.17	.31	.51	.88	1.27
Aug	.00	.00	.00	.00	.00	.20	.49	.88	1.47	2.48	3.53
Sep	.00	.00	.04	.30	.66	1.14	1.78	2.64	3.91	6.16	8.50
Oct	.49	.86	1.56	2.27	3.05	3.92	4.95	6.25	8.02	10.97	13.86
Nov	3.16	4.38	6.28	7.97	9.65	11.42	13.41	15.76	18.85	23.75	28.34
Dec	3.03	4.27	6.22	7.97	9.72	11.57	13.65	16.14	19.41	24.60	29.49
Ann	50.64	56.21	63.49	69.12	74.19	79.15	84.33	90.11	97.20	107.63	116.78

\+ 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: 1948-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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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	2.4	.0	#	0
Feb	.6	.0	#	0
Mar	.5	.0	#	0
Apr	.3	.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	.2	.0	#	0
Dec	1.0	.0	#	0
Ann	5.0	.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	13.0	1972	26	21.0	1972	11	1972	26	1	1982
Feb	6.5	1989	2	13.0	1975	11	1975	2	3	1975
Mar	3.5	1973	19	3.5	1973	3	1973	19	#+	1999
Apr	3.0	1982	4	8.0	1982	1	1982	5	#	1982
May	.0	0	0	.0	0	0	0	0	0	0
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	.0	0	0	.0	0	0	0	0	0	0
Nov	3.0	1977	21	3.0	1977	2	1977	21	#	1977
Dec	8.0	1972	6	21.0	1972	12	1972	12	3	1972
Ann	13.0	Jan 1972	26	21.0+	Dec 1972	12	Dec 1972	12	3+	Feb 1975

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.6	.5	.3	.2	.1
Feb	.5	.4	.2	.1	.0
Mar	.2	.2	.1	.0	.0
Apr	.1	.1	.1	.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	.1	.1	@	.0	.0
Dec	.2	.2	.2	.1	.0
Ann	1.7	1.5	.9	.4	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.6	.4	.3	@
Feb	.6	.4	.3	.3
Mar	.1	@	.0	.0
Apr	@	.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	@	.0	.0	.0
Dec	.5	.4	.4	.0
Ann	1.8	1.2	1.0	.3

+ 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	5/27	5/18	5/12	5/06	5/01	4/26	4/21	4/14	4/05
32	5/05	4/22	4/13	4/04	3/28	3/20	3/12	3/02	2/17
28	3/16	3/02	2/20	2/10	2/01	1/22	1/10	12/18	0/00
24	2/10	1/29	1/21	1/12	1/02	12/16	0/00	0/00	0/00
20	1/19	1/04	12/15	0/00	0/00	0/00	0/00	0/00	0/00
16	1/08	0/00	0/00	0/00	0/00	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	9/24	10/05	10/13	10/20	10/26	11/01	11/08	11/16	11/27
32	10/10	10/23	11/01	11/09	11/17	11/24	12/02	12/12	12/25
28	11/18	11/28	12/05	12/11	12/18	12/25	1/03	0/00	0/00
24	11/29	12/14	12/26	1/07	1/22	0/00	0/00	0/00	0/00
20	12/18	1/08	2/04	0/00	0/00	0/00	0/00	0/00	0/00
16	1/05	0/00	0/00	0/00	0/00	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	224	208	196	186	177	168	158	146	130
32	289	270	256	244	233	222	210	196	177
28	>365	>365	>365	>365	326	306	290	274	254
24	>365	>365	>365	>365	>365	>365	>365	358	316
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

***** 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	690	543	511	391	229	85	19	19	64	266	536	709	4062
60	535	403	359	251	115	24	2	2	19	151	387	554	2802
57	442	321	273	175	67	9	0	0	7	97	301	461	2153
55	383	269	220	133	42	4	0	0	3	69	247	399	1769
50	242	151	113	55	10	0	0	0	0	23	130	257	981
32	6	0	0	0	0	0	0	0	0	0	0	7	13

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	339	381	512	600	807	964	1175	1181	1034	775	454	321	8543
55	3	6	19	43	136	277	462	468	348	131	11	0	1904
57	0	2	10	25	98	222	400	406	292	97	5	0	1557
60	0	0	3	10	54	148	309	315	213	58	1	0	1111
65	0	0	0	1	13	59	171	177	108	18	0	0	547
70	0	0	0	0	1	14	73	78	40	4	0	0	210

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	131	189	288	379	559	728	936	940	798	526	235	118	131	320	608	987	1546	2274	3210	4150	4948	5474	5709	5827
45	41	78	147	231	405	578	781	785	648	372	105	38	41	119	266	497	902	1480	2261	3046	3694	4066	4171	4209
50	4	19	52	113	257	428	626	630	498	222	27	3	4	23	75	188	445	873	1499	2129	2627	2849	2876	2879
55	0	0	5	37	135	281	471	475	350	102	3	0	0	0	5	42	177	458	929	1404	1754	1856	1859	1859
60	0	0	0	5	56	149	316	320	208	34	0	0	0	0	0	5	61	210	526	846	1054	1088	1088	1088
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	37	79	150	226	337	446	581	579	495	305	88	35	37	116	266	492	829	1275	1856	2435	2930	3235	3323	3358

(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