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: ELKTON 3 SW, OR **COOP ID: 352633**

Climate Division: OR 1 **NWS Call Sign:** **Elevation: 120 Feet** **Lat: 43˚36N** **Lon: 123˚35W**

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	49.1	35.9	42.5	66	1953	8	46.0	1998	6	1962	22	35.6	1979	698	0	.0	.0	15.3	@	7.5	.0
Feb	53.8	37.6	45.7	76	1995	19	50.3	1995	4	1989	5	37.6	1989	540	0	.0	.0	22.3	.1	4.6	.0
Mar	58.7	38.9	48.8	80+	1969	29	54.4	1992	25+	1965	19	44.5	1971	503	0	.0	.0	28.6	.0	2.2	.0
Apr	63.7	40.5	52.1	91	1998	30	57.3	1992	27	1975	9	46.1	1975	387	1	.0	@	29.7	.0	.9	.0
May	70.1	44.3	57.2	96+	1992	25	64.3	1992	27	1954	1	53.8	1999	250	8	.0	1.1	31.0	.0	@	.0
Jun	76.3	48.0	62.2	102	1992	22	66.1	1986	34	1966	1	58.4	1971	114	29	.1	2.7	30.0	.0	.0	.0
Jul	83.3	51.2	67.3	108	1961	11	71.7	1996	38	1979	26	63.5	1989	39	109	.7	7.9	31.0	.0	.0	.0
Aug	84.4	51.1	67.8	107+	1978	9	71.9	1998	40+	1992	25	64.7	1973	21	106	.9	7.6	31.0	.0	.0	.0
Sep	80.1	48.0	64.1	103	1948	9	69.8	1974	30	1970	14	60.1	1985	92	62	.2	4.8	30.0	.0	.1	.0
Oct	67.8	44.0	55.9	96	1987	1	60.3	1988	25	1985	9	52.8	1971	286	4	.0	.4	31.0	.0	.6	.0
Nov	54.2	40.6	47.4	74	1975	3	51.6	1995	16	1978	14	40.9	1985	528	0	.0	.0	23.7	@	2.4	.0
Dec	48.0	36.3	42.2	69	1958	1	46.6	1977	0	1972	8	34.9	1990	708	0	.0	.0	12.8	.6	6.6	.0
Ann	65.8	43.0	54.4	108	Jul 1961	11	71.9	Aug 1998	0	Dec 1972	8	34.9	Dec 1990	4166	319	1.9	24.5	316.4	.7	24.9	.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	8.09	8.80	4.73	1982	6	16.09	1995	.59	1985
Feb	6.97	5.97	4.49	1982	16	16.10	1999	.74	1988
Mar	6.05	6.16	2.19	1966	9	12.48	1983	1.73	1992
Apr	3.92	3.55	2.07	1982	13	8.34	1982	1.47+	1985
May	2.42	2.45	2.07	1949	1	5.94	1998	.00	1992
Jun	1.10	.92	1.36	1981	8	2.74	1981	.07	1987
Jul	.35	.25	.95	1993	22	1.46	1987	.00+	1994
Aug	.68	.20	1.28	1977	25	2.31	1976	.00+	2000
Sep	1.45	1.05	1.30	1957	26	5.04	1971	.00+	1999
Oct	3.29	2.93	3.10	1955	9	12.58	1975	.00	1978
Nov	8.89	7.95	5.35	1996	19	21.38	1984	1.55	1976
Dec	9.29	8.77	4.61	1980	2	19.78	1981	1.51	1976
Ann	52.50	52.97	5.35	Nov 1996	19	21.38	Nov 1984	.00+	Aug 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	18.3	12.3	5.4	2.1
Feb	16.4	11.4	4.5	1.6
Mar	17.8	12.1	4.2	1.0
Apr	13.5	8.4	2.0	.5
May	10.0	6.0	1.3	.2
Jun	6.1	3.0	.4	.1
Jul	2.2	1.1	.2	.0
Aug	2.9	1.7	.4	.1
Sep	4.6	2.7	.8	.1
Oct	9.8	5.7	1.9	.7
Nov	16.9	12.7	5.6	2.1
Dec	18.0	13.2	6.1	2.7
Ann	136.5	90.3	32.8	11.2

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	1.94	2.70	3.88	4.93	5.98	7.08	8.32	9.80	11.73	14.79	17.67
Feb	1.88	2.54	3.54	4.43	5.29	6.20	7.21	8.41	9.97	12.41	14.69
Mar	2.27	2.83	3.64	4.32	4.96	5.62	6.33	7.15	8.20	9.82	11.29
Apr	1.17	1.54	2.10	2.58	3.05	3.54	4.07	4.70	5.52	6.79	7.97
May	.23	.51	.91	1.26	1.62	2.01	2.46	2.99	3.71	4.87	5.97
Jun	.13	.22	.37	.53	.69	.87	1.08	1.35	1.70	2.29	2.86
Jul	.00	.00	.02	.07	.12	.20	.29	.41	.59	.89	1.21
Aug	.00	.00	.00	.05	.15	.30	.49	.76	1.16	1.89	2.64
Sep	.00	.00	.08	.27	.51	.81	1.20	1.71	2.46	3.76	5.08
Oct	.25	.59	1.12	1.61	2.11	2.66	3.29	4.07	5.11	6.81	8.44
Nov	2.33	3.17	4.46	5.59	6.71	7.88	9.18	10.72	12.74	15.91	18.87
Dec	2.30	3.17	4.53	5.73	6.92	8.17	9.58	11.24	13.42	16.87	20.11
Ann	33.68	37.17	41.73	45.25	48.41	51.49	54.70	58.28	62.66	69.08	74.70

\+ 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	.6	.0	#	0
Feb	.3	.0	#	0
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	.4	.0	#	0
Ann	1.4	.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	5.2	1971	12	9.5	1971	2	1982	7	#+	1982
Feb	3.0	1971	27	4.6	1971	#	1982	22	#	1982
Mar	2.0	1972	25	2.0	1972	1	1973	19	#	1973
Apr	#	1983	9	#+	1983	0	0	0	0	0
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	.0	0	0	.0	0	4	1973	6	#	1973
Dec	3.5	1972	5	7.6	1972	5	1972	6	2	1972
Ann	5.2	Jan 1971	12	9.5	Jan 1971	5	Dec 1972	6	2	Dec 1972

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.3	.2	.1	@	.0
Feb	.2	.1	.1	.0	.0
Mar	.1	.1	.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	.0	.0	.0	.0	.0
Dec	.2	.1	.1	.0	.0
Ann	.8	.5	.3	@	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.1	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	@	.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	.0	.0	.0	.0
Dec	@	.0	.0	.0
Ann	.1	.0	.0	.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	5/24	5/14	5/07	5/01	4/25	4/20	4/14	4/07	3/28
32	4/26	4/12	4/03	3/26	3/18	3/11	3/03	2/21	2/08
28	3/06	2/24	2/16	2/10	2/03	1/27	1/18	1/02	0/00
24	2/12	2/01	1/23	1/16	1/08	12/29	12/11	0/00	0/00
20	1/26	1/10	12/25	0/00	0/00	0/00	0/00	0/00	0/00
16	1/11	12/22	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	9/22	10/01	10/07	10/13	10/18	10/23	10/28	11/04	11/13
32	10/13	10/24	11/02	11/09	11/16	11/23	11/30	12/09	12/21
28	11/03	11/20	12/03	12/15	12/26	1/08	1/25	0/00	0/00
24	11/26	12/10	12/20	12/30	1/10	1/24	0/00	0/00	0/00
20	12/11	12/29	1/16	0/00	0/00	0/00	0/00	0/00	0/00
16	12/18	1/14	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	214	201	191	182	175	167	158	148	135
32	298	279	265	253	242	231	219	206	187
28	>365	>365	>365	362	330	311	295	278	257
24	>365	>365	>365	>365	>365	>365	344	324	305
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	698	540	503	387	250	114	39	21	92	286	528	708	4166
60	543	400	351	248	128	36	7	1	29	153	379	553	2828
57	450	318	265	173	76	13	1	0	12	91	295	460	2154
55	388	265	212	132	49	5	0	0	5	59	241	401	1757
50	243	146	107	55	12	0	0	0	0	14	130	260	967
32	3	0	0	0	0	0	0	0	0	0	1	9	13

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	328	384	520	603	781	905	1093	1109	960	741	463	324	8211
55	0	5	19	45	117	220	380	396	276	87	14	3	1562
57	0	2	11	26	82	167	319	334	222	57	7	0	1227
60	0	0	3	11	41	101	232	242	150	26	1	0	807
65	0	0	0	1	8	29	109	106	62	4	0	0	319
70	0	0	0	0	0	4	33	25	15	0	0	0	77

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	132	203	302	393	560	694	874	886	739	513	244	127	132	335	637	1030	1590	2284	3158	4044	4783	5296	5540	5667
45	43	89	160	248	405	544	719	731	589	359	117	42	43	132	292	540	945	1489	2208	2939	3528	3887	4004	4046
50	5	23	58	123	255	394	564	576	439	215	38	4	5	28	86	209	464	858	1422	1998	2437	2652	2690	2694
55	0	1	10	42	129	245	409	421	292	95	6	0	0	1	11	53	182	427	836	1257	1549	1644	1650	1650
60	0	0	0	7	54	122	255	267	159	30	0	0	0	0	0	7	61	183	438	705	864	894	894	894
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	37	81	150	223	328	413	540	552	460	295	86	35	37	118	268	491	819	1232	1772	2324	2784	3079	3165	3200

(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