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: ABERDEEN 20 NNE, WA **COOP ID: 450013**

Climate Division: WA 1 **NWS Call Sign:** **Elevation: 435 Feet** **Lat: 47˚16N** **Lon: 123˚42W**

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	44.0	34.1	39.1	59	1961	19	43.2	1978	8	1979	1	33.0	1993	805	0	.0	.0	3.3	.6	16.4	.0
Feb	47.0	34.6	40.8	74	1963	9	45.0	1991	7	1989	4	34.2	1989	678	0	.0	.0	7.7	.3	14.0	.0
Mar	51.5	36.0	43.8	74+	1994	27	49.4	1992	17	1971	1	39.6	1976	659	0	.0	.0	16.8	.0	13.0	.0
Apr	56.4	38.2	47.3	85	1998	30	50.5	1989	26	1975	1	43.0	1972	531	0	.0	.0	23.3	.0	7.2	.0
May	62.7	42.8	52.8	98	1983	29	56.7	1993	29+	1985	12	48.4	1974	380	0	.0	.1	30.1	.0	1.0	.0
Jun	66.7	47.0	56.9	95	1982	19	60.9	1992	16	1963	2	53.4	1971	247	3	.0	.2	30.0	.0	.1	.0
Jul	72.5	50.3	61.4	100	1965	31	65.1	1985	35	1962	2	58.1	1993	128	17	.0	.9	31.0	.0	.0	.0
Aug	72.9	51.1	62.0	100	1981	10	65.3	1986	36	1973	22	58.8	1975	116	23	@	.8	31.0	.0	.0	.0
Sep	68.2	47.6	57.9	93+	1988	2	61.7	1974	30	1970	13	54.9	1972	218	5	.0	@	30.0	.0	.1	.0
Oct	58.5	42.2	50.4	79+	1980	3	54.0	1988	24	1971	28	47.5	1990	454	0	.0	.0	28.8	.0	2.7	.0
Nov	48.4	37.5	43.0	71	1970	3	46.2	1997	10	1985	23	35.7	1985	662	0	.0	.0	11.7	.3	9.6	.0
Dec	42.7	33.9	38.3	60	1960	14	42.9	1980	3	1983	23	32.2	1990	828	0	.0	.0	3.4	1.1	15.5	.0
Ann	57.6	41.3	49.5	100+	Aug 1981	10	65.3	Aug 1986	3	Dec 1983	23	32.2	Dec 1990	5706	48	@	2.0	247.1	2.3	79.6	.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: 1931-2001

(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	19.09	20.43	8.51	1968	19	29.67	1997	1.13	1985
Feb	17.10	17.14	6.28	1951	9	36.66	1999	.96	1993
Mar	14.63	13.34	7.30	1997	19	33.17	1997	1.90	1992
Apr	9.62	8.60	5.72	1959	29	19.22	1996	3.28	1998
May	6.28	5.66	3.60	1940	1	11.96	1984	.99	1992
Jun	4.20	3.49	5.05	2000	12	9.68	1981	1.37	1972
Jul	2.75	2.01	4.85	1934	16	10.18	1983	.14	1984
Aug	2.78	2.18	4.34	2001	22	10.97	1991	.12	1986
Sep	5.39	5.90	5.69	1997	17	14.43	1997	.07	1993
Oct	11.40	10.42	6.00	1942	31	32.17	1975	1.57	1972
Nov	20.16	20.79	7.80	1955	3	37.97	1998	5.91	1976
Dec	21.41	20.46	7.02	1977	2	37.73	1979	5.12	1985
Ann	134.81	137.21	8.51	Jan 1968	19	37.97	Nov 1998	.07	Sep 1993

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	21.3	17.8	11.6	7.0
Feb	19.4	16.4	10.7	5.7
Mar	21.6	17.4	10.0	5.0
Apr	19.5	14.7	6.7	2.8
May	16.2	10.8	4.4	1.7
Jun	12.8	8.2	3.1	.8
Jul	8.1	4.5	1.7	.8
Aug	7.6	4.9	1.7	.7
Sep	10.6	7.3	3.5	1.9
Oct	16.0	12.2	7.1	4.3
Nov	22.3	19.1	12.6	7.8
Dec	22.3	18.8	12.0	7.3
Ann	197.7	152.1	85.1	45.8

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	5.47	7.29	10.02	12.40	14.71	17.13	19.80	22.95	27.04	33.44	39.40
Feb	5.17	6.80	9.23	11.32	13.35	15.46	17.78	20.51	24.04	29.55	34.66
Mar	5.48	6.84	8.80	10.44	12.00	13.59	15.31	17.31	19.86	23.78	27.37
Apr	3.54	4.44	5.74	6.82	7.86	8.92	10.07	11.40	13.10	15.73	18.13
May	1.97	2.56	3.45	4.21	4.94	5.70	6.53	7.51	8.77	10.74	12.55
Jun	1.44	1.84	2.41	2.90	3.37	3.85	4.38	5.00	5.78	7.00	8.12
Jul	.26	.45	.82	1.20	1.62	2.09	2.65	3.36	4.32	5.92	7.50
Aug	.18	.35	.70	1.08	1.50	2.00	2.60	3.37	4.44	6.25	8.05
Sep	.18	.41	.97	1.66	2.48	3.49	4.75	6.40	8.78	12.91	17.10
Oct	2.32	3.36	5.04	6.56	8.11	9.76	11.63	13.87	16.84	21.59	26.09
Nov	7.40	9.29	12.01	14.28	16.45	18.67	21.08	23.88	27.46	32.96	38.01
Dec	8.38	10.36	13.18	15.52	17.73	19.98	22.42	25.23	28.81	34.30	39.30
Ann	96.46	103.90	113.43	120.66	127.07	133.27	139.67	146.74	155.30	167.72	178.45

\+ 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: 1931-2001
(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	.5	1	#
Feb	3.9	.2	1	#
Mar	2.3	.0	#	#
Apr	.3	.0	#	0
May	.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
Nov	1.1	.0	#	0
Dec	2.0	.9	#	#
Ann	15.6	1.6	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	8.5	1972	25	38.0	1982	21	1982	5	7	1982
Feb	13.0	1971	27	19.5	1982	18	1990	8	8	1990
Mar	4.0	1971	2	16.7	1971	16	1971	4	5	1971
Apr	2.0	1972	12	4.5	1972	2	1972	13	#+	1999
May	1.0	1982	29	1.0	1982	#+	1999	7	#+	1999
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	#	1971	27	#	1971	#	1971	27	#	1971
Nov	8.0	1985	22	13.5	1985	10	1985	22	2	1985
Dec	6.2	1975	13	8.6	1983	9	1998	24	2	1971
Ann	13.0	Feb 1971	27	38.0	Jan 1982	21	Jan 1982	5	8	Feb 1990

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.5	1.8	.9	.5	.0
Feb	2.2	1.5	.6	.3	.1
Mar	1.8	1.1	.2	.0	.0
Apr	.3	.2	.0	.0	.0
May	@	@	.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	.7	.3	.1	@	.0
Dec	1.9	1.1	.3	.1	.0
Ann	9.4	6.0	2.1	.9	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	6.0	2.9	1.8	.6
Feb	2.9	1.2	.7	.2
Mar	2.0	.9	.5	.3
Apr	.3	.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	1.1	.5	.3	@
Dec	2.8	1.2	.4	.0
Ann	15.1	6.7	3.7	1.1

+ 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	6/16	6/08	6/03	5/29	5/25	5/21	5/16	5/11	5/03
32	5/21	5/14	5/09	5/04	4/30	4/26	4/21	4/16	4/09
28	4/15	3/31	3/21	3/12	3/04	2/23	2/15	2/04	1/21
24	3/01	2/20	2/13	2/07	2/01	1/26	1/20	1/11	12/27
20	2/18	2/04	1/25	1/16	1/05	12/23	0/00	0/00	0/00
16	1/29	1/13	12/30	12/11	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	9/18	9/24	9/28	10/02	10/05	10/09	10/13	10/17	10/23
32	10/03	10/09	10/14	10/17	10/21	10/24	10/28	11/02	11/08
28	10/29	11/07	11/14	11/19	11/25	11/30	12/06	12/12	12/22
24	11/15	11/28	12/07	12/16	12/24	1/01	1/10	1/21	2/11
20	12/01	12/15	12/27	1/06	1/18	2/04	0/00	0/00	0/00
16	12/11	12/26	1/10	1/31	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	161	151	144	138	133	127	121	114	104
32	208	196	187	180	173	166	159	151	139
28	324	301	286	274	263	252	240	227	208
24	>365	>365	350	337	326	316	306	294	279
20	>365	>365	>365	>365	>365	>365	346	327	308
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	805	678	659	531	380	247	128	116	218	454	662	828	5706
60	650	538	504	381	234	120	39	33	98	300	512	673	4082
57	557	454	411	292	157	66	12	10	49	211	422	580	3221
55	495	398	352	234	115	40	5	4	27	158	363	518	2709
50	345	263	211	110	39	7	0	0	3	58	227	367	1630
32	16	6	2	0	0	0	0	0	0	0	5	21	50

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	235	252	366	459	643	746	911	930	777	569	334	217	6439
55	0	0	3	3	45	96	203	221	114	14	2	0	701
57	0	0	0	1	25	62	148	165	76	5	0	0	482
60	0	0	0	0	9	26	82	95	36	1	0	0	249
65	0	0	0	0	0	3	17	23	5	0	0	0	48
70	0	0	0	0	0	0	1	2	0	0	0	0	3

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	50	65	120	207	379	496	652	676	524	301	112	45	50	115	235	442	821	1317	1969	2645	3169	3470	3582	3627
45	5	12	36	94	226	346	497	521	374	159	36	4	5	17	53	147	373	719	1216	1737	2111	2270	2306	2310
50	0	1	1	34	110	204	342	366	227	58	1	0	0	1	2	36	146	350	692	1058	1285	1343	1344	1344
55	0	0	0	5	44	86	194	212	102	8	0	0	0	0	0	5	49	135	329	541	643	651	651	651
60	0	0	0	0	12	27	77	90	29	0	0	0	0	0	0	0	12	39	116	206	235	235	235	235
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	17	55	106	197	257	365	382	285	131	17	0	0	17	72	178	375	632	997	1379	1664	1795	1812	1812

(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/normals/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.
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