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: ABINGDON 3 S, VA **COOP ID: 440021**

Climate Division: VA 6 **NWS Call Sign:** **Elevation: 1,920 Feet** **Lat: 36˚40N** **Lon: 81˚58W**

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	43.0	22.0	32.5	75	1972	24	44.5	1974	-21	1985	21	19.0	1977	1007	0	.0	.0	10.7	4.2	24.1	.9
Feb	47.9	24.6	36.3	79	1977	26	42.1	1976	-17	1996	5	26.9	1978	805	0	.0	.0	14.7	2.7	21.0	.4
Mar	57.5	31.6	44.6	85	1985	31	50.7	1973	-6	1980	3	39.5	1996	634	0	.0	.0	24.4	.5	15.4	.1
Apr	66.5	39.3	52.9	91	1986	28	58.1	1981	12	1982	7	48.4	1997	365	2	.0	@	28.2	.0	7.3	.0
May	74.5	48.3	61.4	91	1985	15	66.8	1991	27	1977	10	56.1	1997	157	46	.0	.1	30.8	.0	.9	.0
Jun	81.4	56.6	69.0	96+	1988	25	72.4	1994	35+	1988	10	65.3	1972	21	140	.0	2.1	30.0	.0	.0	.0
Jul	85.0	60.5	72.8	99	1988	15	77.1	1993	42	1988	1	69.8	1979	1	241	.0	5.7	31.0	.0	.0	.0
Aug	83.7	59.2	71.5	100	1988	17	76.0	1995	37	1986	29	68.2	1976	4	203	@	4.2	31.0	.0	.0	.0
Sep	78.2	52.6	65.4	97	1998	14	70.6	1978	28	1983	24	61.8	1974	75	86	.0	1.4	30.0	.0	.1	.0
Oct	68.0	39.9	54.0	86	1984	18	62.4	1984	18	1987	22	44.0	1988	361	18	.0	.0	30.2	.0	6.1	.0
Nov	57.1	32.3	44.7	81	1986	9	53.0	1985	6	1970	25	37.0	1976	610	0	.0	.0	23.0	.2	15.3	.0
Dec	47.0	25.0	36.0	78	1982	25	44.6	1971	-12+	1989	23	23.7	1989	900	0	.0	.0	14.9	2.9	22.0	.3
Ann	65.8	41.0	53.4	100	Aug 1988	17	77.1	Jul 1993	-21	Jan 1985	21	19.0	Jan 1977	4940	736	@	13.5	298.9	10.5	112.2	1.7

\+ 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: 1969-2001

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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	4.11	3.95	1.87	1979	20	6.99	1979	1.60	1981
Feb	3.86	4.11	2.57	1994	11	7.90	1994	1.21	1977
Mar	4.47	3.88	2.50	1990	16	9.75	1975	1.85	1985
Apr	3.73	3.56	2.80	1970	28	8.13	1998	.90	1976
May	4.93	4.71	2.10	1984	7	8.40	1996	1.76	1977
Jun	4.11	4.41	2.85	1972	21	7.88	1982	.68	1993
Jul	4.82	4.58	3.55	2001	29	10.83	1973	1.37	1995
Aug	3.62	3.19	2.20	1976	27	7.94	1982	1.51	1995
Sep	3.62	3.57	3.05	1972	29	8.40	1989	.29	1985
Oct	2.74	2.66	3.33	1977	2	7.20	1976	.13	2000
Nov	3.33	3.33	2.12	1977	6	8.28	1985	1.35	1981
Dec	4.07	4.07	2.68	1993	5	7.29	1978	1.27	1985
Ann	47.41	47.70	3.55	Jul 2001	29	10.83	Jul 1973	.13	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	13.0	9.2	2.8	.7
Feb	11.1	8.2	2.4	.8
Mar	13.1	9.5	3.0	.9
Apr	11.6	8.2	2.5	.6
May	13.1	9.9	3.7	1.0
Jun	11.5	8.6	2.8	.8
Jul	11.4	9.1	3.7	1.0
Aug	10.4	7.4	2.8	.7
Sep	9.3	6.6	2.5	.9
Oct	8.7	5.8	1.7	.7
Nov	10.5	7.4	2.2	.7
Dec	12.4	8.2	2.7	.8
Ann	136.1	98.1	32.8	9.6

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	1.90	2.26	2.76	3.16	3.54	3.91	4.31	4.77	5.35	6.22	7.00
Feb	1.58	1.94	2.43	2.84	3.23	3.62	4.04	4.52	5.14	6.08	6.93
Mar	1.77	2.18	2.77	3.25	3.71	4.18	4.68	5.26	6.00	7.13	8.15
Apr	1.34	1.70	2.20	2.63	3.03	3.45	3.90	4.42	5.10	6.13	7.08
May	2.23	2.66	3.27	3.76	4.22	4.68	5.17	5.74	6.45	7.53	8.50
Jun	1.33	1.72	2.29	2.78	3.26	3.75	4.28	4.91	5.72	6.97	8.13
Jul	2.23	2.66	3.24	3.71	4.15	4.59	5.06	5.60	6.27	7.29	8.21
Aug	1.68	2.00	2.44	2.79	3.12	3.45	3.80	4.20	4.71	5.47	6.16
Sep	.83	1.16	1.69	2.17	2.64	3.15	3.71	4.39	5.28	6.69	8.02
Oct	.61	.86	1.26	1.63	1.99	2.37	2.80	3.32	4.00	5.08	6.10
Nov	1.39	1.69	2.12	2.47	2.79	3.13	3.49	3.90	4.42	5.22	5.94
Dec	1.55	1.93	2.47	2.92	3.35	3.78	4.26	4.80	5.50	6.56	7.54
Ann	37.37	39.39	41.94	43.84	45.51	47.11	48.75	50.54	52.69	55.78	58.41

\+ 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: 1969-2001
(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	6.2	3.3	1	#
Feb	5.5	5.0	1	#
Mar	1.4	.0	#	#
Apr	.1	.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
Nov	.5	.0	#	0
Dec	1.9	1.0	#	#
Ann	15.6	9.3	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	12.0	1996	7	27.9	1986	18	1996	12	4	1996
Feb	12.0	1996	2	23.0	1979	16	1996	4	4	1996
Mar	10.0	1993	13	11.0	1999	14	1993	14	2	1993
Apr	3.5	1983	18	3.5	1983	16	1987	5	2	1987
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	.5	1993	31	.5	1993	1	1993	31	#	1993
Nov	3.5	1974	15	5.0	1976	2	1977	27	#+	1997
Dec	7.0	1982	12	10.0	1976	7	1982	13	1+	2000
Ann	12.0+	Feb 1996	2	27.9	Jan 1986	18	Jan 1996	12	4+	Feb 1996

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	3.4	2.5	.8	.4	@
Feb	2.0	1.4	.8	.3	@
Mar	.9	.5	.2	.1	@
Apr	.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
Nov	.3	.2	.1	.0	.0
Dec	1.5	1.0	.2	@	.0
Ann	8.2	5.7	2.1	.8	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	5.8	2.5	1.3	.2
Feb	3.5	2.0	.9	.1
Mar	1.0	.4	.2	@
Apr	.1	@	.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
Nov	.3	.0	.0	.0
Dec	1.6	.2	.1	.0
Ann	12.3	5.1	2.5	.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	6/02	5/26	5/21	5/17	5/13	5/09	5/05	4/30	4/23
32	5/17	5/11	5/07	5/03	4/30	4/26	4/22	4/18	4/12
28	5/02	4/26	4/22	4/19	4/15	4/12	4/09	4/05	3/30
24	4/16	4/10	4/06	4/03	3/30	3/27	3/24	3/19	3/14
20	4/03	3/28	3/24	3/20	3/17	3/13	3/10	3/05	2/27
16	3/21	3/14	3/09	3/04	2/28	2/24	2/20	2/15	2/07

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	9/19	9/24	9/27	9/30	10/03	10/05	10/08	10/12	10/16
32	9/29	10/03	10/06	10/08	10/10	10/12	10/15	10/17	10/21
28	10/04	10/10	10/14	10/17	10/21	10/24	10/27	10/31	11/06
24	10/17	10/23	10/28	11/01	11/05	11/09	11/14	11/18	11/25
20	10/28	11/04	11/09	11/13	11/17	11/20	11/24	11/29	12/06
16	11/09	11/16	11/21	11/26	11/30	12/04	12/08	12/13	12/21

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	164	156	151	146	142	138	133	128	120
32	185	177	172	167	163	158	154	148	141
28	210	202	197	192	188	183	178	173	165
24	245	236	230	224	219	214	209	202	193
20	267	259	254	249	244	239	234	229	221
16	297	289	283	278	274	269	264	258	250

***** 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	1007	805	634	365	157	21	1	4	75	361	610	900	4940
60	852	665	480	229	72	3	0	0	26	238	462	745	3772
57	761	581	392	158	39	1	0	0	12	177	379	659	3159
55	704	525	336	119	24	0	0	0	7	142	324	600	2781
50	560	392	209	47	5	0	0	0	1	73	204	458	1949
32	167	56	8	0	0	0	0	0	0	0	8	105	344

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	183	175	397	627	912	1109	1263	1222	1002	680	389	227	8186
55	7	0	12	56	223	419	550	509	319	109	15	10	2229
57	3	0	6	35	176	360	488	447	264	82	9	7	1877
60	0	0	2	15	116	272	395	354	188	50	3	0	1395
65	0	0	0	2	46	140	241	203	86	18	0	0	736
70	0	0	0	0	12	48	105	80	25	5	0	0	275

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	63	93	241	433	686	889	1030	992	780	470	224	94	63	156	397	830	1516	2405	3435	4427	5207	5677	5901	5995
45	28	45	139	295	532	739	875	837	630	326	130	46	28	73	212	507	1039	1778	2653	3490	4120	4446	4576	4622
50	3	17	70	182	379	589	720	682	480	196	65	20	3	20	90	272	651	1240	1960	2642	3122	3318	3383	3403
55	0	1	33	94	243	440	565	527	339	98	25	1	0	1	34	128	371	811	1376	1903	2242	2340	2365	2366
60	0	0	4	39	126	292	410	372	204	41	2	0	0	0	4	43	169	461	871	1243	1447	1488	1490	1490
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	44	75	176	286	440	582	699	668	505	314	156	64	44	119	295	581	1021	1603	2302	2970	3475	3789	3945	4009

(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