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: HOLLAND 1 E, VA **COOP ID: 444044**

Climate Division: VA 1 **NWS Call Sign:** **Elevation: 80 Feet** **Lat: 36˚41N** **Lon: 76˚46W**

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	48.9	26.5	37.7	79	1970	30	46.4	1974	-5+	1985	22	27.2	1977	846	0	.0	.0	14.7	2.1	21.2	.1
Feb	51.9	28.7	40.3	81+	1997	28	47.2	1990	-5	1996	5	30.1	1978	691	0	.0	.0	16.1	1.1	17.9	@
Mar	60.1	35.8	48.0	88+	1990	14	51.9	2000	15+	1996	9	43.6	1984	529	0	.0	.0	25.8	.1	11.1	.0
Apr	69.5	43.6	56.6	96	1960	27	61.2	1994	21+	1985	10	52.5	1975	260	6	.0	.6	29.3	.0	2.7	.0
May	77.1	53.1	65.1	97	1996	21	70.2	1991	30	1956	9	61.2	1992	66	68	.0	1.7	31.0	.0	@	.0
Jun	84.5	61.3	72.9	105	1952	27	76.9	1981	39+	1976	5	68.3	1979	5	243	.0	8.0	30.0	.0	.0	.0
Jul	88.2	65.9	77.1	104	1952	30	80.7	1994	49	2001	7	73.7	1984	0	374	.2	14.3	31.0	.0	.0	.0
Aug	86.8	64.0	75.4	104	1980	2	78.7	1980	44	1965	30	72.3	1992	0	322	.1	10.9	31.0	.0	.0	.0
Sep	81.6	57.9	69.8	99+	1983	12	74.1	1980	37	1983	23	66.2	1984	18	161	.0	3.3	30.0	.0	.0	.0
Oct	71.9	45.5	58.7	98	1954	7	65.3	1971	20	1962	27	52.9	1987	229	33	.0	.2	30.9	.0	1.9	.0
Nov	62.9	37.4	50.2	88	1972	4	58.5	1985	16	1970	25	42.8	1976	448	3	.0	.0	26.8	.0	9.5	.0
Dec	53.2	29.8	41.5	81	1991	4	49.0	1971	4	1989	25	31.3	1989	728	0	.0	.0	19.2	.8	18.2	.0
Ann	69.7	45.8	57.8	105	Jun 1952	27	80.7	Jul 1994	-5+	Feb 1996	5	27.2	Jan 1977	3820	1210	.3	39.0	315.8	4.1	82.5	.1

\+ 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

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: HOLLAND 1 E, VA

COOP ID: 444044

Climate Division: VA 1 **NWS Call Sign:** **Elevation: 80 Feet** **Lat: 36˚41N** **Lon: 76˚46W**

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	4.40	4.28	2.62	1952	29	8.01	1987	.55	1981
Feb	3.40	3.25	2.16	1970	3	6.75	1982	.99	1991
Mar	4.39	3.72	2.50	1998	9	10.13	1994	1.52	1986
Apr	3.40	3.19	2.71	1984	23	6.63	1989	.80	1994
May	4.07	4.12	3.03	1977	25	10.01	1979	.94	1986
Jun	3.61	3.62	6.20	1963	3	6.26	1989	.33	1980
Jul	5.25	4.75	4.37	1960	30	10.74	1997	1.71	1993
Aug	5.29	4.84	6.41	1949	1	13.82	1992	.73	1975
Sep	4.84	3.67	13.00	1999	17	23.47	1999	.51	1986
Oct	3.92	3.56	6.42	1999	18	11.58	1971	.03	2000
Nov	3.12	2.83	3.08	1949	1	6.27	1985	.43	1981
Dec	3.38	3.30	2.93	1958	29	6.18	1973	.56	1988
Ann	49.07	48.58	13.00	Sep 1999	17	23.47	Sep 1999	.03	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	11.8	8.4	3.1	.8
Feb	9.5	6.5	2.4	.9
Mar	10.9	7.7	3.3	1.0
Apr	9.3	6.4	2.2	.8
May	10.9	7.4	2.9	1.0
Jun	8.8	6.2	2.3	.8
Jul	10.3	7.5	3.4	1.6
Aug	9.7	6.5	3.5	1.7
Sep	8.5	5.5	2.8	1.5
Oct	7.8	5.2	2.6	1.2
Nov	8.7	5.5	2.4	.7
Dec	10.9	7.1	2.5	.6
Ann	117.1	79.9	33.4	12.6

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	1.73	2.13	2.71	3.19	3.65	4.11	4.61	5.18	5.92	7.04	8.06
Feb	1.31	1.63	2.08	2.45	2.81	3.17	3.56	4.02	4.60	5.48	6.29
Mar	1.69	2.09	2.68	3.16	3.62	4.08	4.59	5.18	5.92	7.06	8.11
Apr	1.15	1.48	1.95	2.34	2.73	3.12	3.55	4.05	4.70	5.70	6.62
May	1.38	1.77	2.33	2.81	3.27	3.74	4.25	4.85	5.62	6.81	7.91
Jun	.86	1.19	1.72	2.19	2.66	3.15	3.71	4.37	5.23	6.61	7.90
Jul	1.93	2.42	3.13	3.72	4.29	4.86	5.49	6.22	7.14	8.57	9.88
Aug	1.05	1.53	2.31	3.02	3.74	4.51	5.38	6.43	7.83	10.06	12.17
Sep	.67	1.07	1.76	2.43	3.14	3.91	4.81	5.91	7.39	9.82	12.15
Oct	.68	1.03	1.60	2.14	2.68	3.28	3.96	4.78	5.88	7.65	9.34
Nov	.90	1.19	1.64	2.03	2.40	2.80	3.23	3.75	4.41	5.46	6.43
Dec	1.09	1.41	1.89	2.29	2.68	3.08	3.52	4.04	4.70	5.73	6.68
Ann	35.73	38.33	41.66	44.17	46.39	48.54	50.75	53.20	56.15	60.42	64.11

\+ 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:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Services

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: HOLLAND 1 E, VA **COOP ID: 444044**

Climate Division: VA 1 **NWS Call Sign:** **Elevation: 80 Feet** **Lat: 36˚41N** **Lon: 76˚46W**

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	1.5	.0	#	0	8.0	1996	7	8.5	1980	8	1996	7	1+	2000	1.0	.6	.2	.1	.0	1.6	.5	.2	.0
Feb	3.1	.8	#	#	8.0	1979	19	23.0	1989	12	1989	19	1+	1996	1.0	.9	.4	.2	.0	1.7	.6	.3	@
Mar	1.3	.0	#	0	9.0	1980	2	13.0	1980	13	1980	3	1	1980	.5	.4	.2	.1	.0	.5	.2	.1	.1
Apr	#	.0	#	0	#	1989	11	#+	1989	#	1989	11	#	1989	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.0	.0	#	0	1.0	1987	12	1.0	1987	1	1987	12	#+	2000	@	@	.0	.0	.0	@	.0	.0	.0
Dec	.6	.0	#	0	4.0	2000	4	4.0	2000	2+	2000	4	#+	2000	.4	.4	.1	.0	.0	.4	.0	.0	.0
Ann	6.5	.8	N/A	N/A	9.0	Mar 1980	2	23.0	Feb 1989	13	Mar 1980	3	1+	Jan 2000	2.9	2.3	.9	.4	.0	4.2	1.3	.6	.1

+ Also occurred on an earlier date(s) #Denotes trace amounts

(1) Derived from Snow Climatology and 1971-2000 daily data

@ Denotes mean number of days greater than 0 but less than .05

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: HOLLAND 1 E, VA **COOP ID: 444044**

Climate Division: VA 1 **NWS Call Sign:** **Elevation: 80 Feet** **Lat: 36˚41N** **Lon: 76˚46W**

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	5/04	4/30	4/28	4/25	4/23	4/20	4/18	4/15	4/11
32	4/25	4/20	4/17	4/14	4/12	4/09	4/07	4/03	3/30
28	4/07	4/03	3/30	3/27	3/25	3/22	3/20	3/16	3/12
24	3/28	3/22	3/18	3/14	3/11	3/07	3/04	2/28	2/22
20	3/16	3/09	3/03	2/26	2/22	2/18	2/13	2/08	1/31
16	3/02	2/21	2/14	2/09	2/03	1/29	1/23	1/16	1/05

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	10/01	10/05	10/09	10/11	10/14	10/16	10/19	10/22	10/27
32	10/10	10/15	10/18	10/22	10/25	10/28	10/31	11/04	11/09
28	10/23	10/29	11/02	11/05	11/09	11/12	11/15	11/19	11/25
24	11/08	11/14	11/19	11/24	11/27	12/01	12/06	12/10	12/17
20	11/22	11/29	12/04	12/09	12/13	12/17	12/21	12/26	1/02
16	12/08	12/16	12/21	12/26	12/31	1/04	1/09	1/16	1/25

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	192	185	181	177	173	170	166	161	155
32	213	207	202	199	195	192	188	183	177
28	249	242	236	232	228	224	220	214	207
24	288	279	272	266	261	256	250	243	234
20	316	308	302	297	293	288	283	277	269
16	>365	355	342	334	327	320	313	305	295

***** 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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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: HOLLAND 1 E, VA **COOP ID: 444044**

Climate Division: VA 1 **NWS Call Sign:** **Elevation: 80 Feet** **Lat: 36˚41N** **Lon: 76˚46W**

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	846	691	529	260	66	5	0	0	18	229	448	728	3820
60	691	551	376	138	15	0	0	0	3	128	310	575	2787
57	606	472	291	84	4	0	0	0	1	84	236	490	2268
55	547	419	237	56	2	0	0	0	0	61	192	432	1946
50	407	294	126	15	0	0	0	0	0	21	105	301	1269
32	75	32	1	0	0	0	0	0	0	0	1	34	143

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	253	265	495	736	1026	1228	1397	1345	1133	826	546	329	9579
55	11	8	17	102	314	538	684	632	443	174	47	15	2985
57	8	5	10	70	255	478	622	570	384	135	31	10	2578
60	0	0	2	34	173	388	529	477	296	87	15	3	2004
65	0	0	0	6	68	243	374	322	161	33	3	0	1210
70	0	0	0	0	16	121	223	173	59	8	0	0	600

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	108	148	304	531	812	1023	1185	1133	925	610	347	163	108	256	560	1091	1903	2926	4111	5244	6169	6779	7126	7289
45	55	81	194	388	657	873	1030	978	775	455	230	88	55	136	330	718	1375	2248	3278	4256	5031	5486	5716	5804
50	22	38	108	258	502	723	875	823	625	311	136	45	22	60	168	426	928	1651	2526	3349	3974	4285	4421	4466
55	3	14	55	151	351	573	720	668	475	188	72	21	3	17	72	223	574	1147	1867	2535	3010	3198	3270	3291
60	0	1	20	77	216	424	565	513	329	97	30	3	0	1	21	98	314	738	1303	1816	2145	2242	2272	2275
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	76	102	196	334	517	695	817	781	618	385	224	108	76	178	374	708	1225	1920	2737	3518	4136	4521	4745	4853

(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