

Climatology of the United States

No. 20

1971-2000

Station: PIEDMONT RESEARCH STN, VA

COOP ID: 446712

Climate Division: VA 4

NWS Call Sign:

Elevation: 520 Feet Lat: 38°14N Lon: 78°07W

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	42.4	23.8	33.1	78	1950	26	41.8	1990	-9	1970	21	22.4	1977	989	0	.0	.0	8.4	5.1	25.4	.5
Feb	46.0	26.2	36.1	79+	2000	26	43.1	1990	-11	1996	5	24.7	1979	810	0	.0	.0	11.4	3.2	21.8	.1
Mar	54.8	33.8	44.3	88	1998	31	50.2	2000	7+	1980	3	38.7	1984	642	0	.0	.0	20.9	.6	14.5	.0
Apr	65.6	43.0	54.3	94	1960	24	59.4	1994	18	1985	10	49.5	1975	324	3	.0	.5	28.4	.0	3.6	.0
May	74.0	52.6	63.3	95+	1991	31	70.1	1991	30	1970	7	59.9	1997	114	60	.0	.9	31.0	.0	.1	.0
Jun	82.1	61.4	71.8	102	1952	27	75.3	1994	41	1966	1	67.2	1972	10	213	.0	4.6	30.0	.0	.0	.0
Jul	86.2	65.9	76.1	106	1959	1	80.0	1987	47	1988	1	72.8	2000	0	342	.3	9.6	31.0	.0	.0	.0
Aug	84.4	64.3	74.4	103+	1953	31	77.7	1988	44	1986	29	70.7	1992	1	291	.0	6.5	31.0	.0	.0	.0
Sep	77.9	57.4	67.7	106	1954	6	73.2	1998	33	1963	25	64.5	1975	37	117	.0	2.2	30.0	.0	.0	.0
Oct	67.2	44.7	56.0	98	1951	7	62.1	1984	22+	1976	30	50.7	1976	296	16	.0	.0	30.5	.0	2.1	.0
Nov	56.7	36.2	46.5	86	1950	1	52.2	1985	9+	1956	24	39.6	1976	558	0	.0	.0	22.2	.0	11.4	.0
Dec	46.3	28.1	37.2	79+	2001	6	44.0	1984	-4	1989	23	25.0	1989	862	0	.0	.0	12.6	2.6	21.8	.1
Ann	65.3	44.8	55.1	106+	Jul 1959	1	80.0	Jul 1987	-11	Feb 1996	5	22.4	Jan 1977	4643	1042	.3	24.3	287.4	11.5	100.7	.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/normal/usnormals.html

Issue Date: February 2004

(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

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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: PIEDMONT RESEARCH STN, VA

COOP ID: 446712

Climate Division: VA 4

NWS Call Sign:

Elevation: 520 Feet Lat: 38°14N

Lon: 78°07W

Precipitation (inches)																								
	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount										
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution										
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	3.32	2.89	2.71	1968	14	8.71	1978	.41	1981	9.9	6.2	2.5	.8	.84	1.15	1.63	2.06	2.48	2.93	3.42	4.01	4.78	5.99	7.13
Feb	2.82	2.49	2.33	1965	8	7.52	1998	.29	1978	8.9	5.6	1.9	.7	.58	.84	1.25	1.63	2.01	2.41	2.87	3.43	4.16	5.32	6.43
Mar	3.72	3.42	2.76	1962	6	8.39	1993	1.11	1981	10.3	6.6	2.8	1.0	1.25	1.60	2.11	2.55	2.97	3.41	3.88	4.44	5.15	6.25	7.27
Apr	3.22	2.73	2.24	1992	22	7.97	1983	.49	1985	10.8	6.4	2.2	.8	.94	1.25	1.71	2.11	2.49	2.90	3.35	3.87	4.55	5.62	6.62
May	4.33	4.49	4.69	1989	6	10.29	1971	.88	1994	12.3	7.6	3.2	1.1	1.24	1.65	2.27	2.81	3.34	3.88	4.49	5.20	6.13	7.58	8.93
Jun	4.06	3.69	7.85	1972	22	12.78	1972	.68	1980	10.4	6.4	2.5	.9	.67	1.03	1.62	2.17	2.75	3.37	4.08	4.95	6.11	7.98	9.78
Jul	4.82	4.57	4.65	1997	24	9.92	1997	1.04	1983	11.7	8.1	3.4	1.3	1.46	1.91	2.60	3.19	3.76	4.35	5.01	5.78	6.77	8.32	9.76
Aug	3.77	3.17	4.80	1978	28	8.34	1978	.49	1995	9.6	6.3	2.4	.9	.98	1.34	1.88	2.36	2.84	3.34	3.89	4.55	5.41	6.76	8.02
Sep	3.86	2.97	4.95	1987	9	11.15	1987	.76	1978	9.2	6.2	2.3	1.2	.74	1.09	1.66	2.18	2.71	3.28	3.92	4.70	5.73	7.39	8.96
Oct	3.93	2.92	5.24	1954	15	12.08	1976	.01	2000	8.3	5.0	2.7	1.3	.34	.62	1.14	1.69	2.28	2.96	3.77	4.79	6.18	8.52	10.81
Nov	3.71	3.02	5.47	1993	28	12.09	1985	.70	1981	9.4	5.8	2.4	1.1	.90	1.24	1.78	2.27	2.74	3.25	3.82	4.49	5.37	6.77	8.08
Dec	3.08	2.61	2.83	1992	11	7.29	1973	.51	1980	9.3	5.7	2.1	.9	.71	1.00	1.45	1.85	2.26	2.68	3.16	3.73	4.48	5.67	6.79
Ann	44.64	44.69	7.85	Jun 1972	22	12.78	Jun 1972	.01	Oct 2000	120.1	75.9	30.4	12.0	31.99	34.44	37.58	39.96	42.07	44.11	46.22	48.54	51.36	55.45	58.98

+ 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

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COOP ID: 446712

Climate Division: VA 4

NWS Call Sign:

Elevation: 520 Feet

Lat: 38°14N

Lon: 78°07W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										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	7.1	3.8	1	#	16.0	1996	8	32.0	1987	22	1996	8	6	1996	2.9	1.5	.8	.4	.2	5.2	2.8	1.5	.6
Feb	4.6	3.2	1	#	17.0	1979	19	19.4	1996	21	1979	19	5	1987	2.1	1.7	.6	.3	@	4.2	2.2	1.2	.3
Mar	2.8	1.0	#	#	9.0	1980	2	13.7	1993	10	1993	14	3	1994	1.5	.9	.3	.2	.0	1.5	.5	.2	@
Apr	.4	.0	#	0	3.0	1990	7	3.0	1990	2+	1990	7	#+	1990	.2	.2	@	.0	.0	.1	.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	#	1999	23	#	1999	.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	.1	.0	#	0	4.0	1979	10	4.0	1979	1	1979	10	#	1979	@	@	@	.0	.0	@	.0	.0	.0
Nov	.9	.0	#	0	4.5	1987	12	4.9	1987	4+	1996	22	1	1981	.4	.3	.1	.0	.0	.3	.2	.0	.0
Dec	2.9	1.1	#	#	11.0	1973	17	14.5	1989	12	1973	17	4	1989	1.2	.8	.3	.2	@	2.3	1.2	.9	.1
Ann	18.8	9.1	N/A	N/A	17.0	Feb 1979	19	32.0	Jan 1987	22	Jan 1996	8	6	Jan 1996	8.3	5.4	2.1	1.1	.2	13.6	6.9	3.8	1.0

+ 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

Complete documentation available from:

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Climate Division: VA 4

NWS Call Sign:

Elevation: 520 Feet

Lat: 38° 14N

Lon: 78° 07W

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	5/11	5/06	5/02	4/29	4/27	4/24	4/21	4/17	4/13
32	4/29	4/23	4/20	4/17	4/14	4/10	4/07	4/04	3/29
28	4/17	4/12	4/09	4/06	4/04	4/01	3/30	3/26	3/22
24	4/06	4/01	3/28	3/25	3/22	3/20	3/16	3/13	3/08
20	3/31	3/24	3/20	3/16	3/12	3/08	3/04	2/27	2/21
16	3/19	3/11	3/06	3/01	2/25	2/21	2/16	2/10	2/03
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	9/30	10/05	10/08	10/11	10/14	10/17	10/19	10/23	10/27
32	10/12	10/17	10/20	10/23	10/26	10/29	11/01	11/04	11/09
28	10/19	10/25	10/30	11/02	11/06	11/09	11/12	11/17	11/23
24	11/03	11/09	11/13	11/17	11/21	11/24	11/28	12/02	12/08
20	11/16	11/23	11/27	12/01	12/05	12/08	12/12	12/17	12/23
16	11/28	12/07	12/13	12/18	12/22	12/27	1/01	1/07	1/15
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	191	184	178	174	170	165	161	155	148
32	216	209	204	199	195	191	186	181	173
28	238	230	224	220	215	210	205	200	192
24	264	257	251	247	243	238	234	229	221
20	295	285	278	273	267	261	256	249	239
16	336	322	313	305	298	292	284	276	264

* 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:

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Climate Division: VA 4 NWS Call Sign: Elevation: 520 Feet Lat: 38°14N Lon: 78°07W

Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	989	810	642	324	114	10	0	1	37	296	558	862	4643
60	834	670	488	191	43	1	0	0	8	178	412	707	3532
57	741	586	400	126	19	0	0	0	3	122	329	617	2943
55	679	531	343	90	10	0	0	0	1	91	277	560	2582
50	536	401	215	31	1	0	0	0	0	38	165	418	1805
32	137	72	10	0	0	0	0	0	0	0	4	77	300

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	171	186	391	669	969	1193	1365	1312	1070	743	436	238	8743
55	0	1	11	69	266	503	652	599	381	121	19	8	2630
57	0	0	6	45	213	443	590	537	322	89	11	3	2259
60	0	0	1	20	144	354	497	444	238	52	4	0	1754
65	0	0	0	3	60	213	342	291	117	16	0	0	1042
70	0	0	0	0	17	100	193	152	37	3	0	0	502

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	48	80	213	452	737	966	1127	1078	848	517	246	86	48	128	341	793	1530	2496	3623	4701	5549	6066	6312	6398
45	25	38	126	313	582	816	972	923	698	368	150	43	25	63	189	502	1084	1900	2872	3795	4493	4861	5011	5054
50	7	15	62	196	430	666	817	768	548	231	77	19	7	22	84	280	710	1376	2193	2961	3509	3740	3817	3836
55	0	1	29	107	286	517	662	613	401	125	31	3	0	1	30	137	423	940	1602	2215	2616	2741	2772	2775
60	0	0	10	46	166	367	507	458	260	56	8	0	0	0	10	56	222	589	1096	1554	1814	1870	1878	1878
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	36	57	139	273	454	648	779	743	546	311	148	53	36	93	232	505	959	1607	2386	3129	3675	3986	4134	4187

(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.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/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 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.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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