

# Local Climatological Data

Annual Summary With Comparative Data

1975

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RICHMOND, VIRGINIA



## Narrative Climatological Summary

Richmond is located in east-central Virginia at the head of navigation on the James River and along a line separating the Coastal Plains (Tidewater Virginia) from the Piedmont. The Blue Ridge Mountains lie about 90 miles to the west and the Chesapeake Bay 60 miles to the east. Elevations range from a few feet above sea level along the river to a little over 300 feet in parts of the west section of the City.

The climate might be classified as modified continental. Summers are warm and humid and winters generally mild. The mountains to the west act as a partial barrier to outbreaks of cold, continental air in winter, the coldest air being delayed long enough to be modified, then further warmed as it subsides in its approach to Richmond. The open waters of the Chesapeake Bay and Atlantic Ocean contribute to the humid summers and mild winters. The coldest weather normally occurs in late December and in January, when low temperatures usually average in the upper twenties and the high temperatures in the upper forties. Temperatures seldom lower to zero. The record lowest temperature of minus 12° was recorded at the Airport in January 1940. The record high temperature of 107° occurred in August 1918 at Chimborazo Park.

Precipitation is rather uniformly distributed throughout the year. However, dry periods lasting several weeks do occur, especially in autumn when long periods of pleasant, mild weather are most common. There is considerable variability in total monthly amounts from year to year so that no one month can be depended upon to be normal. Snow has been recorded during seven of the twelve months. Falls of 4 inches or more occur on an average of once a year. Snow usually remains on the ground only 1 or 2 days at a time, but on one occasion it remained 21 days (January 23 to February 13, 1948). Ice storms (freezing rain or glaze) are not uncommon in winter, but they are seldom severe enough to do any considerable damage. A notable exception was the spectacular glaze storm of January 27 - 28, 1943, when heavy damage was done to trees and overhead transmission lines of all kinds.

The James River reaches tidewater at Richmond where flooding has occurred in every month of the year, most frequently in March and least in July. Hurricanes and less severe storms of tropical origin have been responsible for most of the flooding during the summer and early fall months. The flood of record at Richmond was Agnes in June, 1972 which produced on the 23rd crests 6 and one half feet above old high water marks dating back 200 years. Agnes was followed closely by serious flooding on October 7, 1972 and preceded by Camille on August 22, 1969 which is now the fourth greatest flood of record. In 1955 three hurricanes brought record rainfall to Richmond within a 6-week period. The most noteworthy of these were Hurricanes Connie and Diane that brought heavy rains five days apart.

Damaging storms occur mainly from snow and freezing rain in winter and from hurricanes, tornadoes, and severe thunderstorms at other seasons. Damage may be from wind, flooding, or rain, or from any combination of these. Tornadoes are infrequent but some notable occurrences have been observed within the Richmond area. The highest wind recorded has been 68 m.p.h. with a peak gust of 79 m.p.h. at the time of Hurricane Hazel, October 15, 1954.

The dates of the last freeze in spring and of the first in autumn mark the limits of the growing season for most crops. The average growing season is 216 days. May 11, 1966, has been the latest date in spring when a temperature of 32° or lower was recorded; October 5, 1965, has been the earliest date in autumn.

noaa

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA SERVICE / NATIONAL CLIMATIC CENTER / ASHEVILLE, N.C.



### Average Temperature

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1936	31.4	33.7	51.2	53.1	66.5	73.7	79.7	76.5	71.6	59.8	46.3	40.1	57.0
1937	46.0	38.3	43.3	55.3	65.8	76.0	76.8	77.2	66.0	55.0	46.2	38.4	57.0
1938	37.2	43.1	53.6	59.9	64.9	71.6	76.8	78.3	68.4	57.7	49.9	40.3	58.5
1939	41.6	44.8	48.8	56.0	66.9	76.4	75.7	77.1	71.8	59.0	44.8	39.8	58.6
1940	24.2	38.2	43.3	52.4	65.0	74.7	76.0	73.6	66.2	55.8	47.4	42.5	54.9
1941	35.2	34.2	40.8	59.8	66.8	73.0	78.3	72.2	64.7	48.7	41.9	57.6	57.6
#1942	34.2	35.2	48.0	58.8	69.5	75.2	79.4	75.2	71.3	60.8	50.0	37.1	57.9
1943	40.0	41.3	47.0	53.9	69.0	79.2	78.5	78.4	68.4	57.3	47.5	38.6	58.3
1944	38.6	40.4	45.2	56.2	71.6	76.4	77.7	75.4	71.2	57.9	48.2	36.1	57.9
1945	34.2	40.8	58.6	61.4	63.9	75.7	76.2	75.2	73.6	57.8	49.6	33.4	58.4
#1946	38.0	41.7	53.8	57.2	65.8	72.8	75.4	72.6	70.0	60.9	52.9	43.4	58.8
1947	44.6	33.5	40.0	57.5	67.0	72.2	74.8	78.5	70.1	63.7	46.4	38.4	57.2
1948	31.1	39.8	50.9	57.7	66.3	74.4	78.2	75.7	68.6	56.2	52.9	42.0	57.8
1949	45.2	46.5	48.6	55.7	66.0	75.2	80.1	76.6	67.4	62.5	49.0	42.4	59.6
#1950	49.7	40.7	44.4	54.7	65.0	74.2	76.8	75.5	68.2	61.2	47.3	36.1	57.8
1951	40.8	41.3	46.8	56.6	64.6	74.3	78.6	76.0	70.0	61.6	44.7	42.0	58.1
1952	42.4	42.2	46.3	58.1	65.4	77.6	80.4	76.4	69.2	55.2	49.4	39.2	58.5
1953	42.9	43.4	48.3	58.0	71.5	75.2	79.9	77.2	70.0	60.7	48.5	42.5	59.9
1954	38.0	44.9	47.0	61.2	63.0	74.6	78.6	76.8	74.4	62.3	46.4	38.8	58.8
1955	35.8	40.1	50.2	60.8	67.2	70.1	81.3	78.7	70.6	59.5	46.3	34.8	58.0
1956	36.0	43.0	46.3	55.5	65.0	74.7	77.8	76.5	67.9	60.9	47.6	48.9	58.3
1957	35.2	43.3	47.2	61.5	67.8	76.2	78.4	74.6	71.9	54.6	50.3	43.0	58.7
1958	34.6	39.8	42.3	57.5	65.7	71.3	80.2	76.4	69.1	51.2	33.4	56.2	58.2
1959	37.5	41.6	47.3	59.3	69.4	74.8	77.9	79.0	70.8	61.4	47.3	41.6	59.0
1960	38.8	39.3	35.9	61.8	64.9	73.7	76.3	77.5	69.3	57.1	50.1	34.6	58.6
1961	33.5	42.2	50.8	53.0	63.6	72.8	78.5	77.1	73.5	58.1	50.1	37.1	57.5
1962	36.6	39.7	45.0	57.5	70.6	74.0	74.8	74.6	66.2	60.5	47.2	36.1	56.9
1963	35.9	33.3	50.8	59.2	64.0	72.0	76.1	75.7	65.5	58.6	50.1	32.4	56.1
1964	38.1	37.2	47.6	55.4	66.4	73.1	75.8	73.1	67.1	59.4	51.5	42.9	56.8
1965	35.6	38.8	43.0	53.9	69.6	70.7	74.9	75.9	70.7	56.1	48.2	41.3	56.6
1966	31.1	37.7	47.5	52.8	63.1	71.4	76.4	74.6	67.2	55.5	49.5	38.0	55.4
1967	40.9	34.8	46.6	58.8	60.7	72.1	76.6	75.5	65.7	57.2	44.0	41.9	56.2
1968	33.9	34.2	52.0	58.8	64.7	74.7	78.9	78.9	70.9	61.9	51.3	37.0	58.1
1969	33.9	36.8	42.3	57.6	65.5	75.7	78.3	75.1	68.1	58.5	46.8	35.5	56.2
1970	30.1	37.1	42.9	58.2	69.1	75.7	78.3	78.0	74.8	62.9	49.9	40.4	58.1
1971	33.8	39.5	44.3	55.0	63.3	74.7	76.6	75.3	71.4	64.6	48.5	48.0	57.9
1972	40.7	37.6	47.2	56.2	64.6	70.1	77.1	75.2	70.1	55.8	47.9	45.9	57.4
1973	37.6	38.5	52.6	57.9	65.1	76.0	77.4	77.5	72.3	60.6	51.3	40.8	59.0
1974	45.8	40.1	50.4	59.9	65.8	76.9	75.7	67.4	55.4	48.5	41.7	58.2	58.2
1975	40.7	41.4	45.3	52.9	67.7	73.6	76.0	78.8	69.3	62.5	53.6	40.0	58.5
RECORD MEAN	38.0	39.4	46.9	56.9	66.1	74.0	77.6	76.1	69.9	58.9	48.7	39.7	57.7
MAX	47.9	50.0	58.2	69.3	78.0	85.1	87.9	86.2	80.7	70.8	60.2	49.8	68.7
MIN	28.1	28.7	35.5	44.4	54.2	62.8	67.2	66.0	59.1	46.9	37.1	29.5	46.6

### Heating Degree Days

RICHMOND, VA

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1955-56	0	0	9	184	555	928	896	631	578	323	107	10	4223
1956-57	0	0	3	75	146	519	493	915	600	546	201	63	3566
1957-58	0	0	50	317	434	674	936	871	696	254	70	6	4308
1958-59	0	0	24	212	409	673	847	650	542	212	44	10	3923
1959-60	0	0	36	217	330	717	807	737	894	184	88	2	4212
1960-61	0	0	24	257	439	936	971	632	461	390	106	7	4223
1961-62	0	0	21	218	459	860	879	702	623	276	32	0	4072
1962-63	0	0	73	175	526	891	897	882	434	218	102	1	4199
1963-64	0	0	71	197	439	1004	826	801	537	306	74	12	4267
1964-65	0	0	32	357	402	676	909	726	674	339	17	34	4161
1965-66	0	0	25	275	498	726	1043	759	538	371	133	27	4401
1966-67	0	0	47	293	466	833	738	841	560	230	171	17	4196
1967-68	0	0	64	256	623	708	956	887	416	191	86	0	4187
1968-69	0	0	0	161	403	864	957	783	693	237	66	0	4166
1969-70	0	0	45	221	541	907	1076	778	677	231	51	0	4527
1970-71	0	0	12	124	445	756	960	709	627	295	104	3	4035
1971-72	0	0	11	69	512	526	746	788	554	286	58	21	3373
1972-73	0	0	17	285	513	588	843	735	394	247	79	0	3701
1973-74	0	0	5	163	414	744	589	691	455	204	75	5	3345
1974-75	0	0	62	310	513	715	746	654	604	368	44	1	4017
1975-76	0	0	2	121	356	770							

### Cooling Degree Days

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1969	0	0	0	21	90	328	417	321	147	26	0	0	1350
1970	0	0	0	35	185	328	418	313	67	0	0	0	1756
1971	0	0	0	0	56	297	367	327	209	62	22	5	1345
1972	0	0	7	30	52	180	381	326	178	9	8	0	1171
1973	0	0	13	42	91	338	391	395	231	32	9	2	1544
1974	0	0	10	58	106	180	377	340	141	21	26	0	1259
1975	0	0	0	16	135	267	348	433	165	51	18	0	1433

### Precipitation

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1938	3.28	1.82	3.72	3.24	4.92	9.24	11.89	0.95	4.41	1.57	2.74	2.74	50.52
1939	3.40	2.98	5.33	3.04	1.39	5.41	5.23	8.34	1.70	4.84	2.18	1.51	46.35
1940	4.16	2.99	2.31	4.22	4.26	4.02	4.45	9.33	1.77	2.27	4.59	1.83	46.20
1941	2.19	1.17	1.97	3.48	1.31	1.83	2.82	3.05	1.23	0.35	0.66	2.89	22.91
#1942	3.59	1.03	5.31	0.74	1.11	5.30	3.52	6.61	3.21	6.74	1.31	3.04	42.05
1943	2.87	2.27	3.01	2.11	4.04	3.15	3.87	0.52	1.13	2.90	1.44	1.98	33.29
1944	2.83	5.61	5.85	3.59	1.41	1.42	7.76	6.44	5.50	1.79	3.94	2.26	48.40
1945	2.25	3.57	1.33	3.50	5.09	1.71	18.87	2.92	8.49	0.91	3.09	5.28	57.01
#1946	2.16	2.69	2.23	2.59	7.73	6.01	6.64	3.87	4.39	2.36	1.90	2.71	45.28
1947	1.43	1.43	2.22	2.53	6.69	4.48	3.33	1.87	6.38	2.37	7.03	1.56	42.28
1948	4.11	2.66	5.54	6.59	6.42	2.73	4.05	7.75	3.25	5.75	4.14	4.14	53.99
1949	3.26	2.55	2.12	2.22	5.11	3.53	6.34	8.99	2.04	3.87	1.88	1.94	44.45
#1950	2.17	1.71	3.20	2.74	4.27	0.99	6.69	3.32	4.04	1.77	1.74	2.73	33.37
1951	1.08	1.90	2.85	2.26	2.51	5.85	2.63	5.23	0.98	2.71	4.52	3.63	36.15
1952	5.71	2.76	5.05	5.32	3.72	4.50	2.71	6.41	2.35	2.04	6.42	3.37	50.36
1953	4.47	3.36	3.95	3.16	4.59	2.04	6.05	7.15	3.21	5.76	4.14	4.14	53.99
1954	3.70	1.56	2.44	3.08	4.36	1.09	1.30	3.95	0.69	4.99	1.82	2.43	31.45
1955	1.09	3.18	2.66	3.14	1.79	3.06	7.93	14.10	5.79	2.57	1.76	0.86	47.93
1956	1.65	3.57	3.06	2.75	4.25	3.28	10.32	2.28	2.96	4.92	6.11	3.98	49.23
1957	3.36	5.29	2.82	2.25	2.75	3.92	1.80	7.46	3.43	5.35	5.30	6.88	50.61
1958	2.96	4.38	3.81	4.35	5.79	6.09	3.27	9.77	1.90	5.35	1.43	4.43	53.53
1959	1.												

# STATION LOCATION

RICHMOND, VIRGINIA

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude North	Longitude West	Elevation above										Remarks
						Sea level	Ground								Sea level	
							Ground at temperature site	Wind instruments	Extreme thermometers	Psychrometer	Telepsychrometer	Tipping bucket rain gage	Weighing rain gage	8" rain gage		
<u>COOPERATIVE</u>																
High elevation in East Richmond	1/1880	2/1893				Est. 150									W. H. Pleasants; exact address unknown.	
Near Southern RR Bridge	3/1893	3/1895				Est. 35									A. J. Duesberry, River Observer.	
Westbrook Farms	4/1895	10/1897	4 mi. N	27° 36'	77° 24'	196									Capt. J. C. Shafer; temperatures only	
<u>CITY</u>																
State Library Building Capitol Square	9/18/95	5/22/97	4 mi. S	37° 32'	77° 27'	142									Section Center; no observations	
Chamber of Commerce Building, Ninth & Main Streets	5/22/97	5/31/00	3/8 mi. SW	37° 32'	77° 27'	104	107	98	98		89		89		Observational Program begun 10/5/97.	
Times Building 10th & Bank Streets	5/31/00	6/30/05	1/8 mi. NE	37° 32'	77° 27'	115	92	82	82		76		76			
Mutual Assurance Bldg. Ninth & Main Streets	6/30/05	1/30/10	1/8 mi. SW			104	154	145	145		138		138			
Weather Bureau Building Chimborazo Park 3301 E Broad Street	1/30/10	7/01/53	1-1/2 mi. E	37° 32'	77° 25'	162	53	11	11		3	a4	3		Climatological observations were continuous at City Office sites 10/5/97 through 6/30/53.  a - At this site 9/24/42 to 4/19/46 and after 6/1/50.	
<u>AIRPORT</u>																
WB-CAA Building	7/15/25	9/24/42	None	37° 30'	77° 20'	158	#	5	5				3		CAA to 8/3/30. WBAS 8/3/30 to 5/26/35 and 7/14/38 to 9/24/42. # - 40 feet 8/3/30 to 5/26/35, estimated 40 feet 5/26/35 to 7/14/38 and estimated 50 feet to 9/24/42.	
Army Hangar (Operations Annex)	9/24/42	4/19/46	1/2 mi. NNW	37° 30'	77° 20'	156	55	5	5				3		AF operation.	
Old Airport Administration Building	4/19/46	6/01/50	1/3 mi. SSE	37° 30'	77° 20'	156	46	5	5				4		WBAS reopened.	
Byrd Field † New Terminal Building † R. E. Byrd International Airport effective 2/18/71	6/01/50	Present	4/5 mi. N	37° 30'	77° 20'	e164	b20	d6	d6		e19		e19	a4	a - Installed 2700 feet ENE of thermometer site 6/26/59. b - 67 feet to 1/11/61. c - 162 feet to 6/26/59. d - Discontinued 6/26/59. e - 3 feet to 10/9/69.	

Requests for additional climatic information should be addressed to: Director, National Climatic Center, Federal Building, Asheville, N. C. 28801

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