

U. S. DEPARTMENT OF COMMERCE
WEATHER BUREAU

LOCAL CLIMATOLOGICAL DATA
WITH COMPARATIVE DATA

1963

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 classed 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 degrees 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 four 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 (28 times in the past 61 years), and only twice 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. In recent years, three hurricanes brought more than normal rainfall to Richmond within a six-weeks period in 1955. The most noteworthy of these were Hurricanes Connie and Diane that brought heavy rains five days apart which sent the James River out of its banks at Richmond, during August 18th through August 20th.

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. Three tornadoes have been observed in the Richmond area, the latest, July 20, 1956. The highest wind recorded has been 68 mph with a peak gust of 79 mph 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 9, 1956, has been the latest date in spring when a temperature of 32 degrees or lower was recorded; October 8, 1935, has been the earliest date in autumn.

AVERAGE TEMPERATURE

TOTAL PRECIPITATION

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	An'l
1930	38.7	43.6	45.2	54.0	67.5	71.1	78.1	73.8	75.3	54.3	46.2	35.5	56.9
1931	38.3	40.4	41.3	53.4	64.4	72.6	77.8	73.8	73.4	59.8	54.2	41.2	57.6
1932	48.1	46.4	44.3	54.3	63.6	73.8	77.8	76.9	70.0	59.0	46.8	42.2	58.4
1933	44.3	40.3	45.6	56.0	69.1	74.4	75.2	75.7	71.2	57.1	45.0	41.8	58.0
1934	42.6	28.2	42.8	56.3	66.2	76.6	79.7	74.9	71.3	56.3	49.5	38.4	56.9
1935	34.5	38.7	51.9	53.5	62.9	73.6	77.2	75.3	67.6	58.3	51.5	31.6	56.4
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	68.0	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	75.8	72.2	64.7	49.7	41.9	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	41.5	47.0	53.9	60.9	72.2	78.5	78.4	68.4	47.3	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	33.0	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	50.8	57.7	66.3	74.4	78.2	75.7	68.6	56.2	52.9	42.0	57.8
1949	45.2	46.8	48.6	55.7	66.0	75.2	80.1	76.6	67.4	62.5	49.0	42.4	59.6
1950	40.7	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	74.6	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	77.3	70.0	60.7	48.5	42.5	59.9
1954	38.0	44.9	47.0	61.2	63.0	74.6	76.8	74.4	62.3	46.1	38.2	38.2	58.8
1955	35.8	40.1	50.2	60.8	67.2	70.1	81.3	78.7	70.6	59.5	46.4	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	33.8	42.3	57.5	65.7	71.3	80.2	76.4	69.1	58.7	51.2	33.4	56.2
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	56.6
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	74.8	68.2	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
RECORD MEAN TEMP	38.4	39.9	46.8	57.0	66.4	74.3	77.8	76.1	70.1	58.9	48.5	39.1	57.8
MAX	48.1	50.6	58.1	69.3	78.3	85.4	88.2	86.2	80.8	70.8	59.8	49.2	68.7
MIN	28.6	29.2	35.5	44.6	54.4	63.1	67.4	66.0	59.3	47.0	37.1	29.0	46.8

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	3.98	5.33	3.04	1.39	5.41	5.23	8.34	1.70	4.64	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	3.44	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	0.78	1.11	5.30	3.52	6.81	3.71	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	5.13	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	4.31	1.43	2.22	2.53	4.69	4.48	3.33	1.87	6.38	2.37	7.03	1.56	42.20
1948	4.11	2.66	5.54	4.59	6.42	2.73	4.05	7.75	3.05	3.21	5.74	4.14	53.99
1949	3.26	2.55	2.12	2.22	5.11	3.53	6.34	8.99	2.64	3.87	1.88	1.94	44.45
1950	2.47	1.71	3.20	0.74	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	2.35	3.06	2.04	0.99	6.84	2.16	1.85	2.94	37.17
1954	3.70	1.56	2.44	3.08	4.36	1.09	1.30	3.95	0.69	4.99	1.86	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	3.08	2.75	4.35	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	3.35	3.00	6.88	50.61
1958	2.96	4.38	3.81	4.35	5.79	6.09	3.27	8.77	1.90	5.35	1.43	4.43	53.53
1959	1.31	1.87	2.92	4.32	2.44	3.45	12.85	5.75	3.30	3.25	7.64	2.24	51.34
1960	2.13	4.56	3.29	3.57	3.59	0.91	7.34	7.20	6.21	3.31	0.85	3.04	46.00
1961	2.97	5.39	4.02	1.73	4.83	6.49	2.85	3.90	1.64	8.78	1.81	5.05	49.06
1962	5.95	3.00	4.87	3.80	4.08	5.57	5.65	2.37	3.66	0.50	6.73	2.64	48.62
1963	1.55	2.98	5.62	0.64	2.39	7.01	0.52	3.75	3.20	0.30	6.70	2.80	37.46
RECORD MEAN	3.00	2.97	3.52	2.96	3.72	4.00	5.64	5.27	3.66	3.12	3.51	3.03	44.40

MONTHLY AND SEASONAL HEATING DEGREE DAYS

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1930-31	0	1	5	345	557	908	825	684	718	336	84	13	4474
1931-32	0	4	25	194	328	375	498	580	662	319	111	1	3295
1932-33	0	0	31	209	568	711	637	684	601	285	54	21	3781
1933-34	1	0	1	249	569	712	716	1024	681	265	74	0	4292
1934-35	0	9	3	262	443	817	920	734	403	356	105	0	4052
1935-36	0	0	40	223	413	1034	1038	933	422	372	60	13	4548
1936-37	0	0	17	199	564	748	590	742	668	283	78	1	3890
1937-38	0	0	75	321	556	820	876	622	379	204	91	11	3955
1938-39	0	0	38	228	462	778	724	551	527	288	120	0	3716
1939-40	3	0	5	250	610	785	1265	777	673	380	91	3	4842
1940-41	2	0	74	288	474	475	924	862	595	224	92	13	4021
1941-42	0	3	13	152	510	691	995	854	529	222	13	0	3982
1942-43	0	2	52	104	459	849	753	652	578	356	63	0	3868
1943-44	0	0	57	251	532	808	819	710	639	280	17	0	4113
1944-45	0	2	21	236	478	873	950	670	253	122	125	27	3795
1945-46	0	0	3	229	456	986	849	643	350	257	76	11	3860
1946-47	0	5	21	161	370	669	638	880	770	249	94	10	3862
1947-48	0	0	81	98	558	822	1049	733	469	250	48	3	4111
1948-49	0	0	28	278	373	712	615	515	525	295	67	3	3412
1949-50	0	0	52	134	478	700	483	676	631	327	85	2	3568

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total	
1950-51	0	0	0	80	138	538	888	739	680	559	287	78	0	3923
1951-52	0	0	22	181	608	710	692	655	579	233	58	0	0	3718
1952-53	0	1	19	316	460	792	680	598	509	234	7	6	0	3615
1953-54	0	0	28	152	488	691	829	596	553	183	151	1	0	3632
1954-55	0	0	5	220	581	826	898	690	450	155	67	12	0	3884
1955-56	0	0	9	186	555	928	898	631	578	323	107	10	0	4223
1956-57	0	3	75	146	519	493	915	800	546	201	63	5	0	3568
1957-58	0	0												

STATION LOCATION

RICHMOND, VIRGINIA
BYRD FIELD
1963

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude	Longitude	Elevation above										Remarks
						Sea level		Ground								
						Ground	Actual barometer elevation (H _g)	Wind instruments	Extreme thermometers	Psychrometer	Telepsychrometer	Tipping bucket rain gage	Weighing rain gage	8" rain gage	Hygrothermometer	
CITY OFFICE																
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, Observed Temperatures.
Westbrook Farms	4-1895	10-1897	4 mi. N	27° 36'N	77° 24'W	196										Capt. J. C. Shafer, Temperatures only.
State Library Building Capitol Square	9-18-95	5-22-97	4 mi. S	37° 32'N	77° 27'W	142										Section Center, No Observations.
Chamber of Commerce Bldg. Ninth & Main Sts.	5-22-97	5-31-00	3/8 mi. SW	37° 32'N	77° 27'W	104	143.70	107	98	98		89		89		Observational Program begun 10-5-97.
Times Bldg., 10th & Bank Sts.	5-31-00	6-30-05	1/8 mi. NE	37° 32'N	77° 27'W	115	156.90	92	82	82		76		76		
Mutual Assurance Bldg. 9th & Main Sts.	6-30-05	1-30-10	1/8 mi. SW	37° 32'N	77° 27'W	104	214.82	154	145	145		138		138		
Weather Bureau Building Chimborazo Park, 3301 E. Broad Street	1-30-10	7-1-53	1-1/2 mi. E	37° 32'N	77° 25'W	162	169.59	53	11	11		3 a 4		3		Observational program at Airport 7-1-39 to 9-24-42 and after 4-19-46. a - At this site 9-24-42 to 4-19-46 and after 6-1-50.
Climatological observations were continuous at City Office sites 10-5-97 through 6-30-53.																
AIRPORT STATION																
WB-CAA Building	7-15-25	9-24-42	None	37° 30'N	77° 20'W	158	163.96	#	5	5	-	-	-	3		CAA to 8-3-30, instrument elevation unknown. WBAS 8-3-30 to 5-26-35 and 7-14-38 to 9-24-42. # - 40 ft. 8-3-30 to 5-26-35, estimated 40 ft. 5-26-35 to 7-14-38 and estimated 50 ft. to 9-24-42.
Army Hanger (Operations Annex)	9-24-42	4-19-46	1/2 mi. NNW	37° 30'N	77° 20'W	156	159.72	55	5	5	-	-	-	3		AF operation.
Old Airport Administration Building	4-19-46	6-1-50	1/3 mi. SSE	37° 30'N	77° 20'W	156	166.85	46	5	5	-	-	-	4		WBAS re-opened in airport terminal building (old).
Byrd Field, New Terminal Building.	6-1-50	Present	4/5 mi. N	37° 30'N	77° 20'W	162	180.24	b 20	6	6	-	3	-	3 a 5		a - Installed 2700 ft. ENE of thermometer site 6-26-59. b - 67 ft. to 1-11-61.

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