## Floods Caused by Tropical Systems: James River near Richmond, VA

| Latitude: 37.563 <br> Flood Stage: 12 |  |  | Period of Record: 1816-Present <br> Longitude: -77.547 <br> Last Flood: 4/22/2019 <br> Number of Floods: 193 |
| :---: | :---: | :---: | :---: |
| Date of Flood | Crest (ft) | Streamflow (cfs) | Weather Summary |
| 9/7/1935 | 21.01 | 127,000 | The "Labor Day Hurricane" dumped heavy rain along the East Coast. A total of 16.62 inches of rain was reported in Easton and 12.1 inches of rain was reported in Salisbury, MD. |
| 8/19/1985 | 14.94 | 66,000 | The remnants of Hurricane Danny brought heavy rain to parts of the Mid-Atlantic region. Most of Virginia had at least one inch of rain with locally higher amounts of 7 inches. Minor flooding occurred in the James and Appomattox Basins. |
| 9/20/1945 | 14.82 | 61,100 | The 1945 Southeast Florida Hurricane brought gusty winds and heavy rains to the Mid-Atlantic region. |
| 8/20/1955 | 18.36 | 98,700 | Hurricane Diane made landfall 5 days after Hurricane Connie. Hurricane Diane produced several inches of rain with locally heavier amounts of 10 to 20 inches. |
| 7/4/2003 | 13.33 | 53,830 | The remnants of Tropical Storm Bill collided with a frontal system and produced over an inch of rain across most of Virginia and Maryland. Some locations in Central Virginia reported storm totals of 3 to 5 inches. |
| 9/26/1975 | 16.1 | 78,300 | The remnants of Hurricane Eloise combined with a cold front and produced very heavy rainfall in the MidAtlantic. Washington, D.C. reported 9.08 " of rainfall. Total damage for Virginia was estimated to be $\$ 17.2$ million. |
| 6/23/1972 | 28.62 | 313,000 | Hurricane Agnes made landfall again over southeastern New York on June 22 and moved westward into Pennsylvania. Rainfall totals from June 20-25 range from 2-3 inches in the Upper Potomac to 18 inches near Shamokin, Pennsylvania. |
| 9/28/1896 | -9999 | -9,999 | A hurricane knocked out communication in Richmond. Several buildings were unroofed in Petersburg. In Buena Vista, the fire department rescued people from their homes. The Potomac, Chesapeake and Ohio Canals merged into one giant canal. |
| 10/17/1942 | 19.8 | 119,000 | The remnants of the eighth tropical storm of the year produced torrential rains and caused the worst river flooding in the history of Virginia. |

Data represent all historical events. James Basin

County of Gage: Henrico County of Forecast Point: Independent City

| Date of Flood | Crest (ft) | Streamflow (cfs) | Weather Summary |
| :---: | :---: | :---: | :---: |
| 9/7/1979 | 14.28 | 59,800 | Hurricane David dumped 3-7 inches of rainfall across Virginia, Maryland and Pennsylvania. |
| 8/20/1939 | 14.37 | 57,900 | The remnants of the second hurricane of year produced heavy rain throughout the Mid-Atlantic region with 14.81 inches observed at Tuckerton, NJ. |
| 9/12/1950 | 14.6 | 59,500 | Hurricane Dog's outer rainbands produced upwards of 3 inches of rain in parts of Virginia over a short period of time. |
| 9/28/1822 | -9999 | -9,999 | A strong tropical storm caused 3.5 days of continuous rainfall. The Staunton River rose to the highest level ever observed. In Richmond, the James River was reported to rise several feet in less than one hour. |
| 9/12/1878 | -9999 | -9,999 | The Hurricane of 1878 produced tornadoes and heavy rain around Richmond, Virginia. Southeastern Virginia, West Virginia and Pennsylvania all had unprecedented flooding. |
| 9/8/1996 | 21.23 | 152,000 | Hurricane Fran produced up to 16 inches of rain in the western part of Virginia and up to 7 inches in the Juniata Basin in Pennsylvania. Fran was the worst flood even to hit Maryland since Hurricane Hazel and the January 1996 Flood. |
| 9/18/1816 | -9999 | -9,999 | A tropical storm caused flooding on the James River at Richmond. The flood waters invaded the first floors of some homes. |
| 11/14/2009 | 13.3 | 51,800 | The extratropical remnants of Ida dumped more than 12 inches of rain in Coastal Virginia, 5.50 inches of rain in Richmond and 5.00 inches of rain in Farmville. |
| 9/10/1987 | 18.53 | 108,000 | Tropical Depression Nine merged with a cold front to produce over 5inches of rain in Virginia and 3-7 inches of rain in Pennsylvania. |
| 9/1/1915 | -9999 | -9,999 | A tropical system inundated the low-lying areas in Richmond. The flooding was similar to the flooding caused by Gaston in 2004. |
| 8/18/1940 | 21.8 | 151,000 | As a strong Category 1 storm, the Southeast Hurricane produced over 1 inches of rain just south of our basins and caused widespread flooding across Virginia. |

Drainage Area: 6753 square miles
Gage Datum: 98.82 ft MSL

Data represent all historical events. James Basin

County of Gage: Henrico County of Forecast Point: Independent City

| Date of Flood | Crest (ft) | Streamflow (cfs) | Weather Summary |
| :---: | :---: | :---: | :---: |
| 9/10/2004 | 12.81 | 48,000 | The remnants of Hurricane Frances combined with a low pressure system and produced heavy rain throughout the Mid-Atlantic. Rainfall totals ranged from 2-3 inches in New Jersey to 2.5-6 inches in Central Pennsylvania. |
| 11/7/1985 | 24.77 | 218,000 | Hurricane Juan produced more than 1 inch of rain in VA with more than 7 inches reported in higher elevations. A coastal low pressure system produced an additional 1-7 inches of rain and caused widespread major flooding in Virginia and Maryland. |
| 8/21/1969 | 24.95 | 222,000 | Remnants of Hurricane Camille produced 12-20 inches of rainfall. In Virginia, most of the rainfall occurred in a 3-5 hour period and caused several record-setting floods. |
| 10/1/2004 | 15.5 | 72,000 | Hurricane Jeanne stalled a cold front and supplied the front with much-needed moisture. As a result, 1-day rainfall totals ranged from 1-6 inches throughout the Mid-Atlantic region. |
| 9/19/2018 | 15.12 | 67,900 | Remnants of Hurricane Florence produced rain up to 5+ inches in spots, leading to moderate to major flooding. |
| 10/13/2018 | 15.02 | 66,900 | Remnants of Hurricane Michael dumped up to 9 inches of rain near the coast. Moderate to Major flooding in the Appomattox basin. |

