

Floods on Potomac from rains of Connie stage 9.02 at Little Falls
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River ice breakup was a feature of several notable floods in Washington, including February 1881; February 18, 1918; February 6, 1932; January and February, 1936; and February 16, 1948 (USACE 2005). According to Henry (1918), the ice jam flood of 1918 damaged all the house boats on the Potomac River (loss estimated at \$1,500 in contemporary dollars), damaged all but three boat houses (loss estimated at \$15,000 in contemporary dollars), and caused more than \$38,000 (contemporary dollars) in damages to commercial interests along K Street.

The most severe ice-related flood was the flood of March 1936, which was the greatest flood experienced since the flood of 1889. Earlier freezing and thawing resulted in the formation of thick ice throughout the eastern U.S. comparable to 1918 (Moxom 1936a), and ice jams on the Potomac River were reported in January and February of 1936 (USACE 2005). Rainy weather in late February and early March caused floodwaters to rise again in early March, but it was the extremely heavy rain on March 15 (over five inches in less than 12 hours in the headwaters of the Potomac River falling on saturated and semi-frozen ground that resulted in the record flood of March 17, 1936 (Moxom 1936b). Swenson (1937) reports that the peak stage at Wisconsin Avenue was 17.2 ft during this event.

Winter floods in D.C. can also be associated with large snowpack. DC SHEMA reported that just two weeks after the Blizzard of 1996 dumped two to four feet of snow on the Washington area, 60-degree temperatures and heavy rain (two to five inches) led to rapid snowmelt. Flooding on the Potomac River damaged homes and businesses, and 80% of the paths and bridges in the C&O National Historic Park were wiped out. According to Ambrose et al. (2002), this flood was the fifth highest on record for the Potomac River (see high water mark of Figure 2).

Flooding associated with hurricanes has also resulted in damaging floods in D.C. Ambrose et al. (2002) report that five hurricanes made landfall along the Virginia, Maryland, and Delaware coasts from 1900 to 2000, and only the Chesapeake- Potomac hurricane of 1933 had winds greater than 100 miles per hour at landfall. This hurricane resulted in a tidal surge at D.C., with some areas of D.C. flooded to a depth of ten feet (Ambrose et al. 2002). Ten people died when a train crossing the Anacostia River was swept off the tracks by floodwaters (Ambrose et al. 2002).

Precipitation associated with Hurricane Able (September 1952) was reported as being about 3.47 inches (Ross 1952), which caused flooding along Rock Creek (Ambrose et al. 2002). The combined impact of Hurricanes Connie and Diane in August 1955 resulted in rainfall of 10.43 inches at Washington D.C., that caused major flooding in the Potomac River, according to Ambrose et al. (2002).

On September 5, 1979, Hurricane David resulted in five to six inches of rain north and northeast of D.C., which caused flooding along Rock Creek Parkway (USGS 1991), as well as funnel clouds and tornadoes throughout the city. According to DC HSEMA, \$374,000 in damage was caused. USGS (1991) reported that the Rock Creek discharge at Sherrill Drive gage was about 1.5 times the 1-percent annual chance discharge during that event. Precipitation associated with the remnants of Hurricane Fran caused flooding along the Potomac River on the order of the 1985 flooding from Hurricane Juan (see Figure 2) (Ambrose et al. 2002). The most severe hurricane to impact D.C. in recent memory is Hurricane Isabel.

According to DC HSEMA, floods put the following areas and addresses at high risk: 3000 K Street, NW; 3030 K Street, NW; 3050 K Street, NW; 3524 K Street, NW; 3526 K Street, NW; 3528 K Street, NW; 1000 Potomac Street, NW; 3524 Water Street, NW; 3526 Water Street, NW; Polk Street and Anacostia Avenue, SE; North Extension, Shoemaker Street (near Tilden Street); North Side, Quebec and Williamsburg Streets; 27th and Q Streets, (North Side); C&O Canal and 29th Street, NW; Mayfair Terrace and Jay Street; G and 22nd Streets, (northeast side); South of Potomac Avenue and Half Street; South of Frederick Douglas Memorial Bridge; East Side Ft. Lincoln Subdivision; Washington Channel (Maine & 6th Streets); and Georgetown Waterfront (between Key Bridge and the mouth of Rock Creek).