

Rains Four Days After Isabel Later Cause Some Flooding and Impact on Rivers entering Chesapeake Bay.

Several inches of rain during September 22-23 resulted in some additional flooding in Maryland and DC areas and an additional increase in river flow into the Chesapeake Bay. According the U.S. Geological Survey, the Susquehanna River, the largest river entering the Chesapeake Bay, had a peak flow of 139,000 cubic feet per second (cfs) on the evening of September 23, which is higher than the maximum discharge reached during Isabel (72,200 cfs).

The peak discharge observed at the Conowingo Dam was far below the rate of 400,000 cfs needed for large amounts of sediment to be scoured out of the reservoir and be delivered into the Bay. The peak stage reached was more than 9 feet below flood stage, so significant riverine flooding was not anticipated at downstream communities, although substantial tidal surge flooding and damage was experienced during Hurricane Isabel in Havre de Grace, Maryland.

While Isabel did not greatly impact the Susquehanna River, the rainfall resulted in flooding of the streams and rivers in the Potomac basin. Streamflow from Isabel exceeded flood stage by 7.1 feet on the Potomac River at Point of Rocks, but paled in comparison to historical floods such as from Hurricanes Fran in 1996 (20.3 ft above flood stage) and Agnes in 1972 (21.4 ft above flood stage). Streamflow at the Potomac River near Washington DC reached just above flood stage. Streamflow increases further east towards Baltimore were more moderate, generally similar to what might be experienced following a summer thunderstorm.

Unfortunately, rainfall of similar or greater intensity fell just 4 days later on September 22 and 23, with soils already saturated and many stormwater control ponds nearly full, and some areas reported rainfall amounts of 3 to 5 inches. Flows in many streams from central Maryland to northern Delaware were two to three times those observed following Isabel. In some urban streams, flows were as much as 10 times those from Isabel, and flows were also about 10 times greater in the Monocacy River near Frederick, where the river rose to 4.7 ft above flood stage.

The U.S. Geological Survey provides real-time streamflow data for 80 stations in Maryland to emergency managers and to the general public. During flooding, field measurements are made of stream discharge to calibrate long-term records for safe design of dams, culverts, and bridges, and for water-resources management by other agencies. Water-quality samples are also collected at selected streams during floods to determine the impacts on water bodies such as the Chesapeake Bay.