

OUTSTANDING GEOLOGIC FEATURE OF PENNSYLVANIA

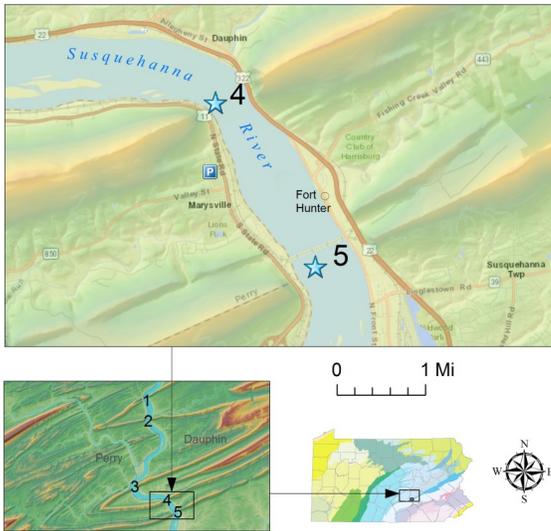
SUSQUEHANNA WATER GAPS, DAUPHIN AND PERRY COUNTIES



Stuart O. Reese, 2016

Location

Numerous locations along the Susquehanna River, Dauphin and Perry Counties, from lat: 40.33 to 40.57, lon: -76.90 to -77.02; dedication plaque location: lat: 40.34706, lon: -76.931251



Geology

The area of five water gaps along the Susquehanna River north of Harrisburg was recognized once again in September 2009 as a registered National Natural Landmark. A water gap is a cut through a mountain ridge by a river. The Susquehanna River flows through five ridges. Those ridges from north to south are (1) Mahantango Mountain (Buffalo Mountain west of the river), (2) Berry Mountain, (3) Peters Mountain, (4) Second Mountain (Cove Mountain west of the river), and (5) Blue Mountain. Gaps 1 through 4 cut across Pocono sandstone; Blue Mountain Gap is through Tuscarora sandstone.

The details of the formation of the water gaps is still a source of geologic debate. Research has shown that there is a concentration of joints (fractures) in the water gap areas, which would have allowed preferential erosion. Many researchers support the idea that headward erosion occurred through the ridges at these zones of weakness, which guided the path of the ancestral Susquehanna River as it lengthened to the northwest. The landscape underwent erosion after the Alleghanian mountain-building event peaked about 270 million years ago. As large mountains began to erode and the Atlantic Ocean opened, drainage systems developed that carried away sediment to the widening ocean, and the surface water divide moved north and west. The ancestral Susquehanna River began in this way, and ultimately cut the five water gaps.



The marker at Marysville (photograph by Gary Fleeger, Pennsylvania Geological Survey) denotes the importance of the water gaps: "Susquehanna Water Gaps has been designated a National Natural Landmark. This site possesses exceptional value as an illustration of the nation's natural heritage and contributes to a better understanding of the environment." The photograph on the right shows the water gap at Second Mountain as viewed to the northwest from Fort Hunter.