

CHESAPEAKE-ALLEGHENY

Hemlock Ecosystem Studies

The National Park Service and the USGS Biological Resources Division (BRD) have initiated landscape-level studies

of hemlock ecosystem biodiversity at Delaware Water Gap National Recreation Area, Pennsylvania and New Jersey, and Shenandoah National Park, Virginia. Previous ecological studies completed at the parks were geographically limited in scope, including only two or three hemlock stands in each park, and did not include stream ecology. In contrast, the new initiative will be geographically extensive, and include as many as 40 stream study sites at Delaware Water Gap.

The initiative has three major goals: (1) determine the extent to which hemlock-dominated forests contribute to landscape-level biodiversity; (2) identify environmental correlates of hemlock occurrence and mortality; and (3) predict and measure the effects of hemlock decline and mortality on ecosystem structure, function, and biodiversity at the two parks.

The NPS has funded a team of three Penn State University researchers to compile existing park biodiversity information and develop standardized sampling protocols for terrestrial vegetation, vertebrates, and invertebrates. The BRD is providing GIS analysis and statistical guidance to ensure effective study design, and they will also conduct stream studies of fish and macroinvertebrates. Caralyn Mahan is the project coordinator (814-863-1904; cgm2@psuvm.psu.edu).