# Green Infrastructure Valuation Modeling

Alexandria, Virginia







*top: Path stands*
*above left: Healthy understory*
*above right: Completed path entrance*

*Quantifying the ecosystem benefits associated with the campus forest has allowed Episcopal High School to raise the standard of care given to this important community asset.*

Alexandria, Virginia, contracted with Biohabitats to model the functional benefits supplied by this vegetation community. In addition to mapping the botanical composition of the forest, Biohabitats utilized the U.S. Forest Service Urban Forestry Effects Model (UFORE) to quantify the ecosystem services provided by the tree canopy.

As atmospheric carbon is a primary greenhouse gas contributing to global climate change, Episcopal High School wanted to understand the positive contribution that preserving this woodland would make towards reducing levels of this pollutant. Applying the carbon module of UFORE, Biohabitats determined both the total carbon currently stored in tree biomass and the projected amount of carbon sequestered annually. In addition to carbon, the green infrastructure analysis evaluated the impact that the forest canopy had on the interception of several other pollutants including ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, and fine particulate matter. An economic analysis was performed on the data results in order to estimate the dollar value of these benefits.

The results of this study were directly incorporated into the development of a master plan for the campus forest and have been instrumental in both informing and directing campus management decisions.

**SERVICES**
Green Infrastructure
Inventory & Assessments

Recognizing that a campus-owned woodland had potential value as green infrastructure, the Episcopal High School, a private educational facility located in

*conservation planning*
*ecological restoration*
*regenerative design*

Biohabitats

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**Physiographic Province**
Coastal Plain

**Bioregion**
Chesapeake

**Watershed**
Middle Potomac-Anacostia-Occoquan