



News Release

For Immediate Release
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Trees Provide Annual Services Worth \$6.6 Million in Just Five Communities

The trees of our residential areas, schoolyards, parks, and along downtown streets are more than just pretty niceties; they are necessities. They increase property values, cool buildings, take in carbon dioxide, and mitigate air pollution – all valuable economic and ecological benefits.

Now, in a survey of five Virginia communities, Virginia Tech Associate Professor [Eric Wiseman](#) is using a tool developed by the U.S. Forest Service to provide scientific evidence of the value of the services that urban trees provide. It is the first time such a detailed study assigning value to urban trees has been undertaken in the state.

Wiseman's crew of students spent the summers of 2010 and 2011 collecting field data on the trees and vegetation in plots in Abingdon, Charlottesville, Falls Church, Roanoke, and Winchester.

Using analysis software called [i-Tree Eco](#), they input data on the trees growing in each municipality – its urban forest – and arrived at an estimate of the forest's functional benefits and economic value. These benefits include such contributions as air pollution reduction, carbon dioxide capture, and building energy conservation.

The analyses show that there are more than 3.4 million trees in these five communities alone and that these urban forests provide nearly \$7 million in annual benefits (see [summary table of key findings](#) for more detail).

“The survey also gives us good information on tree species diversity in each municipality's urban forest and the potential impacts of invasive pests such as the gypsy moth, emerald ash borer, and Asian longhorned beetle,” Wiseman said. “So far, we're finding good species diversity in the municipalities assessed, which is a positive indicator of urban forest resiliency to invasive pests.”

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Values found for selected Virginia Communities:

Community	Number of Trees	Structural Value	Carbon Storage	Carbon Sequestration Annually	Pollution Removal Annually	Annual Energy Savings & Carbon emission Reductions
Abingdon, VA	204,020	\$ 253,000,000	\$ 1,030,000	\$ 26,400	\$ 258,000	\$ 318,000
Charlottesville, VA	357,985	\$ 592,000,000	\$ 1,660,000	\$ 76,200	\$ 555,000	\$ 1,039,000
Falls Church, VA	59,677	\$ 147,000,000	\$ 388,000	\$ 17,900	\$ 138,000	\$ 225,000
Roanoke, VA	2,586,202	\$ 2,170,000,000	\$ 6,300,000	\$ 386,000	\$ 2,270,000	\$ 524,000
Winchester, VA	233,639	\$ 261,000,000	\$ 822,000	\$ 29,900	\$ 288,000	\$ 468,500
Total Selected VA Communities	3,441,523	\$ 3,423,000,000	\$10,200,000	\$ 536,400	\$ 3,509,000	\$ 2,574,500

The structural and functional values of an urban forest tend to increase with an increase in the number and size of healthy trees. However, inappropriate species selection, improper tree placement and tree neglect can diminish both structural and functional values.

The project is supported by the Virginia Department of Forestry with funds from the U.S. Forest Service. Municipalities provided geographical information system (GIS) data and parcel information used by Wiseman to select field plots for data collection. In Charlottesville, the field crews were assisted by volunteers of the Rivanna Master Naturalist chapter, volunteers in a Virginia Cooperative Extension program based in the College of Natural Resources and Environment.

“The i-Tree analysis that Dr. Wiseman facilitated is very important to the Virginia Department of Forestry,” said Barbara White, the agency’s urban and community forestry partnership coordinator. “It’s a tool to highlight, on a statewide basis, the value of the services our urban forests provide to the citizens of the commonwealth.”

After contacting landowners and securing permissions, the field teams measured trees, evaluated their condition, identified their species, and noted the ground cover and other characteristics of the assigned plots. A summary report of each locality’s urban forest assessment is posted online (<http://urbanforestry.frec.vt.edu/eco.html>).

The cities and towns surveyed will decide how to act on the information they receive. Wiseman and White are urging localities to use these analyses of tree abundance and composition, along with canopy cover, as they plan their urban forests and green spaces.

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“You can’t manage your forest resources until you understand their character and function,” Wiseman said. “As Virginia becomes increasingly urbanized, managing the state’s urban forests will be increasingly important for conserving natural resources and sustaining communities.”

Kevin Sigmon, Abingdon town arborist, is pleased to know the value of the town’s trees. “This report gives us not only the overall replacement or structural value of the urban forest, but we now have a value for how the forest is working for us in areas of carbon storage and sequestration, air pollution mitigation and energy savings,” he said. “Before the report, we could only guess at such things, but now we have specific numbers and a reliable data collection method to support the numbers.”

Ben Thompson, City of Falls Church arborist, said, “The results of this study will help staff better plan and manage the city’s trees and forest, creating a safe, healthy, and pleasant landscape for our citizens and visitors.”

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Photo: Va Urban Forest Assessment

Cutline: Jeannette Hoffman, a research technician in the Department of Forest Resources and Environmental Conservation, uses the i-Tree Eco software to record urban forest data in Roanoke, Va.