



Leaves OF Change



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Science Delivery

Urban Forest Sustainability and Management Audit System

IN 2014, Urban Forestry South developed and beta tested a new urban forest sustainability and management audit checklist and process (collectively referred to as an “audit system”) at Agnes Scott College, a small women’s liberal arts college in Decatur, GA. Agnes Scott was a great location to try out this new system because it is a Tree Campus USA®.

This audit system is designed to provide a framework for internal (ad hoc) audits by program managers or for independent evaluations by an external lead auditor and audit team.

The primary objectives of this audit system are to

- benchmark changes in urban forest program capacity over time;
- provide program direction that increases the level of professionalism and the application of best management practices in urban forest management;
- increase the health of the green assets managed by the program; and
- optimize management for identified ecosystem services.

The audit system can be used to evaluate municipal, college, or corporate campus urban forest management programs. The audit checklist can also be used in a less formal internal process to develop a cursory “snapshot” of an urban forest management program for the purpose of identifying the program’s strengths and evaluating its perceived deficiencies. *See the enclosed fact sheet for a detailed description of the audit checklist and process.*

The beta test at Agnes Scott College was very successful and has resulted in a strong recognition of the value of the campus’s urban forest program by campus administration and leadership. Recommendation for program changes are being presented to the College Board of Trustees and an implementation plan is being drafted per the audit’s recommendations. Urban Forestry South plans to continue testing the audit system in 2015 with municipalities and other college campuses with the Tree City and Tree Campus USA designations.

For more information about this audit system, contact **Ed Macie**, 404-347-1647, emacie@fs.fed.us.



Members of the Agnes Scott College audit team conduct a beta-test of the urban forest sustainability and management audit system.

Jim Abbot



Jim Abbot

The i-Tree Hydro Model

THE I-TREE HYDRO model is a public domain hydrology model that simulates the effects of changes in tree and impervious cover on stream flow and water quality. The model was designed specifically to handle urban vegetation effects so that urban natural resource managers, stormwater managers, and urban planners can quantify the effects of changes in tree and impervious cover on local hydrology to aid in management and planning decisions.

To learn more about the use of natural processes for urban stormwater management, visit water.epa.gov/infrastructure/greeninfrastructure/index.cfm#tabs-1.

To learn more about i-Tree Hydro, visit itreetools.org/hydro/index.php.



i-Tree Hydro Training Workshop in Northern Virginia

URBAN FORESTRY SOUTH organized an i-Tree Hydro training workshop on October 13–14, 2014, on the Northern Virginia Community College (NVCC) campus in Sterling, VA. This workshop was hosted by the NVCC Horticulture Club, Trees Virginia, and the Virginia Department of Forestry, and it was open to urban planners, stormwater engineers, designers, and managers, and urban foresters. Tom Taggart and Emily Stephan, doctoral students at the SUNY College of Environmental Science and Forestry in Syracuse, NY, and assistant developers of the urban hydrology model, provided instruction for this hands-on, intensive workshop. Participants learned how to use the model at varying scales from watershed to parcel levels and learned about the model's basic assumptions and limitations.

To practice using the model, workshop participants used data

Figure 1 – The digital elevation model (DEM) of the Upper Accotink Creek watershed in Fairfax County, VA was used by the i-Tree Hydro model to help estimate soil parameters for the urban forest management district (red boundary) in the lower part of the watershed.

from a recent i-Tree Eco and Urban Tree Canopy study of the Upper Accotink Creek watershed, a local watershed in Fairfax County that ultimately drains to the Chesapeake Bay. Participants were able to estimate soil parameters for the watershed using the i-Tree Hydro application. The Fairfax County Urban Forestry Division will be able to use these estimates to calculate the effects of various urban forestry management strategies (i.e., increased or decreased tree canopy cover, increased impervious surface cover, increased tree canopy cover over impervious surfaces, etc.) on stormwater runoff and water quality within the watershed using i-Tree Hydro's built-in scenario change function. The scenario change function allows users to change surface cover percentages for tree canopy, herbaceous shrubs, and/or impervious surfaces and compare outputs to current conditions. The Urban Forestry Division plans to use i-Tree Hydro as a collaborative tool that will enable it to work with the planning and stormwater departments to address urban stormwater problems more effectively.

For more information, contact **Eric Kuehler**, 706-559-4268, ekuehler@fs.fed.us.

Mock Exercises Prepare Local and State Arborists for Natural Disasters

MOCK DISASTER exercises were held recently in Savannah, GA, and Fayetteville, AR. These exercises had multiple objectives, including

- testing the deployment protocols of the Urban Forest Strike Team (UFST) (www.UFST.org) and the procedures of the state forestry agency;
- the provisioning of continuing education for team leaders and task specialists in the rapid tree risk assessment procedure used by the UFST;
- testing new field data collection procedures and equipment; and
- practicing deployment under the Emergency Management Assistance Compact (EMAC).

In Savannah, the Georgia Forestry Commission worked with the Georgia EMAC coordinator and the City of Savannah Arborist and Emergency Manager to host a two-day exercise in connection with a training workshop on Tybee Island for new UFST task specialists. Coordination of EMAC was tested with Virginia, South Carolina, Florida, and Arkansas. In addition, Rome, GA, responded with a mutual aid request initiated by the city through the Chatham County Emergency Manager and state EMAC. Participants in the Urban Forest Strike Team included South Carolina, Virginia, Georgia, Florida, and Mississippi.

In Fayetteville, the Arkansas Forestry

Commission worked with Arkansas EMAC, the City of Fayetteville arborist division, and the Washington County Emergency Manager to host a two-day exercise that included UFST personnel from Arkansas, Oklahoma, Texas, Mississippi, Georgia, and Missouri. The EMAC component for this exercise included requests to Oklahoma, Texas, and Georgia. This exercise also introduced the use of ArcGIS Online and the use of iPad and Android smart tablets (and phones) to collect and monitor data.

For more information, contact **Dudley Hartel**, 706-559-4236, dhartel@fs.fed.us.

Littlewood Elementary School Awarded a PLT Greenworks! Grant to Develop an Outdoor Classroom

IN 2013, InterfaceSouth partnered with Littlewood Elementary School in Gainesville, FL, to create a Green Team consisting of approximately twelve second through fifth graders. These students focus on making their school a more green and healthy learning environment by determining appropriate action projects, including creating and maintaining school gardens and outdoor classrooms, identifying and implementing ways to make the school more energy efficient, promoting healthy eating habits and physical activity, participating in citizen science projects and recycling programs, and much more.

The team was recently awarded a Project Learning Tree (PLT) Greenworks! grant to develop an outdoor classroom at Littlewood. The Green Team helped with the design and will help with the development of the outdoor classroom that will provide a place for students and teachers to interact with nature and learn about birds' feeding behaviors and habitats. This outdoor classroom will include a seating area for up to 24 students as well as bird feeders, bird baths, and native plants that provide food and shelter for birds. Additionally, students will adopt the trees in the outdoor classroom area and develop signs that share information about

the tree species (using the National Tree Benefit Calculator).

Green Team members selected the area for the outdoor classroom by conducting the PLT GreenSchools! Site Investigation during the last school year. They mapped all areas of the school and identified potential locations for outdoor classroom/schoolyard habitat projects. They then voted on the location to be used. The winning site has both shady areas for classroom space and sunny areas for existing native plants that attract birds and butterflies. Teachers were also surveyed to incorporate their input into this process and parents will provide feedback through the PTA's Green Team Committee.

Backpacks with ready-made lessons that incorporate bird, tree, and other nature themes will be created so teachers can simply check them out for use in the outdoor classroom space. Backpack materials will focus on a related PLT activity and contain materials, student pages, and supporting resources teachers might need.

Annie Hermansen-Báez (USFS InterfaceSouth), Ashley Whitehead (Littlewood teacher), Littlewood's PTA Green Committee and Green Team, Elisabeth Manley (landscape architect, parent), Annie Oxarart (PLT facilitator, parent), and Hollie Greer (University of Florida, environmental educator) will all be involved in the



Annie Hermansen-Báez



Annie Hermansen-Báez

Green team members make mosaic stepping stones for Littlewood's outdoor classroom.

PLT GreenSchools! Program

PROJECT LEARNING TREE'S GreenSchools! program inspires students to take personal responsibility for improving the environment at their schools, in their homes, and in their communities. Students, teachers, and school staff members receive tools, training, and resources for student-led Green Teams to create healthier schools—and to save schools money! Project Learning Tree's GreenSchools! helps improve students' academic performance, develops students' critical thinking skills, and grows student leaders.

The benefits to becoming a PLT GreenSchool! often include

- significant cost savings;
- improved student learning, particularly in science and math;
- enhanced student leadership skills;
- recognition within the wider community for the school's accomplishments;
- a solid foundation for a lifetime of environmental stewardship; and
- a healthier school.

Five hands-on, student-driven investigations are at the center of the PLT GreenSchools! program. The investigations include energy, water, school site, waste and recycling, and environmental quality. PLT Greenworks! grants can help schools implement projects that they have identified through PLT GreenSchools! investigations or through other methods. Examples include school native plant gardens, streamside restoration projects, recycling programs, energy conservation projects, and more.

To learn more about the PLT Green Schools! program, visit www.plt.org/about-project-learning-tree-greenschools-program.

To learn more about PLT Greenworks! grants, visit www.plt.org/apply-for-greenworks-environmental-education-grant.

development of this outdoor classroom space. Wild Birds Unlimited has donated a bird bath, bird feeders, and a bird house.

For more information, contact **Annie Hermansen-Báez**, 352-376-3271, ahermansen@fs.fed.us.

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Upcoming Events

Date	Description	Location	Contact
March 4–7, 2015	Green Schools National Conference	Virginia Beach, VA	greenschoolsnationalnetwork.org/conference/
April 7–9, 2015	Children and Nature Network Conference	Austin, TX	www.childrenandnature.org/site/conference2015/

Note: InterfaceSouth and Urban Forestry South are the science delivery centers associated with the USFS Southern Research Station work unit, SRS-4952: Integrating Human and Natural Systems in Urban and Urbanizing Environments (<http://www.srs.fs.usda.gov/humanandnaturalsystems>), and the USFS Southern Region. They are collectively called the Centers for Urban and Interface Forestry.



This issue and past issues can be found online at:
www.interfacesouth.org/products/leaves

In Our Next Issue

We will highlight our research that focuses exclusively on the City of Atlanta. Projects currently underway in the city include an i-tree Eco inventory of city trees and a related partnership with Morehouse College to examine the distribution of trees across city neighborhoods and residents' engagement with this process. We are also conducting research that will help clarify the association of urban tree cover, arbovirus occurrence, and incidence of human West Nile Virus infection. And we are using i-Tree tools to better understand the current state of natural resources in the Proctor Creek Watershed to propose urban forest management strategies.