

# Tools for assessing and managing Community Forests



**i-Tree Newsletter—January 2014**

## Upgrading to i-Tree 2014

i-Tree users working with version 5.0 or earlier can upgrade their current installation by selecting the “Check for Updates” option from the Help menu of one of the i-Tree applications. If you are new to i-Tree, you will need to first [register](#) online from the i-Tree homepage and then select “Get the Tools” from the page header to download and install the program.

You do not need to register or install software in order to use the web-based tools [i-Tree Canopy](#) or [i-Tree Design](#).

Check out the “[What's New](#)” page of the i-Tree website for more details on i-Tree 2014.

## i-Tree video learning update

The i-Tree Team recognizes the challenges of providing and attending on-site training programs. For that reason, we hope to increase the availability of short, online learning videos providing instruction on i-Tree Tools.

Visit the i-Tree [Video Learning page](#) to view the latest i-Tree instructional screencasts and webinars. Current videos include:

- Basic i-Tree registration, download and software installation steps
- A 3-part series on importing existing inventories into i-Tree Streets
- i-Tree Canopy introduction and instructional series

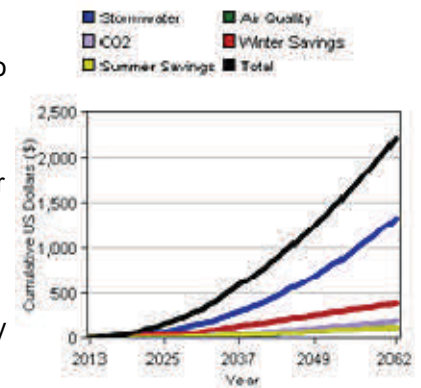
Future videos will be created to introduce new tool updates and assist with common or difficult procedures such as importing inventories into i-Tree.

## The 2014 version of i-Tree offers online tool advances and more

The new 2014 release of the i-Tree Tools greatly expands the capabilities of two of the most widely used applications: i-Tree Design and i-Tree Canopy. In addition, i-Tree Hydro has also been redesigned with many new features. We are grateful to i-Tree users across the world who provide valuable feedback which helps guide our mission to provide accessible and innovative tools to advance sustainable urban natural resource management. Here are a few highlights:

**i-Tree Design** enhancements allow users to forecast benefits and values of individual or groups of trees over a specified time period and calculate their cumulative impact. Design will also estimate benefits to date for each tree and can generate an exportable summary report.

Design calculations now consider the effects of the amount of sunlight received by a tree and the relative position of other nearby trees. Tree-related energy effects can be estimated for multiple defined structures. Finally, tree canopy growth can be visually simulated over time.



An i-Tree Design example showing cumulative tree benefits and values for a 3 inch red oak over 50 years.

Here are a couple of new ways that Design's new features may be utilized:

- Estimate the accrued benefits over a specified period of time for a prospective tree planting project.
- Create tree tag benefit estimates for Arbor Day or other public education events showing total cumulative benefit values over time.

**i-Tree Canopy** has fast become one of the most popular i-Tree Tools used in many countries around the world for producing quick estimates of canopy cover. Canopy will now estimate pollution removal, carbon sequestration, and carbon storage based on local benefit values and the estimated tree canopy cover area for any specified area of interest.

**i-Tree Hydro** offers several new features which extend the use of Hydro beyond the watershed to the city scale. A user can now select a U.S. city and simulate water flow and water quality changes qualitatively by modeling tree and impervious cover changes. Hydro now offers a more user-friendly interface with integrated help features explaining terminology and guiding users through the entire modeling process.

A new Hydro executive summary report can be generated to provide a quick snapshot of simulation results. And Hydro users now have the option to select a topographic index for a city, county, state, or watershed, which eliminates the need for GIS skills to produce and import a digital elevation model.



### i-Tree ideas for emerald ash borer management and advocacy

Many North American communities are dealing with the impacts of ash tree loss due to the emerald ash borer (EAB). There are many creative ways that i-Tree Tools can assist in EAB planning, management, and advocacy efforts. Here are a few ideas to consider for your community:

**i-Tree Streets** - Import existing ash trees from your tree inventory or enter ash trees from a city block into Streets to estimate the community tree benefits at risk to EAB. This information can be used to help raise awareness of the ecosystem service impacts and values that EAB-related tree loss may cause.

**i-Tree Eco** - An Eco assessment can provide a more comprehensive estimate of ash trees in the entire urban forest. Communities such as the City of Milwaukee and Oakville, Ontario have analyzed their Eco project data with and without ash trees to simulate ecosystem services at risk.

**i-Tree Canopy** - Conduct a survey to determine community or neighborhood tree canopy cover, which provides baseline data to track changes over time. Canopy can also be used for a historical analysis for communities that have already lost most of their ash trees. This information can be helpful for making the case for reforestation.

**i-Tree Design** - Much of the urban forest is located on private property. Introduce i-Tree Design to your community, which can help raise awareness of potential ash tree benefit losses on private property.

**i-Tree Pest Detection** - Integrate the Pest Detection protocol into your tree inventory or assessment project to quantify EAB signs and symptoms.

### Calculating comparative benefits using i-Tree Vue

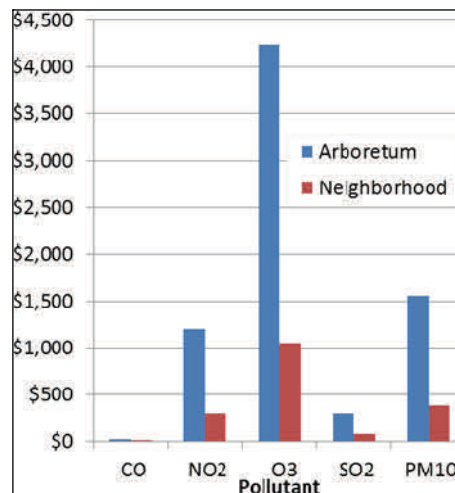
When making the case for trees and their stewardship it is not always enough to simply show the benefits that trees provide. There are times when it is more informative to show how the benefits of a heavily treed area differ from areas with fewer trees. Fortunately, such estimates of comparative benefits can easily be created with i-Tree Vue.

As an example, the benefits of a small (43-acre) urban arboretum were compared to the same land area in an adjacent neighborhood. The boundary for the adjacent neighborhood was created by using the horizontal translation function in GIS to shift a copy of the arboretum boundary to the appropriate location. Each boundary was then used to create the input data layers for i-Tree Vue.



Benefits were estimated for an urban arboretum (blue boundary) and a comparable area in an adjacent neighborhood (red boundary).  
Image from Google Earth

i-Tree Vue estimated that the arboretum, with 60% canopy cover, was storing four times as much carbon as its neighbor which had only 15% canopy cover. This translated to a value of \$65,000 for the arboretum's carbon storage versus \$16,000 for the neighborhood. Similar differences were seen in pollution reductions. The arboretum was removing 1,300 more pounds of pollution from the atmosphere each year for a total benefit of \$7,300. A more precise estimate using i-Tree Eco would likely show a larger discrepancy in benefits as i-Tree Eco accounts for differences in the relative size of trees—not just the amount of canopy.



It is important to remember that these benefits extend beyond the boundaries of the arboretum. The reduction in atmospheric pollutants, for example, will be shared by its neighbors. This simple application of i-Tree Vue can provide another way of evaluating and promoting the benefits of trees in urban areas and another way for forest managers to evaluate their resource.