What’s new with i-Tree

Tools for assessing and managing community forests

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Plan for today...

- An “All lands” approach
- i-Tree Landscape
- i-Tree Eco v6 & Streets update
The 2016 i-Tree Suite of Tools

Web-based, run in your browser

Installed on a Windows desktop or laptop
“All Lands” approach to natural resource stewardship

- Restore & sustain forest landscapes
- Make landscapes more resilient to climate change
- Enhance water resources
- Create jobs & sustainable communities
<table>
<thead>
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<th>Structure</th>
<th>Function</th>
<th>Value</th>
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<tbody>
<tr>
<td>state, county, region, watershed, neighborhood, home, etc.</td>
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Tree cover changes in cities

19 of 20 cities surveyed lost canopy over a 5yr period

Why private property trees matter

St. Elizabeth Hospital D.C. 2006-2011 - courtesy of Casey Trees
Why private property trees matter
Connecting trees and people...

Improving public health through air pollution removal

U.S. urban forests remove 717,000 tons of air pollutants per year worth $4.7 billion/year

Public health impacts: incidence reduction of:

- ~580 deaths / year
- ~580 emergency room visits / year
- ~330,000 asthma exacerbations / year
- ~485,000 acute respiratory symptoms / year

i-TREE Landscape vision

A spatially distributed model that estimates ecosystem services of trees on all lands.
i-Tree Landscape basics

- Web browser tool using:
  - Tree cover, impervious cover, land cover (NLCD 2011 & UTC where available)
  - Census block groups and places
  - County, state, congressional district boundaries
  - National Forests & Parks
i-Tree Landscape basics

Tree benefits derived from:

- Tree cover estimates
- Land classification
- UF & FIA data
- Local environmental variables
- Human populations – census data
- i-Tree Eco urban and rural pollution modeling and hydrology modeling
What does i-Tree Landscape provide?

- Canopy & impervious cover estimates
- Ecosystem service estimates
  - Carbon storage & sequestration
  - Air pollution reduction
  - Hydrology effects
- Assist with tree prioritization based on user criteria
Why i-Tree Landscape Matters?

- Online accessible
- Engage audiences visually
- Explore relationships of trees, people and land
- An “All lands” approach to estimating tree benefits
Welcome to i-Tree Landscape! v1.1 beta

Offering more than just beauty and shade, trees provide intangible benefits, such as removal of atmospheric carbon dioxide and pollution, stormwater reduction, temperature modification, and more. i-Tree Landscape allows you to explore tree canopy, land cover, and basic demographic information in a location of your choosing. With the information provided by i-Tree Landscape, you will learn about the benefits of trees in your selected location, see how planting trees will increase the benefits provided, and map the areas where you decide to prioritize your tree planting efforts.

By removing carbon dioxide, trees help mitigate climate change. The shade provided by urban tree canopies can also help minimize the urban heat island effect. In addition, trees intercept stormwater, which can reduce flooding and improve water quality, and reduce air pollution, such as ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, and fine particulate matter. Reduction of air pollution has proven benefits to human health - trees truly can enhance our lives! Click Get Started to begin an i-Tree Landscape project now.

i-Tree and its partners do not endorse any specific web-browser, but i-Tree Landscape has been tested to work well with modern versions of Chrome, Firefox, Internet Explorer, and Safari. Please, use the Feedback form to report issues.
Help and References

How to Use i-Tree Landscape

Welcome!

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Interested in viewing this How-To text while you work on your Landscape project? Click on the Help drop-down list, in the navigation bar, at the top of the page, then right-click the How to Use option and click Open Link in New Window. This will open the How-To text in a separate window so you can conveniently view both webpages at once.

Important Features and Tools

As you work through your i-Tree Landscape project, you will see that there are five important features that are available on every page, except Generate Results.

Map Display
The map is usually displayed on the upper portion of the page, and spans the entire width of the page. This is where you can view the various boundaries, datasets, and map layers and select the geographic regions to include in your analysis. Use the other features described below (i.e., search bar, navigation tools, and control panel) to customize the map display and data shown here and to make your geographic selection.

Search Bar
The search bar is located at the top-left of the map display and can be used to quickly view a location, such as a city, state, or street address. Enter your location in the search bar and click on the magnifying glass. (Note that you may need to click on the magnifying glass first in order to open the search bar if it has been "collapsed").

This feature is comparable to the search feature in routing and navigation software (e.g., car GPS, MapQuest, Google Maps, Bing Maps, Yahoo Maps, OpenStreetMap).
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Maps Layers

The following descriptions provide a general overview of the steps involved in completing an analysis with i-Tree. Click for more details and a thorough How-To!

Let's Get Started!
Location

The following descriptions provide a general overview of the steps involved in completing an analysis with i-Tree Landscape. Visit the Help page for more details and a thorough How-To!

Let's Get Started!
Step 1: Find a Location

The following descriptions provide a general overview of the steps involved in completing an analysis with i-Tree Landscape. Visit the Help page for more details and a thorough How-To!

Let's Get Started!
Step 2: Explore Location Data

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**Step 2: Explore Location Data**

The screenshot shows a webpage for exploring location data. The interface includes a map with different regions highlighted, and a table below the map with various data fields such as population, income overview, home overview, household type, home tenure, and educational attainment. The data can be displayed in tables or charts, and users can select different datasets and units for their analysis.
### Step 3: Tree Benefits

- **Dataset**: HiRos (2011, 2001)
- **Unit**: Metric (English)
- **Display**: Table (Chart)

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Step 4: Prioritize Tree Planting

How To Prioritize Tree Planting

Better areas to plant trees, based on existing tree canopy and impervious ground cover, can be expressed by a “Priority Planting Index”. This index is built upon individual indices calculated for each of the selected regions on the map. Each criteria affects a region's priority for tree planting:

- **Tree Stocking Level**: a low level indicates land area that could accommodate trees, but currently does not.
- **Tree Cover per Capita**: canopy area per person, prioritizing

Customize The Criteria For Prioritizing

- **Tree Stocking Level**
  - Importance (weight): 50%
Step 5: Generate Reports

Hydrology

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Explore
Other
Geographic
Aggregations

Waukesha
County by
Census block

Prioritize Tree Planting - ... Report - i-Tree Landscape

https://landscape.itreetools.org/maps/prioritize/

How To Prioritize Tree Planting
Better areas to plant trees, based on existing tree canopy and impervious ground cover, can be expressed by a “Priority Planting Index” (PI) calculation. The PI uses the following formula:

PI = (0.5 x T1 + 0.5 x T2) / 2

where T1 = percentage of canopy cover in the cell
and T2 = percentage of impervious cover in the cell

The PI ranges from 0 to 1, with higher values indicating greater priority for tree planting. The tool provides various datasets and options to customize the analysis. For more information, visit the i-Tree Landscape Help section.
Explore Other Geographic Aggregations
New Berlin by Census block
Explore Other Geographic Aggregations

New Berlin by Census block
Explore Other Geographic Aggregations

New Berlin by Census block

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Explore Other Geographic Aggregations

New Berlin by Census block

- Carbon Storage: $5,417,753, 38,909.7 Ton
- Carbon Sequestration: $82,280, 590.9 t/yr
- CO₂ equivalent Storage: $5,417,753, 142,572.5 t/yr
- CO₂ equivalent Sequestration: $82,280, 2,165.3 t/yr
Explore Other Geographic Aggregations

New Berlin by Census block
Explore Other Geographic Aggregations

New Berlin by Census block
How can i-Tree Landscape help you?

- Demonstrate tree value to audiences
- Assess trees beyond streets and parks
- Protect & plant trees where they do the most good
- Justify tree maintenance, management and assessment.
- Explore how tree canopy impacts people
Who can benefit by using Landscape?

- Elected officials & decision makers
- Advocacy groups
- Sustainability groups
- Private consultants
- Tree care professionals
- Tree preservation groups
- UF Coordinators
- Educators
i-Tree Eco v6 update

- Field-based assessment requiring sample or complete inventory data
- Flagship software based on latest science & local data
- Originally developed for assessing whole urban forest
- Adapted for individual tree assessments
- Reports structure, function, and value
i-Tree Eco Assess:

- Structure
- Function
  - Energy effects
  - Air quality
  - Carbon
  - Avoided runoff
  - Human health impacts
  - VOCs
- Value ($)
- Management info
  - Pest risk
  - Tree health
  - Exotic/invasive spp.
Eco v6 update highlights...

- New user interface design
- Multiple years of hourly pollution & weather data now available
- Simplified & new data collection options
Eco update highlights...

- Updated and expanded reporting options
- Forecasting capabilities
- Phase1 i-Tree Streets integration
Eco “Classic” Tree Data Variables

1. Tree species
2. Diameter at breast height DBH
3. Total tree height
4. Height to live top
5. Height to crown base
6. Crown width (N-S & E-W)
7. % Crown missing
8. Condition (% dieback)
9. Crown light exposure
10. Direction to building
11. Distance to building
12. Land use
The 2016 i-Tree Suite of Tools

Web-based, run in your browser

Installed on a Windows desktop or laptop
Thank you!

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