Spring 2024 – i-Tree Open Academy



Session 2: Online with MyTree, i-Tree Design, and i-Tree Planting

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i-Tree Open Academy 2024

Session 2: Tools for Individual Trees

Online with MyTree, i-Tree Planting, and i-Tree Design

March 27, 2024 1:00pm Eastern Time Davey Institute/USDA Forest Service













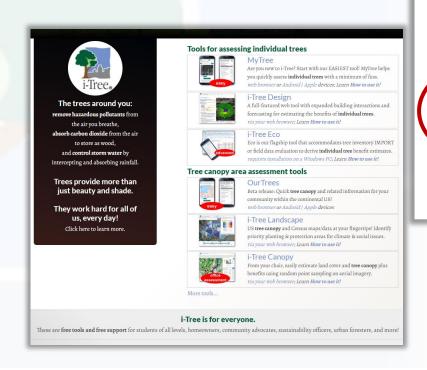




Accessing the Science of Tree Benefits

i-Tree

- www.itreetools.org
- Session 1 now online!
- Exercises available
- Use Chat for questions
- Certificates of completion available after Academy close



i-Tree Open Academy - Spring 2024

Register Here

What:

The i-Tree Open Academy virtual learning series is back for spring of 2024, with everything you need to explore the latest from the i-Tree suite of tools. Whether your work with trees involves planting, managing, funding, educating, or beyond -i-Tree can help you better understand the benefits that trees provide, the impacts of where those benefits are, and how to apply that science to your project goals.

Who:

This seminar-style offering will serve as both a refresher and an introduction to the newest tools and features, with one-hour virtual sessions over a six-week period. There is no fee for the Academy, and you can join all live sessions, or select those that meet your schedule and interests. Register by filling out the participant form.

We will be offering continuing education credits (CEUs) for both the International Society of Arboriculture (ISA) and the New Jersey state Urban and Community Forestry program. One CEU is available for each of the live sessions attended.

How:

All sessions will be streamed live via this Microsoft Teams link. They will also be recorded and posted below as well as on the i-Tree YouTube channel, so that you can catch up on anything you missed. There are no requirements for this course, and there will be self-directed exercises that you can use to gain experience using the tools. You are encouraged to submit any questions related to the course via info@itreetools.org, and there will be opportunities to ask questions during certain live sessions and office hours.

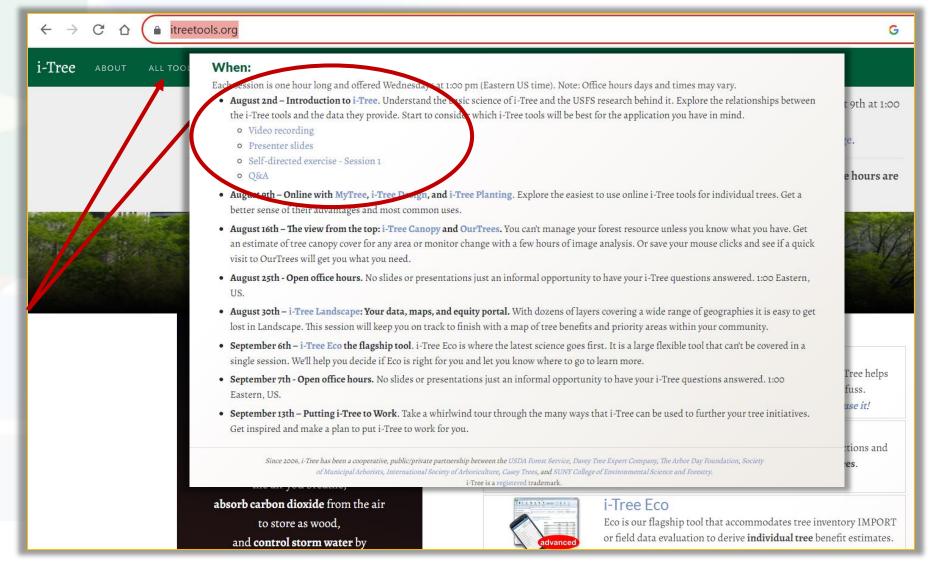
When:

- and Serion is one hour long and Sered Wednesdays at 1:00 pm (Eastern US time). Note: Office hours days and times may vary.
- March 20th Introduction to i-Tro. Understand the basic science of i-Tree and the USFS research behind it. Explore the relationships between the i-Tree tools and the data they project. Start to consider which i-Tree tools will be best for the application you have in mind.
- Video Recording
- Presenter Slides
- Self-Directed Exercise Session
- o Q&A
- Marcine, Collis and MyTree, i-Tree Design, and i-Tree Planting. Explore the easiest to use online i-Tree tools for individual trees. Get a better sense of their advantages and most common uses.
- Video Recording
- Presenter Slides
- Self-Directed Exercise Session 2

i-Tree Website Resources

i-Tree

- www.itreetools.org
- Access to all tools
- Methodologies and How-To Resources
- See projects that use i-Tree and learn how to get help



i-Tree

Support

i-Tree helps people understand the benefits that trees provide and our support of free support in using the tools, understanding the science (and pointing the wateraining).

OVERVIEW the support we p. For new users, here is a handy

Learn to use the i-Tre

- Video learning
- Manuals, Guides, and Wo
 Project Planning and
- Teaching

i-Tree Academy and Learnin

- i-Tree Open Academy St
- i-Tree Open Academy Spi watching and reviewing t
- i-Tree for Funding Oppor Urban and Community F 8th and 10th, All sessions
- About the Domestic i-Tro
 Capstone Project Re

Understand the scien

- Unrierstanding I future goals, and opport leader with the USDA Fo
 US Forest Service we (2021).
- Addtional Methods Doct
- Software and Science cha

Support Overvie

There are several options for seeking help with including:

- i-Tree System Requirements for Installin
- Video Learning
- i-Tree Manuals, Guides, and Workbooks
- International Use of i-Tree

Individuals interested in using i-Tree apolica Notes section of the website and refer to do

Reporting Technical Problem

If you are having a problem with an i-Tree app team for assistance:

- · i-Tree application and version that you ar
- · Computer and system information such a
- A description of the problem encountered
- Screen captures (Ctrl + Print screen) and 6
- We may ask you to send us a copy of your

International Technical Support

The expansion of i-Tree application use intern resolve international technical support questi application function and challenges of adaptit technical support and suggest additional reso

Feedback Page

The i-Tree Feedback Page is a quick webform about your projects.

User Forum

The i-Tree User Forum is a moderated discuss communicate experiences and view frequentl Forum requires registration, which is separat New Forum registrations require administrat account is not activated, you can still access a

i-Tree Tools Resource Guide

This guide is intended. The experienced users to find the tools, guides, and other resources on the i-Tree Website that you need to help make your project a success.



Find the tools

The core tools are all available directly on the homepage www.itreetools.org. This includes the tree assessment tools, MyTree and i-Tree Canopy and i-Tree Landscape. Beyond these web-based tools, you can also learn more about i-Tree Eco from the homepage or head directly to the downloads page to request your download link. For additional tools like i-Tree Species and i-Tree Planting visit the All Tools page.

Learn to use the tools (for most of the web-based tools go to Menu>Help to find the "How to use" guide)

<u>Video walkthroughs</u> – Start by checking our learning videos to see if we have any videos to help you get started or complete specific tasks. You can also head to our <u>YouTube channel</u> for even more videos, including recorded webinars and presentations.

<u>Manuals, Guides, and Workbooks</u> – This page includes manuals for individual tools along with guides and workbooks to help you complete specific tasks like post-stratifying your i-Tree Eco project or looking up synonym species in the i-Tree database. Similar documentation in other languages can be found <u>here</u>.

<u>Teaching with the tools</u> – We have a collection of curricula and teaching resources created by the i-Tree team and others.

See how others have used the tools

<u>User's reports</u> – Reports shared with the i-Tree team from a variety of different applications of the i-Tree tools. Additional international reports in a variety of languages can be found <u>here</u>.

<u>Project profiles</u> – For selected user's projects we have a deeper dive into how the project was used to change community perceptions and/or influence management strategies.

Understand the science of i-Tree

<u>Understanding i-Tree</u> – This document is the starting point for all explorations of the science underlying the i-Tree models and estimates. It provides summary descriptions of all model workings and links to peer reviewed publications for additional details.

<u>Methods documentation</u> – A collection of many of the publications, white papers, and data sources representing the science of i-Tree, broken down by tool and topic.

<u>Software</u> and <u>Science</u> change logs – The i-Tree tools are continually updated with the latest research. Sometimes, the software is updated before the documentation can be added to the website. Check out the software and science change logs for the latest changes.

For international i-Tree users

<u>International use</u> – Find information about the use of i-Tree outside the US. You can also find <u>reports</u> shared by international users and available <u>translated documentation</u> linked at the bottom of that page.

Get support

Email us – If you can't find the answers to your questions on the i-Tree website you can always reach our support team by emailing info@itreetools.org.

<u>Feedback form</u> – Use the feedback form if you have suggestions on how to improve the tools or if you would like to share your own project on the i-Tree website.

<u>User's Forum and FAQs</u> – If you have a question others could benefit from, or you think you may have stumbled across a common problem, feel free to post to or search the forum.

Foundation, So

4/29/22

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Plan for today

- 1. Introduce the online tree tools
- 2. MyTree Demo
- 3. i-Tree Design Demo
- 4. i-Tree Planting Demo
- 5. Comparing the online tree tools







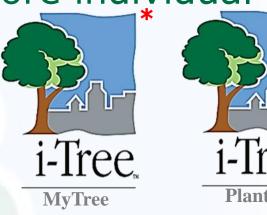


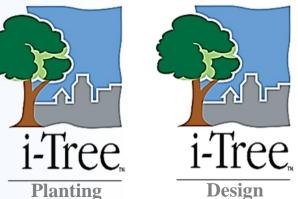
The 2023 i-Tree Suite of Tools





Core individual tree tools





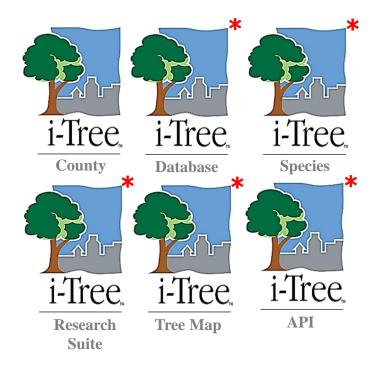
Core canopy tools







Utilities



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*i-Tree Tools that can be used internationally



i-Tree is a
Cooperative
Initiative
among these
partners















i-Tree Tool Relationships



i-Tree Engine/API:
Individual tree benefits and projections

Design

Eco: Tree/Population Ecosystem Services Calculator







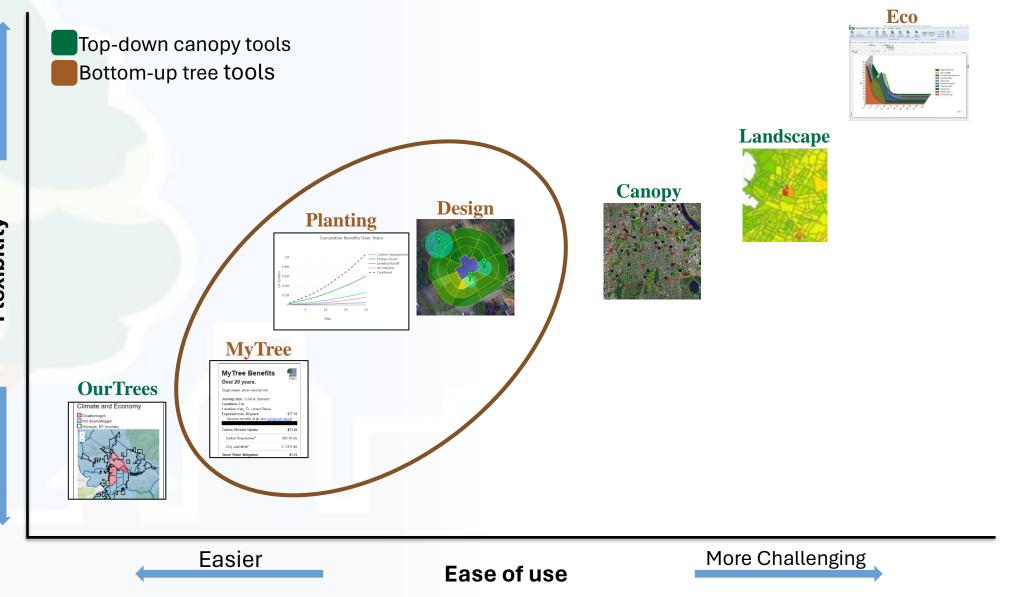






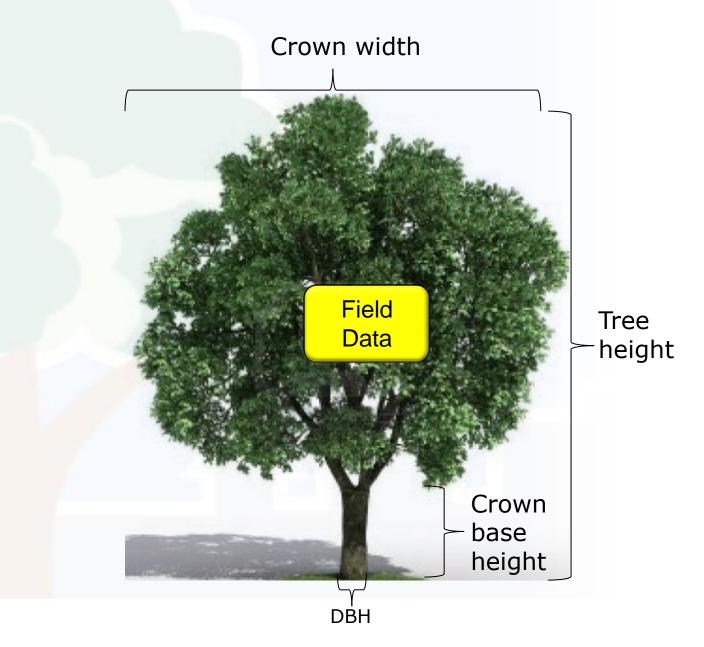






i-Tree model basics: data tree benefits





Key field variables

- DBH
- Species
- Crown measurements
- Tree health
- Building interactions
- Light availability

Simple tools require simplifying assumptions

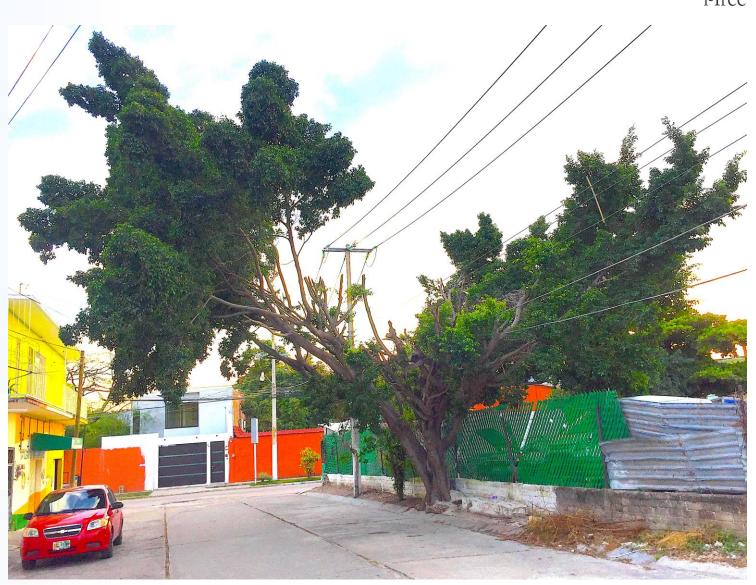


- Crown assumptions
- Less specific inputs
- Fewer outputs
- Mortality assumptions

Key field variables

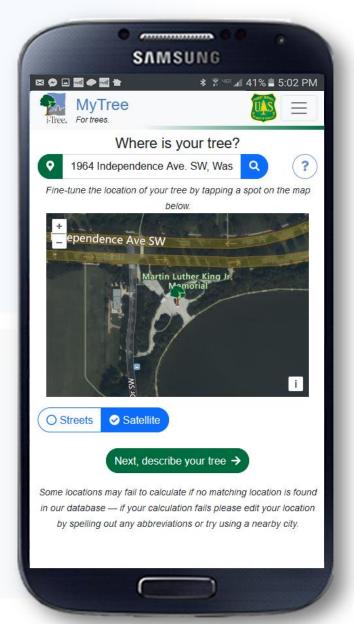
- DBH
- Species
- Crown
 measurements

 Modeled
- Tree health
 Simplified
- Building interactions < Simplified
- Light availability
 Simplified



Let's give MyTree a try





MyTree: Common uses

- Education
- Engagement
- Connect people to the benefits of the trees around them

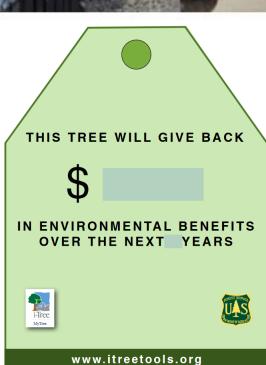


[Photo Source: L. Paqueo 2022]



Photo Source: J. Garden 2017





https://www.unri.org/news/treetags042019/



MyTree: Strengths and limitations



Strengths

- Simple to use
- Created for mobile devices
- Easy to grasp outputs
- Quick
- 20 year projection

Limitations

- No ability to save projects
- Not great for more than 10 trees
- No internet = no MyTree

Potential Upcoming Features

- Mapping collected trees
- Support for group projects



i-Tree Design

Demonstrate the Value of Trees

Davey Institute/USDA Forest Service



















Features -

- Accessible online
- P Easy to use, easy to edit
- Estimates current year, benefits-to-date, and future benefits
- Printable report summary

Considerations – Limited to smaller scale projects, benefits processing can be ...slow, can not export tree data









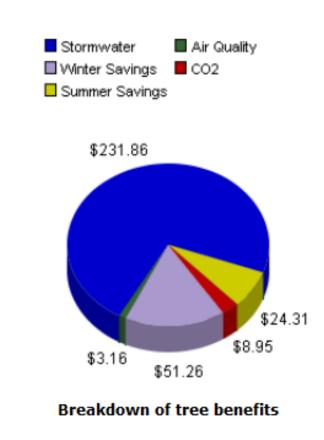
- Can be used on a tablet...but test it first
- Reports can be printed or you can save and email a PDF document
- Project saving and sharing is possible



Provides Quantities and \$ Value of Tree Benefits



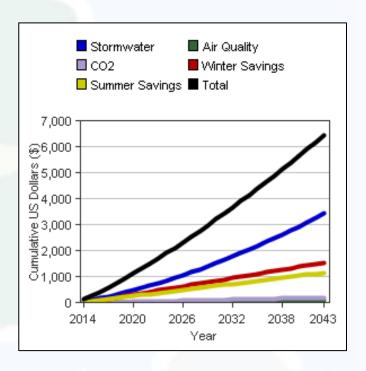
- Estimates 4 core ecosystem services -
 - CO₂ reduction
 - Air pollution removal
 - Stormwater interception & avoided runoff
 - Heating and cooling energy effects when trees are near buildings



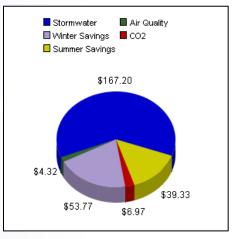
design.itreetools.org

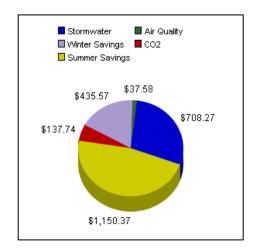
Shows Trees Are an Investment





\$6,476 worth of benefits over the next 30 years ...and growing





Benefits in 2044 = **\$272**

To date = \$2,470

Advocate for Tree Care



† Highlight gems, suggestions for overall health and diversity











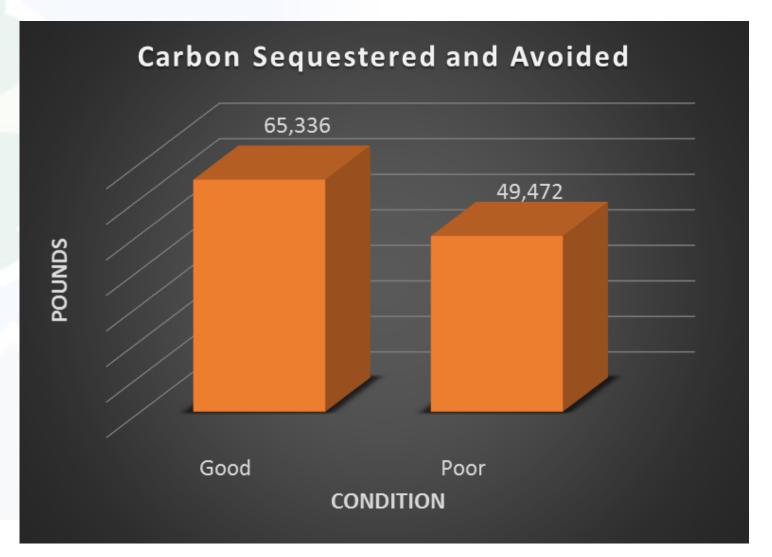




Advocate for Tree Care



- Reduce risk
- Increase benefits



Lng: -121.32975

Engage Residential and Small Commercial Property Owners

Existing Trees

My trees have value?

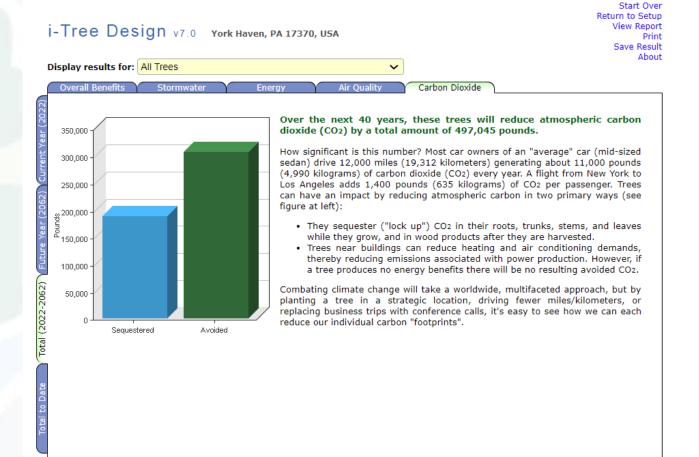
Proposed Trees

- Where to plant
- Species selection



Report Features: relatable examples



















Benefit Based Approach to Choosing Species Benefit Comparison of Different Tree Species

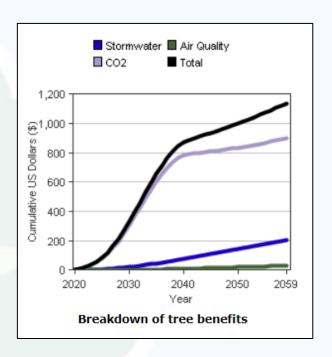


netpsplantfinder.com/



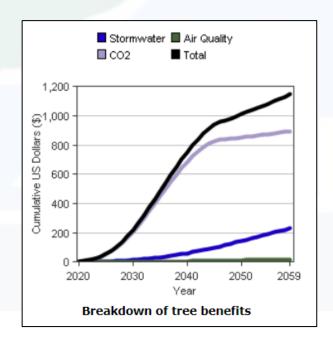
plantmaster.com/share/eplant.php?plantnum=24550

Compare 9 northern hackberry (medium size) with 6 Chinese elm trees (large size)





9 hackberry trees will provide **\$1,139** worth of benefits over the next 40 years including diverting **23,197 gallons** of stormwater and remove **438 pounds** of air pollution ...



...6 Chinese elms will provide \$1,148 worth of benefits over the next 40 years including diverting 25,860 gallons of stormwater and remove 315 pounds of air pollution



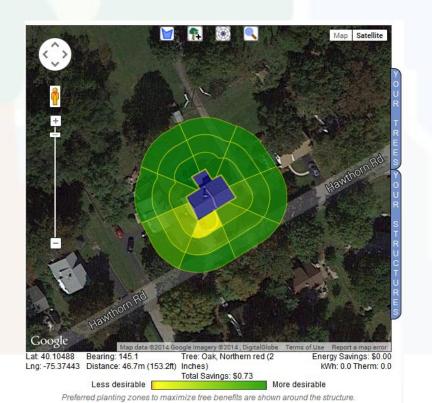
i-Tree

...or access from
www.itreetools.org

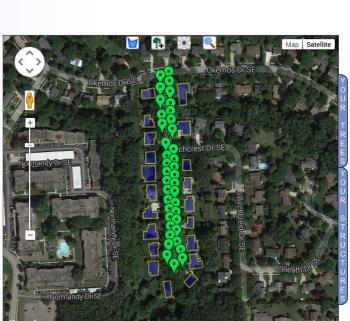


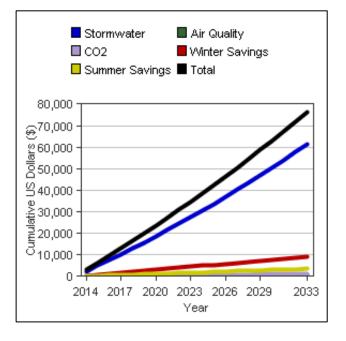
i-Tree Design: Common uses

- Connecting with property owners
- Engaging visuals
- Landscape planning
- Scenario evaluation











i-Tree Design: Strengths and limitations



Strengths

- Great visuals (maps, benefits web, graphs)
- Shareable report
- Interactive evaluation

Limitations

- Limited to a handful of buildings and few dozen trees
- Helps to have a mouse for drawing

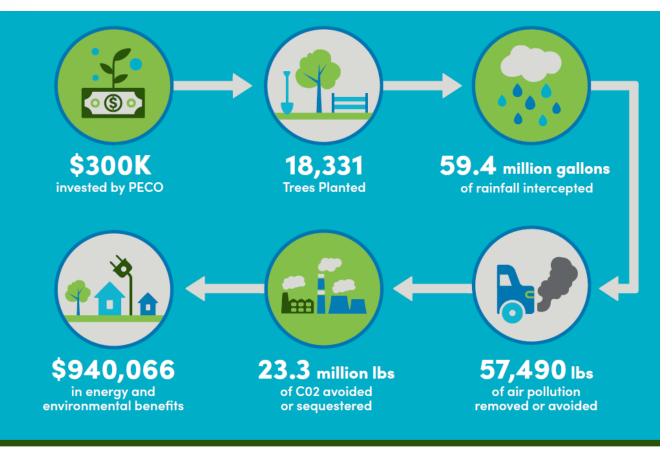
Upcoming Features

- Modernization
- Expanded capacity

i-Tree Planting: Common uses

- Tracking planting projects
- LEED Certification of landscapes
- Carbon accounting
- Funding requests/reporting
- Sustainability impact reporting









2019-2021 Tree Planting

Projected 20 year cumulative values Source: US Forest Service Northern Research Station & iTree i-Tree Planting: Example Use





SCHOOLS

NTS FOR NEW JERSEY LEGES, AND UNIVERSITIES



i-Tree Planting: Strengths and limitations



Strengths

- Easily project thousands of trees
- Flexible projection length
- Includes mortality
- Editable parameters

Limitations

- No import ability
- Simplified mortality schemes

Upcoming Features

- Annual results
- Spreadsheet importing

Flexible applications

- Compare species
- Evaluate the impact of maintenance (change condition or mortality)
- Estimate time to replacement for removed trees
- Evaluate policy decisions

18 inch red maple \$40.35 / yr in benefits 24 times the benefits of new tree 2 inch red maple \$1.64 / yr in benefits

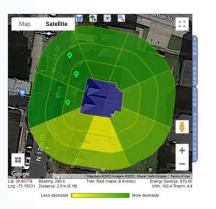
Tool Characteristics





- Great for groups
- Quickest and easiest
- Simple to use on a mobile device
- Education settings
- Good for up to 5-10 trees per person

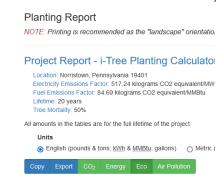




- Great visuals
- Connect people to their own trees
- Multiple buildings and a few dozen trees
- Nice to have a mouse for drawing







- Perfect for planting projects
- Easily project hundreds of trees
- Ideal for carbon accounting
- Funding requests/reporting
- Use if you have many trees of each species
- More convenient on a desktop/laptop

Give the homework a try



