

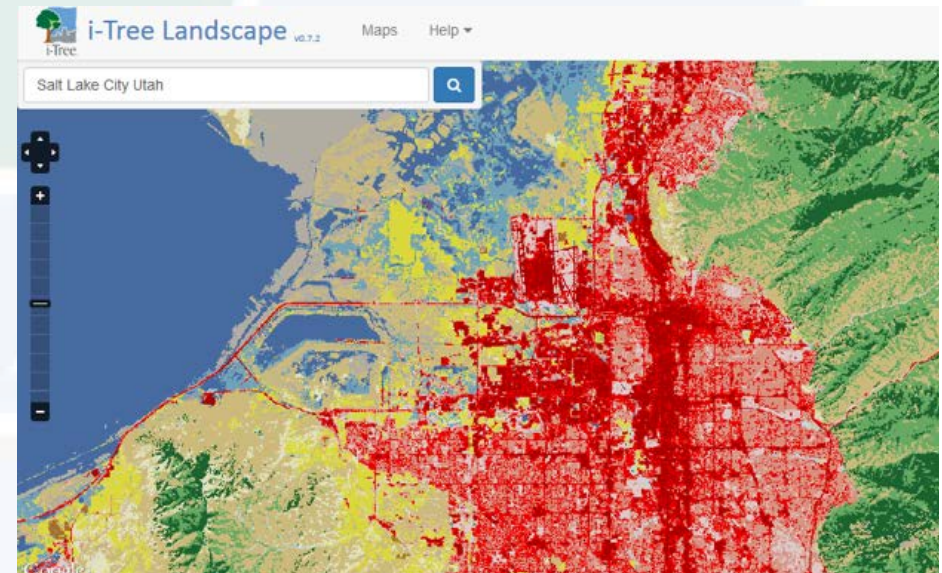


Assessing your Urban Forest Resource with i-Tree

*Al Zelaya
Urban Forester
The Davey Institute, Chicago, IL*

Plan for today...

- 🌳 Overview of i-Tree 2015 core tools
- 🌳 Ground-based assessment tools: *Streets, Eco & Design*
- 🌳 Aerial assessment tools : *Canopy & Landscape*
- 🌳 Implementation strategies



i-Tree is a
Cooperative
Initiative among
these partners



i-Tree...

“Putting USFS Urban Forest science into the hands of users”

- Free public domain software
- Based on peer-reviewed research
- Technical support
- Continuously improved

www.itreetools.org

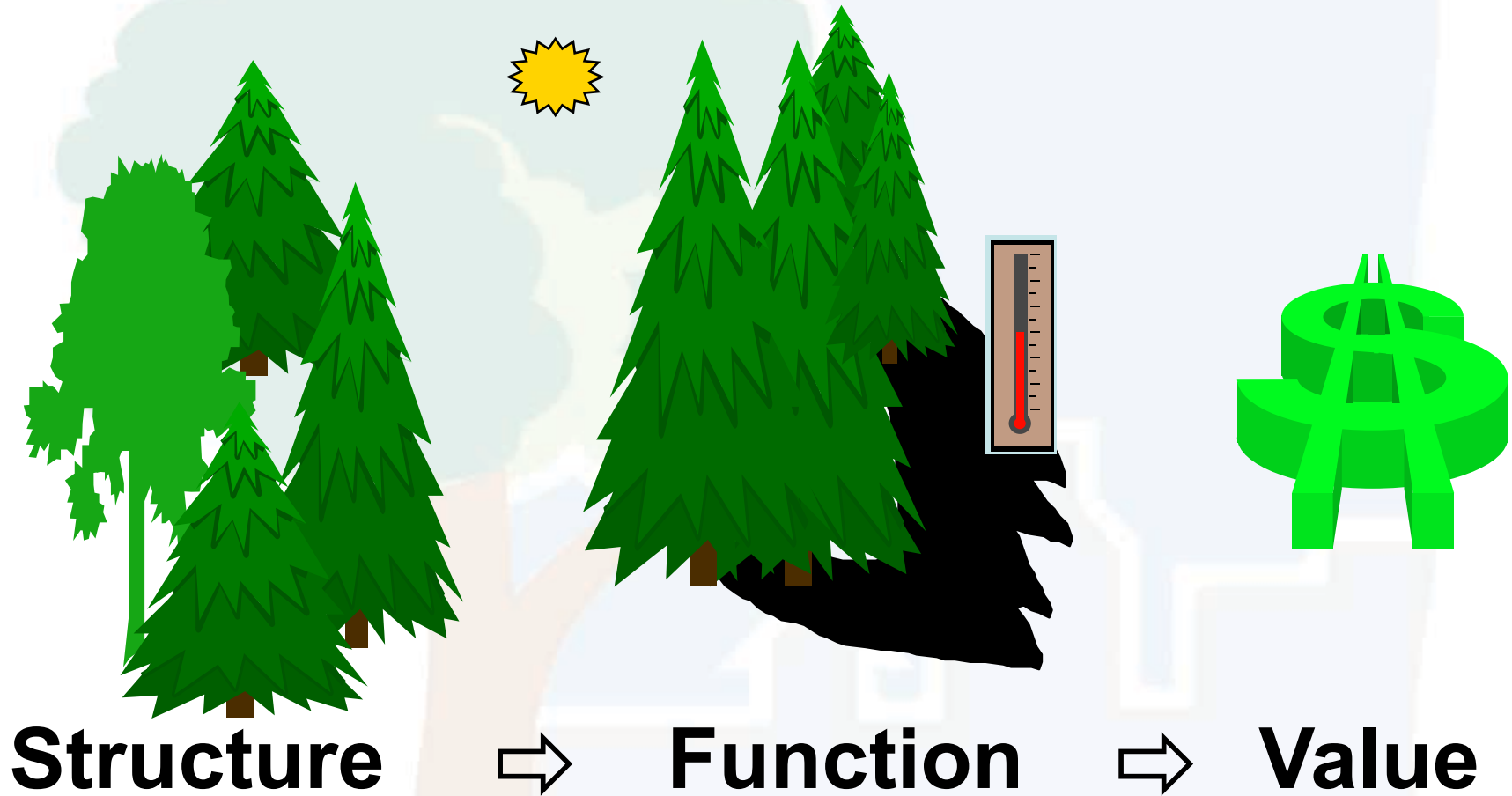
The screenshot shows the i-Tree website homepage. At the top, there is a navigation bar with the i-Tree logo, the tagline "Tools for Assessing and Managing Community Forests", and a "Get the Tools" button with a CD icon. To the right is a search bar and a login/register section with fields for "Username" and "Password", and buttons for "Search", "Login", and "Register". Below the navigation bar is a large banner image of a city skyline at night with a bridge over a river. Underneath the banner is a horizontal menu with buttons for "Home", "About", "Applications", "Utilities", "Resources", "Support", and "News". The main content area is divided into three columns. The left column features a "Desert Canopy Ecosystem Analysis" section with a tree image and a "A US Forest Service Northern Research Station Guide" section with a book cover titled "A Guide to Assessing Urban Forests". The middle column has a "What is i-Tree?" section with a detailed paragraph about the software's origin and use, followed by a "Visit the Video Learning Page" section with a video player icon. The right column contains a "What's New?" section with several news items, including "Check out updated April 2015 i-Tree User Maps", "i-Tree Eco: Modelling the Lungs of our Cities - Part1", "i-Tree Eco: Modelling the Lungs of our Cities - Part2", "Breathe Easy: Urban Forests for Human Health", "Baltimore Gas and Electric provide over 4,200 free trees", and "Delmarva Power to provide 1,500 free trees". At the bottom of the main content area, there is a "Follow i-Tree on Twitter" button.



i-Tree is a
Cooperative
Initiative among
these partners



The i-Tree Foundation:



i-Tree is a
Cooperative
Initiative among
these partners



Structure → Function → Value



A Sacramento neighborhood. Credit: City of Sacramento

....city, region, state, watershed or neighborhood scale

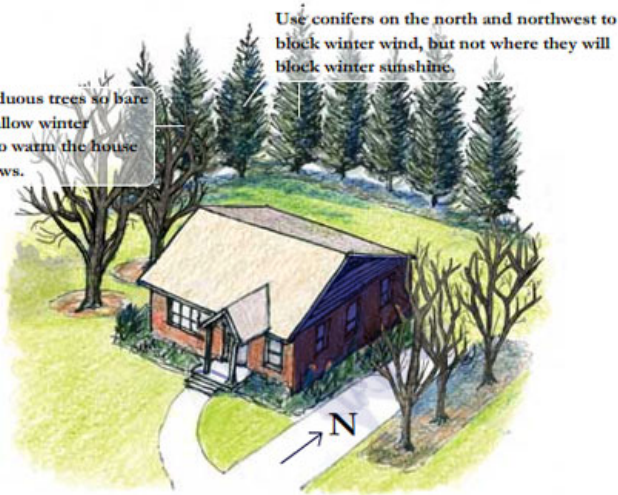


*i-Tree is a
Cooperative
Initiative among
these partners*



Structure → Function → Value

Plant deciduous trees so bare branches allow winter sunshine to warm the house and windows.



Plant on the west and northwest to provide mid-to-late afternoon shade in most locations.



Shade east and west windows, but prune lower branches to prevent blocking the view.

Plant shade trees east patios, driveways, and air-conditioning units.



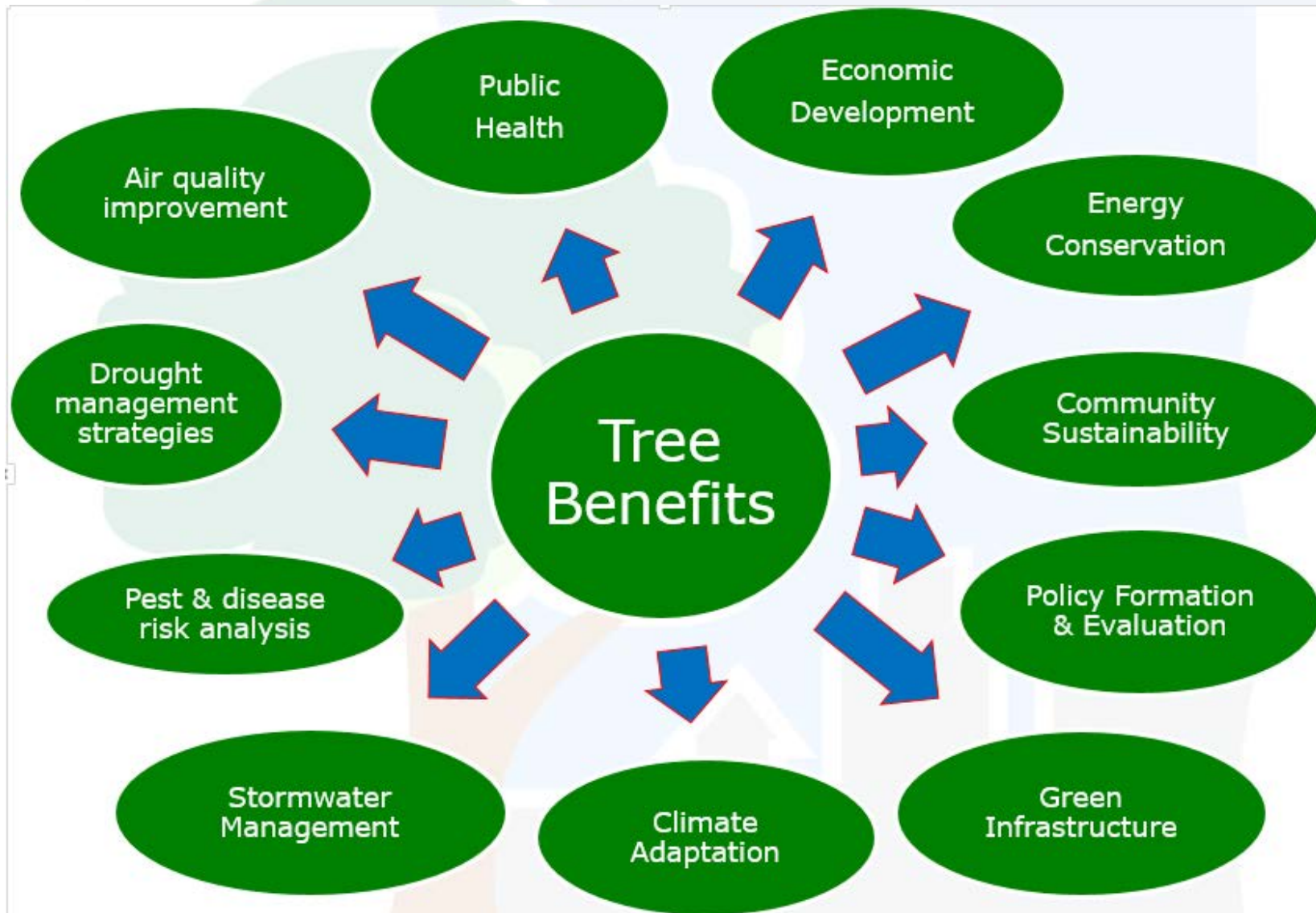
Homeowner scale



i-Tree is a Cooperative Initiative among these partners



Why a tree benefit approach matters...



i-Tree is a
Cooperative
Initiative among
these partners



i-Tree Suite of Tools 2015

Web-based, run
in your browser



Installed on a
Windows
desktop/laptop



i-Tree is a
Cooperative
Initiative among
these partners



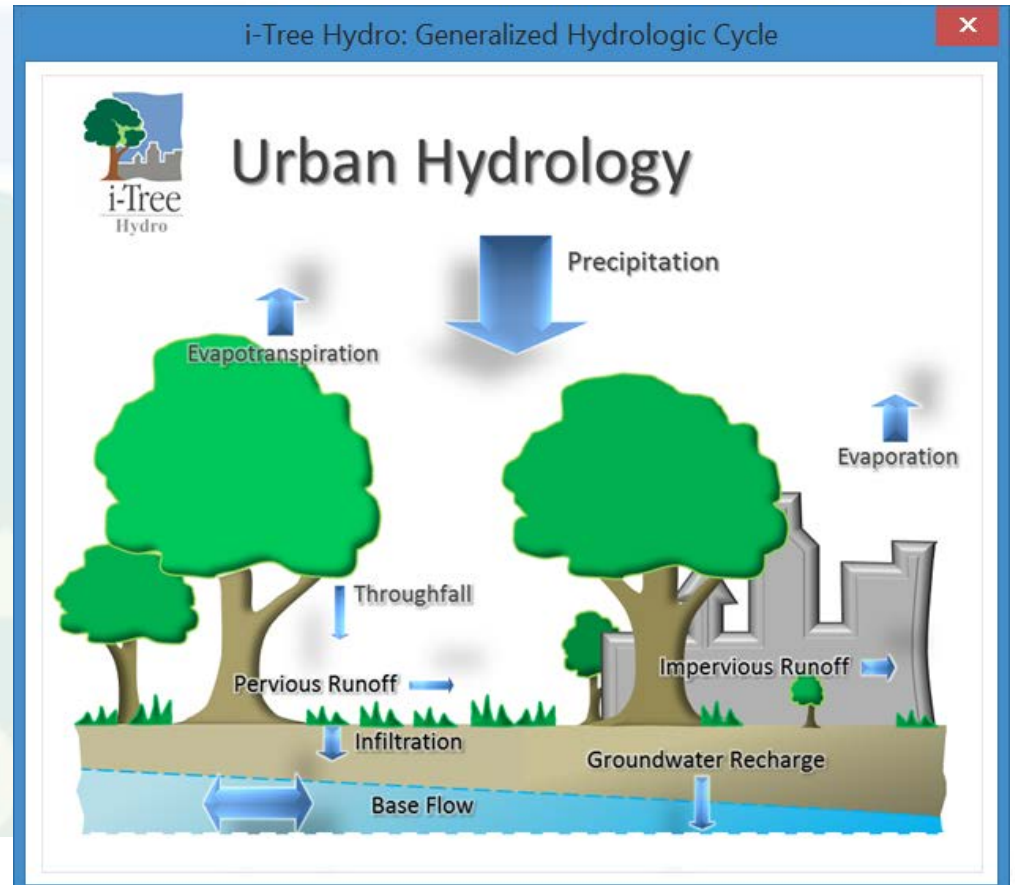
i-Tree Hydro

Quantifies effects of:

- Tree cover
- Impervious cover

on:

- Stream flow
- Water quality



Model Parameters

Streamflow Predictions

	Total Runoff		Baseflow		Pervious Flow		Impervious Flow	
	Base	Alternative	Base	Alternative	Base	Alternative	Base	Alternative
Total Flow (cubic meters)	6,006,586.2	5,783,460.5	4,172,666.0	4,304,124.9	10,053.5	10,459.8	1,823,866.8	1,468,875.9
Highest Flow (cubic meters / hour)	15,080.6	13,412.9	1,205.5	1,243.0	4,018.9	4,181.4	13,365.8	10,775.4
Lowest Flow (cubic meters / hour)	23.7	24.4	23.6	24.3	0.0	0.0	0.0	0.0
Highest Flow Date	01/13/12	01/13/12	01/01/12	01/01/12	01/13/12	01/13/12	08/10/12	08/10/12
Lowest Flow Date	09/18/12	09/18/12	09/18/12	09/18/12	01/01/12	01/01/12	01/01/12	01/01/12
Median Flow (cubic meters / hour)	503.8	511.0	436.1	449.9	0.0	0.0	0.2	0.2

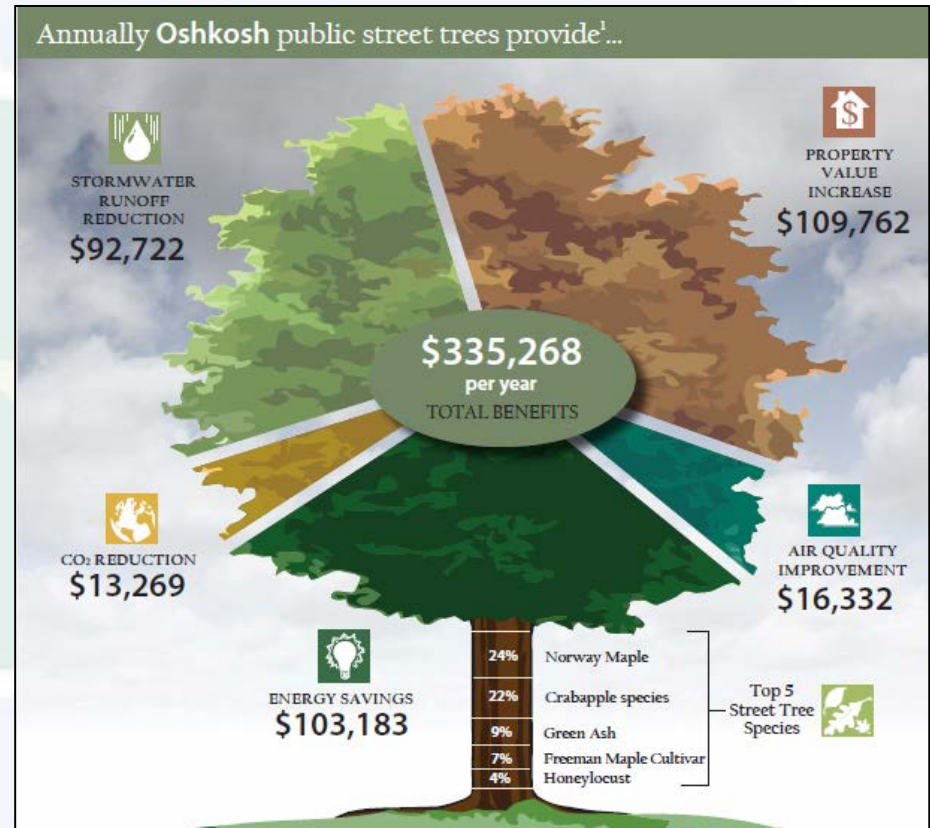


i-Tree is a Cooperative Initiative among these partners



i-Tree Streets

- **Structure** (species condition, age distribution, importance, etc.)
- **Function**
 - Energy
 - Air pollution
 - Stormwater interception
 - Carbon
 - Aesthetic value
- **Values (\$)**
- **Some management needs**
- **Pest detection module** (optional)



i-Tree is a Cooperative Initiative among these partners



i-Tree Streets: Key considerations

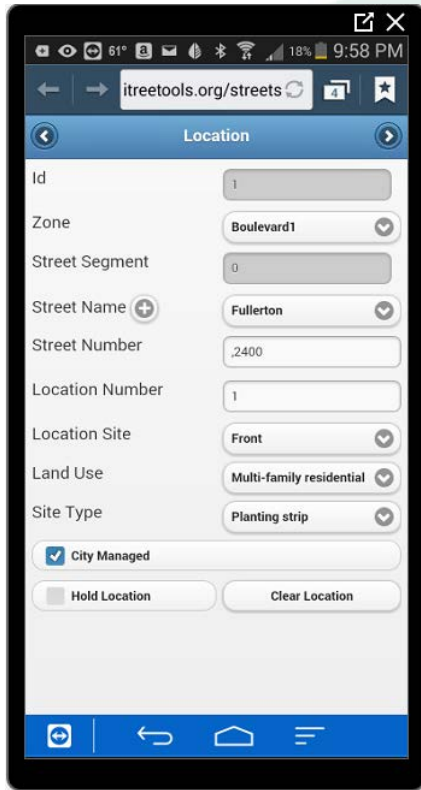
- Regional U.S. model
- Easy to use
- Can import in existing street tree inventories
- Limitations for non-street tree applications
- Some data flexibility
- Not being upgraded in the future
- Future crosswalk to Eco



i-Tree is a Cooperative Initiative among these partners



i-Tree Streets online learning resources



www.itreetools.org/mobile/

i-Tree Tools's YouTube videos
Videos shared publicly in i-Tree Tools's YouTube channel.

- i-Tree Streets part6 submitting a ...
- i-Tree Streets part5 intro to mobil...
- Streets creating a project part4 a...
- Creating an i-Tree Streets project ...
- Creating an i-Tree Streets Pilot Pr...
- Creating an i-Tree Streets Pilot Pr...
- Example of correcting shapefile e...
- i-Tree Eco version 5.x PDA setup ...

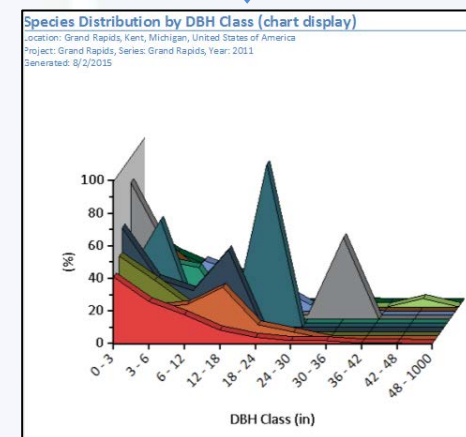


i-Tree is a Cooperative Initiative among these partners



What is i-Tree Eco?

- Field-based assessment requiring inventory data
- Flagship software based on latest science & local data
- Originally developed for assessing whole urban forest
- Adapted for individual tree assessments
- Internationally functional

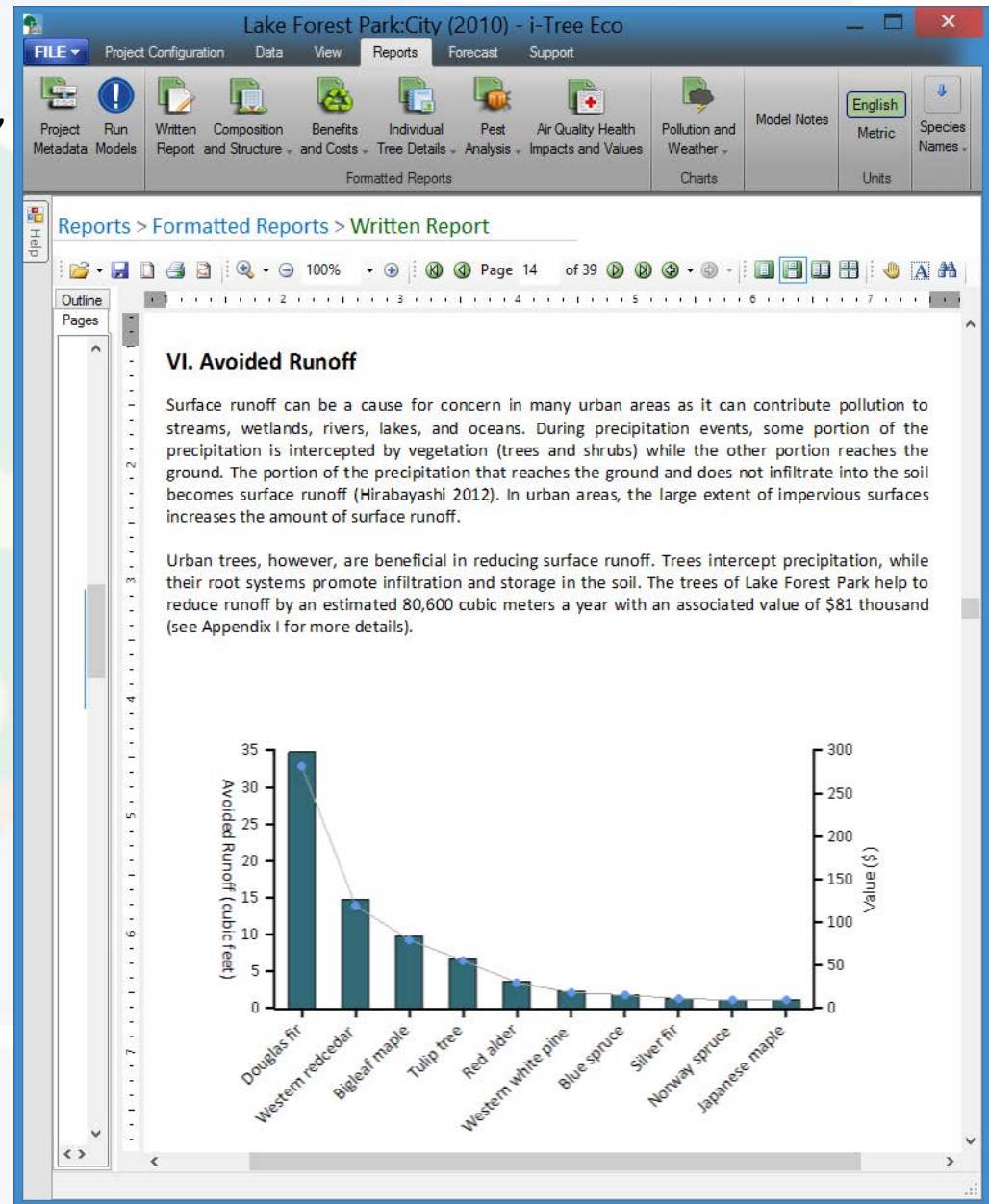


i-Tree is a
Cooperative
Initiative among
these partners



i-Tree Eco Assess:

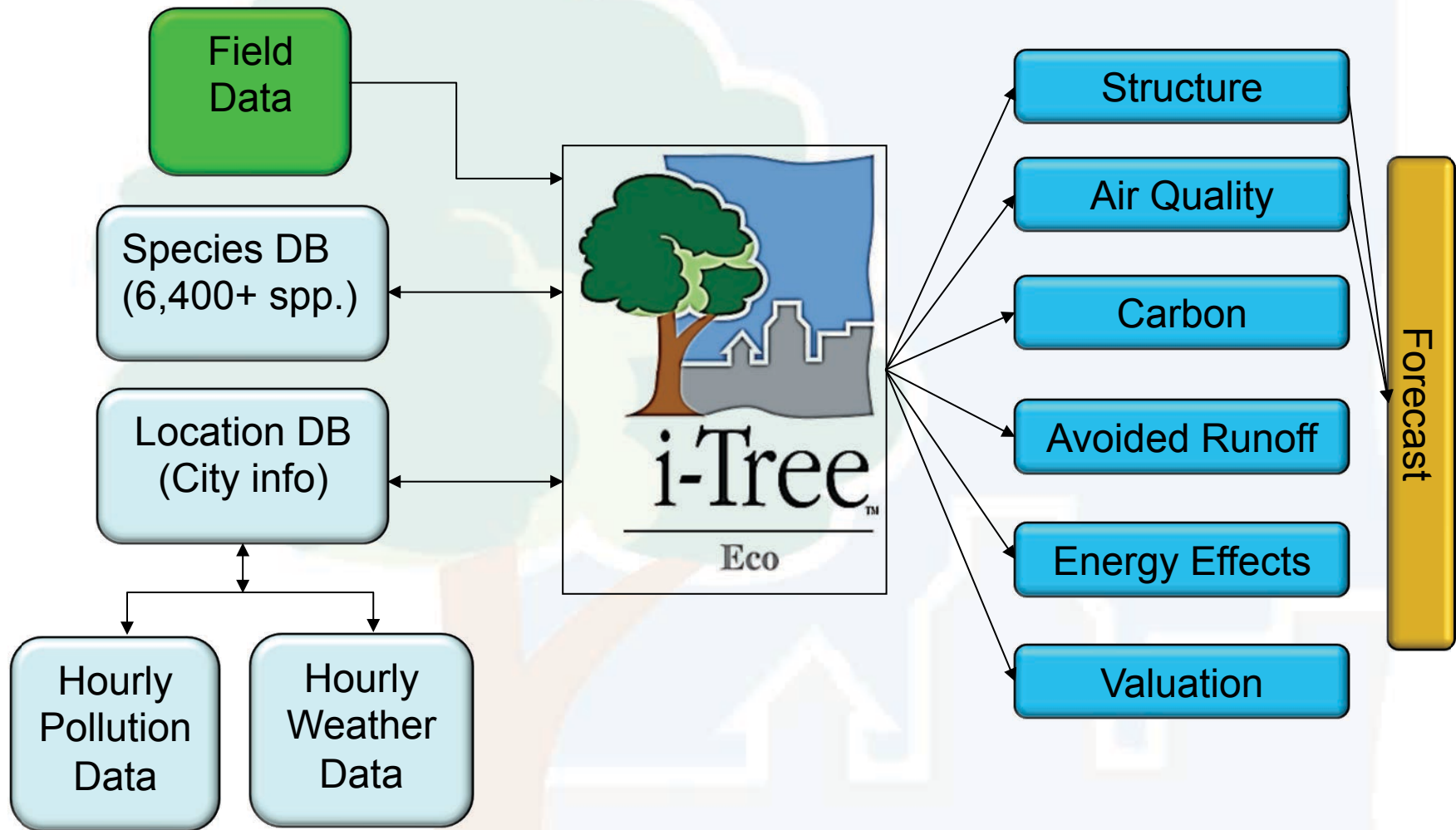
- Structure (leaf area, biomass, condition, diameter distribution, importance, etc.)
- Function
 - Energy effects
 - Air quality
 - Carbon
 - Avoided runoff
 - Human health impacts
 - VOCs
- Value (\$)
- Management info
 - Pest risk
 - Tree health
 - Exotic/invasive spp.



i-Tree is a
Cooperative
Initiative among
these partners



i-Tree Eco Model Schematic



www.itreetools.org/resources/archives.php



i-Tree is a
Cooperative
Initiative among
these partners



Providence i-Tree Eco Summary

Urban Forest Characteristics

- Number of trees: 415,000, or 34.4 trees per acre
- Tree cover: 23.9%
- Structural values: \$582 million
- Most common species: Norway maple, Northern red oak, Honeylocust
- Percentage of trees less than 6" (15.2 cm) diameter: 49.6%
- Ground Cover: 59% impermeable vs. 41% permeable

Environmental Benefits

- Total annual environmental benefits: \$4.7 million per year
 - Pollution removal: 91 tons/year (\$3.5 million/year)
 - Carbon sequestration: 4,030 tons/year (\$287 thousand/year)
 - Avoided runoff: 31.5 million gallons/year (\$281 thousand/year)
 - Building energy savings: \$591 thousand/year
 - Avoided carbon emissions: 500 tons/year (\$35.6 thousand/year)
- Total estimated carbon storage: 124 thousand tons (\$8.80 million)

Threats to our Urban Forest

- Pest Impacts: Asian Longhorned Beetle has the potential to impact 43.2% of the urban forest, a potential loss of \$265 million. Emerald Ash Borer would affect 4.2%, worth \$25.4 million.

Providence's Urban Forest: Structure, Effects and Values



i-Tree Eco System Analysis
February 2014

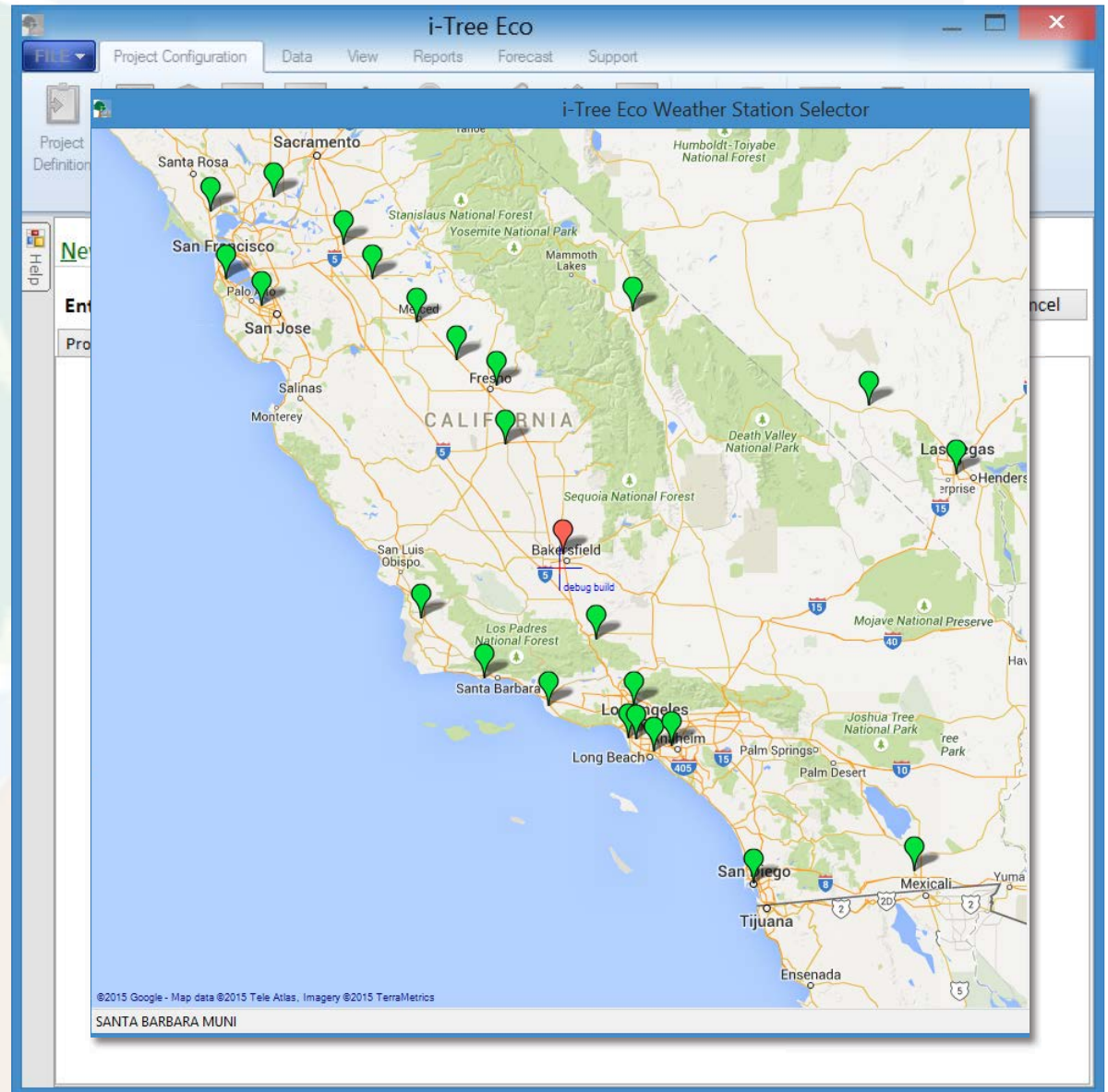


i-Tree is a
Cooperative
Initiative among
these partners



Eco 2015 Highlights...

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

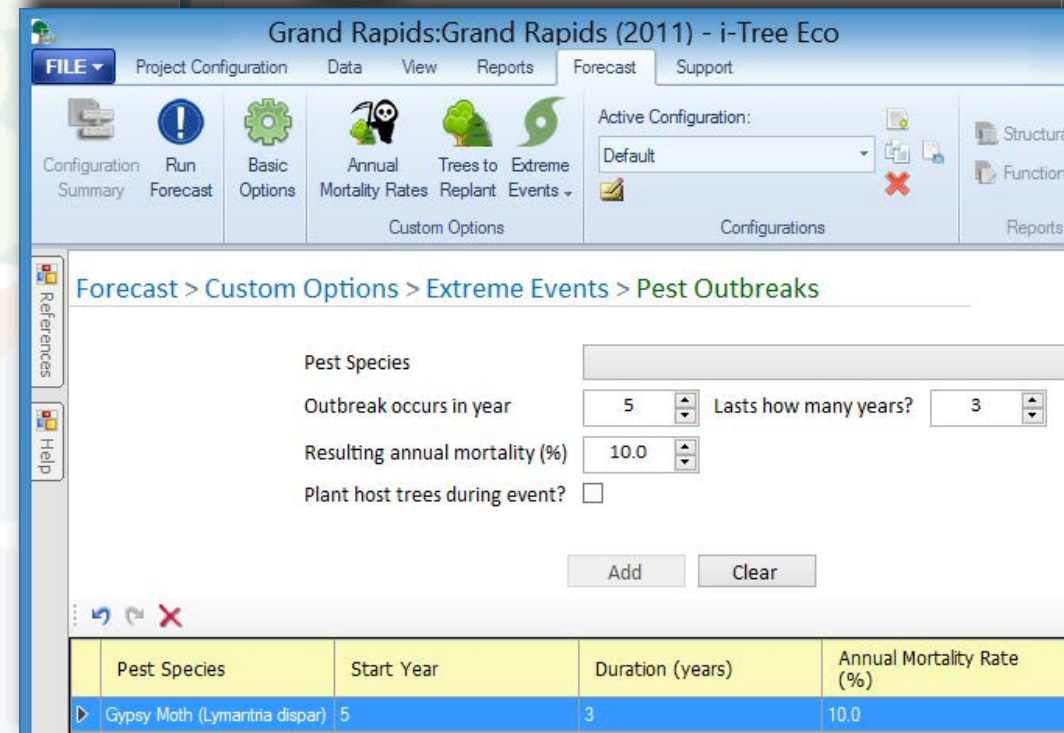
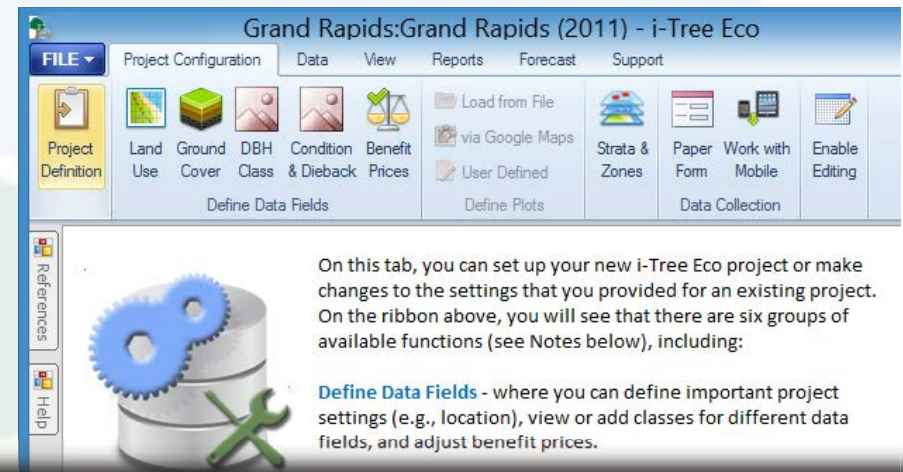


i-Tree is a
Cooperative
Initiative among
these partners



Eco 2015 Highlights...

- Forecasting capabilities
- Updated and expanded reporting options
- Automated processing for USA, AUS, CAN & UK projects



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



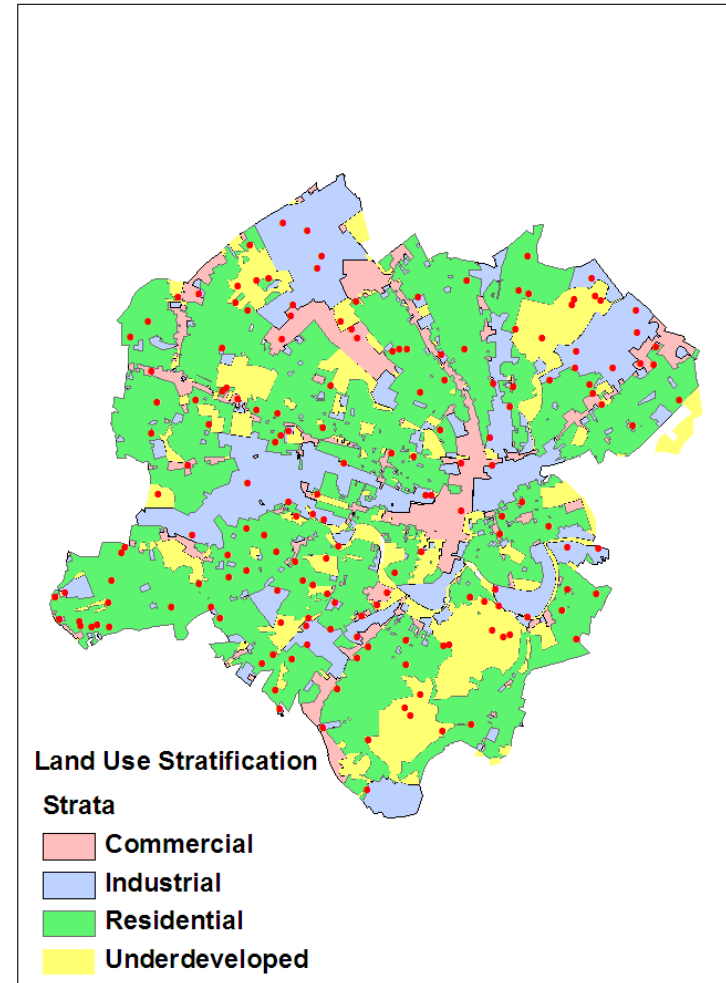
i-Tree is a
Cooperative
Initiative among
these partners



Eco Project Considerations

Inventory Methods

- Complete inventory (parks, campuses, street trees)
- Random sample plots (recommend 200, 1/10th acre for larger urban areas)
- Stratification options (sample & inventories)

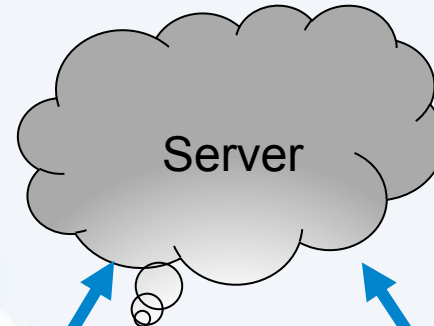


i-Tree is a
Cooperative
Initiative among
these partners



Eco Data Collection

- Web-enabled mobile device, ~~PDA~~ or paper



Eco inventory data link

<http://goo.gl/ISzU2E>

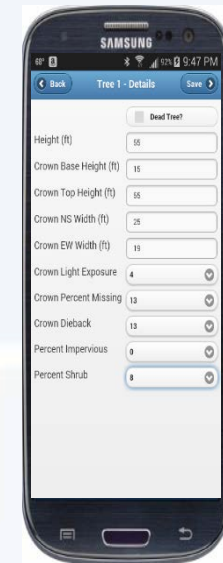


Eco sample plot data link

<http://goo.gl/nMzjw0>

ID	Strata	Address	Date	Crew	Contact Info
1	Large Resident	beach-front dr	8/25/2010	Team 1_Mike	
2	Large Resident	lake washington	8/25/2010	Team 1_Mike	
3	Large Resident	lake washington	8/25/2010	Team 1_Mike	
4	Large Resident	10412 51st place	8/30/2010	Team 1_Mike	
5	Large Resident	various 12th projects	8/30/2010	Team 1_Mike	
6	Large Resident	longshore water district vacant lot located at 19520 47th ave. ne.	8/11/2010		
7	Large Resident	3321 ne 203rd	8/22/2010		
8	Large Resident	west side of acacia com	8/23/2010		
9	Large Resident	Alacra Cemetery	9/18/2010		
10	Large Resident	heavily covered invasive homalayan black berry	9/18/2010		
11	Large Resident	mouthpiece utility district 47th ave ne	9/18/2010		
12	Small Resident	15327 beach drive ne.	10/14/2010		
13	Small Resident	19071 target st	10/1/2010		
14	Large Resident	5105 ne 180th st	8/17/2010	Team 1_Mike	
15	Large Resident	3047 ne 180th st	10/6/2010		
16	Large Resident	18624 47th pl ne	9/28/2010	Team 1_Mike	
17	Large Resident	18620 47th ave ne.	10/4/2010		
18	Large Resident	18211 Balinger Way NE.	9/26/2010		
19	Large Resident	18620 36th ave ne	8/31/2010		

ID	Status	Distance (ft)	Direction	Species	Land Use	DBH 1 (in)
1	Planted	21.00	96	Western redcedar (Thuja plicata)	Vacant	4.2
2	Planted	17.00	104	Western redcedar (Thuja plicata)	Vacant	5.6
3	Planted	26.00	112	Western redcedar (Thuja plicata)	Vacant	7.3
4	Planted	14.00	110	Riparian holly (Ilex macrospora)	Vacant	1.1
5	Planted	11.00	0	Western redcedar (Thuja plicata)	Vacant	6.2
6	Planted	11.00	193	Western redcedar (Thuja plicata)	Vacant	18.0
7	Planted	3.00	183	Western redcedar (Thuja plicata)	Vacant	26.7
8	Planted	20.00	250	Western redcedar (Thuja plicata)	Vacant	4.5
9	Planted	26.00	210	Western redcedar (Thuja plicata)	Vacant	1.7
10	Planted	17.00	230	English holly (Ilex aquifolium)	Vacant	1.4
11	Planted	22.00	231	Douglas fir (Pseudotsuga menziesii)	Vacant	32.3
12	Planted	8.00	225	Western hemlock (Tsuga heterophylla)	Vacant	8.5
13	Planted	18.00	241	English holly (Ilex aquifolium)	Vacant	3.3



www.itreetools.org/mobile/

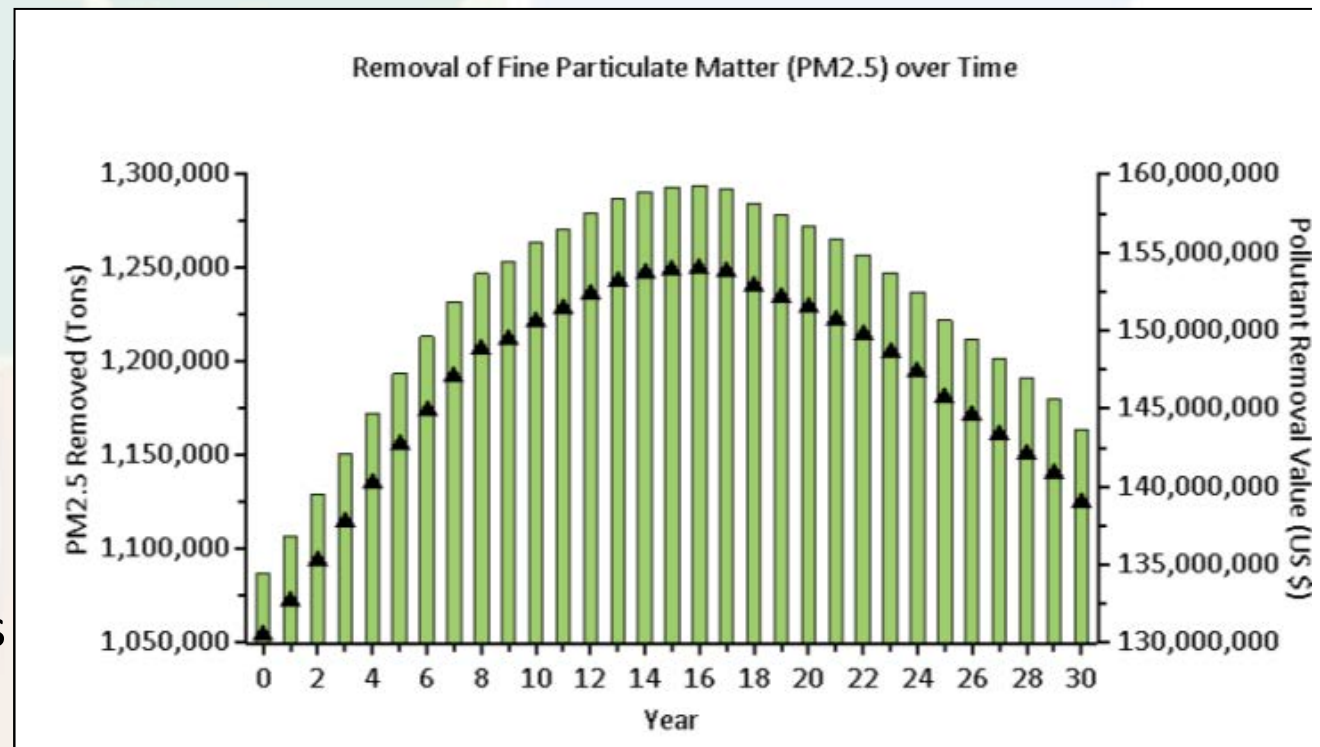


i-Tree is a Cooperative Initiative among these partners



i-Tree Forecast - What is it?

- A new module within i-Tree Eco 2015
- Project tree growth over time
- Include population modeling
- User guided planting and mortality
- Projects changes in selected tree benefits

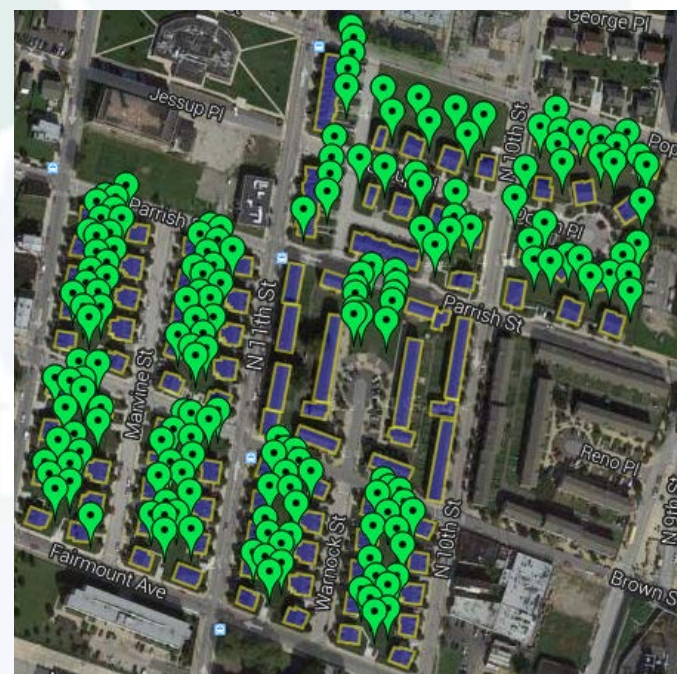
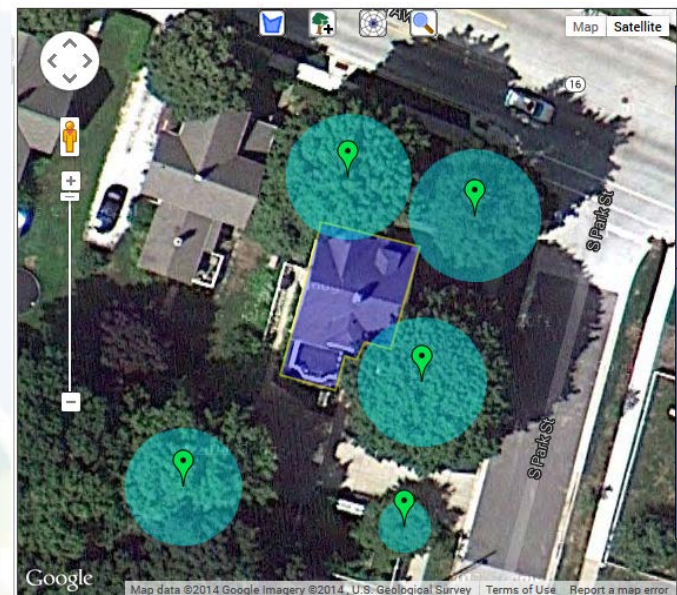


i-Tree is a Cooperative Initiative among these partners



i-Tree Design

- Analysis of individual trees associated with structures
- Calculates benefits over time
- General public use
- Web accessible



<http://www.itreetools.org/design.php>



i-Tree is a
Cooperative
Initiative among
these partners

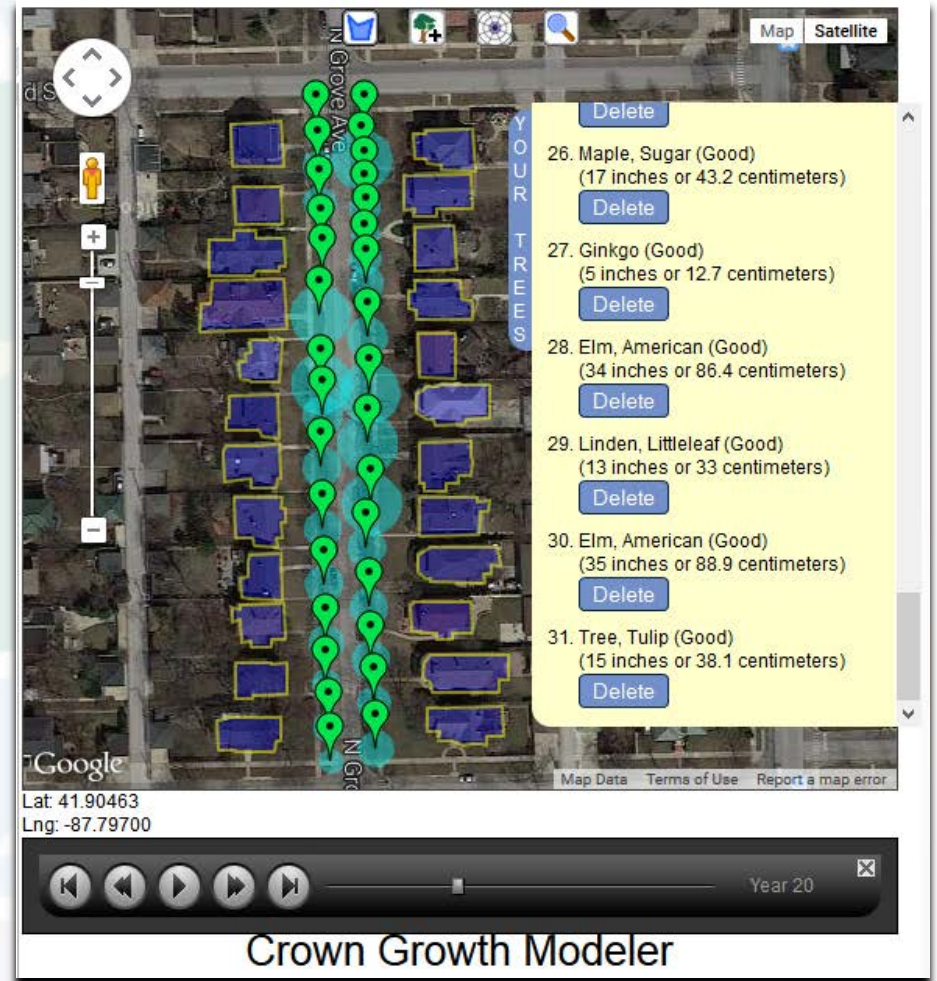


i-Tree Design

Estimates 4 core ecosystem services

- Stormwater interception
- Energy (impacts on heating/cooling)
- Air quality improvement
- Carbon sequestration

Determine value (\$) of current and future benefits



i-Tree is a
Cooperative
Initiative among
these partners



How does i-Tree Design work?

1. Navigate to www.itreetools.org/design in an up-to-date web browser (Firefox or Chrome preferred)
2. Enter an address
3. Draw the footprint of residential structures
4. Add in trees (species, dbh, condition, light)
5. Look at crown growth
6. Estimate benefits overtime
7. Print or save report and project



i-Tree Design v6.0

Tree Benefit Report - 04/25/2014
2353 East Bearfield Subdivision, Columbia, MO 65201, USA
Trees Evaluated: 2

Total Projected Benefits (2014-2044) - Over the next 30 years, based on forecasted tree growth, i-Tree Design projects total benefits worth \$4,901:

- \$2,788 of stormwater runoff savings by intercepting 102,888 gallons of rainfall
- \$75 of air quality improvement savings by absorbing and intercepting pollutants such as ozone, sulfur dioxide, nitrogen dioxide, and particulate matter; reducing energy production needs; and lowering air temperature
- \$205 of savings by reducing 21,118 lbs. of atmospheric carbon dioxide through CO₂ sequestration and decreased energy production needs and emissions
- \$592 of summer energy savings by direct shading and air cooling effect through evapotranspiration
- \$1,241 of winter energy savings by slowing down winds and reducing home heat loss

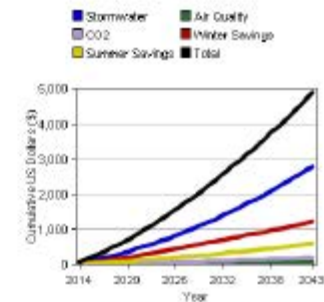


Figure 1. Tree benefit forecast for 30 years

■ Stormwater ■ Air Quality
■ Winter Savings ■ CO2
■ Summer Savings

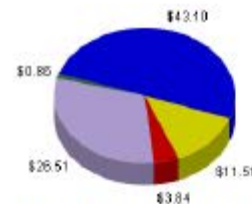


Figure 2. Annual tree benefits for 2014

Current Year - For 2014, i-Tree Design estimates annual tree benefits of \$85.82:

- \$43.10 of stormwater runoff savings by intercepting 1,590 gallons of rainfall
- \$0.86 of air quality improvement savings
- \$3.84 of carbon dioxide reduction savings
- \$11.51 of summer energy savings
- \$26.51 of winter energy savings



i-Tree is a Cooperative Initiative among these partners



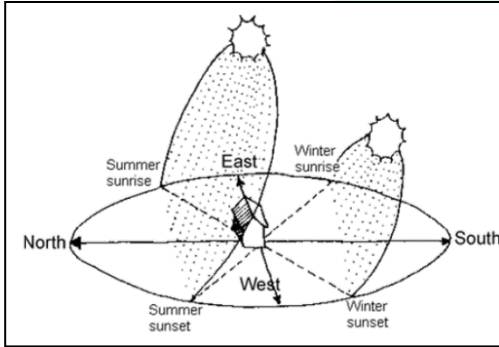
Arbor Day Foundation

<http://www.itreetools.org>

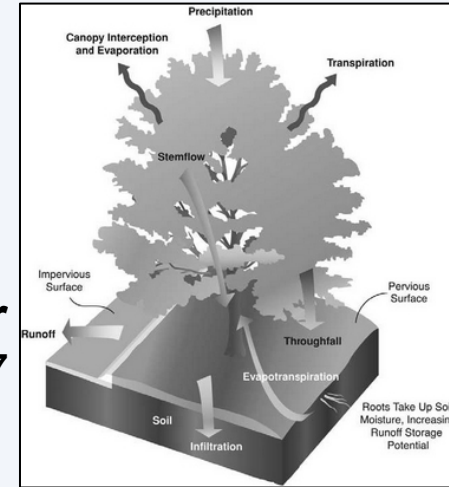


1 of 3

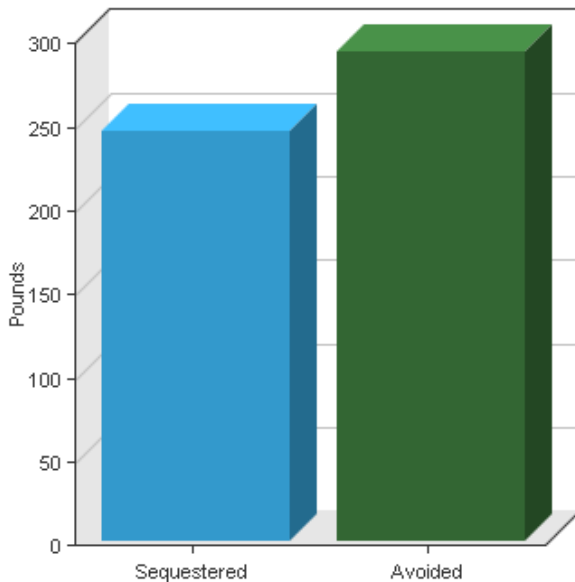
Provides a \$ value for tree benefits



Energy
 305.7 kwh = \$35.85
 21.6 therms = \$35.00

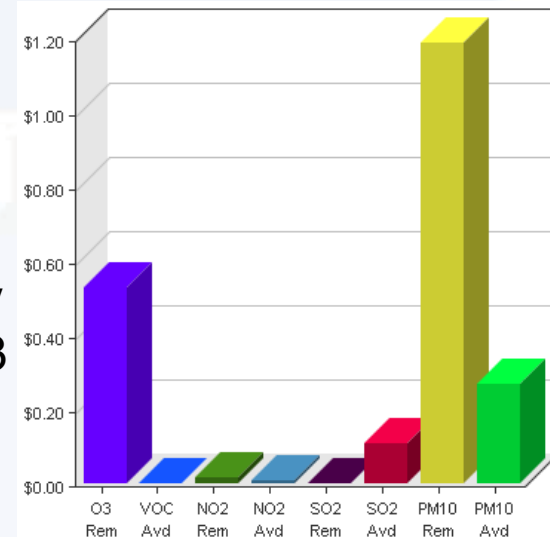


Stormwater
 5,714 gallons = \$56.57



Carbon dioxide
 612 lbs = \$5.95

Air Quality
 Improved health = \$2.23



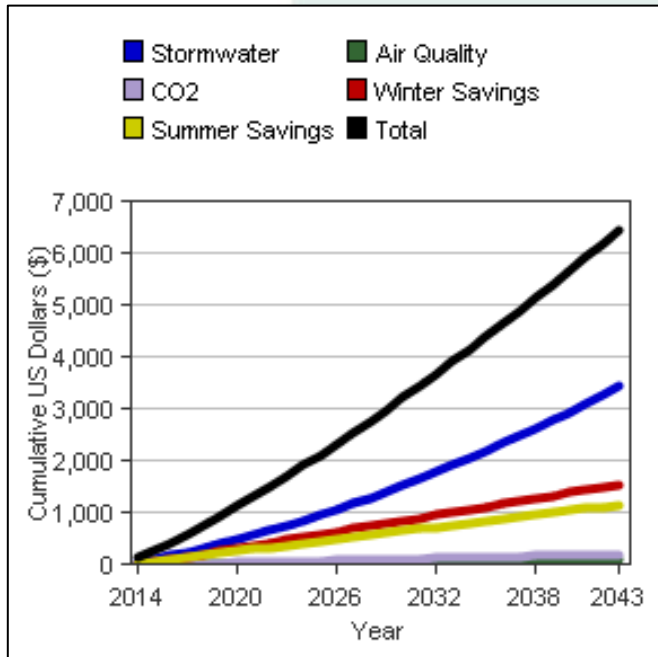
Total benefits this year = \$136



i-Tree is a Cooperative Initiative among these partners



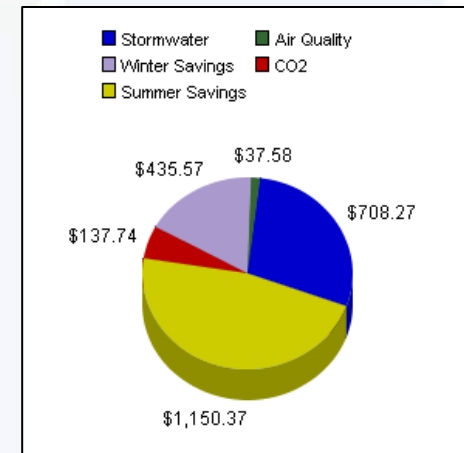
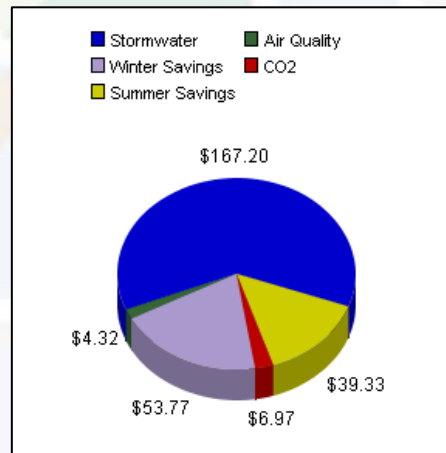
Shows trees are an investment



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

Benefits in 2044 = **\$272**

To date = **\$2,470**



i-Tree is a Cooperative Initiative among these partners



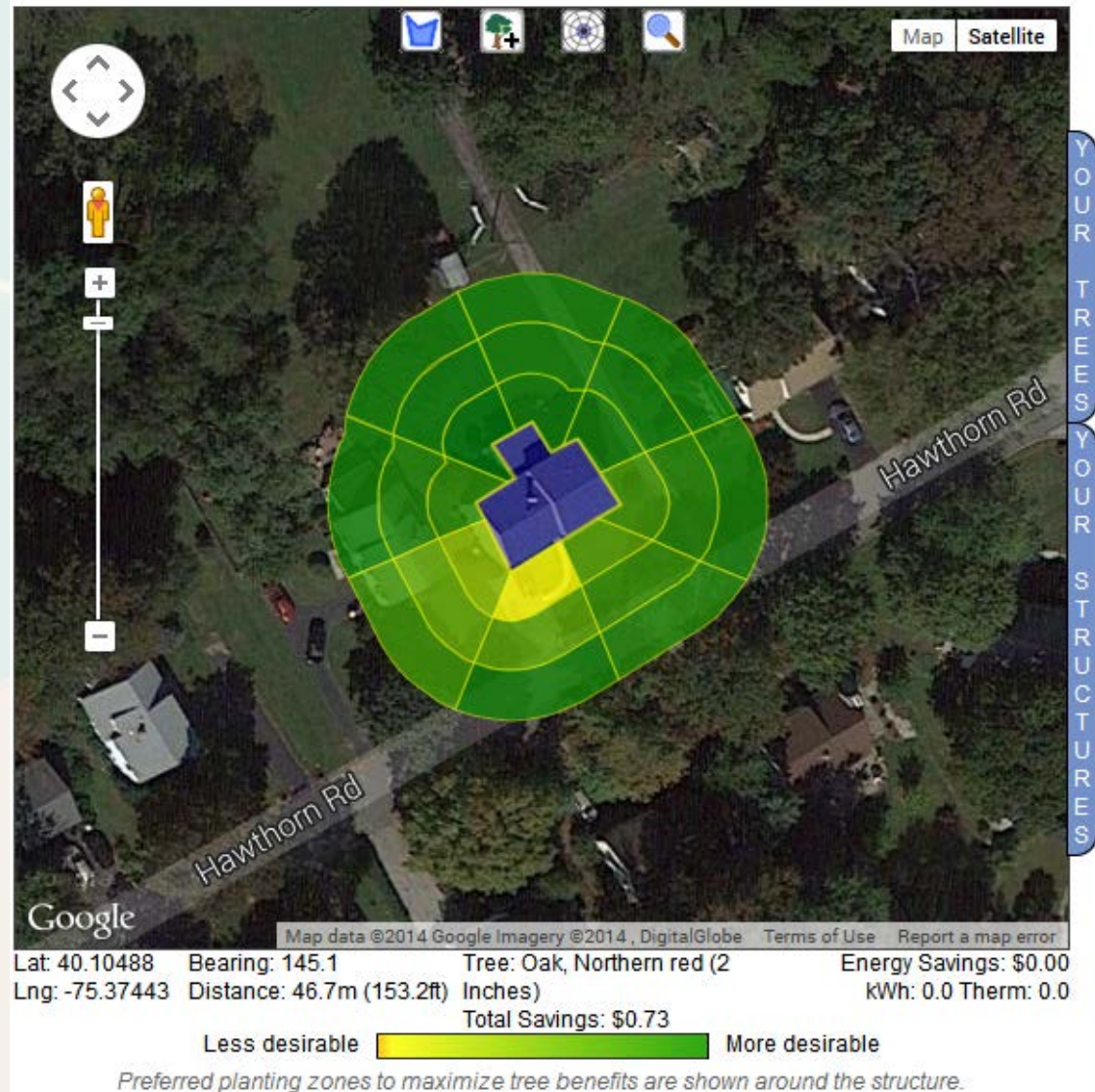
Strategy 1: Engage Residential & Private Property Owners

Existing trees

- My trees have value?
- Improve care
- Printable report

Proposed trees

- Where to plant
- Support giveaways
- Canopy goals



i-Tree is a
Cooperative
Initiative among
these partners

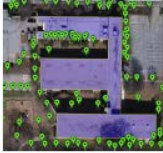


Strategy 2: Advocacy and Outreach

From very simple...



TREES FOR TOMORROW

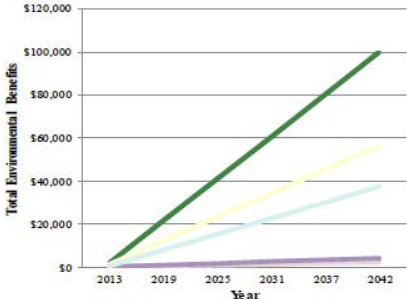


**Bethune School District
Bethune Elementary School
220 Northside Drive NW, Atlanta, Georgia**

Fast Facts



Number of Possible Strategic Tree Plantings	18
Number of Existing Trees on School Property	130
Current Year Annual Tree Benefits (2013)	\$1,816
Future Year Annual Tree Benefits (2043)	\$4,661
Total Projected Tree Benefits (2013-2043)	\$99,797

Total Tree Benefits Forecasted for 30 Years



Tree Benefit Type	Projected Benefits with Possible Future Trees (30 Years)	Change (Existing vs. Possible)
Stormwater Management	\$56,463	6%
Energy Savings	\$37,213	6%
Carbon Dioxide Reduction	\$4,006	7%
Air Quality Improvement	\$2,115	7%
Total Benefits	\$99,797	6%

Launched in spring 2013, American Forests developed a project dedicated to the assessment, restoration, and monitoring of urban forests in five cities. The ultimate purpose is to raise awareness of the critical importance of trees to the well-being of the City. In Atlanta, Georgia, the focus is on determining how the urban forest surrounding the City's schoolyards improves students' well-being. Twenty-six schools and 51 districts are included in this project. This factsheet is a single piece of a much greater educational effort by American Forests' Community ReLeaf program.

AMERICAN FORESTS  For more information, visit the Community ReLeaf website or call American Forests. 

... to more involved



i-Tree is a Cooperative Initiative among these partners



Strategy 3: Corporate/Campus Sustainability Efforts

i-Tree Design v6.0

West Bowery Street & West Exchange Street, Akron, OH
44308, USA

Start Over
Save Progress
About


Get started with these easy steps:

1. Draw Structures

Would you like to calculate the impact of trees on your cooling and heating utility bill?

Yes No

To draw a structure:

- Outline heated or air-conditioned areas only.
- Drag this icon  to the first corner of the structure to start drawing. Then click on the next corner and continue in this way to outline your structure. Double-click on the final corner to complete your drawing.
- Repeat to draw additional structures.

2. Place Trees

3. Estimate Benefits



YOUR TREES YOUR STRUCTURES



i-Tree is a
Cooperative
Initiative among
these partners

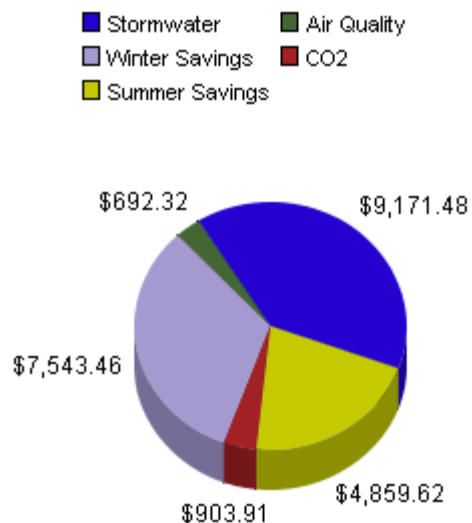


Strategy 4: Evaluating tree energy effects

Pennsylvania Horticultural Society planting for the Philadelphia Housing Authority

Savings over the next 30 yrs

- **\$108,000** in winter
- **\$87,000** in summer



Benefits in year 30



i-Tree is a Cooperative Initiative among these partners





TREE FOUNDATION OF KERN

[About the Tree Foundation](#) » Home

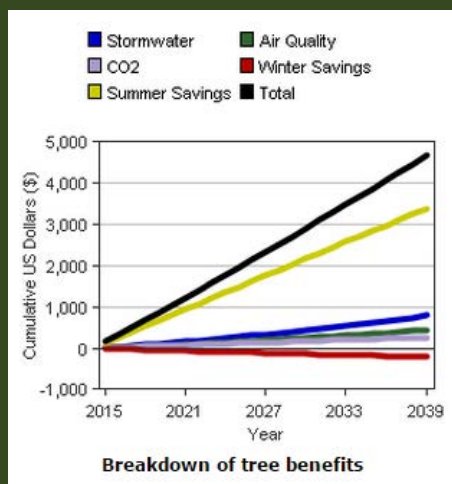
Home

Planting Trees with The Tree Foundation of Kern

The Tree Foundation of Kern is a small local nonprofit organization dedicated to the advancement of sustainable urban and community forestry. Our mission is to provide a better shade canopy in our county, beautify our local landscape, help improve our air quality and educate our citizens about trees, their benefits and their care.



How do we do this?



Find out how much your trees are worth?

- Home
- Donate/Tickets
- About the Tree Foundation
- San Miguel Commemorative Grove Program
- Become a Member
- Trees Remember
- Citizen Forester
- Become a Volunteer
- Calendar
- Tree Links
- Tree Planting Guide
- Tree Tips
- More Tree Tips
- How To Hire an Arborist
- Tree Care Economics
- 50 Careers in Trees
- Pruning Tips

<http://www.urbanforest.org>

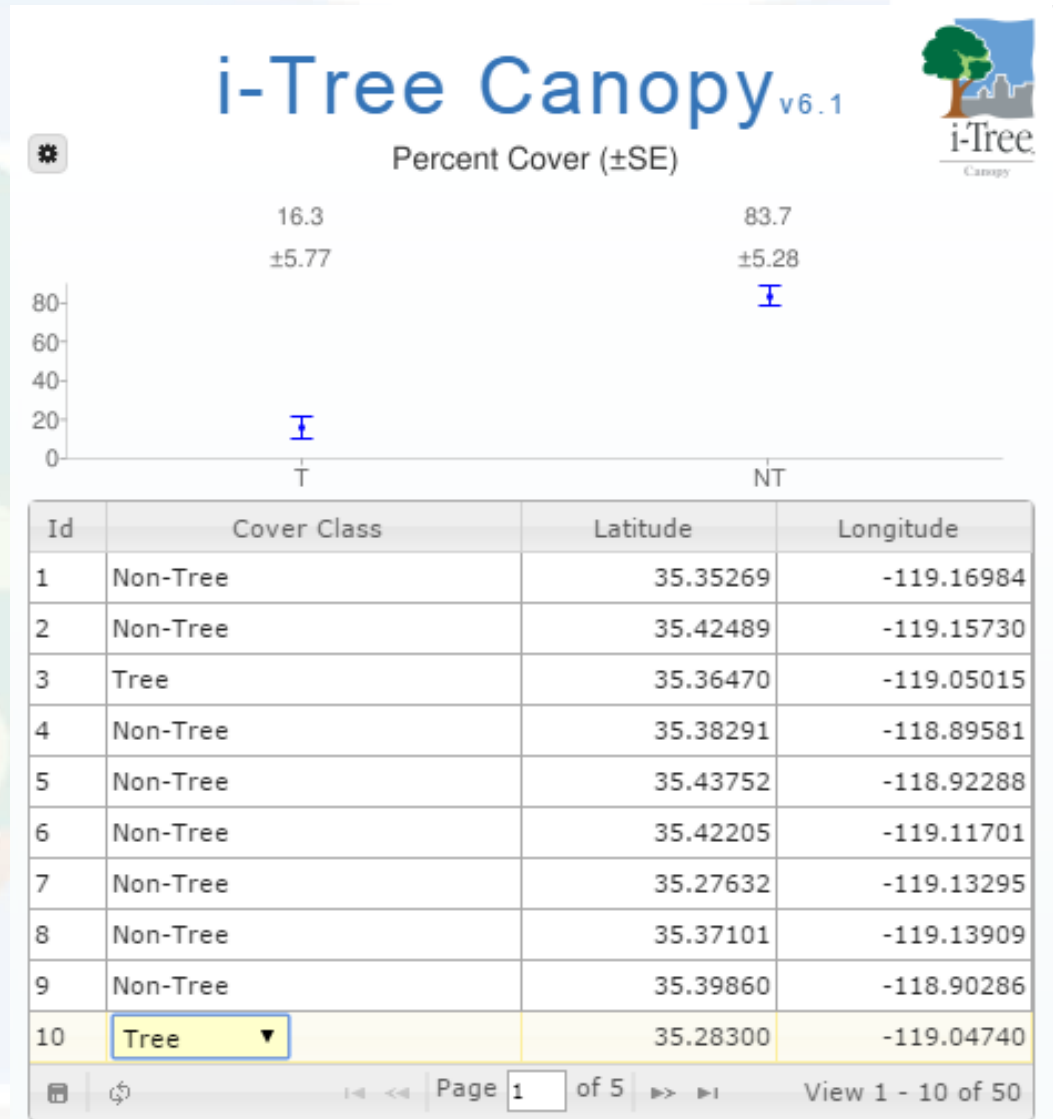


i-Tree is a Cooperative Initiative among these partners



i-Tree Canopy

- Web based survey tool
- Estimates the amount of canopy cover and other cover types
- Estimates pollution removal, CO2 sequestration & storage
- Doesn't require GIS expertise
- Printable report summary
- Canopy change assessment is possible



<http://www.itreetools.org/canopy/index.php>



i-Tree is a
Cooperative
Initiative among
these partners

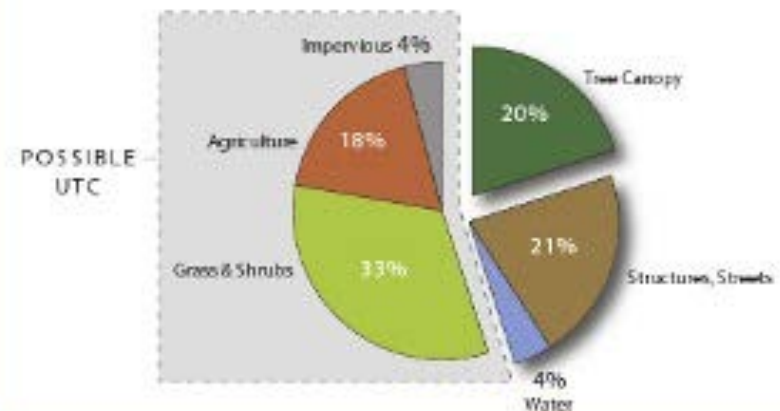


Who is using i-Tree Canopy?

- 🌳 Municipal foresters, UF Coordinators, planners,
- 🌳 Educators, schools, volunteers, neighborhood groups
- 🌳 Tree planting program coordinators
- 🌳 Anyone interested in assessing community canopy & goal setting

UTC analysis for the FOX VALLEY METRO AREA shows²:

- An existing tree canopy of 20% (13,444 acres).
- Trees could potentially cover an additional 55% (37,815 acres) of the Metro's land surface. These "Possible UTC" areas include grass, agriculture land, and impervious surfaces (e.g., parking lots, paved playgrounds & ROW).
- The remaining 25% (17,142 acres) of the Metro's area is buildings, streets, water and other permanent features and is generally unsuited to UTC improvement.




i-Tree is a
Cooperative
Initiative among
these partners



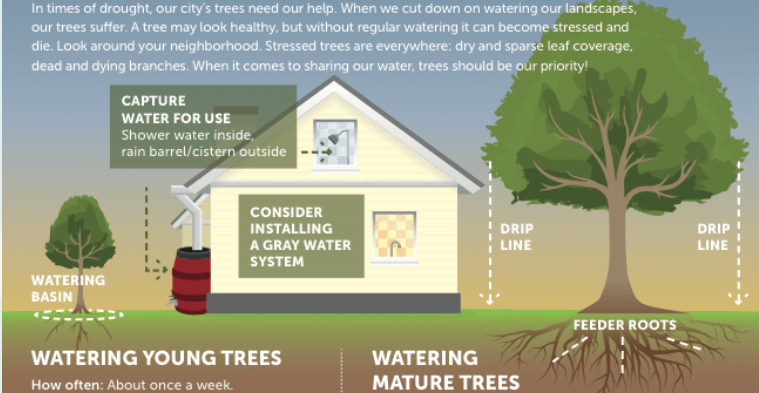
i-Tree Canopy Strategies

- 🌳 Establish base line data for goal setting
- 🌳 Monitor changes due to development, pest & diseases, storms, drought, land use change, etc.
- 🌳 Determine areas for priority tree planting
- 🌳 i-Tree Canopy estimates can be used in other i-Tree tools such as Hydro

 TREEPEOPLE
www.treepeople.org

HOW TO KEEP TREES ALIVE IN THE DROUGHT

In times of drought, our city's trees need our help. When we cut down on watering our landscapes, our trees suffer. A tree may look healthy, but without regular watering it can become stressed and die. Look around your neighborhood. Stressed trees are everywhere: dry and sparse leaf coverage, dead and dying branches. When it comes to sharing our water, trees should be our priority!



WATERING YOUNG TREES
How often: About once a week.
How much: About 15-20 gallons of water (3 or 4 5-gallon buckets).
How to do it: Create a 3-4 foot wide basin around the tree to hold the water. Use a bucket to deliver water slowly into the basin.

WATERING MATURE TREES
How often: About once or twice a month.
How much: Water needs to soak down at least 18". Measure using a "soil probe" available at home improvement stores. The size of the tree and kind of soil will determine how much water is needed.
How to do it: If you can, use "in-line emitter tubing hose" found at home improvement stores. Start about 9" from the trunk. Spiral it outward, forming concentric circles out to the drip line. Consult the store specialist for how to connect to your water source. Run it until the water depth is at least 18" (this could take 1 or more hours).

CAPTURE WATER FOR USE
Shower water inside, rain barrel/cistern outside

CONSIDER INSTALLING A GRAY WATER SYSTEM

WATERING BASIN

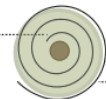
DRIP LINE

FEEDER ROOTS

CHECK FIRST!
Dig your finger down into the soil at least four inches and check for moisture. If the soil below ground is still wet, don't water. If it is dry, give the tree water.

USE CAPTURED WATER!
Collect excess water from indoor use – put a bucket in the shower while it warms up! Or install a series of rain barrels or a cistern to collect rain water.

MULCH!
Add a four inch layer of mulch or wood chips covering the soil around the tree. If used, cover the in-line emitter hose as well.

Start 9" from the tree  End at edge of outer branches

WHAT ELSE?
Visit www.TreePeople.org for more resources including workshops, tours, project toolkits, volunteering opportunities and more!

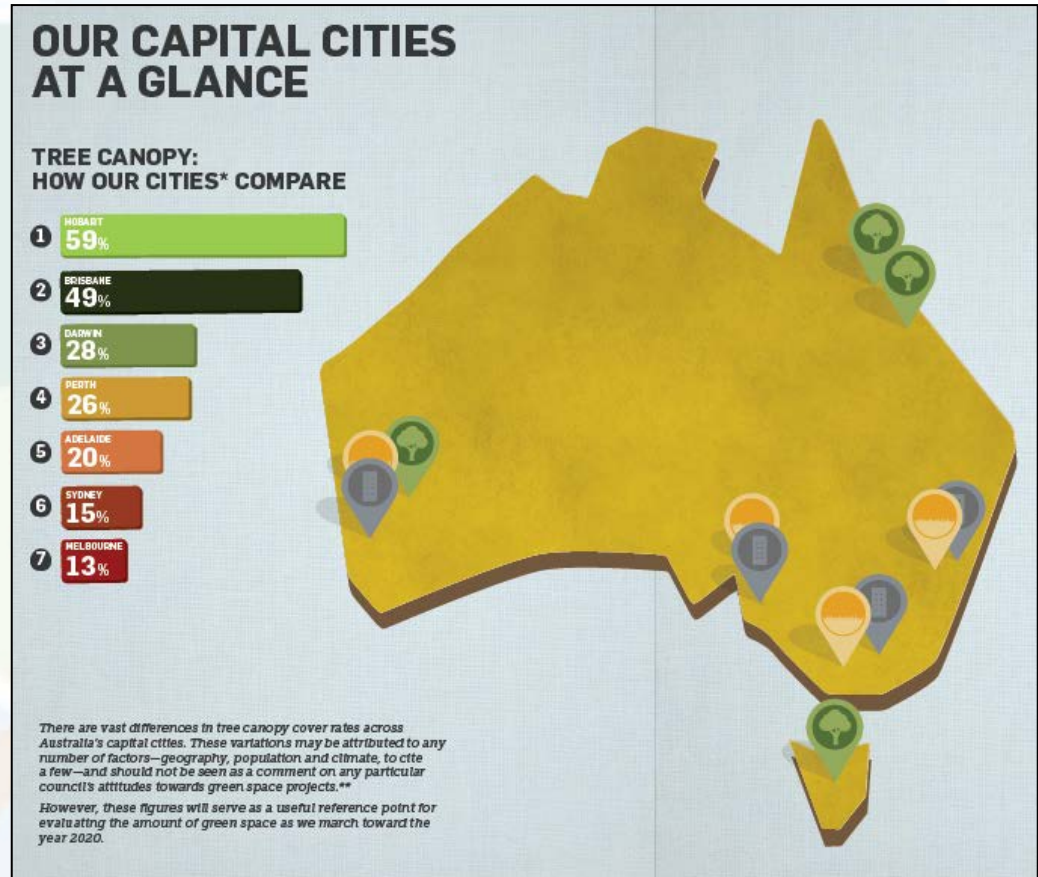
www.treepeople.org




i-Tree is a Cooperative Initiative among these partners



i-Tree Canopy Strategies



Where Are All the Trees: An analysis of tree canopy cover in urban Australia

 Compare canopy between cities, neighborhoods, school districts, political wards, etc.



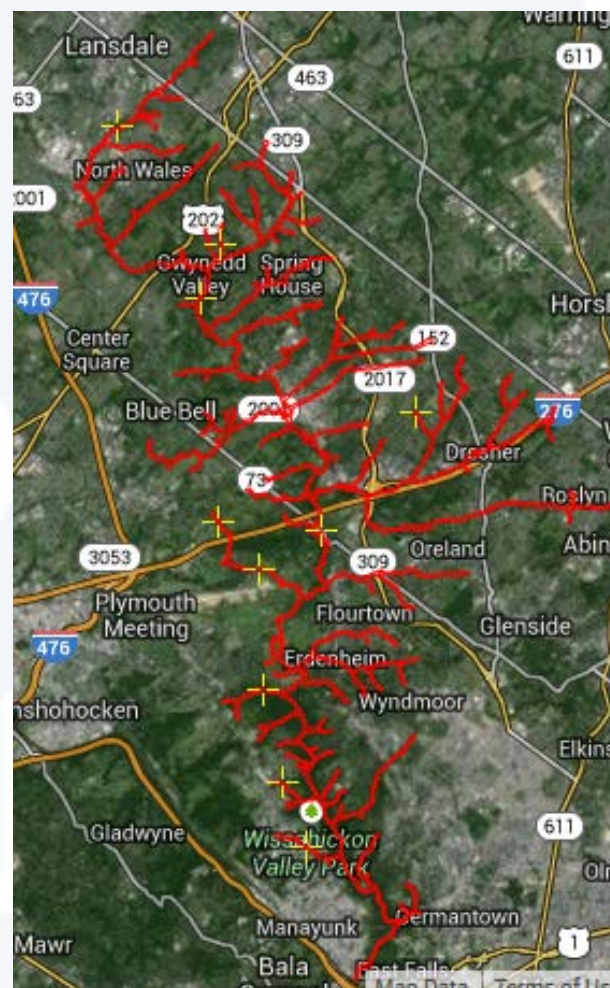
i-Tree is a Cooperative Initiative among these partners



Monitoring with i-Tree Canopy

Example: Assess change in tree cover in a 100ft buffer for Wissahickon creek.

- 🌳 What % of buffer is tree covered?
- 🌳 What % could tree cover be added?
- 🌳 How has cover changed (2006-2011)?



i-Tree is a
Cooperative
Initiative among
these partners



Monitoring with i-Tree Canopy

Cover type	2006	2011
Tree/Shrub	60.5% ±3	64.5% ±3
Possible Tree/Shrub	22% ±3	18% ±3
Tree/Shrub -Not Possible	12% ±2	12% ±2
Water	5.5% ±2	5.5% ±2



Atmospheric Pollutant Removals	2006		2011	
	amount	value	amount	value\$
CO	1,533 lb	\$1,019	1,635 lb	\$1,086
NO2	11.73 T	\$19,861	12.51 T	\$21,174
O3	34.48 T	\$595,761	36.76 T	\$635,151
SO2 removed	3.09 T	\$1,994	3.29 T	\$2,125
Particulate Matter 2.5-10µ	12.18 T	\$76,068	12.99 T	\$81,097
CO2 sequestered	8,692.48 T	\$168,315	9,267.19 T	\$179,444
Total		\$863,018		\$920,077



Change in tree cover in a 100ft buffer for
Wissahickon Creek.



i-Tree is a
Cooperative
Initiative among
these partners

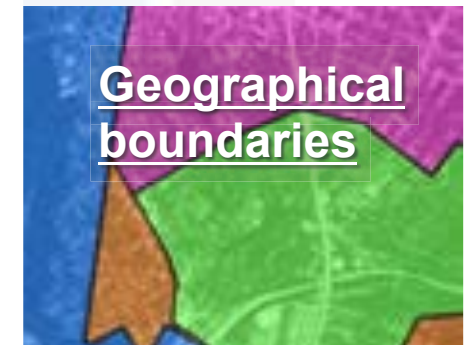
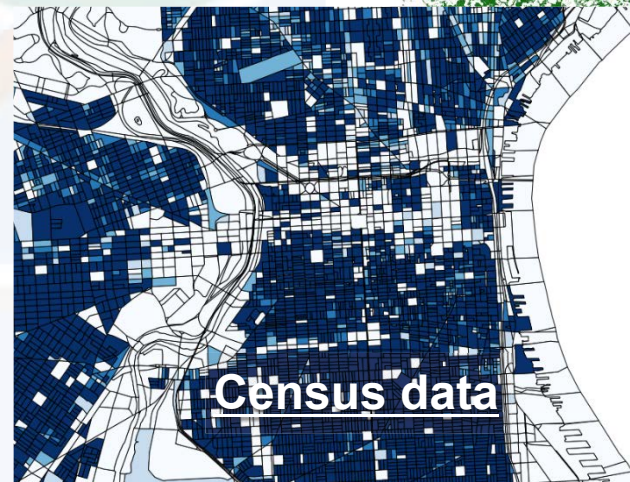
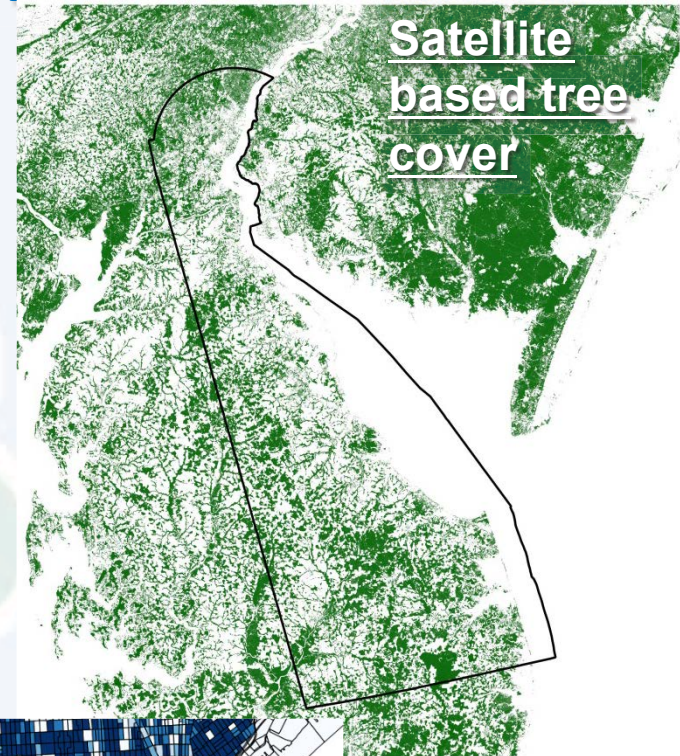


i-Tree Landscape (coming soon)

Make spatial data accessible.

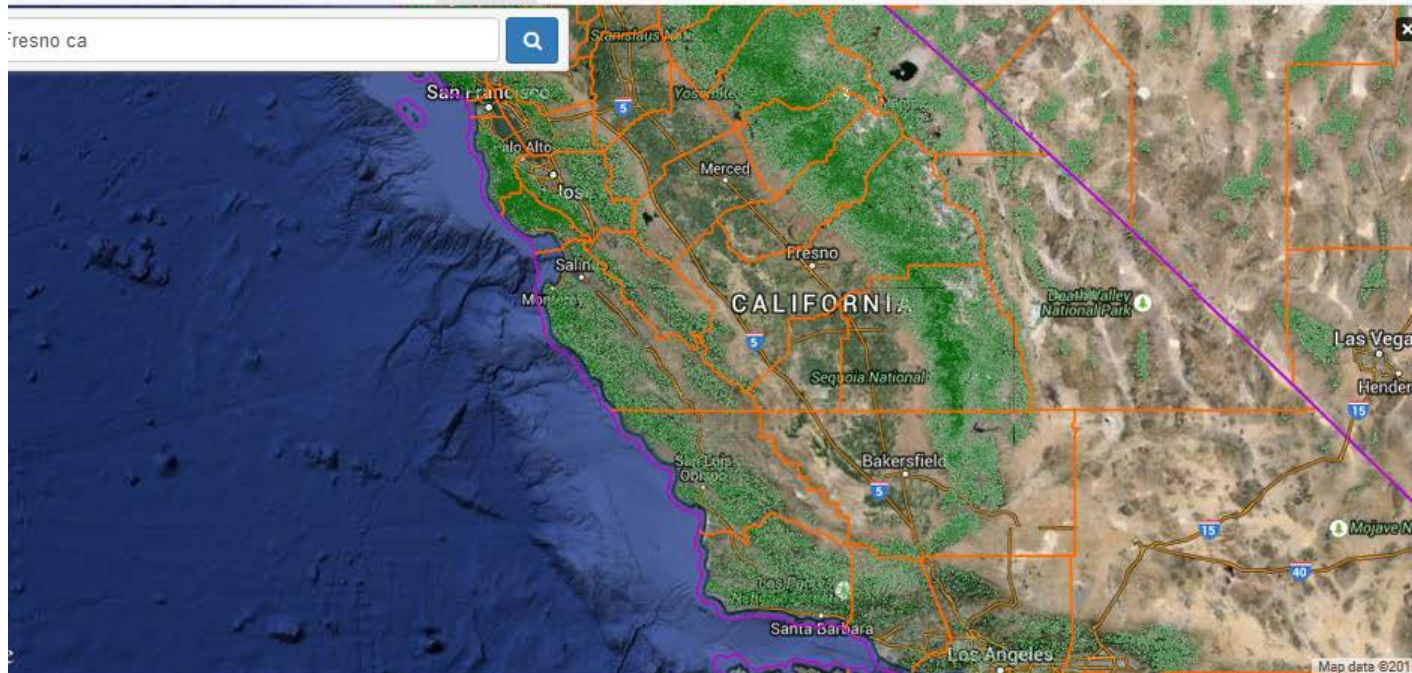
Support strategic planning around locating trees.

Show how tree benefits and people interact.



i-Tree is a
Cooperative
Initiative among
these partners





Map Layers

Administrative

- US Census Block Groups
- US Census Places
- US Congressional Districts
- US Counties
- US States
- US National Forests
- US Ranger Districts

Canopy & Land Layers

- Tree Canopy
Transparency 5 %
- Impervious
Transparency 0 %
- Land Cover
Transparency 0 %

Base Maps

Google Streets

Selection

US Census Block Group

+ Navigate Identify

Select Box-Select



The Help page has a thorough How-To that adds greater detail to the below descriptions, which are of the steps involved in completing an analysis with

Lets Get Started!

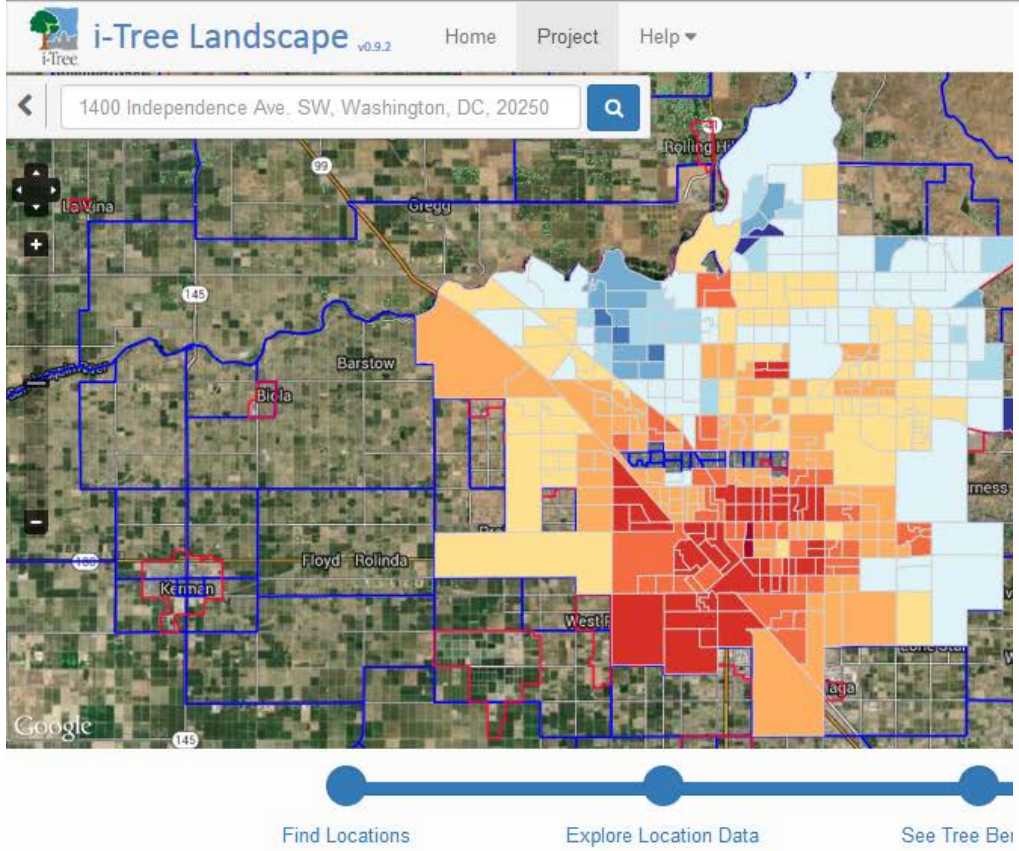
A project is broken into five, simple steps. The current stage of a project is represented by the progress bar, which is shown below the map.

At any stage, regions can be added and removed from the selection group.

1. Find Locations

First, the search bar at the top-left of the map can be used to quickly view a location, such as a city or street address. This feature is comparable to routing or navigation software.

Now, having an area of interest viewable, geographic regions must be selected by clicking on the map. The map's control panel is used to view regions and control which type is being selected.



Map Transparency 0% %

100%

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:

- Recommended (as space is needed for new trees):
- *Tree Stocking Level*: low level indicate land area that could accommodate trees, but currently do not.

Common Scenarios

Importance (weight) %

Importance (weight) %

Additional i-Tree resources

www.itreetools.org

Videos

Documentation

Online tools

Newsletter

Support

Examples

Downloads

The screenshot shows the i-Tree website homepage. At the top left is the i-Tree logo with the tagline "Tools for Assessing and Managing Community Forests". To the right is a "Get the Tools." button with a CD icon. Further right is a Google Custom Search box and a login section with fields for Username and Password, a Login button, and links for "Forgot Username or Password?" and "Register". A UAS logo is in the top right corner. Below the header is a large banner image of a residential street with many trees. Underneath the banner is a navigation menu with buttons for Home, About, Applications, Utilities, Resources, Support, and News. The main content area features a "What is i-Tree?" section with a paragraph describing the software suite. To the left of this section is a "A US Forest Service Northern Research Station Guide" titled "A Guide to Assessing Urban Forests". To the right is a "What's New?" section with two items: "European i-Tree Conference, March 12th, Alnarp, Sweden" and "Breathe Easy: Urban Forests for Human Health".



i-Tree is a Cooperative Initiative among these partners



Closing thoughts...

- 🌳 Consider resources, objectives and available tool options
- 🌳 Demonstrate tree value on ALL lands
- 🌳 Use tools to engage new audiences & build allies to advance common objectives
- 🌳 Leverage resources to enhance community trees

Home Lessons About i-Tree About NGSS Environmental Enrichment Fellowship

Welcome to iTreeLessons.com

Integrate the iTree Software Suite with NGSS Standards-based lesson plans in your classroom.

View Lessons

Lesson Plans

All lesson plans are hosted on Google Drive. You will need a Google Account in order to access the files. If you don't have a Google Account, sign up for an account now.



i-Tree is a
Cooperative
Initiative among
these partners



Questions...

Web-based, run
in your browser



i-Tree™

Design



i-Tree™

Canopy



i-Tree™

Landscape

www.itreetools.org

Installed on a
Windows
desktop/laptop



i-Tree™

Eco



i-Tree™

Streets



i-Tree™

Hydro

info@itreetools.org

al.zelaya@davey.com



i-Tree is a
Cooperative
Initiative among
these partners

