

i-Tree Open Academy

2025

Session 4: Seeing the Forest for the Trees

i-Tree Landscape and map-based tools for benefits assessment

May 28, 2025

1:00pm Eastern Time



i-Tree is a
Cooperative
Initiative
among these
partners



Arbor Day Foundation™



ESF

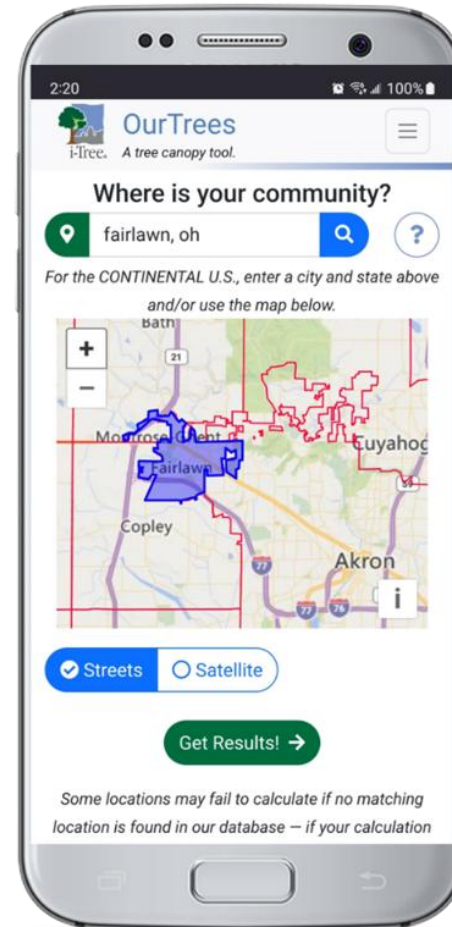
State University of New York
College of Environmental Science and Forestry

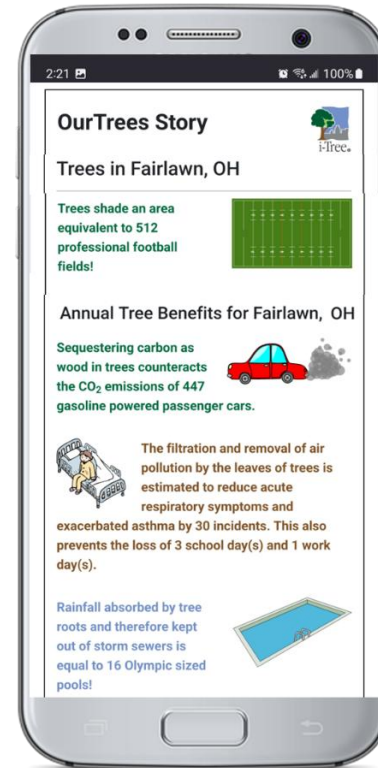
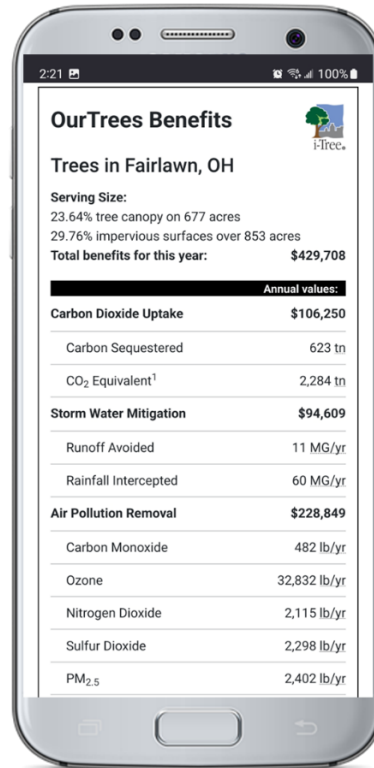
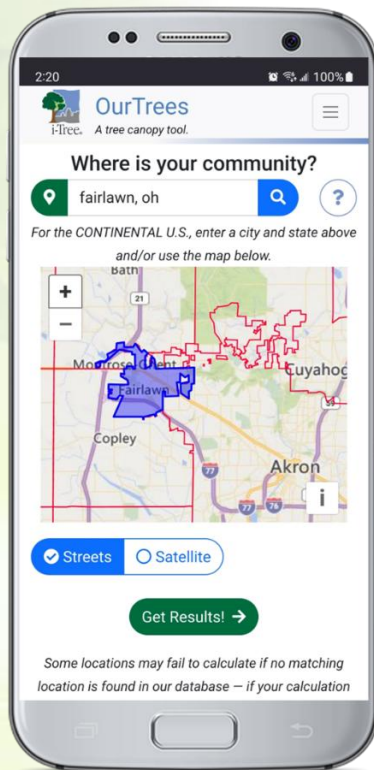


American
Forests™

OurTrees

- 🌳 A snapshot of the tree canopy cover of your community
- 🌳 See tree canopy benefits in minutes
- 🌳 Based on US Census and NLCD tree canopy cover data
- 🌳 Mobile friendly tool





OurTrees.itreetools.org

Outreach with i-Tree



Educate the public with OurTrees, which helps them become invested in caring for the trees

OurTrees Benefits

Trees in Bowling Green, KY

Serving Size:

20.78% tree canopy on 5,026 acres

28.33% impervious surfaces over 6,850 acres

Total i-Tree benefits for this year: **\$3,687,893**

Annual values:	
Carbon Dioxide Uptake	\$2,555,715
Carbon Sequestered	5,906 tn
CO ₂ Equivalent ¹	21,656 tn
Storm Water Mitigation	\$486,997
Runoff Avoided	54 MG/yr
Rainfall Intercepted	333 MG/yr
Air Pollution Removal	\$645,181
Carbon Monoxide	3,058 lb/yr
Ozone	202,040 lb/yr
Nitrogen Dioxide	31,522 lb/yr
Sulfur Dioxide	8,050 lb/yr
PM _{2.5}	9,512 lb/yr

Values are totals to date:	
Carbon Dioxide Uptake	\$77,206,158
Carbon Storage	178,418 tn
CO ₂ Equivalent ¹	654,198 tn

i-Tree Landscape

Core individual tree tools



Core canopy tools

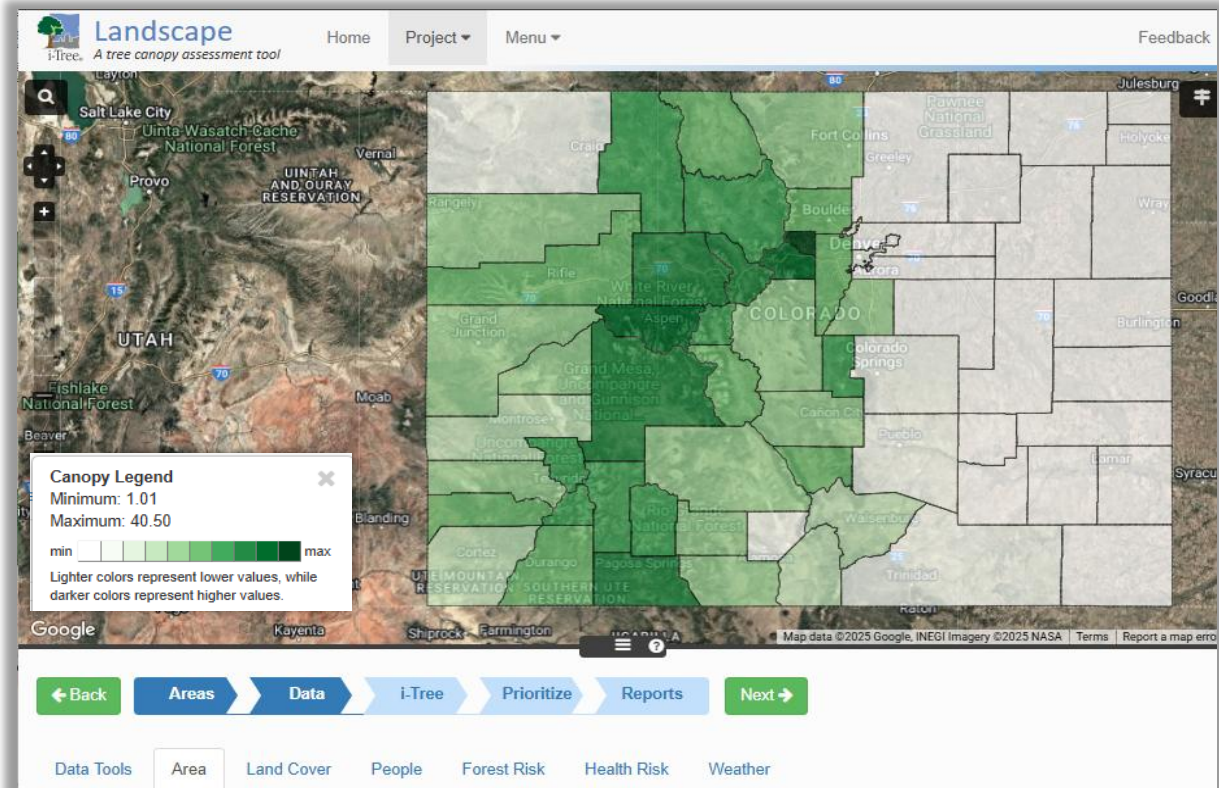


* *i-Tree Tools that can be used internationally*

i-Tree Landscape

See your canopy benefits in action

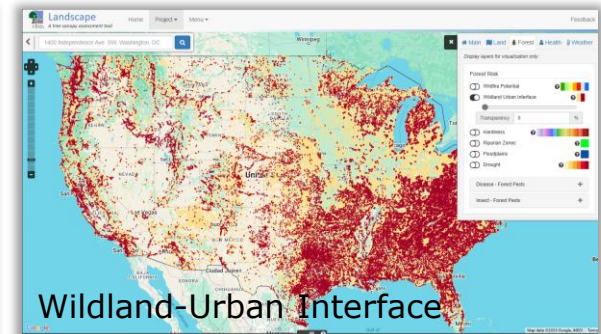
- **Visualizing your environment:** see it in context
- Trees + people + habitats + infrastructure = *connections*
- Landscape brings **USFS tree benefits science** to a nationwide map tool and offers a rich set of complimentary data
- See the spatial distribution of resources and risks: visualizing **canopy impacts at neighborhood scale**
- Includes updated 2021 National Land Cover Data!!
- Allows for prioritization analysis among pre-set geographies: *“right tree, right place”*



i-Tree Landscape

Today we will:

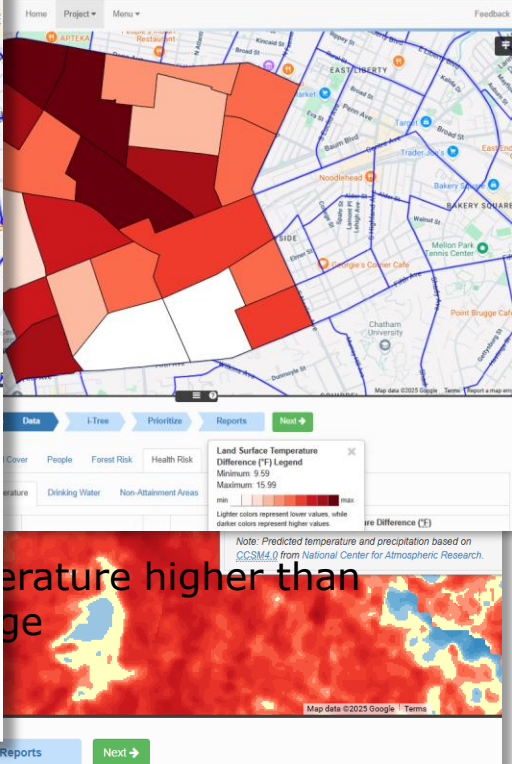
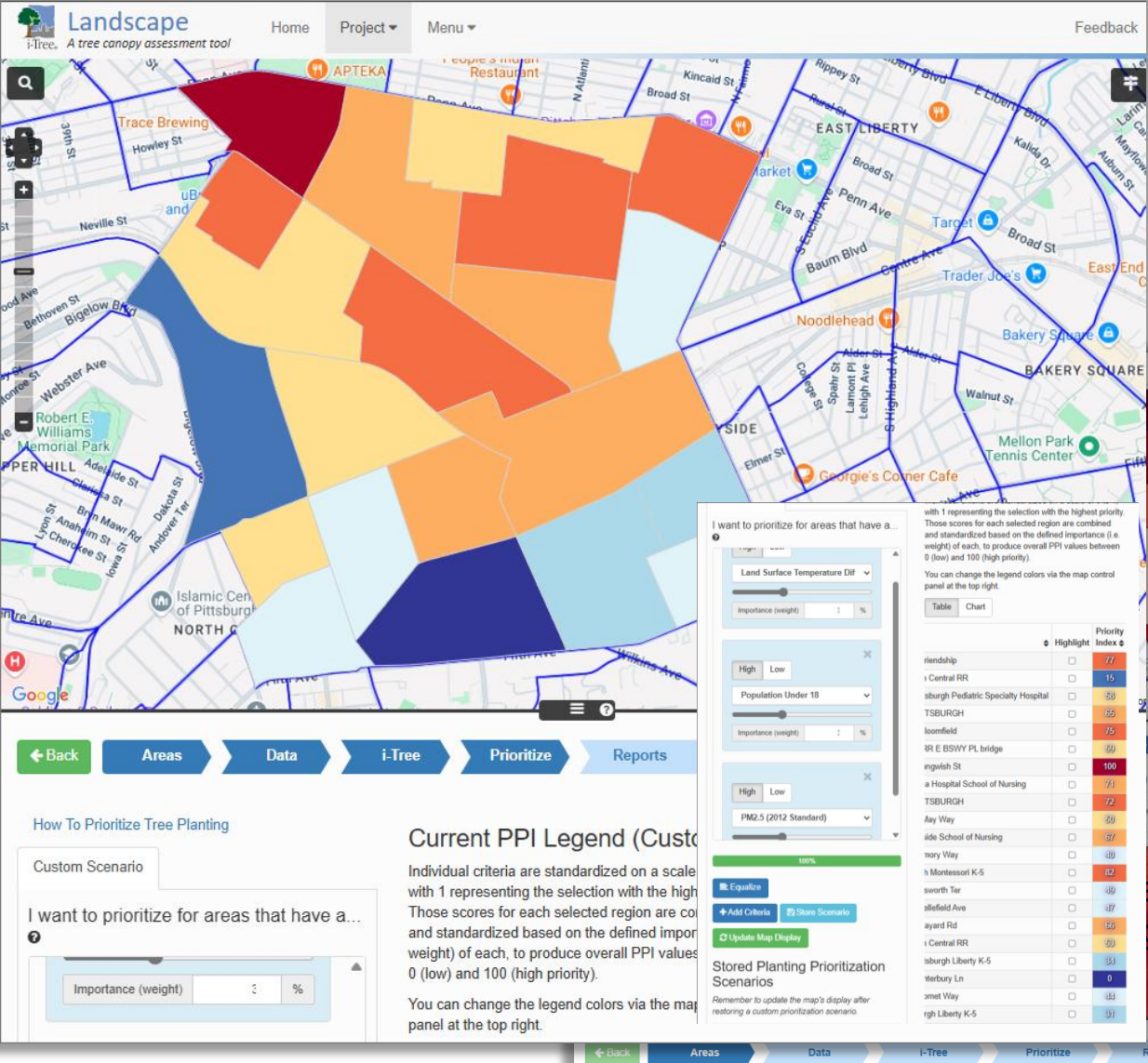
- Explore what data the maps have to offer
- Learn how to navigate the map and make selections for display and analysis
- Talk about what it means to use the data and the map to identify priority areas: which tree benefits or environmental/demographic factors are ones I want to put at the forefront of decisions about resources



i-Tree Landscape

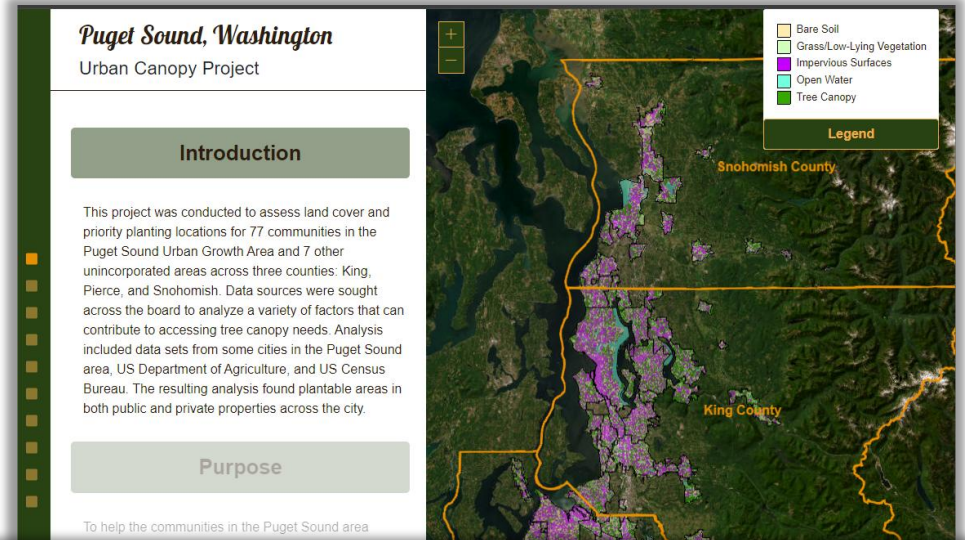
Canopy assets in context:

Prioritize planting strategies for growing canopy benefits



i-Tree Landscape

- The power of partnership
 - Puget Sound, The Nature Conservancy, and DRG
 - High resolution land cover data across urban growth corridors
 - Assessment of plantable areas



gis.davey.com/pugetsound/

News NotNews Maps

Puget Sound, Washington
Urban Canopy Project

soil (7%) such as athletic fields, and open water (1%).

Snohomish County UTC

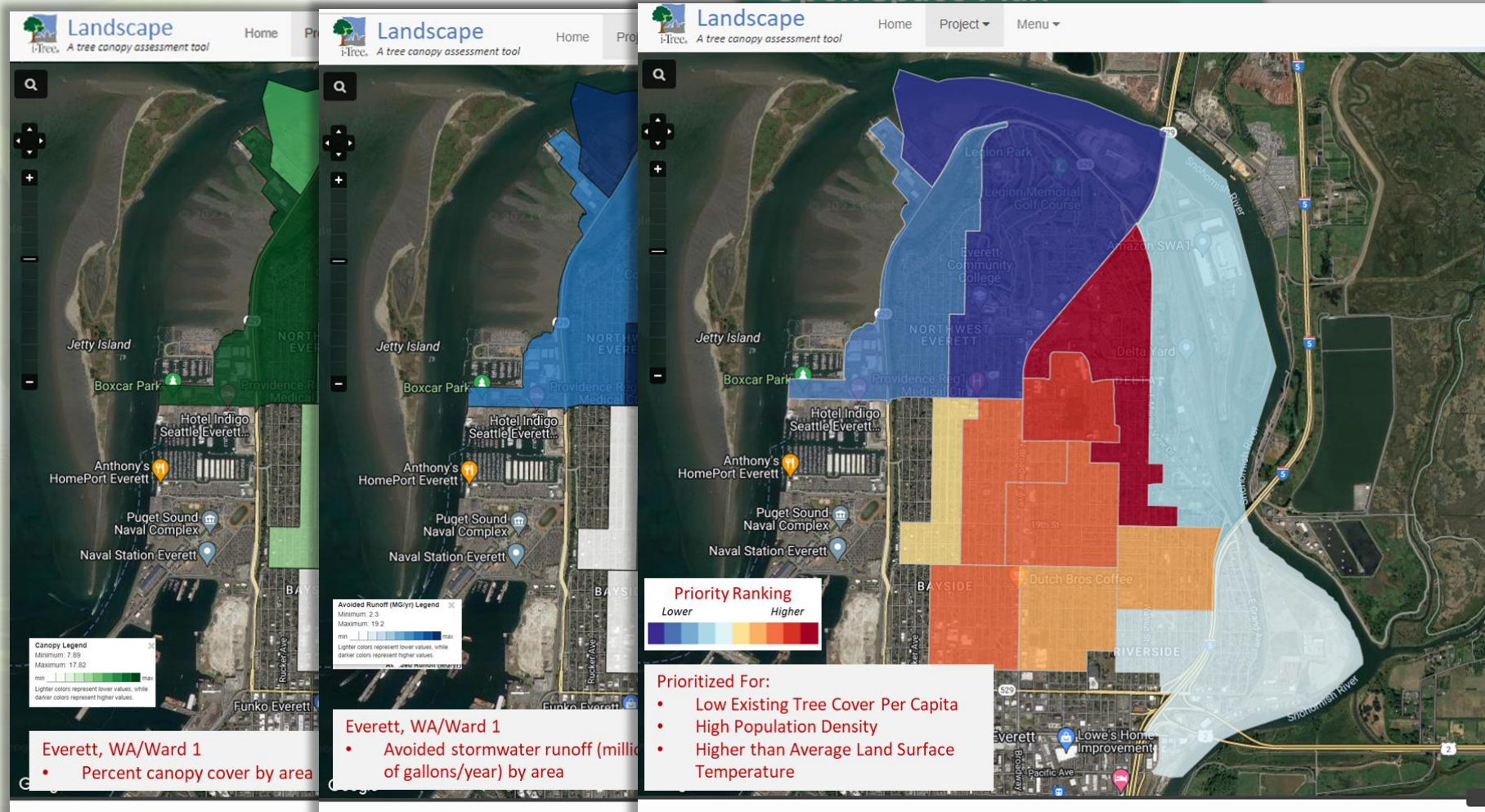
The urban tree canopy (UTC) analysis found that 27% of Snohomish County is covered by tree canopy, while 35% of the city is covered by impervious surfaces (roads, buildings) that repel stormwater and contribute to heat island effects. The remaining land in the city is pervious areas of low vegetation such as understory (23%), bare soil (7%) such as athletic fields, and open water (8%).

Planting Potential



i-Tree Landscape

■ Everett, WA



i-Tree Landscape

■ Chesapeake Tree Canopy Network

Tree Cover Status & Change

FOR SUSSEX COUNTY, DE

41%

Total Percent of
County with Tree Cover

\$76.1 Million

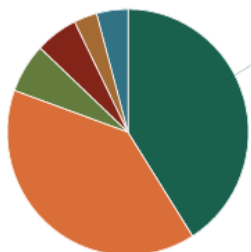
Annual Benefits provided by Tree Cover
(in reduced air pollution, stormwater, & carbon dioxide)

-2,306 Acres

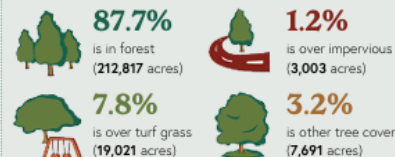
Net Loss of Tree Cover on
Developed Lands, 2013 to 2018

What is the land use/land cover breakdown in your county?

591,495 ACRES OF LAND AREA
IN SUSSEX COUNTY



Where does tree cover occur in your county?



What are some benefits of tree cover in your county?



Total Air Pollution Removal Value
21.2 Million lbs removed annually
\$9.8 Million saved annually
Total air pollution removal includes CO, NO₂, O₃, SO₂, and Particulate Matter (PM2.5, PM10)



Gallons of Reduced Stormwater Runoff Value
507.7 million gallons reduced annually
\$4.5 million saved annually



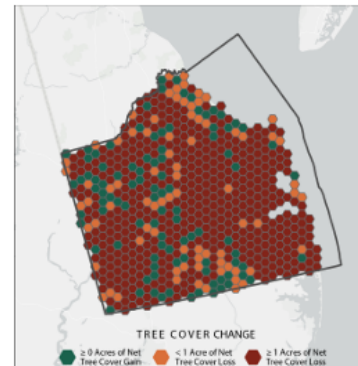
Carbon Sequestered Value
329,000 tons removed annually
\$61.8 million saved annually

Calculated based on 2018 tree cover data using:
landscape.iitree.org

1. Tree cover includes all trees occurring on all land uses, such as individual trees found over turf, impervious, agricultural, wetlands, or other lands. It also includes areas of "forest," defined in this dataset as patches of tree cover 1 acre or greater, with a minimum patch width of 240 feet.
2. Other includes a mixture of non-treed land uses not captured in the main pie chart categories. See the Data Guide for detailed definitions of "other" and all the land use categories.

Land use/land cover statistics were generated based on 2018 imagery using the 2022 edition of the Chesapeake Bay Land Use and Land Cover Database.

How is tree cover changing on developed and developing lands?



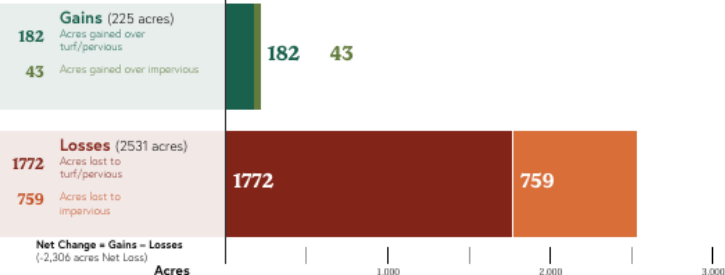
Understanding how your tree cover changes over time can inform the sustainable management of forests and community trees. The map to the left shows where your county has lost and gained tree cover from 2013 to 2018, focusing on land that is already or newly developed.

Tree cover can be lost quickly due to human activities (e.g., construction) or natural events (e.g., severe weather).

Tree cover can be gradually increased through tree planting and natural regrowth, but these gains may take 10-15 years to be detected in high resolution imagery.

Since mature, healthy trees provide significantly greater community benefits than newly planted trees, it is important to both preserve existing tree cover and seek opportunities to grow new trees and forests. Local land use planning, ordinances, and tree programs play a critical role!

Tree Cover Change on developed/developing lands (2013-2018)



Learn More:

Chesapeake Tree Canopy Network
Links to county fact sheets, user guides, map viewers, datasets, and more

Tree Equity Score
Explore maps of how tree benefits are distributed across communities

Capitalizing on the Benefits of Trees
A slideshow for local leaders featuring tree benefits, case studies and resources

State Urban and Community Forestry Assistance
(Delaware Website)



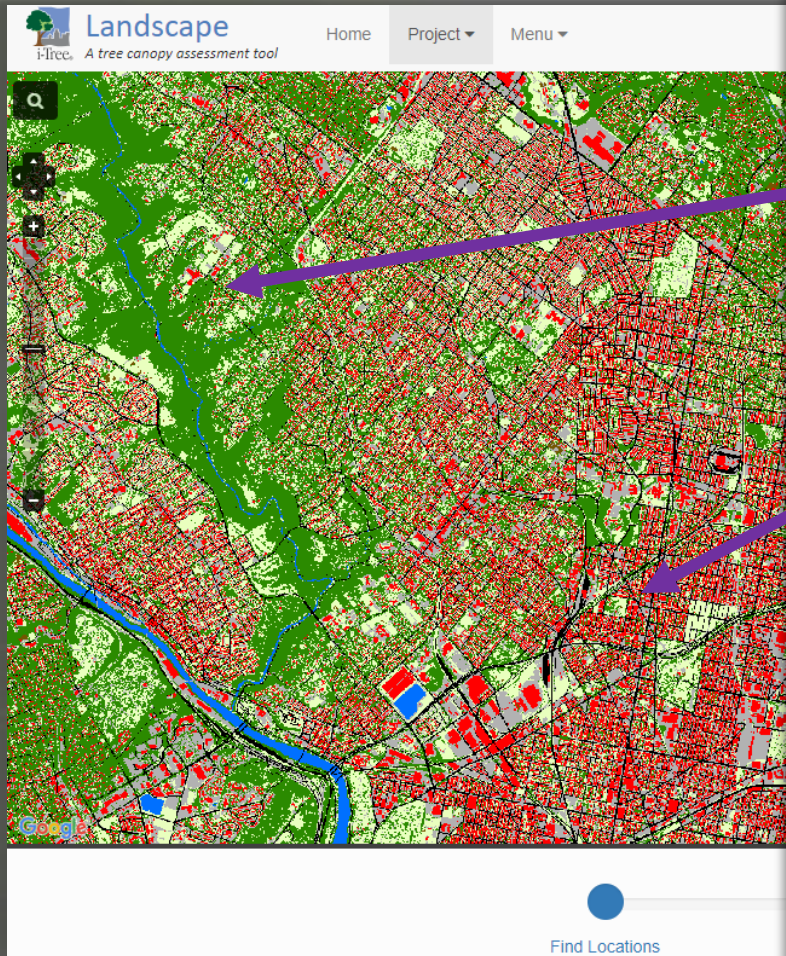
CHESAPEAKETREES.NET
PUBLISHED FEBRUARY 2023



Fact sheets produced through a grant from the USDA Forest Service. USDA is an equal opportunity provider, employer and lender.

i-Tree Landscape

- Chesapeake Tree Canopy Network
- Philadelphia Tree Plan



CHESTNUT HILL:
80°

HUNTING PARK:
102°



SAME DAY

**PLANT STREET TREES.
FUND TREE CARE.**

Letting it all sink in!

🌳 See impacts on geographic scales that can highlight benefits in action

- Distribution of canopy and other resources: where does your landscape fit?

🌳 Estimate future impacts of weather

🌳 Spatial breakdown of benefits: visualize data at neighborhood scales

🌳 See impacts alongside demographic info that can inform decisions for planting and local priorities

🌳 Prioritization and Limitations

- Focus on neighborhoods where you want to increase canopy benefits
- Data layers are publicly available, and not directly downloadable from Landscape itself
- For use in the US, working with layers available on a nationwide level

