

# Metropolitan Washington Council of Governments

August 24, 2023



[www.chesapeaketrees.net](http://www.chesapeaketrees.net)

## Tree Canopy Update

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The screenshot shows the homepage of the Chesapeake Tree Canopy Network. At the top, there is a navigation bar with the logo and menu items: SIGN UP, NEWSLETTER ARCHIVE, ABOUT US, CONTACT US, CHESAPEAKEFORESTBUFFERS.NET, WHY TREE CANOPY?, UNDERSTAND YOUR CANOPY, EXPAND YOUR CANOPY, and MAINTAIN YOUR CANOPY. The main content area features a large image of a diverse group of people standing outdoors. To the left of the image, a welcome message reads: "Welcome to the Chesapeake Tree Canopy Network. Connecting you with resources, stories, and best practices to understand your canopy, expand your canopy, and maintain your canopy. Learn about and make the case to others why tree canopy is so critical to a healthy, vibrant Chesapeake Bay watershed. We are building this resource as we go, so please send your ideas and suggestions for making the network most helpful." To the right of the image, a news snippet states: "DE: Delaware Commits to Planting and Maintaining Trees in the State" with a "Read More" link. Below the main content, there are two buttons: "Get updates on tree canopy news and events!" and "NEWSLETTER ARCHIVES". A section titled "New Resources to Explore" lists "County Tree Cover Fact Sheets" and "Guide for Local Government Leaders". At the bottom, there is a section for "Tree Cover Status & Change FOR CUMBERLAND COUNTY, PA" with a table of statistics and a link to "A Local Government Guide to the Chesapeake Bay Module 4: Capitalizing on the Benefits of Trees".

Tree Cover Status & Change FOR CUMBERLAND COUNTY, PA		
43.6%	\$42.6 Million	-791 Acres
Total Percent of County with Tree Cover	Annual Benefits provided by Tree Cover (in reduced air pollution, stormwater, & carbon dioxide)	Net Loss of Tree Cover on Developed Lands, 2013 to 2019

# Tree canopy outcome: what is our goal?



Through the *Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to...

Continually increase urban tree canopy capacity to provide air quality, water quality and habitat benefits throughout the watershed. **Expand urban tree canopy by 2,400 acres by 2025.**

**Goal: *Vital Habitats***

**Outcome: *Tree Canopy***

# It's not just about planting...

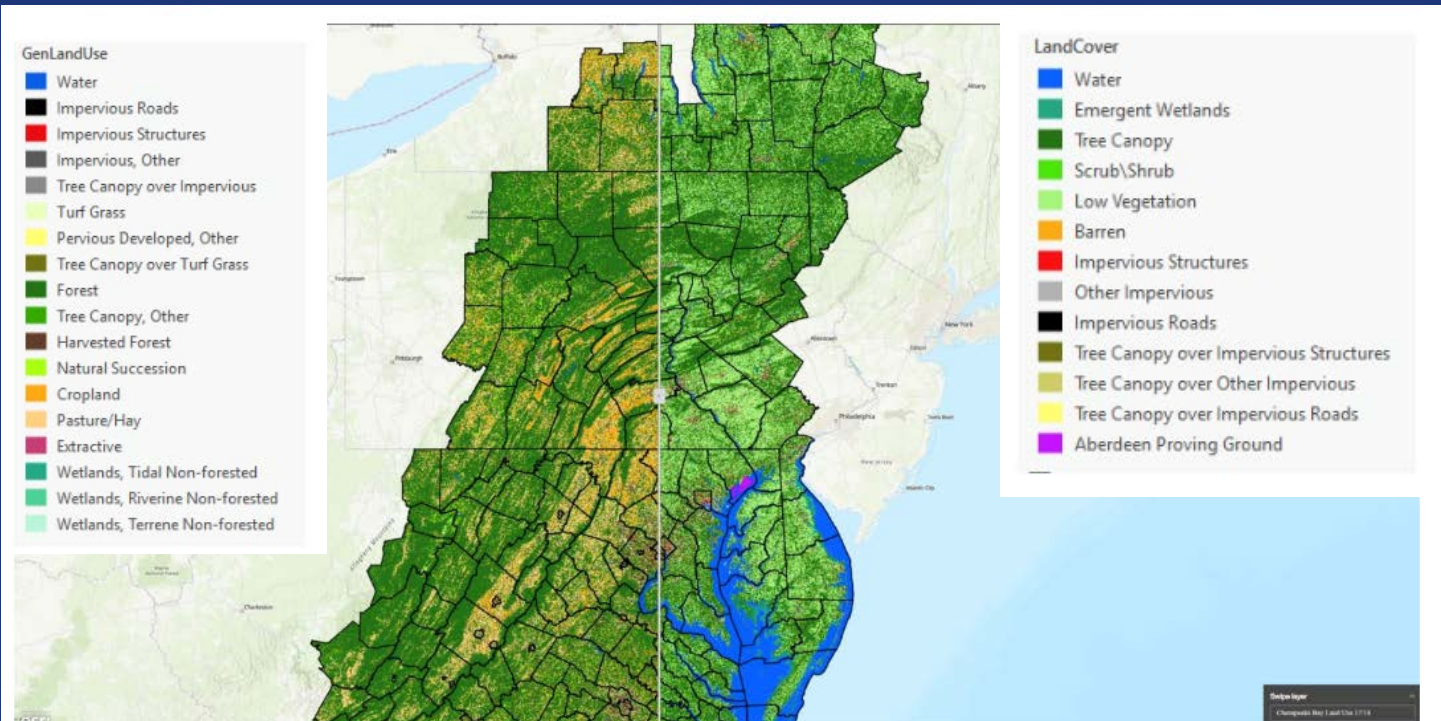


We track Tree Canopy progress in two ways:

- 1) States report three urban tree planting BMPs annually for TMDL
- 2) Long term progress analyzed through high resolution Land Cover/Land Use updates

# Chesapeake Bay Program High Resolution Land Use/Land Cover Data

- EPA funded, used in Chesapeake Bay modeling tools for TMDL; USGS plays leading technical role
- Lead partner-Chesapeake Conservancy with land cover/change mapping contracted to UVM SAL
- Change analyses completed for 2013/14 and 2017/18 datasets (2021/22 coming in 2024)



<https://www.chesapeakeconservancy.org/conservation-innovation-center/high-resolution-data/lulc-data-project-2022/>

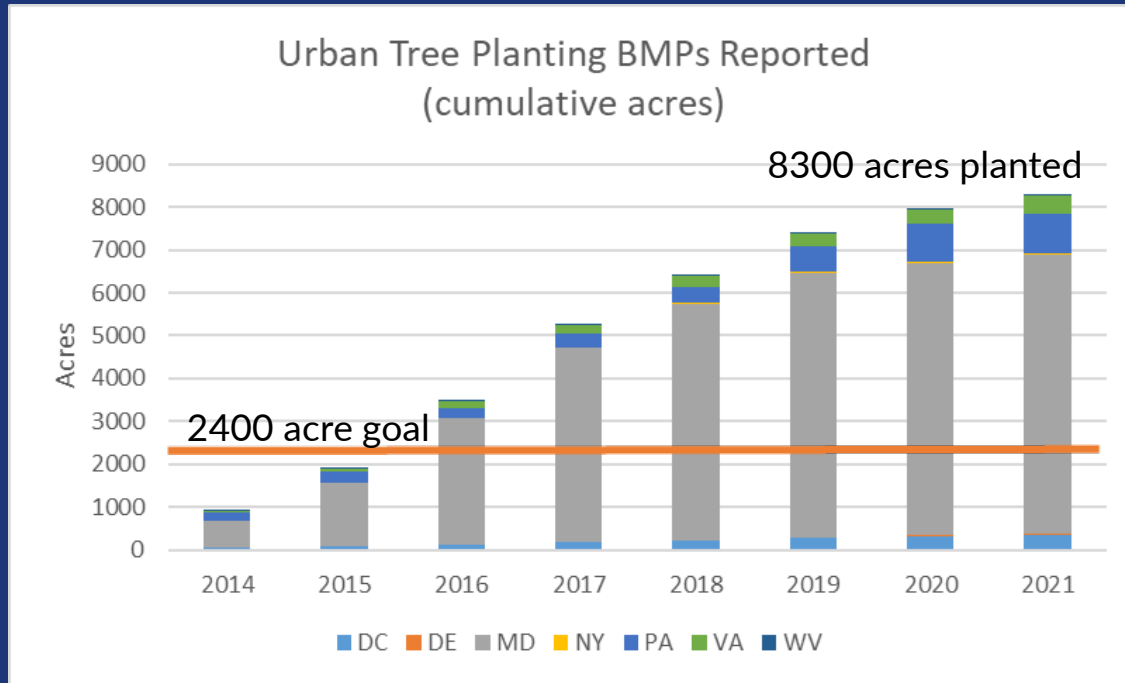
Land Use/Land Cover Classification produced from Land Cover + ancillary data (USGS, Chesapeake Conservancy)

Land Cover produced by UVM Spatial Analysis Lab; NAIP imagery (1m), available LIDAR, ancillary data

# How are we doing?



## New Plantings



## Land Cover Change Detected from Imagery

Tree Canopy Net Change in Census Places (2013/14-2017/18)	
Jurisdiction (CB Only)	Net Change (Acres)
Delaware	-28
DC	21
Maryland	-13,804
New York	78
Pennsylvania	-2,444
Virginia	-9,548
West Virginia	-107
<b>Total</b>	<b>-25,832</b>



Home » Understand your Canopy

# Understand your Canopy

The first step in working toward a tree canopy goal is understanding what you have. Thanks to the investments of Chesapeake Bay Program partners, we are fortunate to now have ready access to "wall-to-wall" high resolution land cover/land use data for the entire watershed, for the 2013/14 and 2017/18 time periods. Updated data based on 2021/2022 imagery are anticipated in 2024.

New county fact sheets are now available for all Chesapeake watershed counties sharing tree cover status, benefits (from i-Tree) and change information over the 2013/14 to 2017/18 time periods. Use the map viewer below to find your county's fact sheet. Municipal fact sheets will be produced later in 2023.

Visit the [Data Guide](#) for more information on the data sources included in the fact sheets, as well as additional resources. Access to land use/land cover map viewers, GIS datasets, and detailed methods documentation are available from [Chesapeake Conservancy](#).

## Tree Cover Status & Change

FOR CUMBERLAND COUNTY, PA

**43.6%** Total Percent of County with Tree Cover  
**\$42.6 Million** Annual Benefits provided by Tree Cover (in reduced air pollution, stormwater, & carbon dioxide)  
**-791 Acres** Net Loss of Tree Cover on Developed Lands, 2013 to 2017

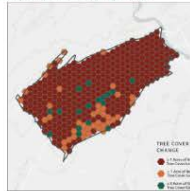
What is the land use/land cover breakdown in your county?  
**350,171 ACRES OF LAND AREA** IN CUMBERLAND COUNTY



Where does tree cover occur in your county?

<b>83.9%</b> is in forest (128,186 acres)	<b>1.4%</b> is over riparian (1,075 acres)
<b>9.4%</b> is over turf grass (14,411 acres)	<b>5.3%</b> is other tree cover (8,144 acres)

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 2017, 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.

## Featured Resources



Tree Cover Fact Sheet Data Guide

LEARN MORE >



Chesapeake Land Cover/Land Use Data & Viewers

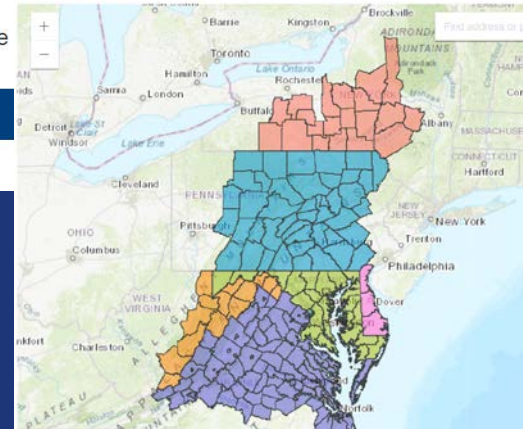
LEARN MORE >



Tree Equity Score Mapping Tool

LEARN MORE >

## Find your County Tree Cover Fact Sheet



# County Fact Sheets now available...(municipal coming in next year)

## Tree Cover Status & Change

### FOR FREDERICK COUNTY, MD

**42.9%**  
Total Percent of County with Tree Cover

**\$52.4 Million**  
Annual Benefits provided by Tree Cover (in reduced air pollution, stormwater, & carbon dioxide)

**-453 Acres**  
Net Loss of Tree Cover on Developed Lands, 2013 to 2018

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

**423,219 ACRES OF LAND AREA**  
IN FREDERICK COUNTY

**Where does tree cover occur in your county?**

- 80.9%** is in forest (147,005 acres)
- 2%** is over impervious (3,656 acres)
- 10.3%** is over turf grass (18,704 acres)
- 6.8%** is other tree cover (12,345 acres)

**What are some benefits of tree cover in your county?**

- Total Air Pollution Removal Value \$12.1 Million lbs** removed annually  
**\$5.0 Million** saved annually  
Total air pollution removal includes CO, NO<sub>x</sub>, O<sub>3</sub>, SO<sub>x</sub>, and Particulate Matter (PM2.5, PM10).
- Gallons of Reduced Stormwater Runoff Value 300.7 million gallons** reduced annually  
**\$2.7 million** saved annually
- Carbon Sequestered Value 238,000 tons** removed annually  
**\$44.7 million** saved annually

Calculated based on 2018 tree cover data using [landscope.treestools.org](https://landscope.treestools.org)

**42.9%** Tree Cover<sup>1</sup>  
181,709 acres

**41.4%** Agriculture  
175,408 acres

**5.3%** Turf Grass (Lawns)  
22,492 acres

**6.4%** Impervious (Buildings/Pavement)  
26,888 acres

**3.6%** Other<sup>2</sup>  
15,327 acres

**0.3%** Non-Forested Wetlands  
1,396 acres

**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-branded 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.

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

Category	Acres
Gains (265 acres)	201
Acres gained over turf/pervious	64
Acres gained over impervious	201
Losses (718 acres)	517
Acres lost to turf/pervious	201
Acres lost to impervious	517
<b>Net Change = Gains - Losses</b>	<b>-453 acres (Net Loss)</b>

**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**  
(Maryland Website)



CHESAPEAKETREES.NET  
PUBLISHED FEBRUARY 2023



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

# Tree Cover Status & Change

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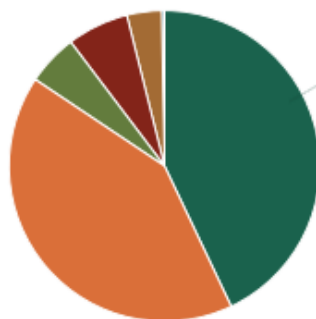
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**12.1 Million lbs** removed annually  
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**Gallons of Reduced Stormwater Runoff Value**  
**300.7 million gallons** reduced annually  
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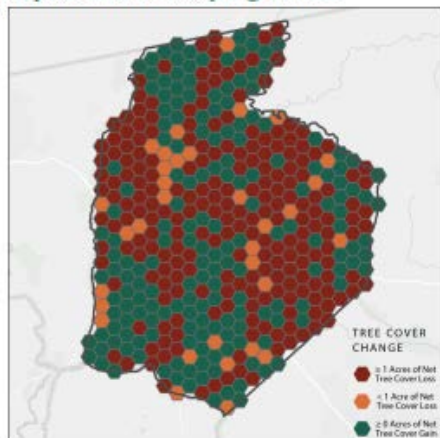


**Carbon Sequestered Value**  
**238,000 tons** removed annually  
**\$44.7 million** saved annually

Calculated based on 2018 tree cover data using:  
[landscapetree.tools.org](https://landscapetree.tools.org)



## How is tree cover changing on developed and developing lands?



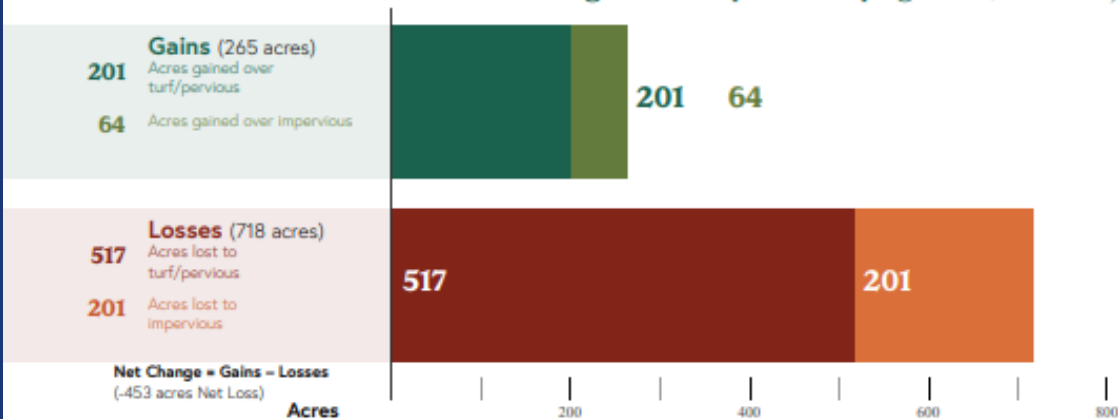
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### Tree Cover Change on developed/developing lands (2013–2018)



# Chesapeake Bay Tree Cover Status and Change

## Fact Sheet Data Guide

By Marie G Bouffard, UVM Spatial Analysis Lab, in collaboration with partners listed below

March 2023

### Why do trees matter?

Trees provide numerous public benefits in the form of ecosystem services. Ecosystem services refer to all the ways we benefit from the services that healthy natural systems provide, such as improved air quality, reduced stormwater runoff, carbon sequestration, temperature regulation, and wildlife habitat.

### Why map tree cover?

It is important to map and monitor tree cover change over time to detect trends that can inform management decisions. This information can be used to improve access to ecosystem services, decide where new trees should be planted, and ensure healthy tree cover for future generations.



## Sections

- |   |   |
|---|---|
| <b>1</b>   Introduction<br>Pages 1 - 3                          | <b>4</b>   i-Tree Benefits<br>Page 9            |
| <b>2</b>   Land Cover Change<br>Mapping<br>Pages 4 - 5          | <b>5</b>   Tree Cover Change<br>Page 10 - 11    |
| <b>3</b>   Land Use/Land Cover<br>Classification<br>Pages 6 - 8 | <b>6</b>   Additional Resources<br>Page 12 - 14 |

## Map Viewers

2013/2014 NAIP

2017/2018 NAIP

Land Use / Land Cover Change,  
2013-2018

On the Land Use Change Viewer, select a county and click Download Links to access the GIS data and land use/land cover change matrices available for that county.

Download Links	
County Name	Cumberland County
State	PA
Land Use Land Cover 2017/2018	Download
Land Use Land Cover 2013/2014	Download
Land Use Land Cover Change	Download
Land Cover 2017/2018	Download
Land Cover 2013/2014	Download
Land Cover Change	Download
Land Use Land Cover Matrices	Download
Land Use Land Cover Summaries	Download

For those who want to simply view and explore the data online, map viewers are available for the 2017/2018 land use/land cover data, as well as the land use/land cover change data (2013/2014 – 2017/2018) at [this link](https://chesapeaketrees.net/understand-your-canopy/).

<https://chesapeaketrees.net/understand-your-canopy/>

# State of the Chesapeake Forests

A follow-up to the 2006 State of the Chesapeake Forests report.

**USDA Forest Service, Chesapeake Bay Program**

May 1, 2023

[Forest and tree distribution](#)

[Tree cover \(2017/18\)](#)

[Forested extent \(2017/18\)](#)

[Tree cover change](#)

[Forested extent change](#)

[Next Steps](#)





[Home](#) » [Local Government Guide: Capitalizing on the Benefits of Trees](#)

## Local Government Guide: Capitalizing on the Benefits of Trees

A Local Government Guide to the Chesapeake Bay is a [seven-module series](#) created to support decision-making by local officials. As demonstrated in Module 4 (Capitalizing on the Benefits of Trees), local officials can achieve mutually beneficial outcomes by prioritizing local economic development, infrastructure resiliency, public health, and education, while also protecting and enhancing the environment. Please use the below resources widely to help advance local tree canopy efforts. As a companion product, State Tree Resource Guides were created to highlight the state programs and grant opportunities that can help local governments achieve their goals.

### A Local Government Guide to the Chesapeake Bay

#### Module 4: Capitalizing on the Benefits of Trees

#### Resources to Download

- [Capitalizing on the Benefits of Trees \(PPT\)](#)
- [Capitalizing on the Benefits of Trees \(PDF\)](#)
- [Fact Sheet: Capitalizing on the Benefits of Trees](#)
- [Delaware Tree Resource Guide](#)
- [Maryland Tree Resource Guide](#)
- [New York Tree Resource Guide](#)
- [Pennsylvania Tree Resource Guide](#)
- [Virginia Tree Resource Guide](#)
- [West Virginia Tree Resource Guide](#)





## Questions & Discussion

Thank you!

Follow up:

Julie Mawhorter, [Julie.Mawhorter@usda.gov](mailto:Julie.Mawhorter@usda.gov)

Katie Brownson, [Katherine.Brownson@usda.gov](mailto:Katherine.Brownson@usda.gov)