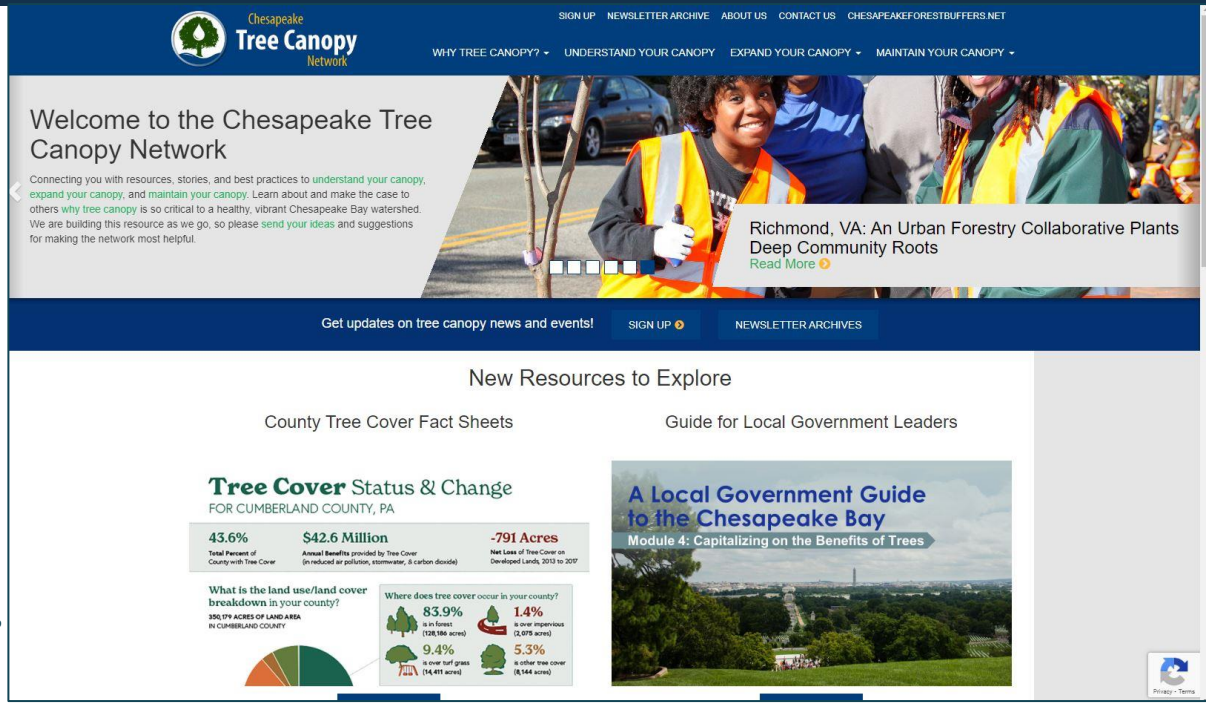
Tree Canopy Outcome



Julie Mawhorter, USFS, Tree Canopy Outcome Coordinator
1/8/25 Forestry Workgroup

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

Vital Habitats Goal

- **Tree Canopy Outcome***:* 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**

TREES in COMMUNITIES

CREATE VIBRANT COMMUNITIES

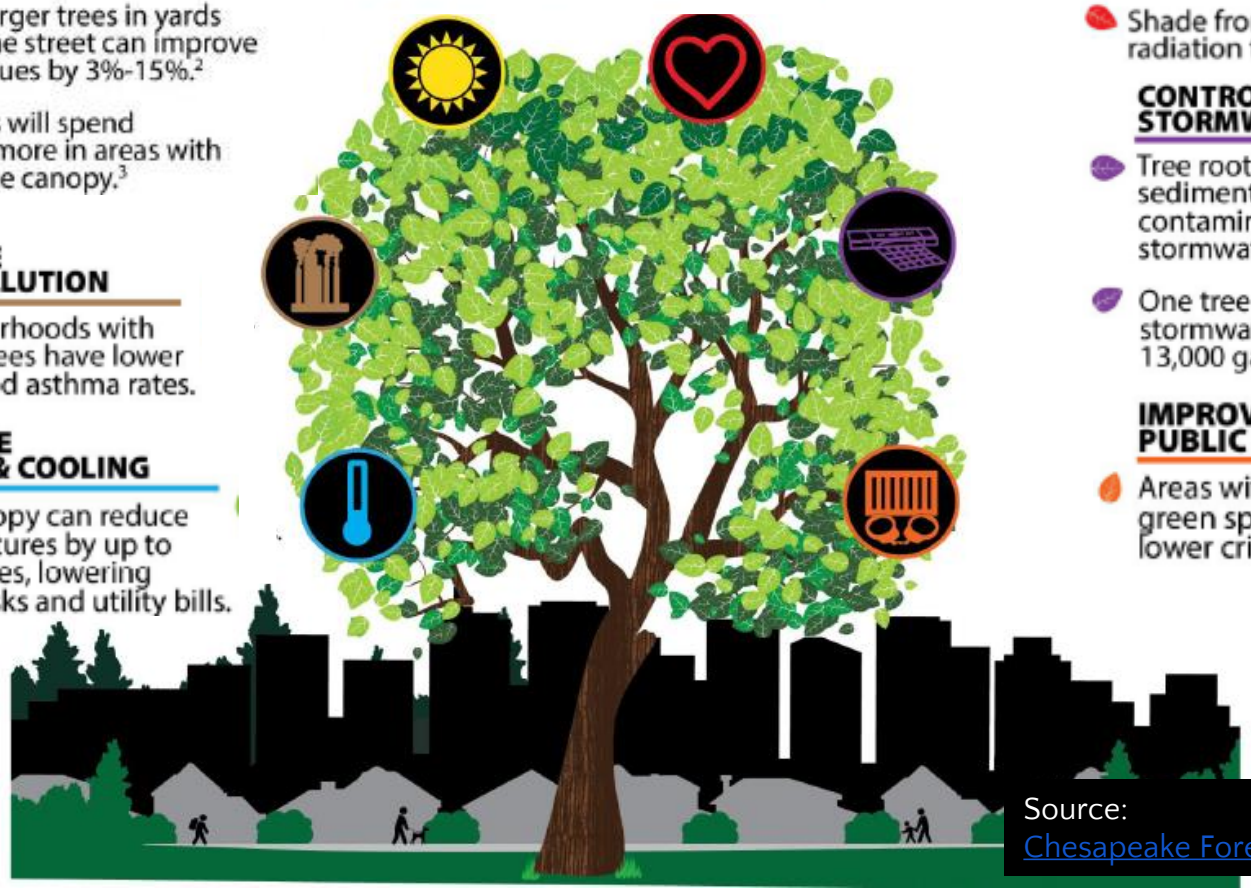
- Incorporating trees into common spaces in public housing increases social activities.[1]
- Having larger trees in yards and on the street can improve home values by 3%-15%.[2]
- Shoppers will spend 9%-12% more in areas with better tree canopy.[3]

REDUCE AIR POLLUTION

- Neighborhoods with lots of trees have lower childhood asthma rates.

PROVIDE SHADE & COOLING

- Tree canopy can reduce temperatures by up to 20 degrees, lowering health risks and utility bills.



IMPROVE HUMAN HEALTH

- Trees help reduce stress, lower blood pressure, and boost the immune system.
- Shade from trees reduces radiation that causes skin cancer.

CONTROL STORMWATER

- Tree roots can trap sediment and filter contaminants from stormwater.
- One tree can reduce stormwater runoff by 13,000 gallons per year.[4]

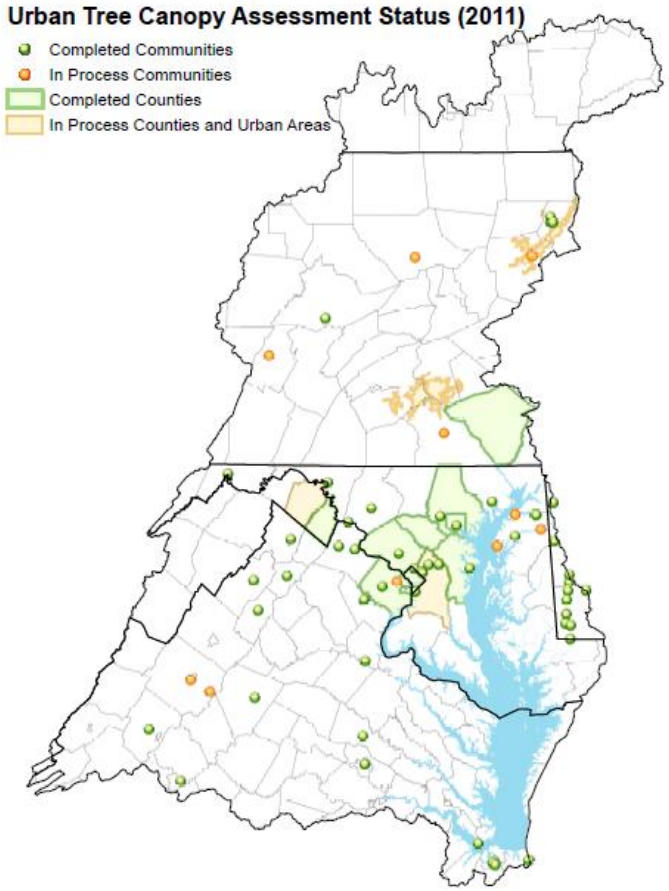
IMPROVE PUBLIC SAFETY

- Areas with increased green space have lower crime rates.[3]

Source:
Chesapeake Forest Restoration Strategy

History of Tree Canopy goals in the Chesapeake Bay Watershed

- 2003 EC Directive: By 2010, work with at least 5 local jurisdictions in each state to complete an assessment of urban forests, adopt a local goal to increase urban tree canopy cover and encourage measures to attain the established goals
- 2007 EC Directive: By 2020, accelerate reforestation and conservation in urban and suburban areas, by increasing the number of communities with commitments to tree canopy expansion goals to 120
- 2014: Shift to numeric canopy target to track progress in terms of net gain



How was the 2014 Tree Canopy Outcome established?

- State forestry agencies set annual target used to calculate a 2025 goal
- 100 trees per acre assumption at the time, but BMP credit shifted to 300 trees per acre in later years
- Not much data available at the time on canopy gains/losses

State	Annual Target (New Acres)	2025 Target (New Acres)
Delaware	5	60
DC	40	480
Maryland	45	540
New York	5	60
Pennsylvania	60	720
Virginia	40	480
West Virginia	10	120
TOTAL	205	2460

Tree Canopy Indicator has 2 components:

1) States report three urban tree planting BMPs annually for TMDL
2) Long term progress analyzed through CBP Land Cover updates

How do we measure progress?

Annual Planting Numbers

- States report BMP progress annually to CBP (usually by county) for three urban tree BMPs – urban tree planting, urban forest planting, urban forest buffers

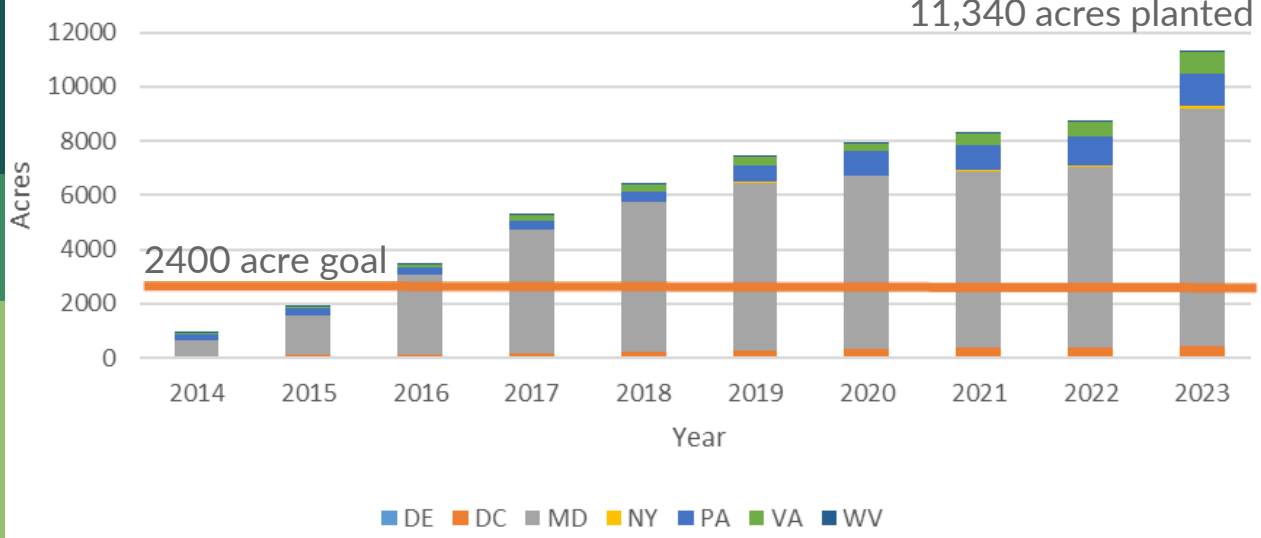
Community Tree Canopy Net Change

- Calculate tree canopy cover and change within urban/community areas (2010 census places) using high-resolution land use data every 4-5 years

OUTLOOK OFF COURSE

What is our Expected and Actual Progress? (as published in 2024)

1. Community Tree Planting BMPs Reported (cumulative acres)



Tree Canopy Indicator updated in 2024 on [Chesapeake Progress]

2. Land Use/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
Total	-25,832

What is our Expected and Actual Progress?

State	Annual Target (New Acres)	2025 Target (New Acres)	Acres Planted (2014-2023)	Net Change (2013/14 – 2017/18)
Delaware	5	60	32	-28
DC	40	480	418	21
Maryland	45	540	8739	-13804
New York	5	60	88	78
Pennsylvania	60	720	1200	-2444
Virginia	40	480	822	-9548
West Virginia	10	120	41	-107
TOTAL	205	2460	**11,340**	**-25,832**

Hot off the press with latest tree canopy change data… [DRAFT]

	Total Area of Tree Canopy (acres)						Net Change in Tree Canopy (acres)		
Jurisdiction	Time 1	Year	Time 2	Year	Time 3	Year	T1-T2	T2-T3	T1-T3
DE	2,996	2013	2,967	2018	2,766	2021	(29)	(201)	**(230)**
DC	13,659	2013	13,647	2017	13,691	2021	(13)	44	**32**
MD	633,499	2013	619,962	2018	617,959	2021	(13,536)	(2,003)	**(15,540)**
NY	48,863	2013	48,915	2017	47,119	2022	53	(1,796)	**(1,743)**
PA	302,969	2013	300,636	2017	296,413	2022	(2,334)	(4,223)	**(6,557)**
VA									Coming soon
WV	14,983	2014	14,868	2018	14,726	2022	(115)	(142)	**(256)**

Preliminary analysis of tree canopy net change in CB watershed census places (2010) from three time periods of high resolution imagery. T1=2-13/14, T2=2017/18, T3 = 2021-2022

Learn

What have we learned in the last ten years?

Successes

- Increased state and federal investment

(E.g. MD 5 Million Trees, IRA Urban & Community Forestry Grants)

- Growing focus on equity, health, resilience, workforce
- Access to state-of-the-art datasets, putting data to use

(E.g. Tree Cover Status & Change Fact Sheets)

- MANY partnership projects –Summits, TC Network website, Trees for All EJ project, funding guide, schools guide, local government guide, Funding & Policy Roundtable, Urban Tree Supply Forum, etc.

Challenges

- Overriding trend of tree canopy loss from many factors (age, storms, development, pests/disease, etc.)
- Still high need for local funding and policy enhancements, including sustained state and federal support
- Critical focus needed on equity, workforce, maintenance (beyond planting), and community-based action

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What is the value-add of having this as a Chesapeake Bay Program outcome?

Adapt

Should we modify our outcome in an amended agreement? If so, how?

Is this outcome SMART (or SMARTIE)?

- Specific- Yes
- Measurable- Yes
- Achievable- ???
- Realistic- ???
- Time-bound- Yes

- Inclusive and Equitable?

Outputs vs. Outcomes

- Outcome: 2400 acre net gain by 2025

The net gain focus helps get at desired outcomes more than just a planting focus. 2400 acres was set based on perceived achievability in a 10 year period, with little data at the time. How do we set our next target, given variable gains/losses across the watershed?

Achievability and realistic-ness

Considerations

- 2025 target aimed for an average net gain of 205 acres per year watershed-wide
- Our average planting rate 2014-2023 was 1134 acres, with a high of 2577 in 2023
- Net tree canopy change data is showing overall losses 2-3 times what we are planting

Timeframes and units of measure

- What is the appropriate timescale for a CB tree canopy outcome? 5-,10-,15-year?
- Do we want to use interim annual goals?

Considerations for improving outcomes

Could/should the outcome be modified to:

- Better meet the goals and vision in the watershed agreement?
- Better address emerging challenges, including climate change and land use change?
- Better integrate conservation?
- Be more inclusive and equitable?

Recommendation options

- **Update**: Outcome intent is largely kept intact. Unique language may be necessary if it is more than just a SMART update. Key principle is maintaining the intent.
- **Consolidate** (i.e., Combine): Multiple Outcomes would be combined in a single Outcome, or activities contributing to an Outcome are dispersed across others
- **Remove**: The Outcome is removed from the 2014 Agreement.
- Replace: This language suggests that a novel Outcome replaces a current one and that it relates in its intent or subject area.

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What should we recommend to the Management Board for this outcome in a revised watershed agreement?

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Could this outcome be improved? If so, how?

Discussion