



# Growing 5 Million Trees in Maryland Progress Report 2024

Maryland Department of the Environment

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Maryland General Assembly

Adrienne A. Jones, House Speaker  
Maryland General Assembly



Wes Moore  
Governor

Aruna Miller  
Lieutenant Governor

Serena McIlwain  
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# 992,989 trees

planted in the State of Maryland  
from JULY 1 2021 - JUNE 30 2024



## Total Trees by Entity



688,039



25,855



1,678

### Independent Plantings

8,365



184,062



84,960\*

Created by the Tree Solutions Now Act of 2021, the 5 Million Tree Initiative (5MT) commits the state to plant and maintain 5,000,000 trees by 2031. MDE leads 5MT with leadership support from DNR, CBT, MDOT, and MDA. This interagency network reports tree plantings to MDE from state afforestation programs. Planting data is also independently reported from private land-owners and other entities.

in the past year the state planted  
**TWICE AS MANY TREES**  
than the first two years of 5MT

This is an **111% increase** in the annual rate of tree plantings. During FY24 522,747 trees were planted whereas only 470,242 trees were planted from FY21-FY23.



Governor Moore, Secretary Mcllwin, and Secretary Lee plant an eastern redbud with MDE volunteers and students on Earth Day 2024 at Montgomery Park

\*MDE collects National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) tree planting data from its administered programs. This number is reflective of Phase II MS4s only (Municipalities, State, and Federal entities).



# 57,799 trees

in urban, underserved areas from  
**JULY 1 2021 - JUNE 30 2024**

Urban underserved areas are specific communities defined by the Tree Solutions Now Act of 2021 using U.S. Census Bureau data and socio-economic criteria related to unemployment, household income, housing project status and history of redlining.

during the 2024 fiscal year  
**18,522 trees planted**  
in urban, underserved areas

Meeting the goal of 500,000 trees in urban, underserved areas enables communities to benefit from the many ecosystem services trees provide while supporting the State’s environmental justice goals.

## More Trees for More Communities



*Abel Olivo and Deforenenses de la Cuenca members plant trees in Edmonston with CBT’s Urban Trees Program*

**Defensores de la Cuenca** Co-Founder and Executive Director **Abel Olivo** has planted more than 300 trees in Prince George’s County since 2021.

*"Our approach works to build the capacity of the community along the way, we’re not just planting trees - we are planting something bigger."*

**3200 Carlisle Block Association** Founder **Warren Shaw** is planting 80 trees in Baltimore City with funding from CBT’s Urban Trees Program.

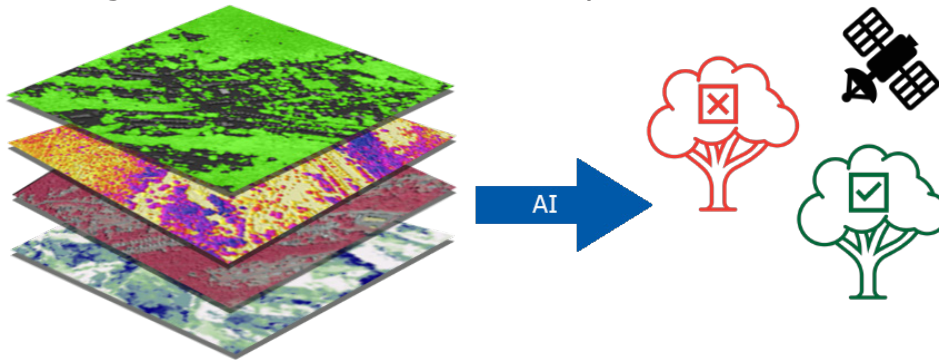


*Warren Shaw, Tree Baltimore and MDE volunteers plant trees in Hanlon Park for Arbor Day 2024*

*"Our goal is to unite residents for the purposes of fellowship, environmental health and beautification, crime prevention and municipal services awareness."*

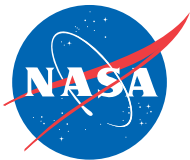
## Leveraging Artificial Intelligence

New funding and research uses artificial intelligence (AI) to automate the verification of newly planted trees. Validating tree plantings enables MDE to track tree survivorship and evaluate long-term maintenance. This approach also demonstrates significant improvements in modeling current and future carbon dynamics.



Satellite imagery and other key datasets can be used to train an AI model to validate the location of new tree plantings. This diagram shows tree canopy height and cover data from USDA's National Agricultural Imagery Program (NAIP), airborne Light Detection and Ranging (LiDAR), and NASA CMS's aboveground biomass dataset.

Establishing partnerships with global leaders in forest carbon monitoring allows Maryland to utilize the most advanced technologies in its greenhouse gas inventory. MDE's partnership with NASA's Carbon Monitoring System and University of Maryland's Department of Geographical Sciences places the State at the forefront of integrating AI and remote sensing technology into its emissions inventory.



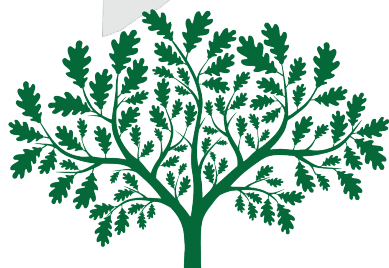
NASA Carbon Monitoring System



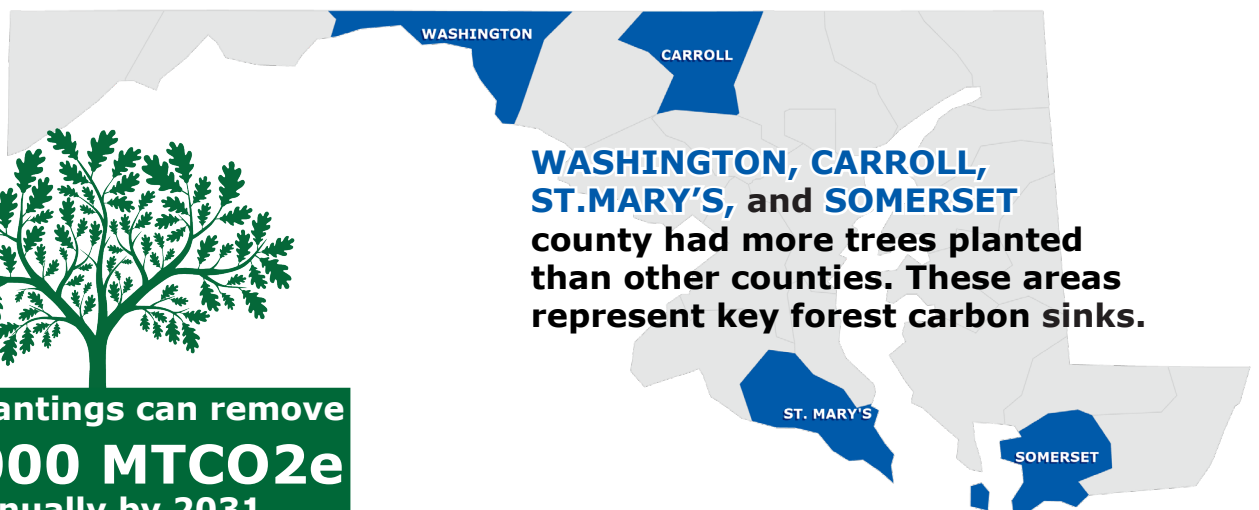
DEPARTMENT OF GEOGRAPHICAL SCIENCES

## The Carbon Benefit of 5MT

Trees planted towards 5MT enhance the State's forest carbon sink. Planting new trees and maintaining the State's existing forest canopy increases the potential to offset fossil fuel emissions. This approach enables 5MT to directly support the State's net-zero emissions by 2045 goal. This map illustrates counties making significant contributions to the State's forest sink based on existing and newly planted trees.



5MT plantings can remove  
**30,000 MTCO<sub>2</sub>e**  
annually by 2031



## More Money for More Trees

New funds from EPA’s Climate Pollution Reduction Grant (CPRG) and USDA’s Community Change Grants Program and Regional Conservation Partnership Program (RCPP), will support shovel-ready tree planting projects in urban, underserved areas, agricultural lands, and coastal areas. These federal dollars are additional to State funds appropriated annually towards afforestation and maintenance. Securing commitments to federal resources enables the State to expedite progress towards 5MT.

Since 2023, Maryland has secured **\$84,000,000** in federal funds to plant more than **1,400,000 TREES**



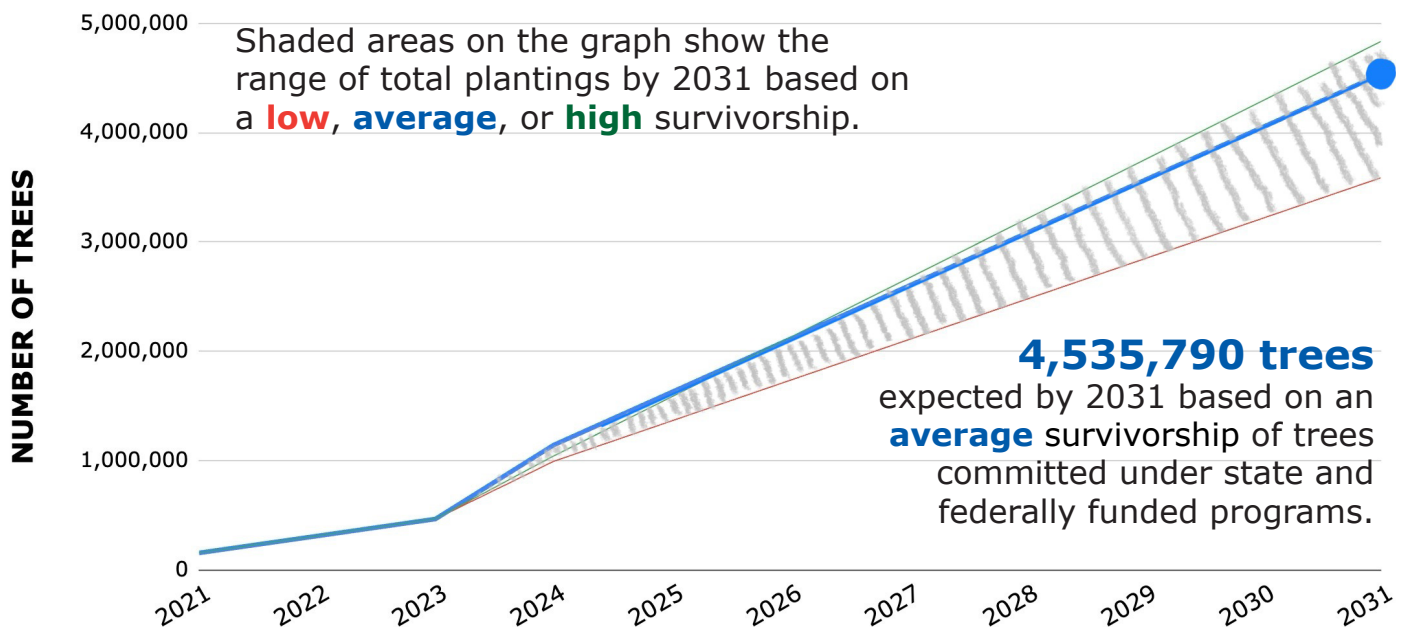
## The Road to 5 Million by 2031

The State has accelerated progress toward meeting 5 million trees by 2031, but more work is required to fill the gap. Meeting this goal will require agencies to secure willing landowners for newly funded plantings, provide long-term maintenance to increase survivorship, pursue additional funding to target urban underserved areas, and generate higher levels of reporting from independent partners.

### STRATEGIES TO ACHIEVE GOAL

1. Landowner engagement
2. Long-term maintenance
3. Leverage more funds
4. Locate reporting gaps

## TRAJECTORY OF FUTURE TREE PLANTINGS



# ACKNOWLEDGEMENTS



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To learn more about the EPA Climate Pollution Reduction Grant award visit [epa.gov/inflation-reduction-act/climate-pollution-reduction-grants](https://epa.gov/inflation-reduction-act/climate-pollution-reduction-grants).

Data for map on Page 3 courtesy of University of Maryland and NASA's Carbon Monitoring System. Learn more about the data and research at DOI 10.5281/zenodo.11580736.

Photo on page 1 courtesy of the Office of Governor Wes Moore.

