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Maryland's Forests & New Forest Conservation Legislation

Potomac River Conference

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MARYLAND FOREST TECHNICAL STUDY

Forest Study Analysis Tasks

1. Forest and Tree Canopy Extent
2. Forest Health
3. Chesapeake Restoration
4. Forest & Tree Canopy Change
5. Progress
6. Mitigation Banking
7. Forest and Tree Planting Programs



Technical Study on Changes in Forest Cover and Tree Canopy in Maryland

November 2022



Harry R. Hughes
CENTER FOR AGRO-ECOLOGY



COLLEGE OF
AGRICULTURE &
NATURAL RESOURCES



Chesapeake
Conservancy



University of Vermont
Spatial Analysis Lab

A COMPREHENSIVE FOREST REVIEW

Partnership between Chesapeake Bay Program, technical experts, research organizations and Maryland State agencies

- Evaluate impact of Maryland's 1991 Forest Conservation Act
- Address continued loss of forest to development
- Evaluate progress on state and Chesapeake Bay Agreement goals



Datasets & Definitions

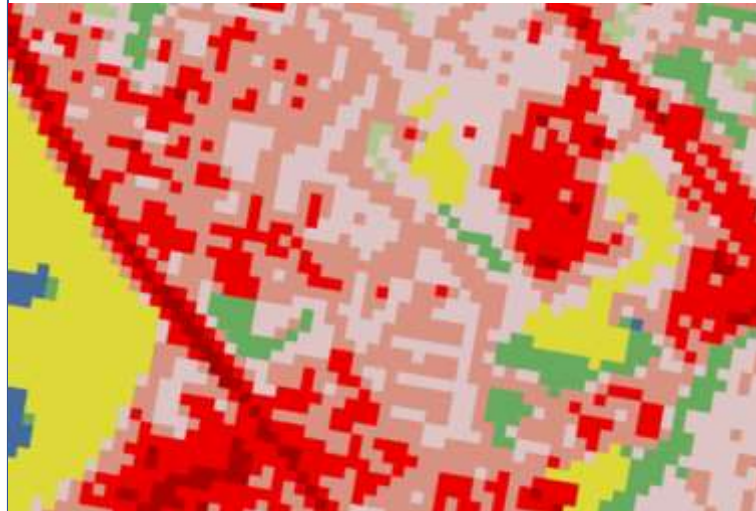
USDA Forest Service Forest Inventory and Analysis (FIA)

Field inventory for 90 years



National Land Cover Dataset (NLCD)

30m Landsat satellite data 2000-2019



Produced by the federal Multi-Resolution Land Characteristics (MRLC) consortium

Chesapeake Bay Program (CBPO) Land Cover/Land Use

1m USDA NAIP imagery + lidar 2013/14 to 2017-18

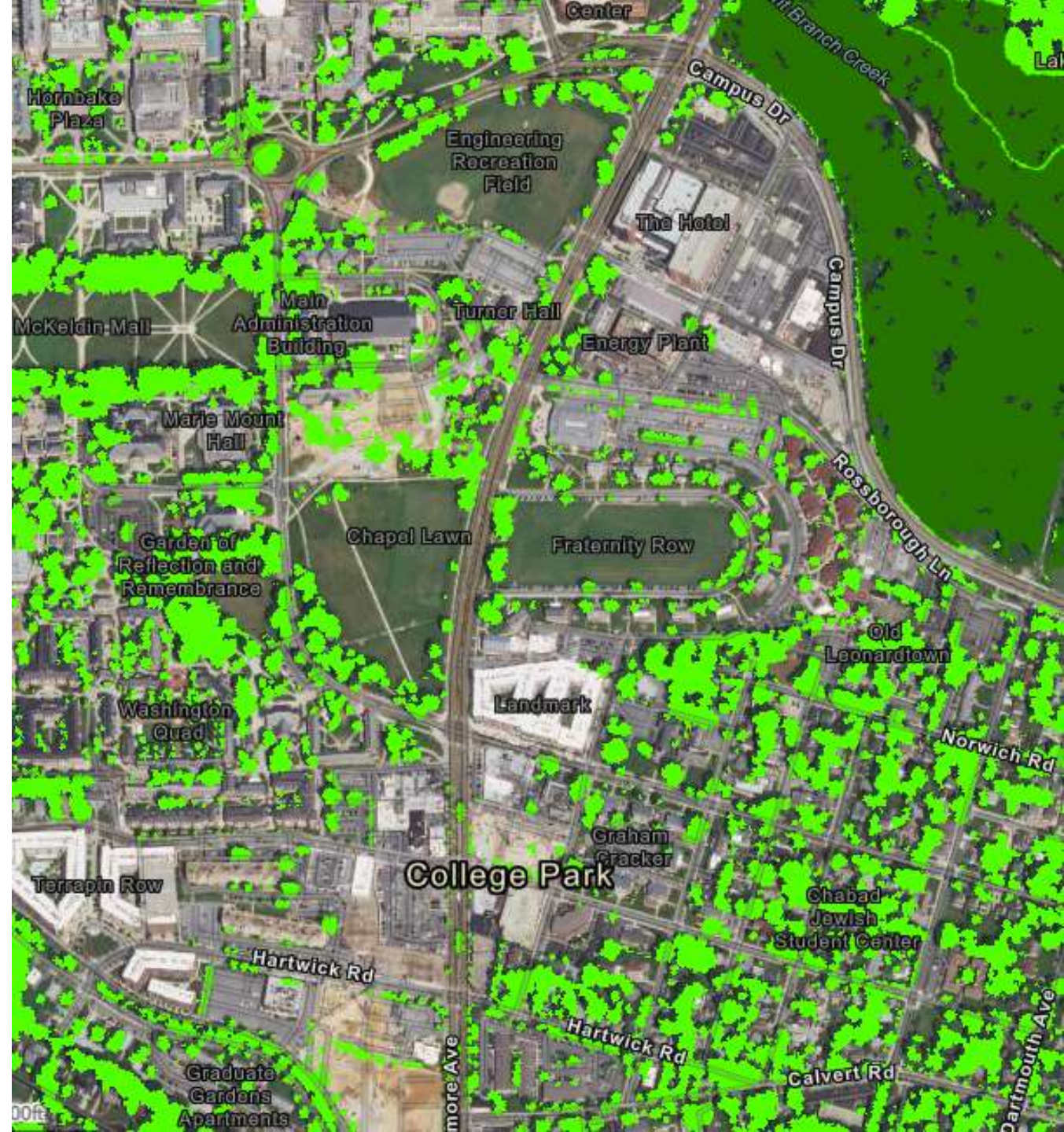


Produced by: UVM, Chesapeake Conservancy and USGS

FOREST DEFINITIONS

Size requirements for forests:

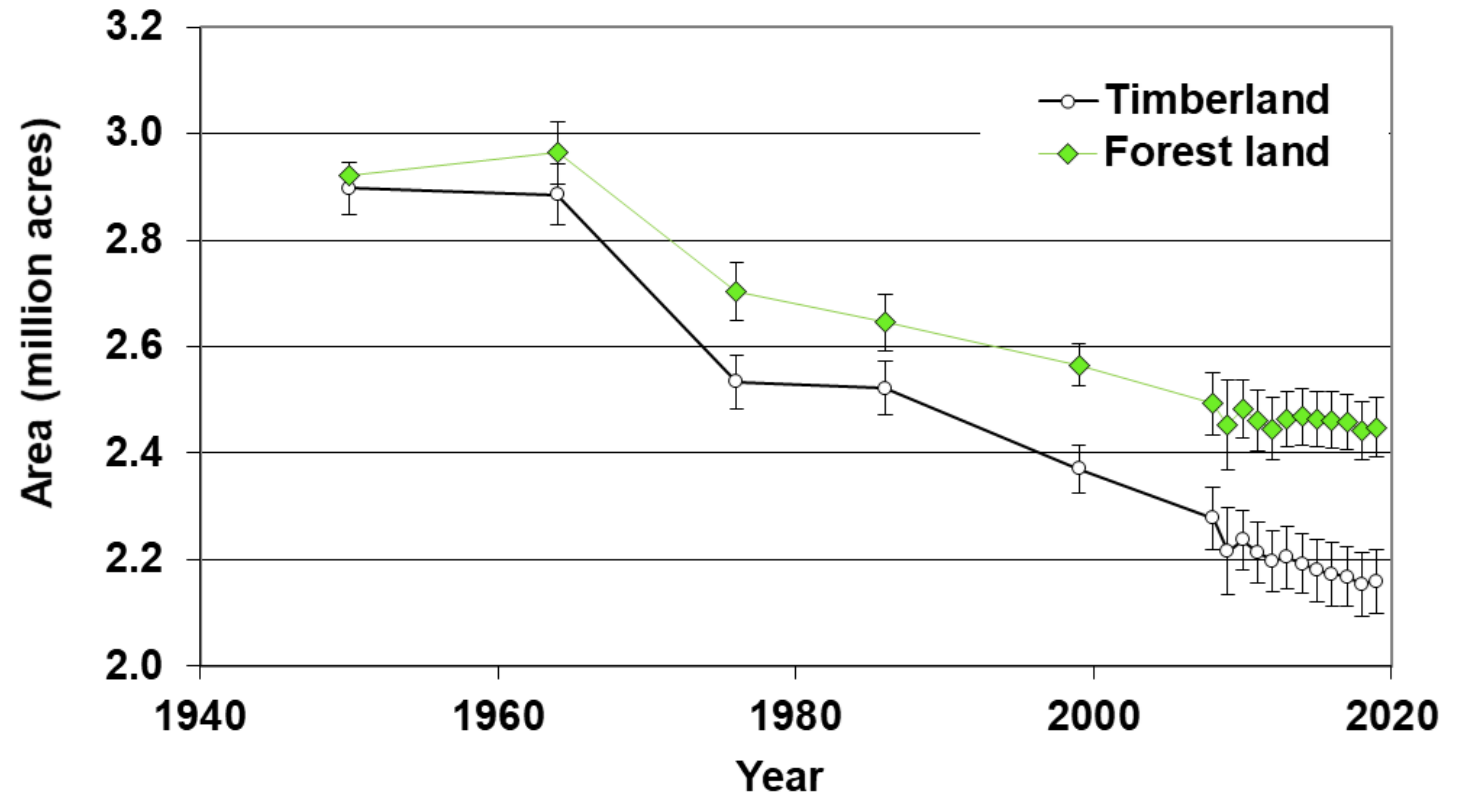
- US Forest Service - at least 1 acre in size and at least 120 feet wide
- NLCD - areas dominated by trees at least 5 meters tall and >20% of total vegetation cover
- CBPO - at least 1 acre and 240 feet wide



Forest and Tree Canopy Extent

USDA Forest Service FIA Data

- Rapid forest loss after 1960
- Reduction in rate of loss 2000 to 2020



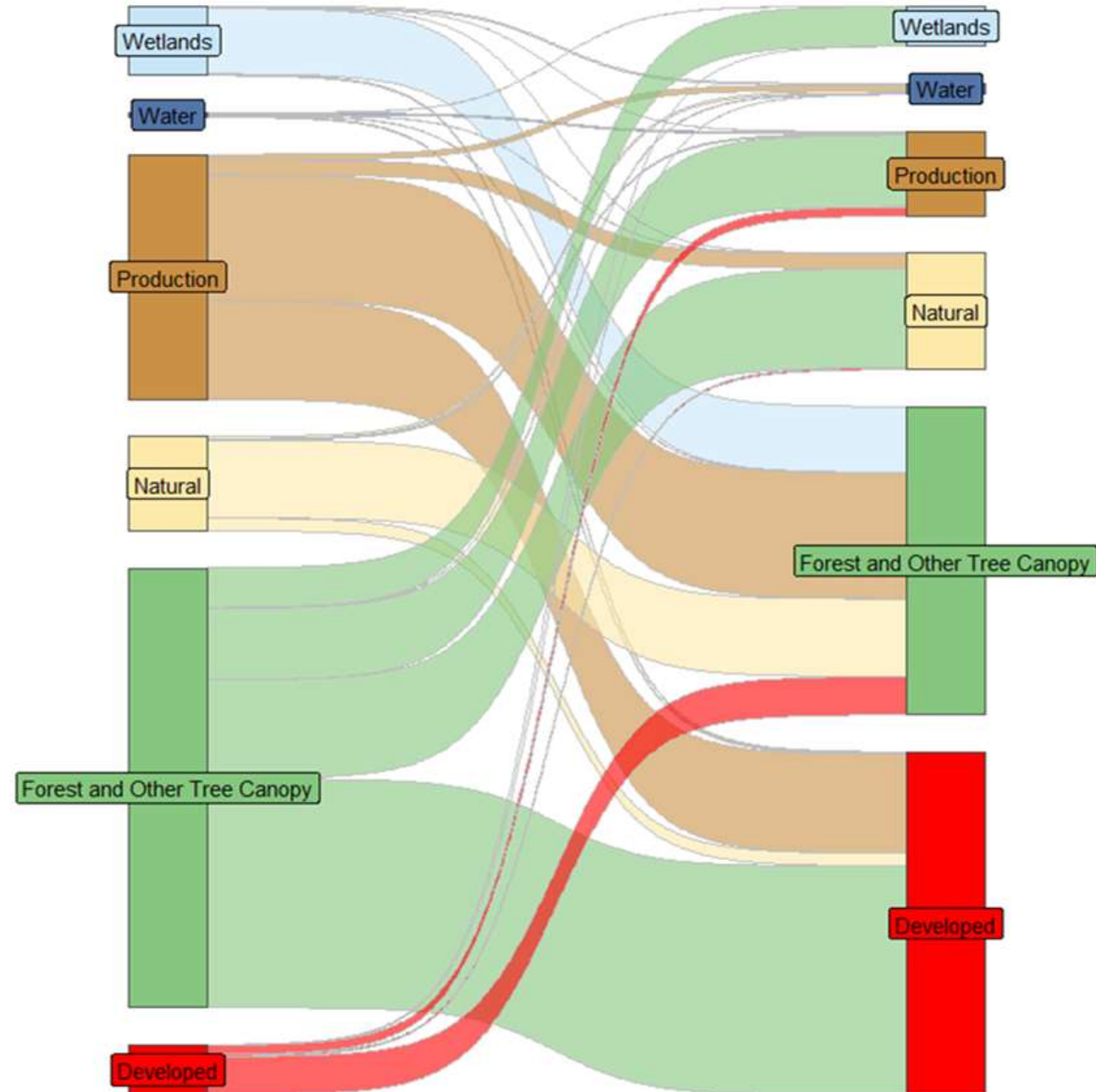
Forest and Tree Canopy Extent and Change

Table ES-1. Forest and tree canopy extent estimates from key data sources.

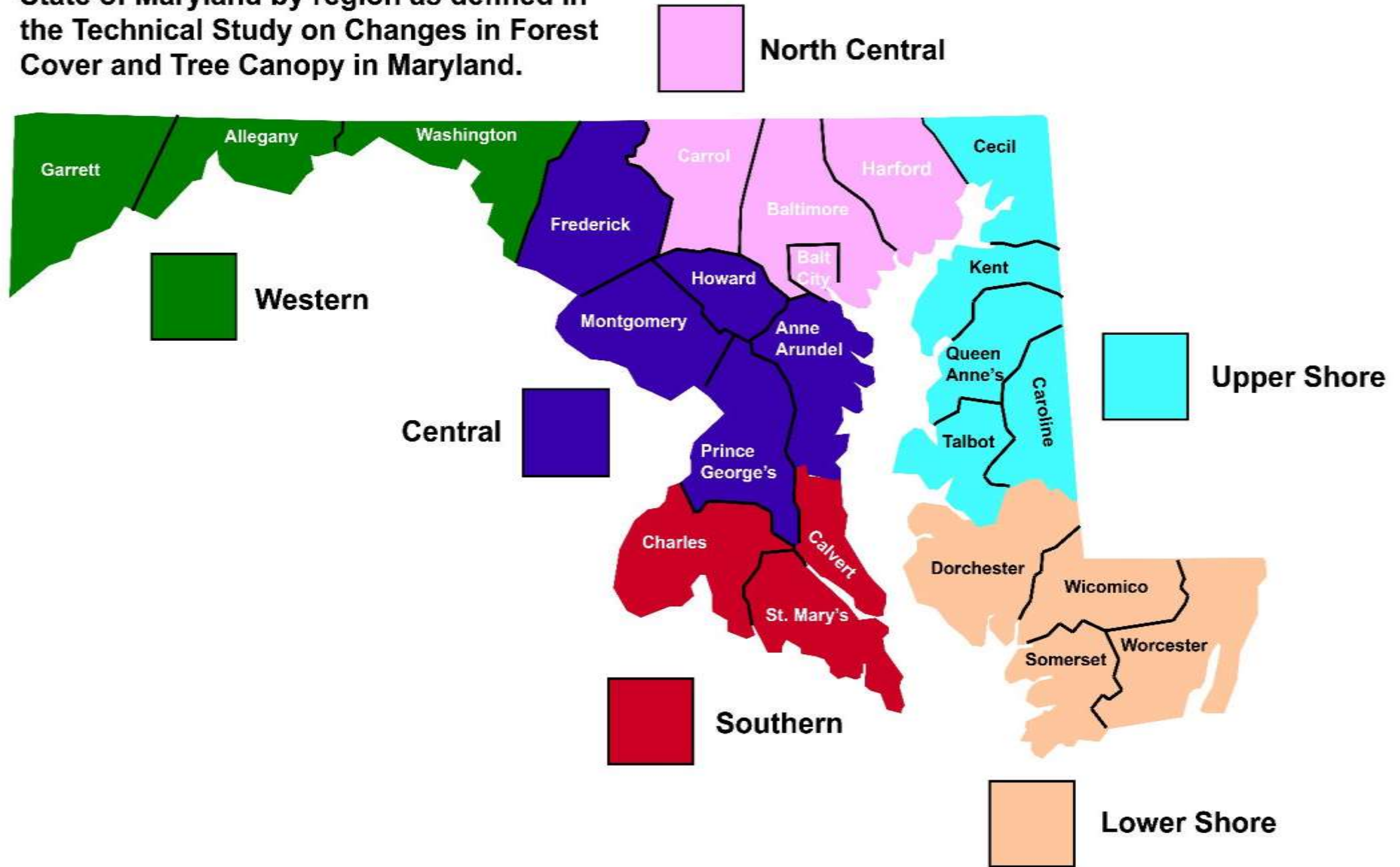
Source	Initial Year	Extent (thousand acres)	End Year	Extent (thousand acres)	Total % Change (Annual % Change)
Forest¹					
FIA ²	1999	2,566 (+/- 770)	2019	2,448 (+/- 108)	-4.6% (-0.23%)
CBPO	2013	2,584	2018	2,566	-0.70% (- 0.14%)
Tree Canopy					
Total Tree Canopy (NLCD)	2001	2,802	2019	2,791	-0.39% (-0.022%)
Within Forest (CBPO)	2013	2,584	2018	2,566	-0.70% (- 0.14%)
Outside Forest (CBPO)	2013	523	2018	529	+1.15% (+0.23%)
Total Tree Canopy (CBPO) ³	2013	3,107	2018	3,095	-0.39% (-0.077%)

LAND USE TRANSITIONS

- High resolution (1m) over 5 year time period
- Forest - 49% of all areas that changed in 2013
- Developed - largest resulting class in 2018 (38%)



State of Maryland by region as defined in the Technical Study on Changes in Forest Cover and Tree Canopy in Maryland.



Forest and Tree Canopy Extent by Region

Maryland Regions

Western

Allegany, Garrett, Washington

North Central

Baltimore, Baltimore City, Carroll, Harford

Central

Anne Arundel, Frederick, Howard, Montgomery, Prince George's

Southern

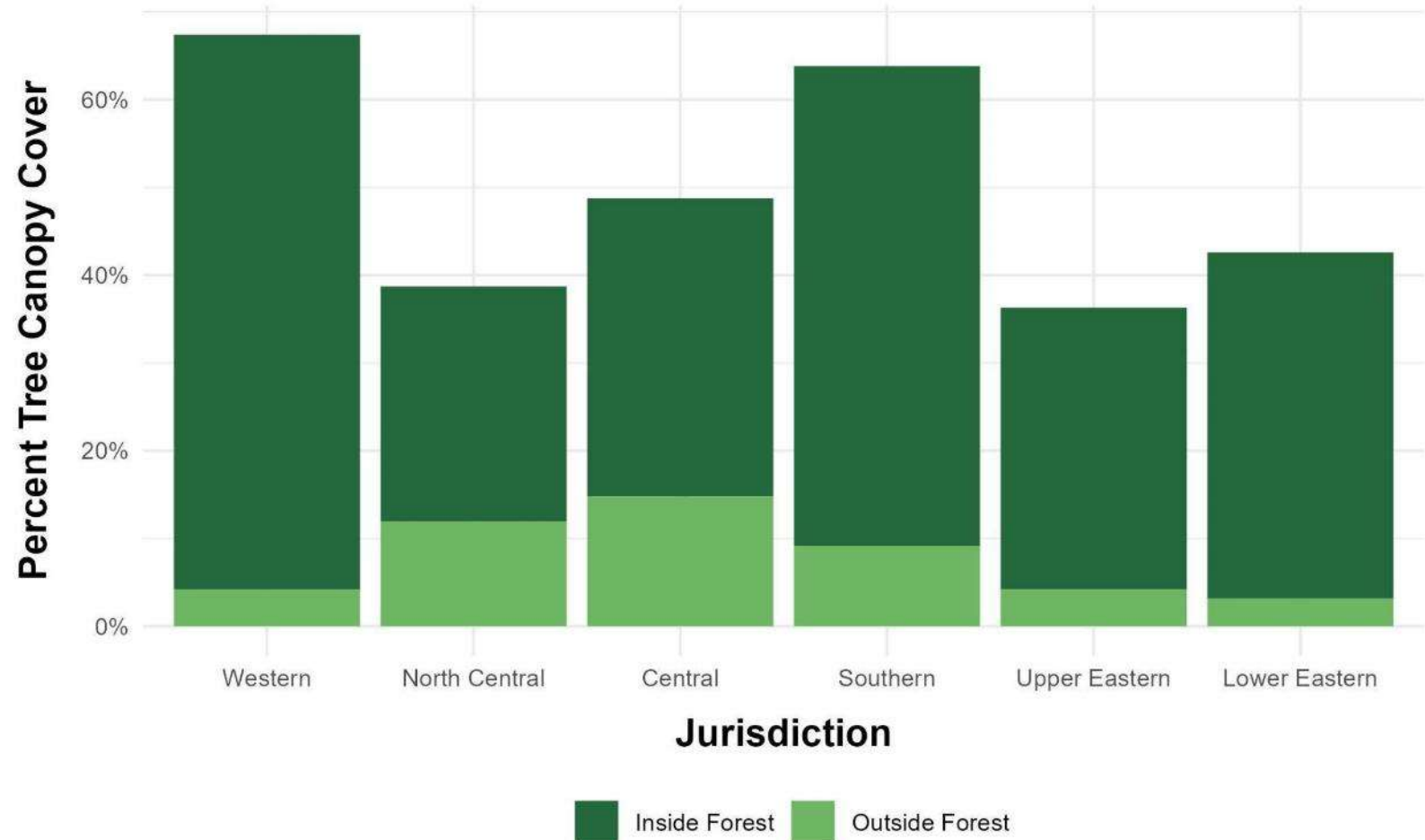
Calvert, Charles, St. Mary's

Upper Eastern

Cecil, Caroline, Dorchester, Kent, Queen Anne's, Talbot

Lower Eastern

Somerset, Wicomico, Worcester



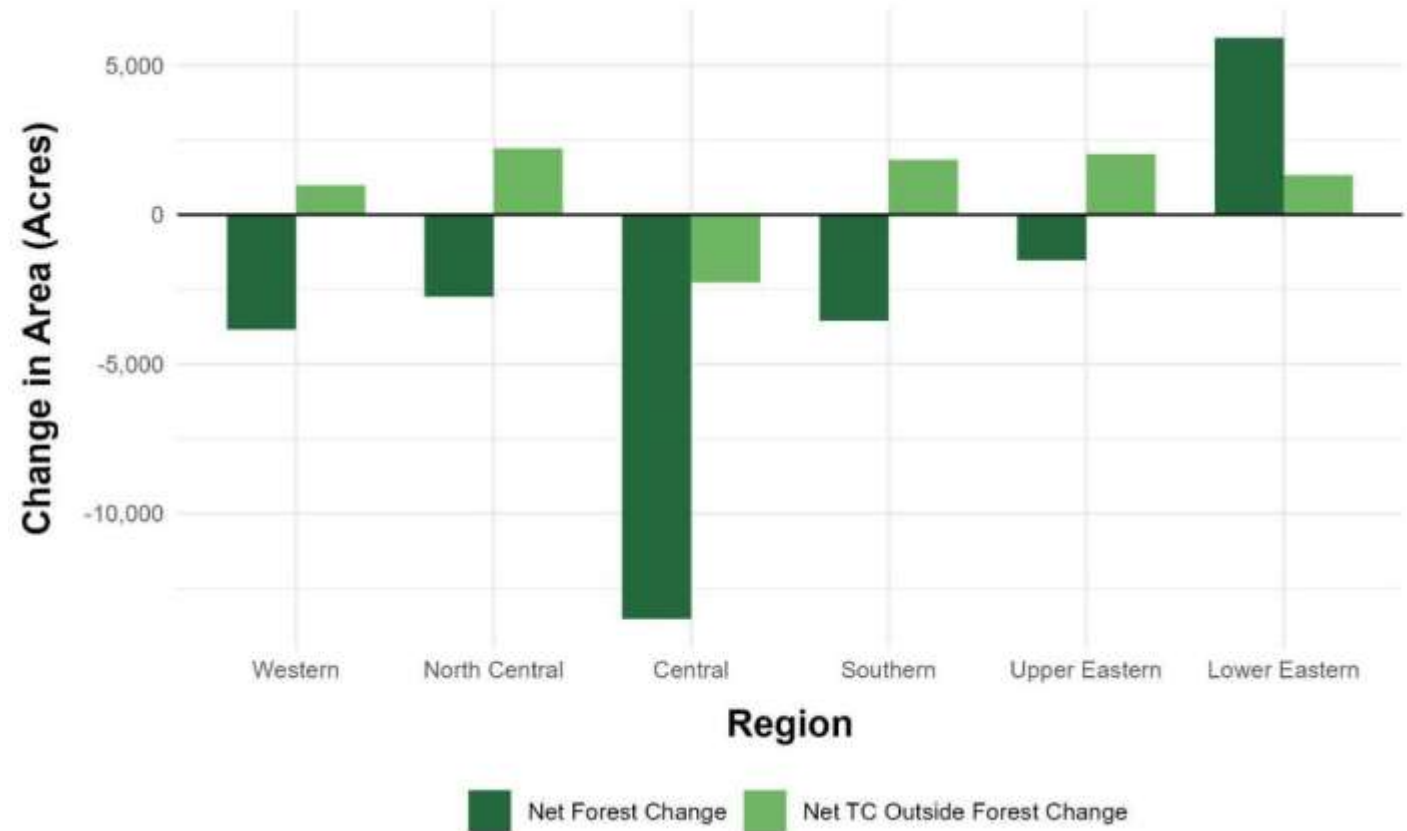
Regional Forest and Tree Canopy Change

Net Change in Forest and Tree Canopy

Greatest forest loss in Central Maryland; also, only region with net loss of tree canopy outside forest

Significant portion of gain in TC outside forest results from forest fragmentation

Lower Eastern region forest gain - likely harvested forest regrowth



Chesapeake Restoration Progress

Goals

Riparian forest buffers

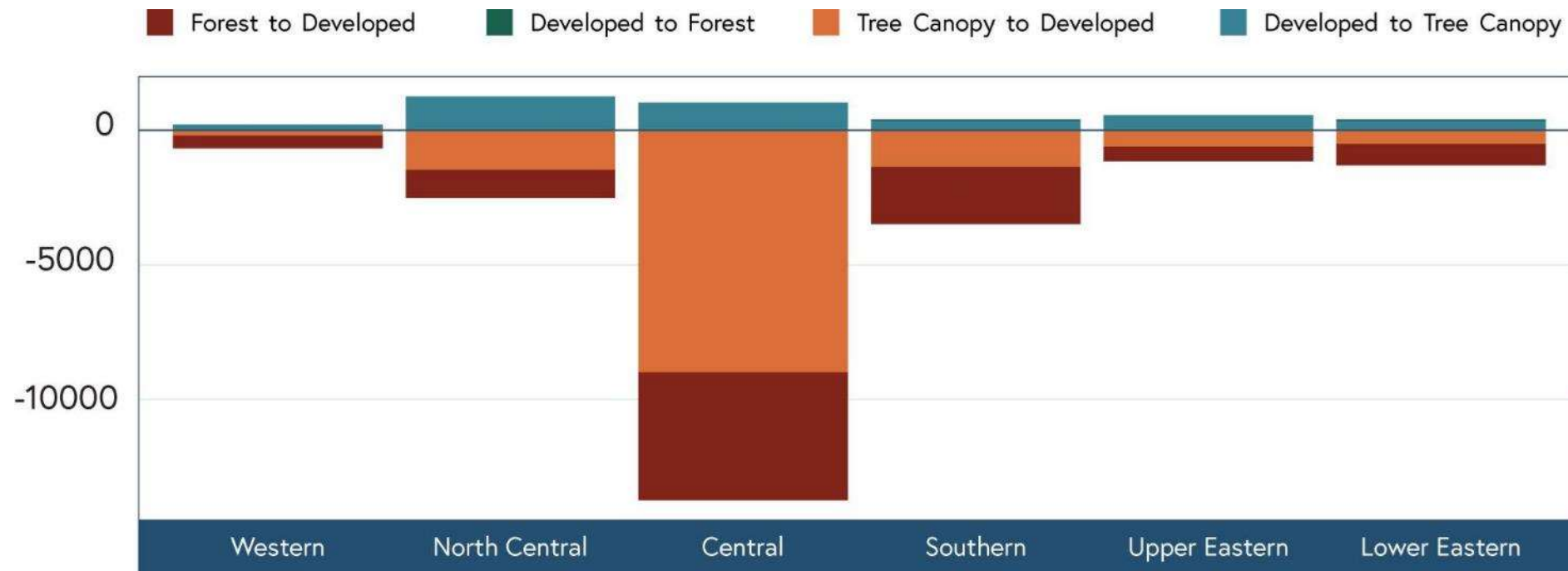
- Goal of 70%, Maryland at 58%

Urban tree canopy

- First state-wide change analysis
- Substantial net loss across state
- Gains in Baltimore and smaller urban areas like Salisbury, Chestertown, Easton



Regional Forest Change Due to Development



Forest and Tree Canopy Change Associated with Development

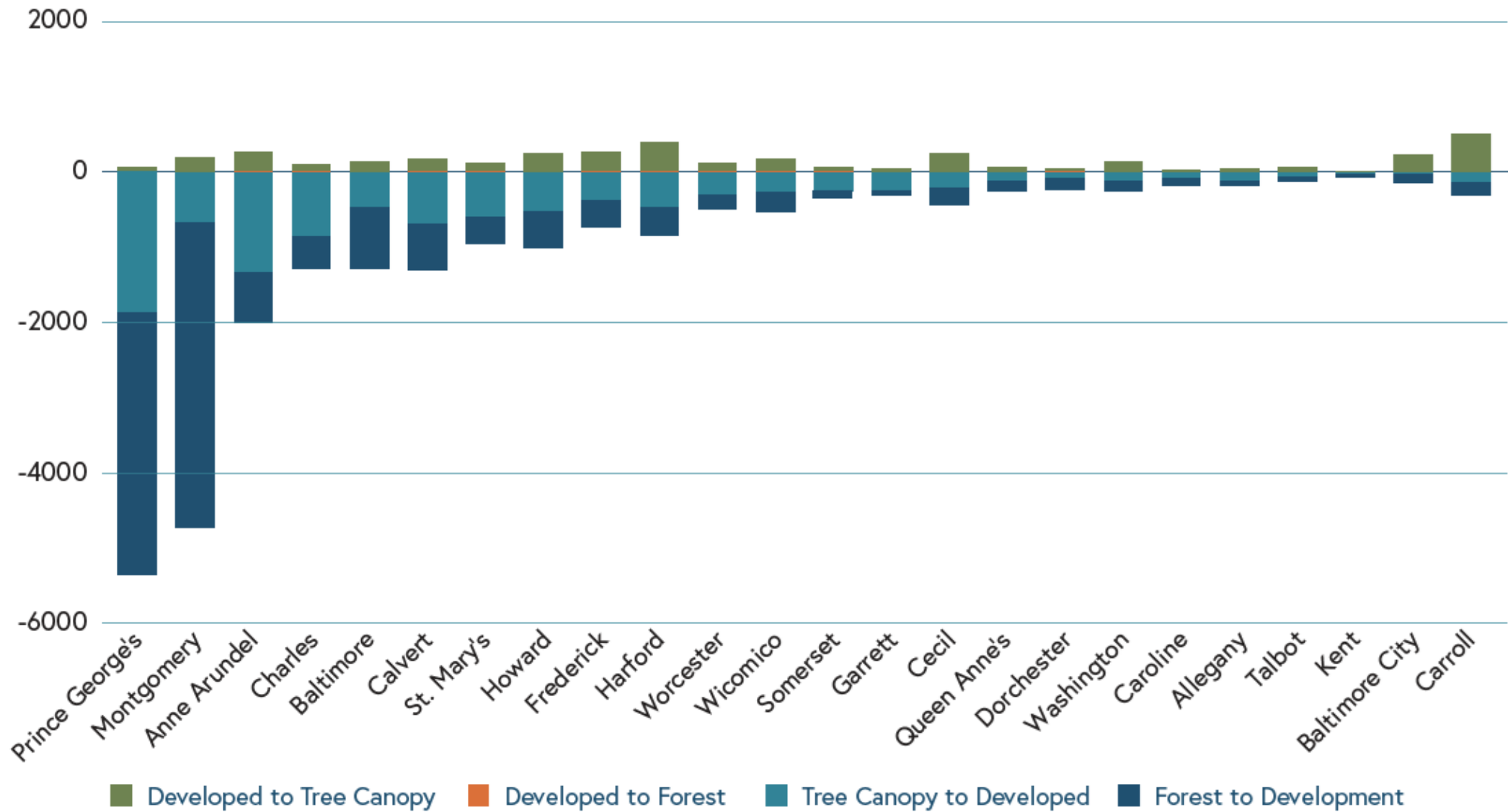


Figure 22. Forest cover change due to development, by jurisdiction.

FOREST MITIGATION BANKING IN MARYLAND



TREE PLANTING PROGRAMS



Key Findings

- While Maryland is still losing forest, **the rate of forest loss is stabilizing** since the Forest Conservation Act of 1991.
 - The state's population grew by 17% 2000-2020 while forest loss slowed
- However, **forest loss for development** and **forest fragmentation** continue to be significant trends, especially in Central Maryland.
- The state has a significant opportunity to **transition from forest and tree canopy loss to gain**
 - Investment in tree planting and progress towards Chesapeake restoration
 - Forest protection: avoiding loss and as a source of tree canopy gain



MAY 8 '23
12 8 TAVM

HB 723 SB 526
HB 353 SB 230

NEW LEGISLATION

SB 526/HB 723

SB 526/HB 723 Key Provisions

Addressing development

- Stronger forest protections
- Higher mitigation requirements for new development
 - 1:1 for priority forest and outside priority funding areas (PFAs)
 - ½ :1 inside PFAs
 - ¼ :1 for transit-oriented development and multi-family housing

New state goal

- Achieve state forest and tree canopy gain

Improvements to mitigation banking and tree planting data collection





ANTICIPATED OUTCOMES

- Shift in development patterns
- Alignment with Maryland climate planning
- Improved monitoring and data collection
- Quantifying benefits - forests as green infrastructure



FOR MORE INFORMATION:

Full study available at
chesapeakeconservancy.org/mdforeststudy2022

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