

 USGS



Chesapeake Bay Program
A Watershed Partnership

Maryland's Forests: Past, Present and Future

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Crowne Plaza- Greenbelt, Maryland**

“Forests” vs “Tree Canopy”

Difference based on understory conditions (e.g., soils, herbs, and shrubs)

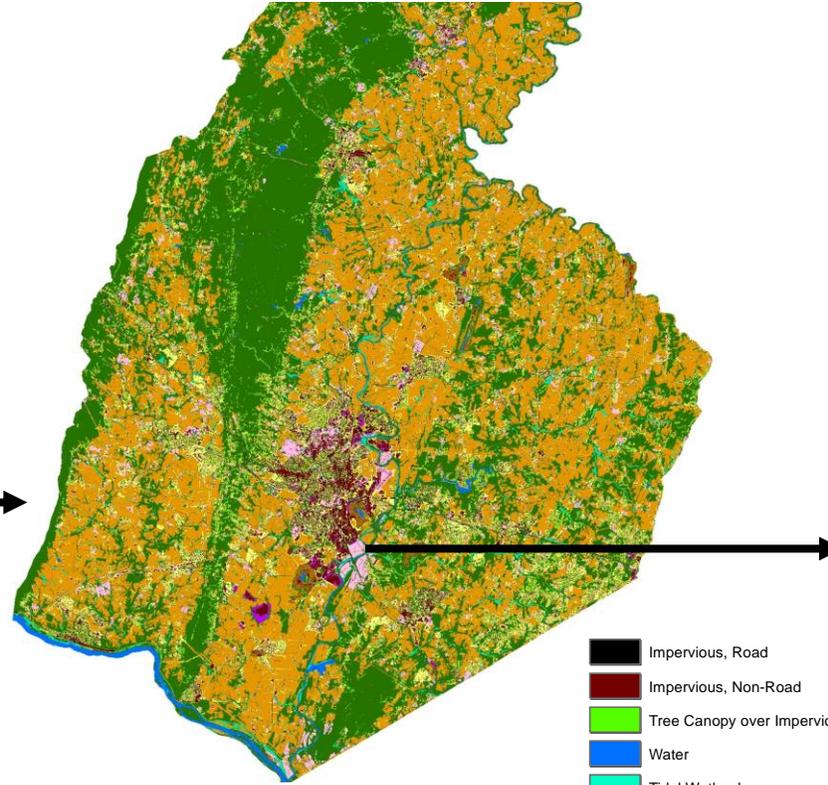
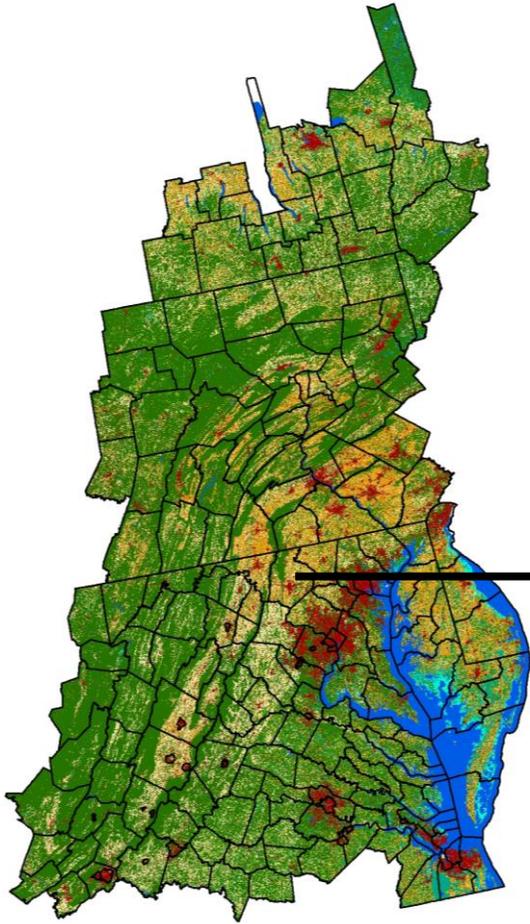
CBP Land Use Mapping Definitions:

“Tree Canopy over Impervious Surfaces” = Tree canopy over roads and non-road impervious surfaces.

“Tree Canopy over Turf Grass” = Tree canopy within 30 feet’ to 80 feet’ of non-road impervious surfaces where the understory is assumed to be turf grass or otherwise altered through compaction, removal of surface organic material, and/or fertilization.

“Forest” = All standing trees and areas of tree harvest farther than 30-80 feet from buildings and forming contiguous patches at least one acre in extent. These areas are presumed to have a minimally disturbed understory.

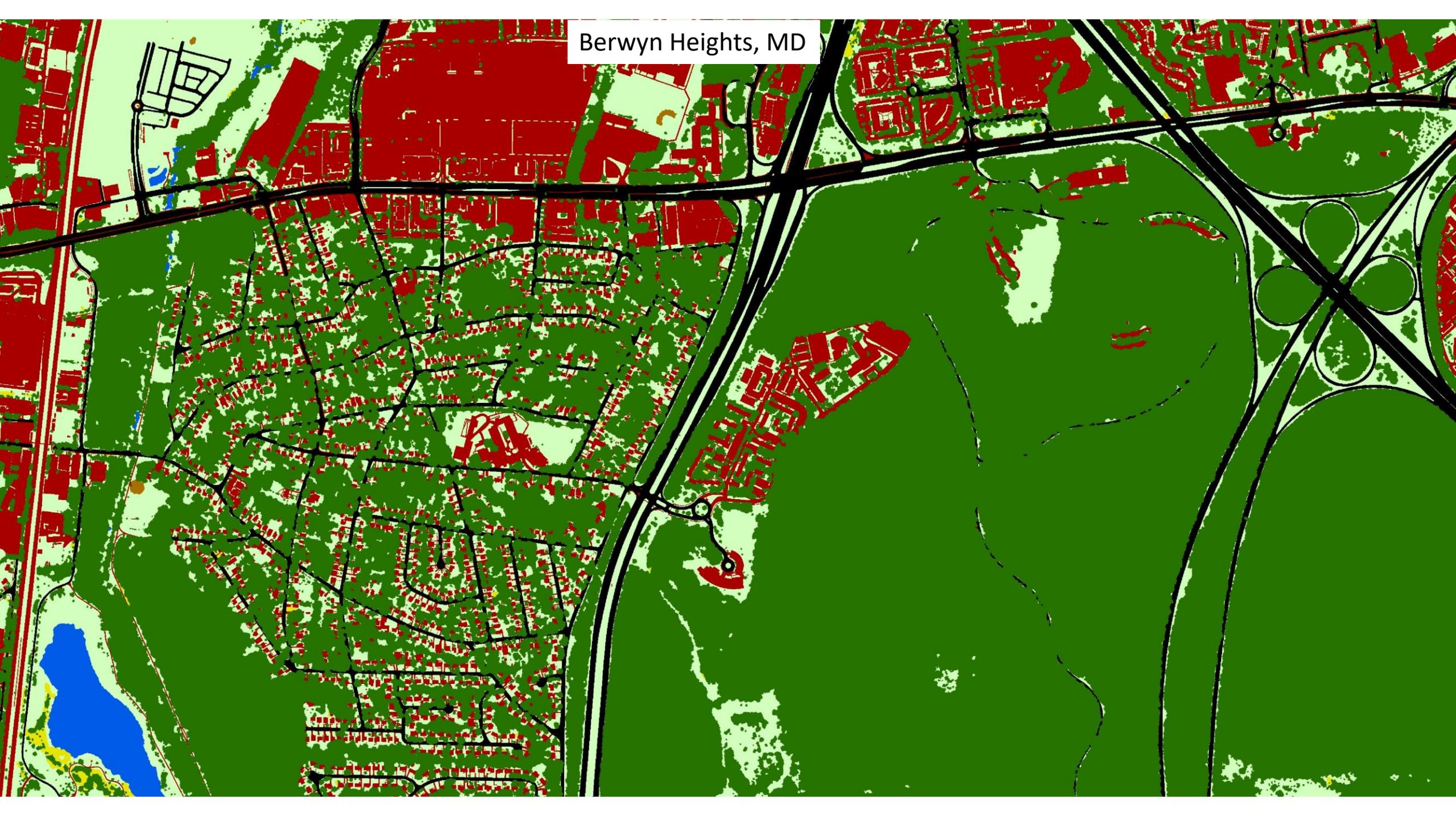
2013 Land Use/Cover Data (1m resolution)



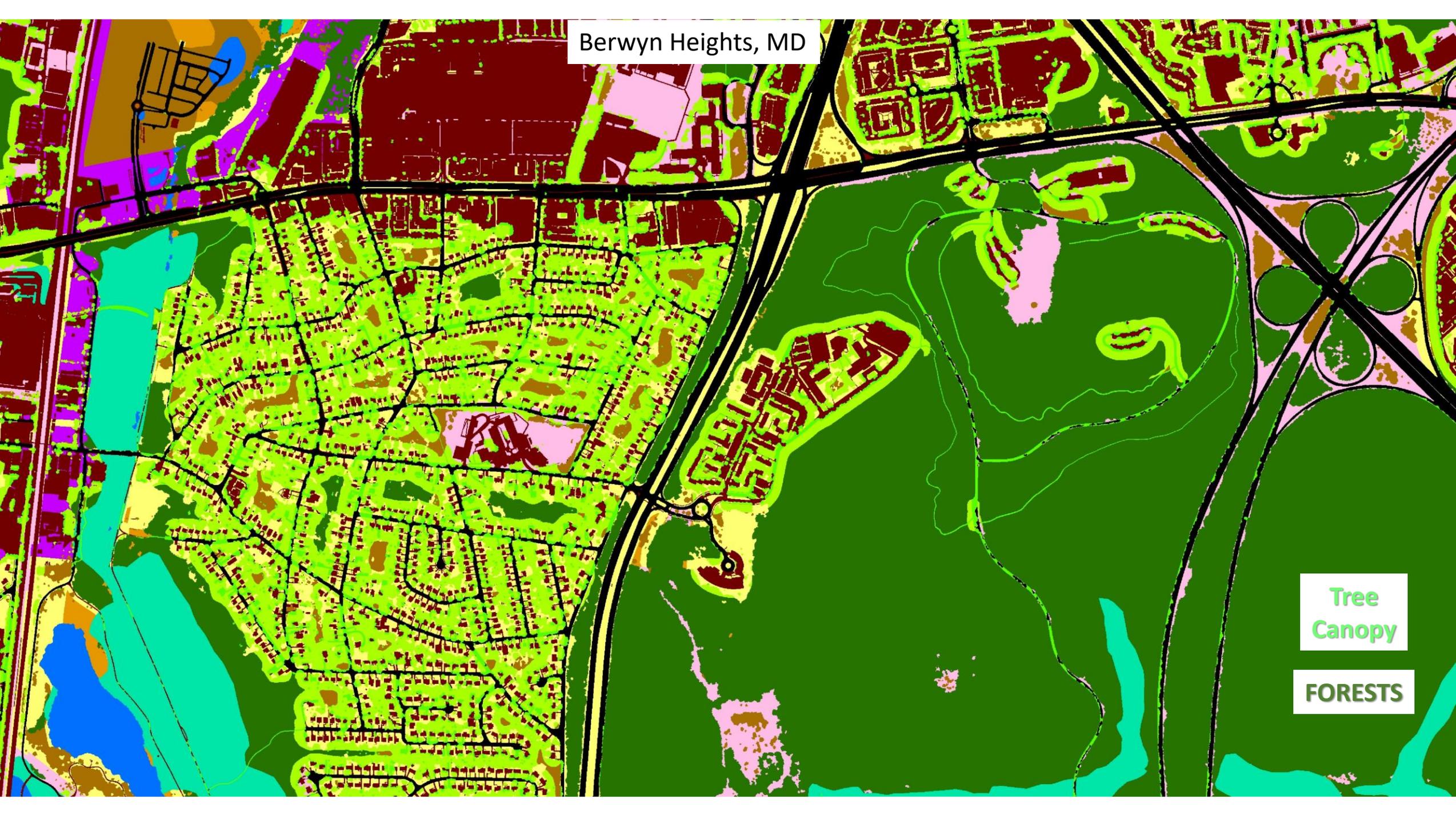
- Impervious, Road
- Impervious, Non-Road
- Tree Canopy over Impervious
- Water
- Tidal Wetlands
- Floodplain Wetlands
- Other Wetlands
- Forest
- Tree Canopy over Turf
- Mixed Open
- Fractional Turf (small)
- Fractional Turf (med)
- Fractional Turf (large)
- Fractional Impervious
- Turf Grass
- Agriculture



Berwyn Heights, MD



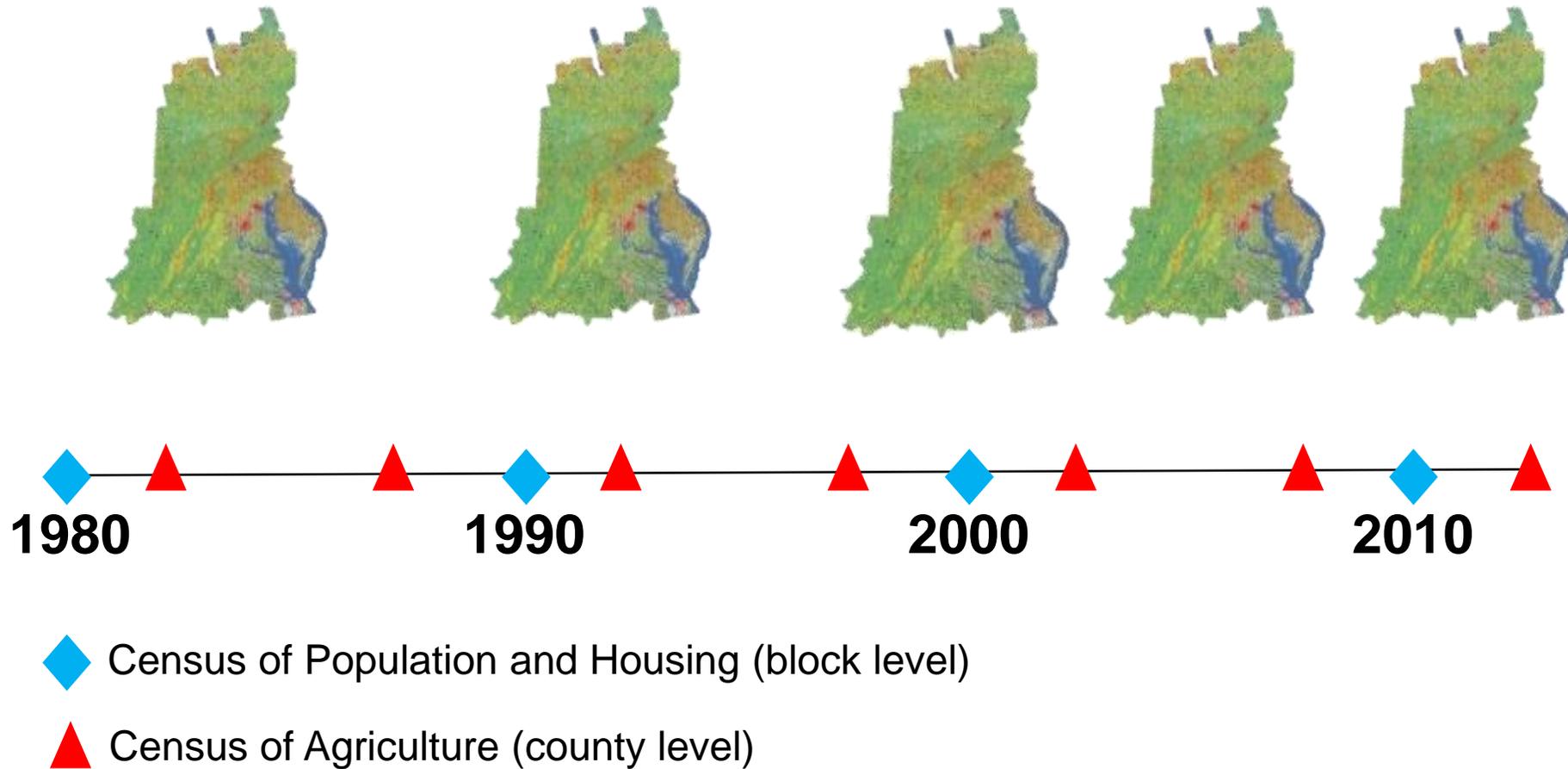
Berwyn Heights, MD



Tree
Canopy

FORESTS

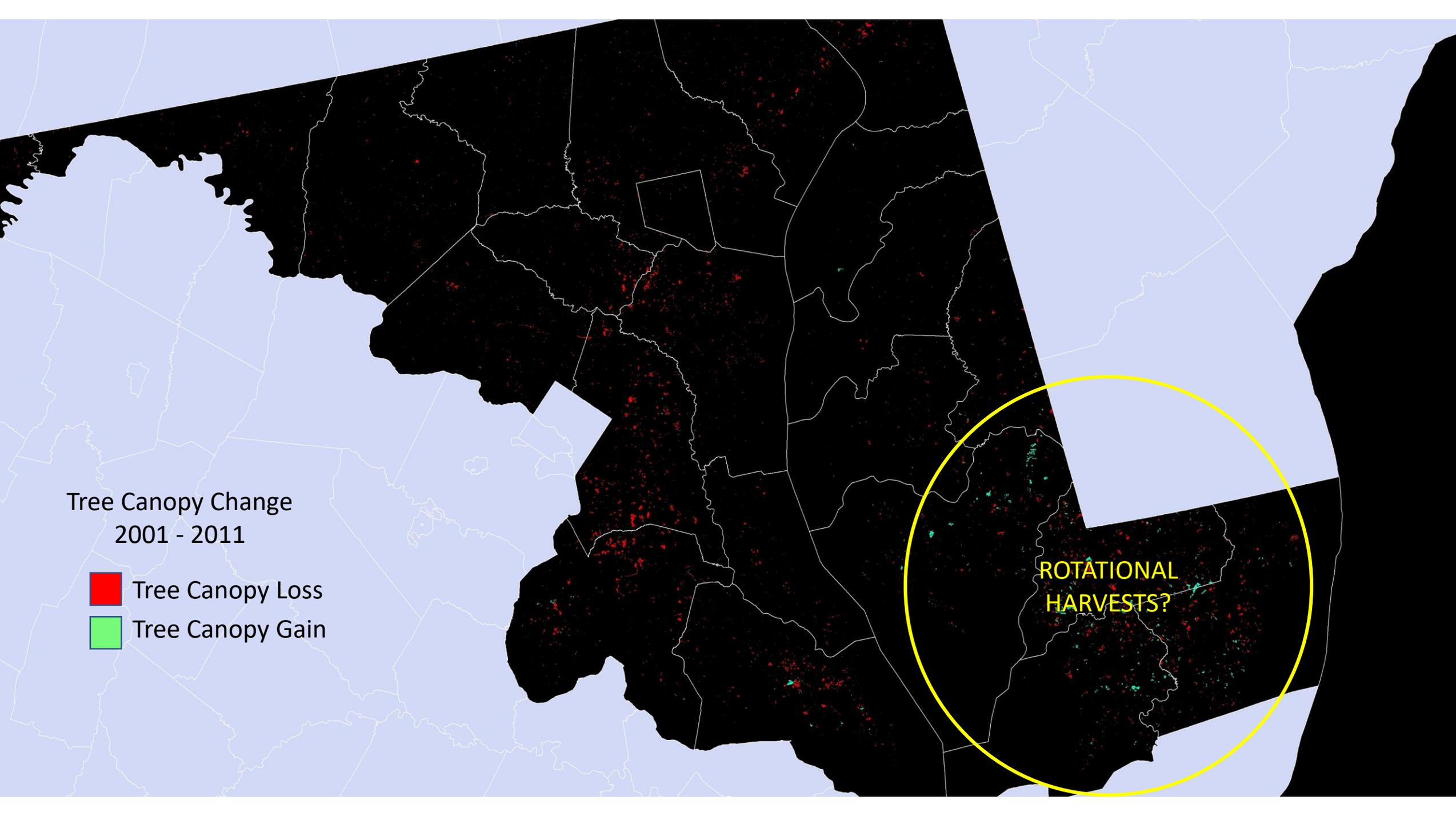
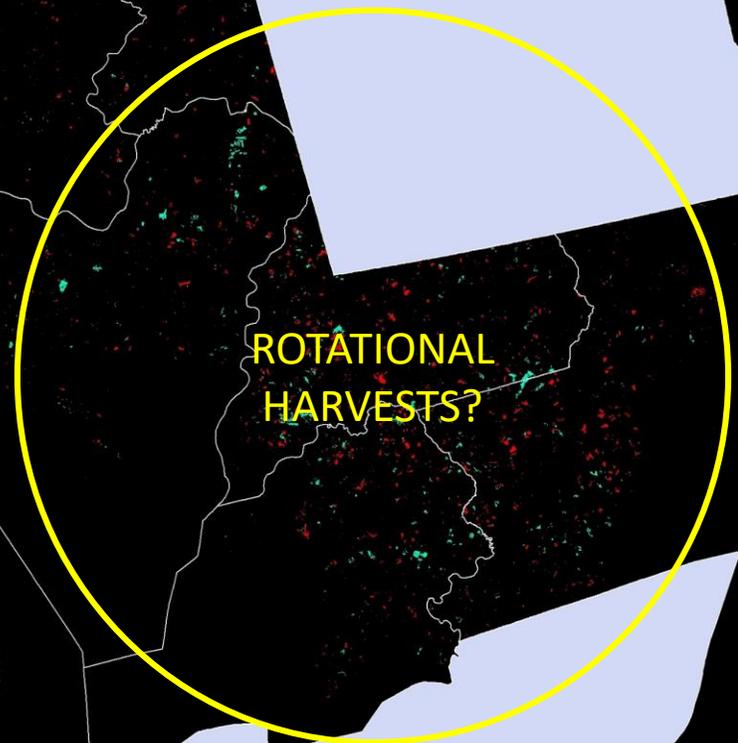
Backcast 2013 Land Use to 1985

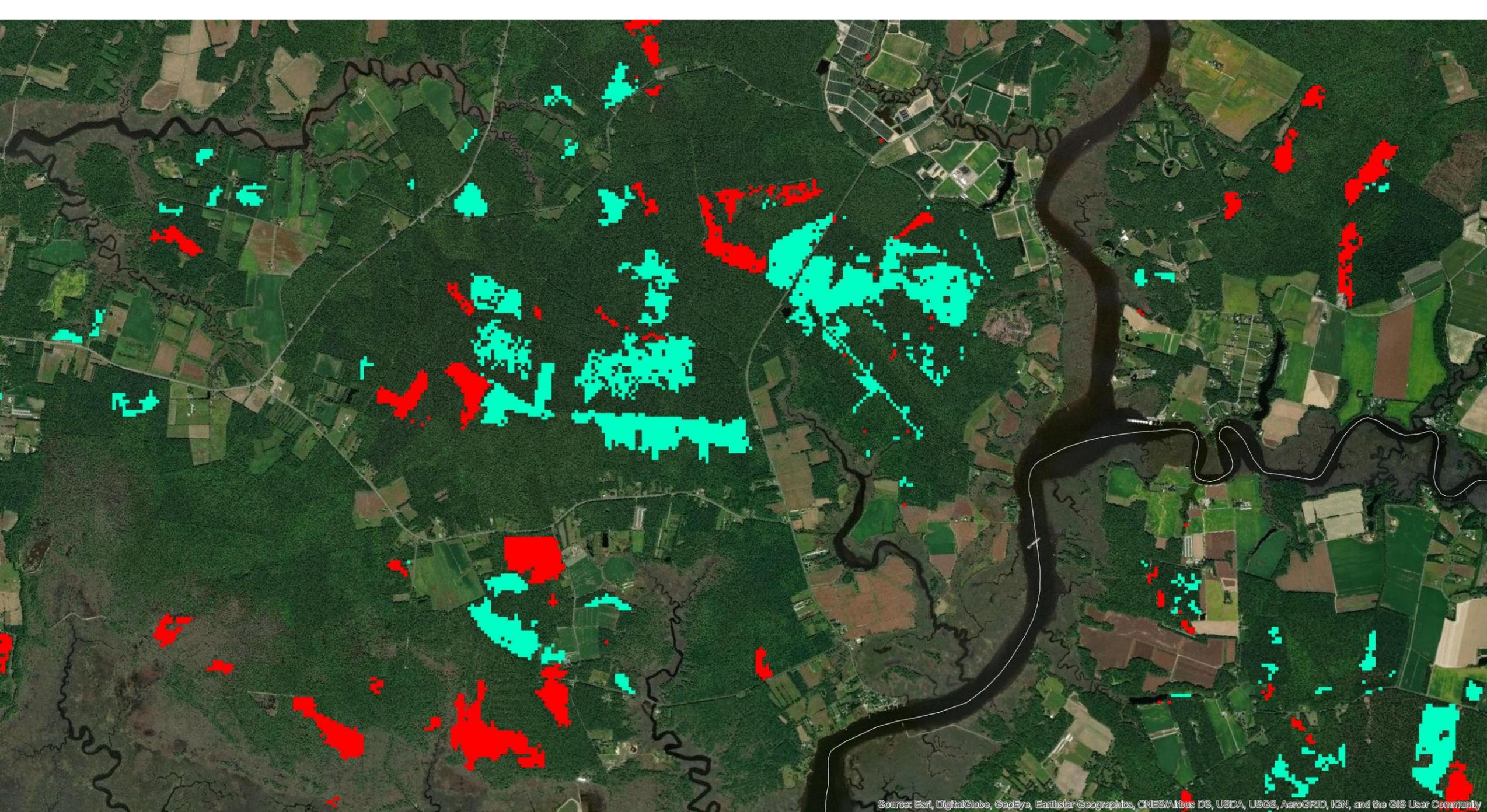


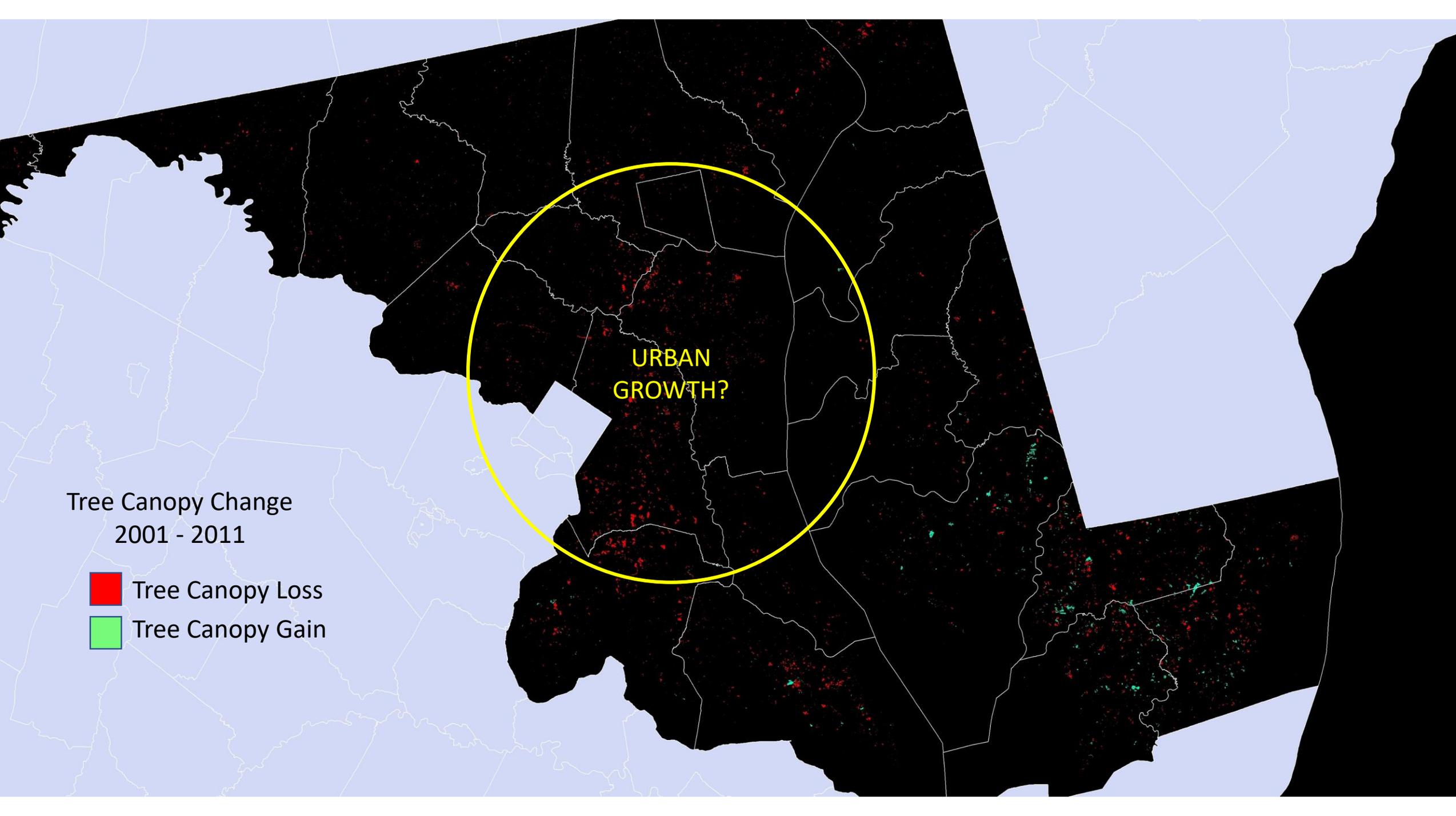
Irani, F. M., & Claggett, P. (2010). Chesapeake Bay Watershed Land Cover Data Series. *US Geological Survey Data Series*, 505.

Tree Canopy Change
2001 - 2011

-  Tree Canopy Loss
-  Tree Canopy Gain



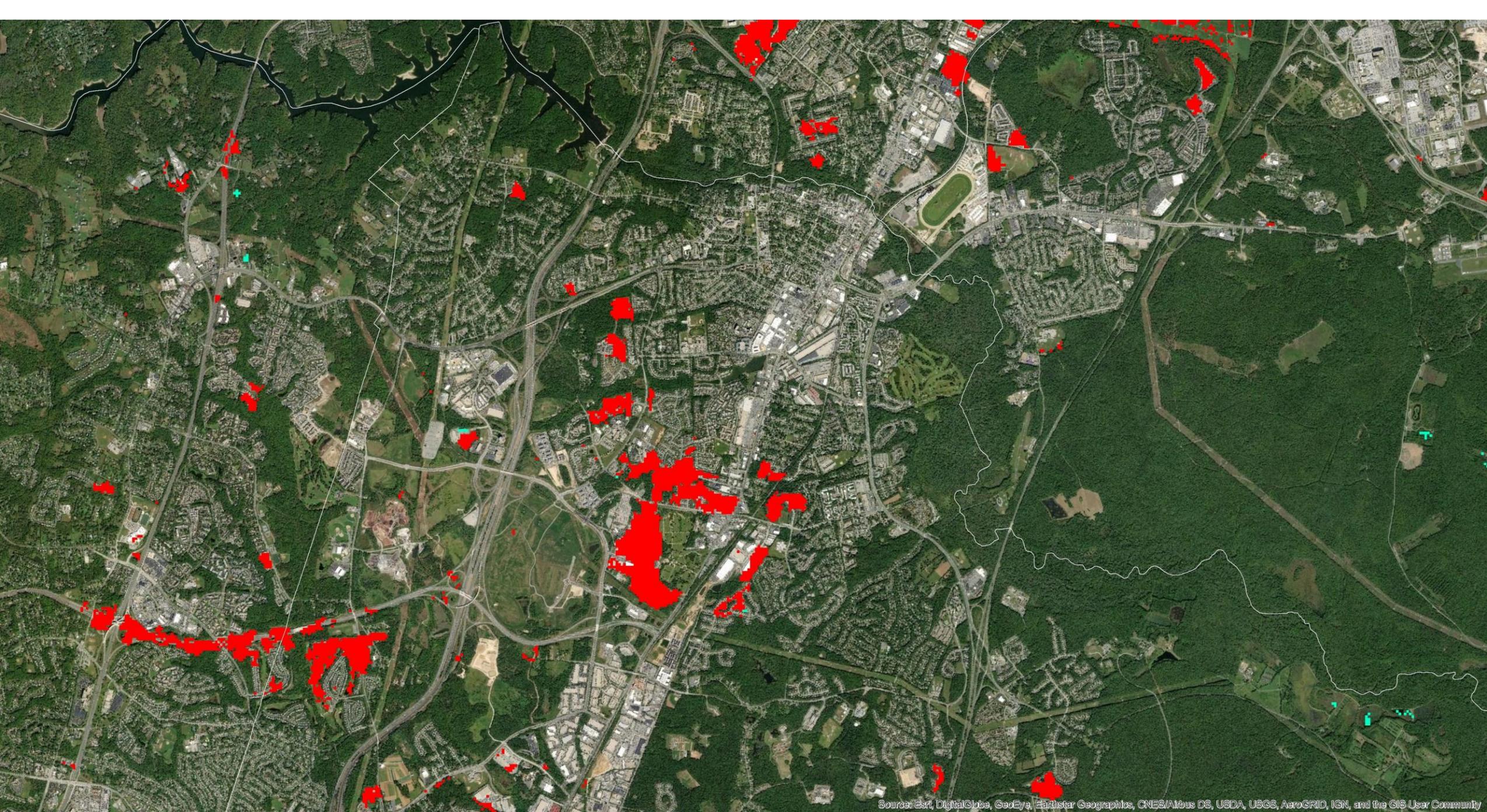




Tree Canopy Change
2001 - 2011

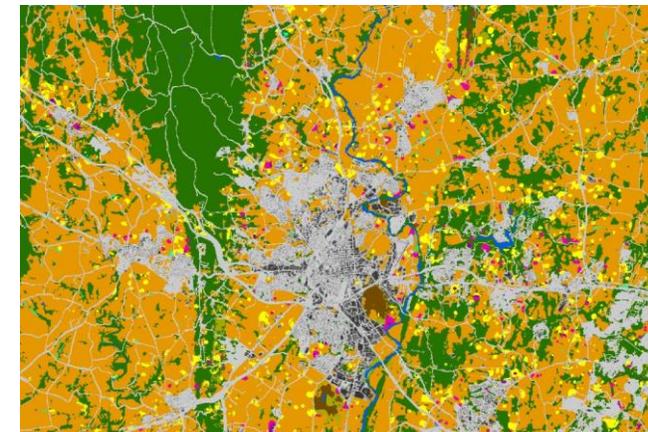
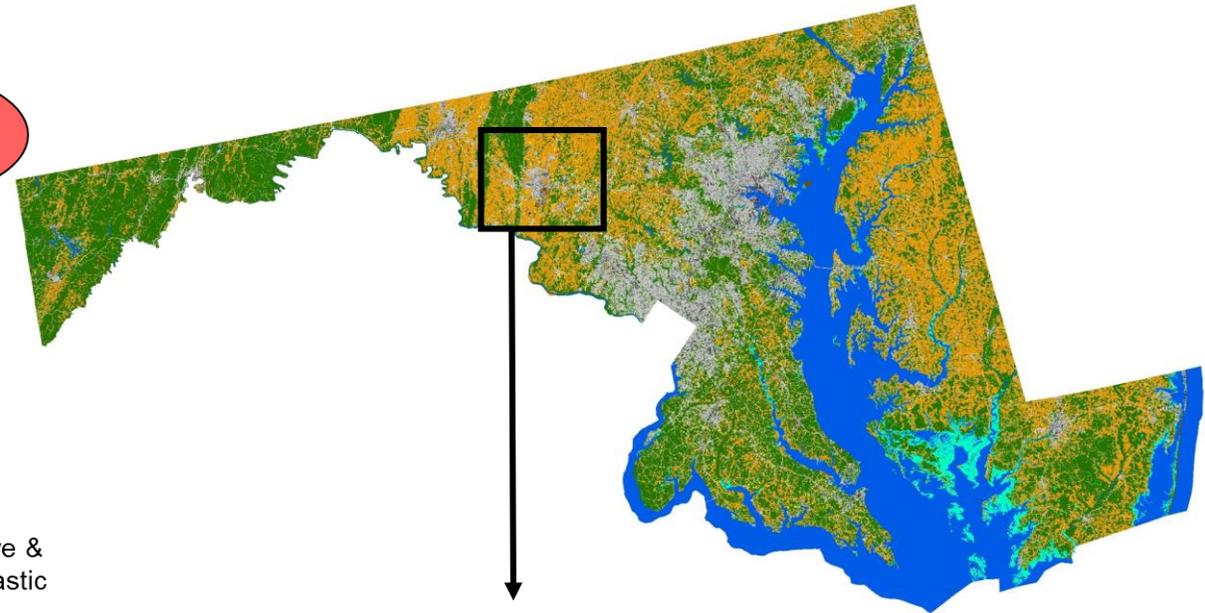
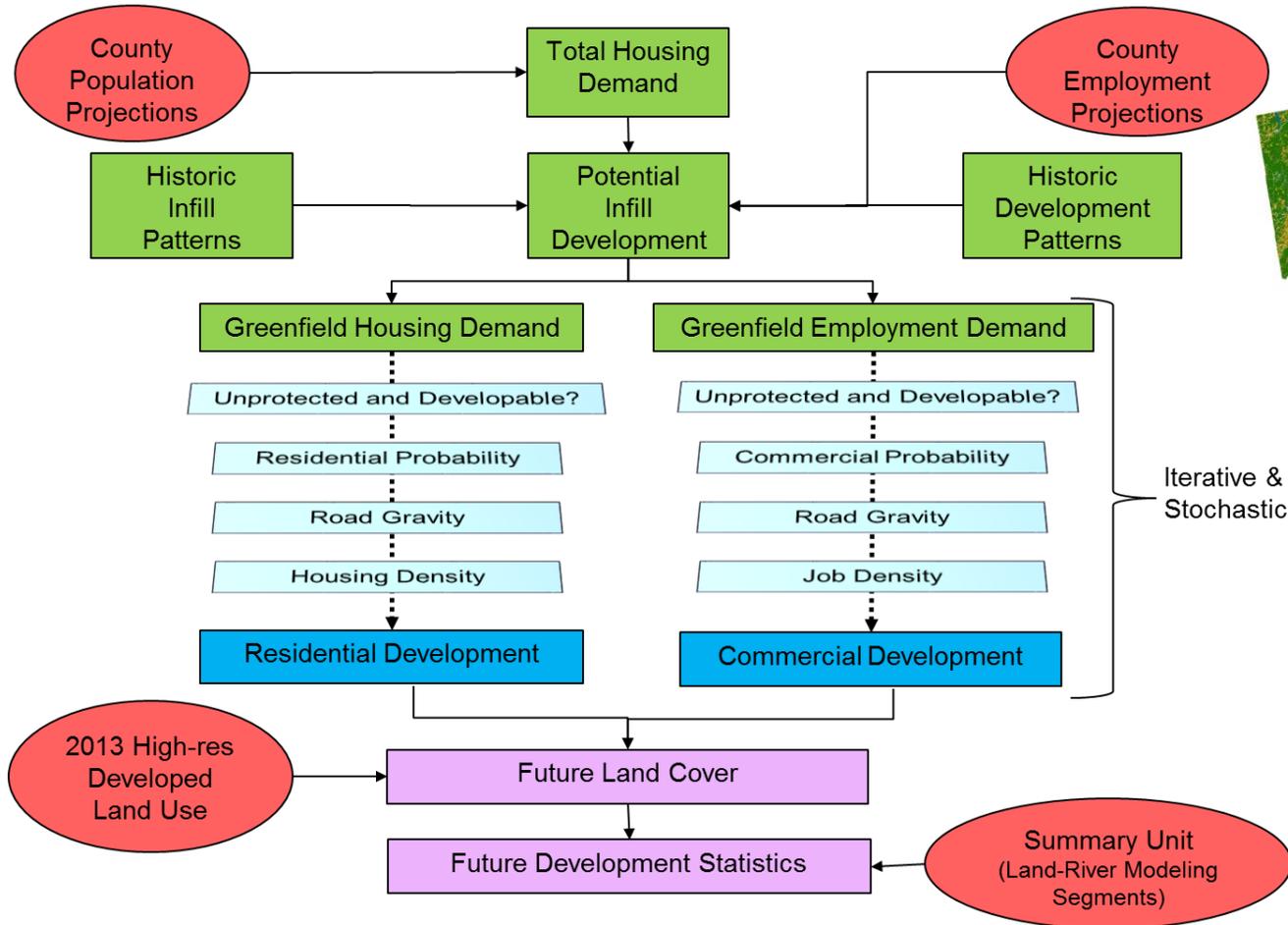
- Tree Canopy Loss
- Tree Canopy Gain

URBAN
GROWTH?

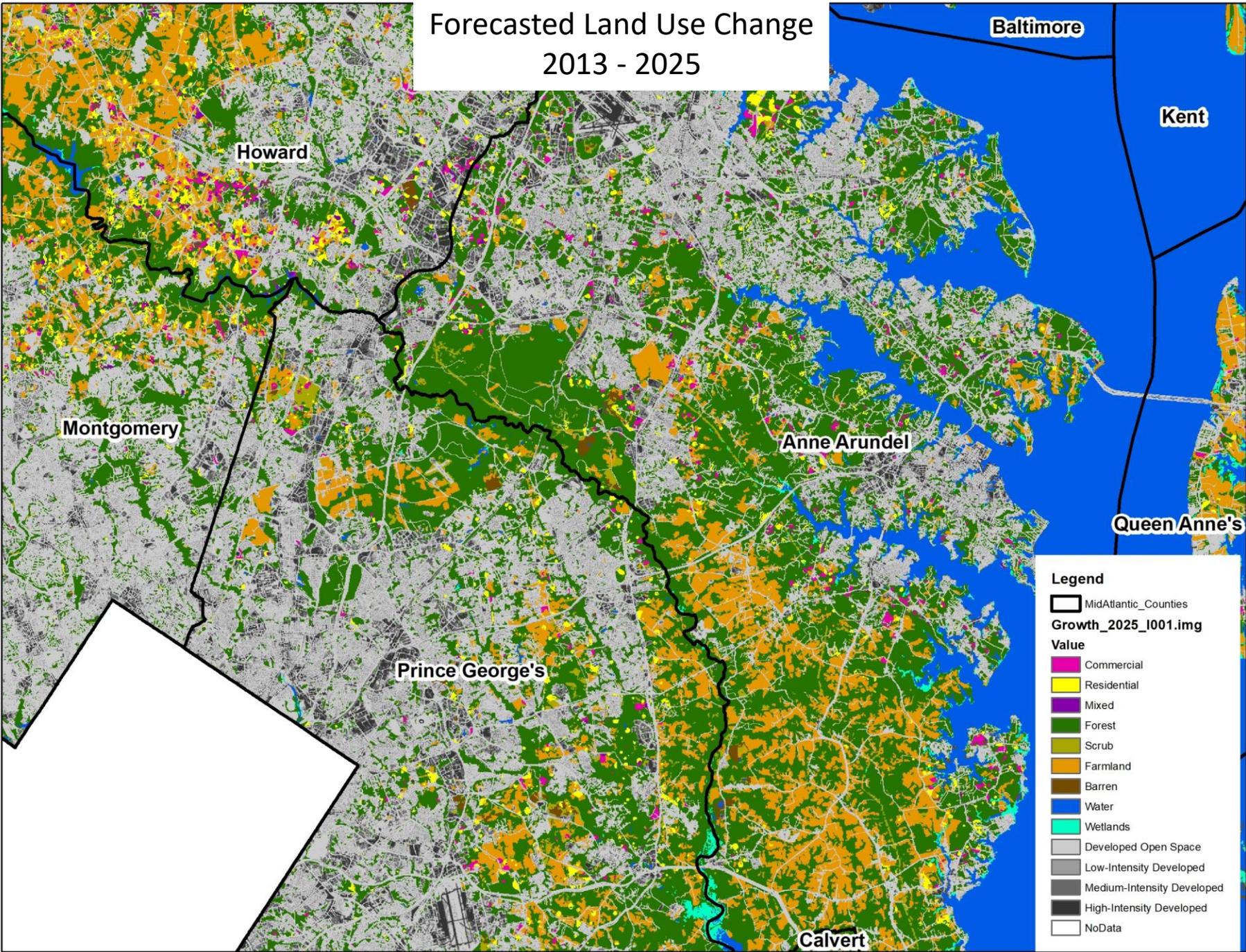


Partnership's Chesapeake Bay Land Change Model

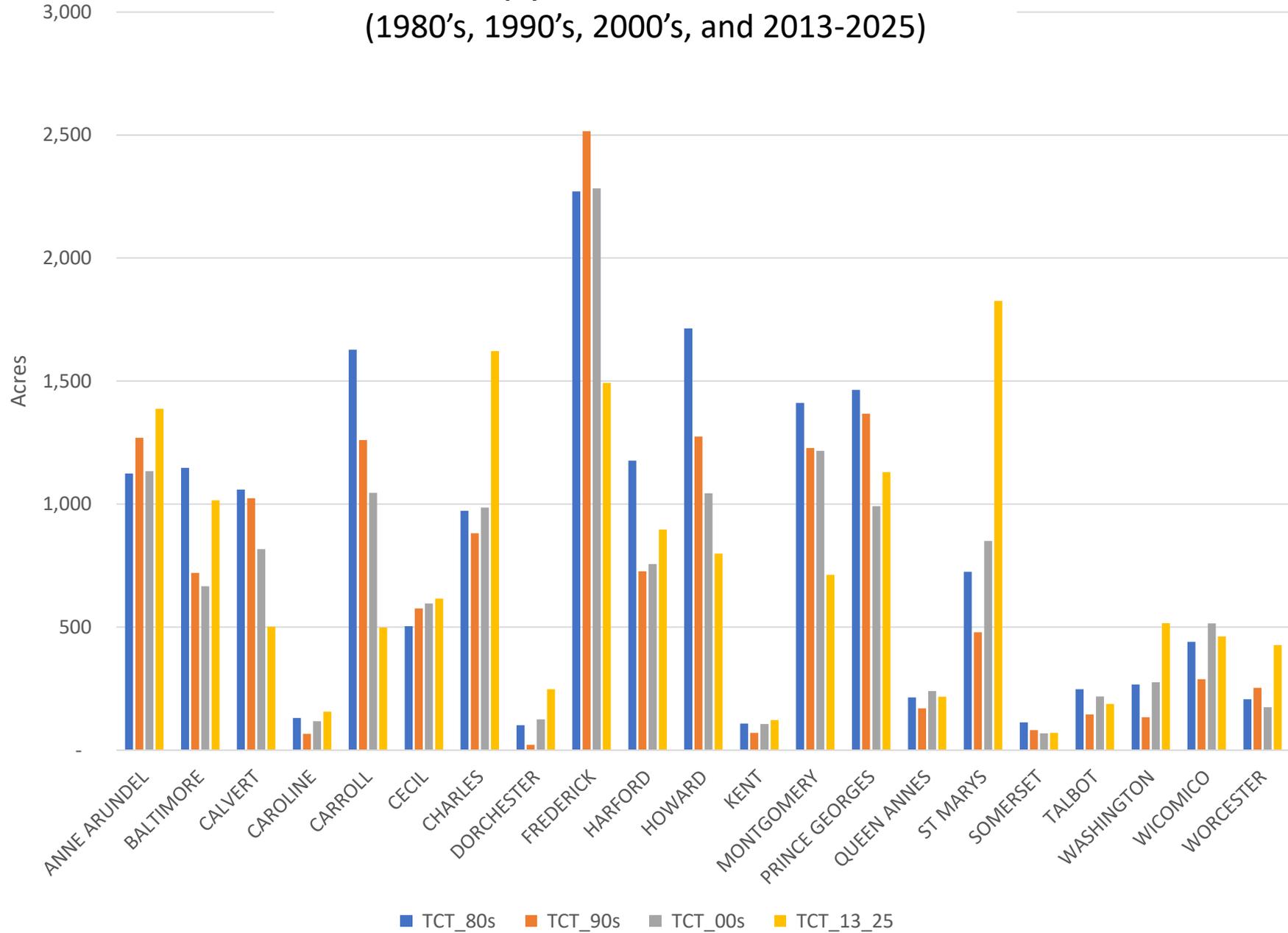
Chesapeake Bay Land Change Model v3a



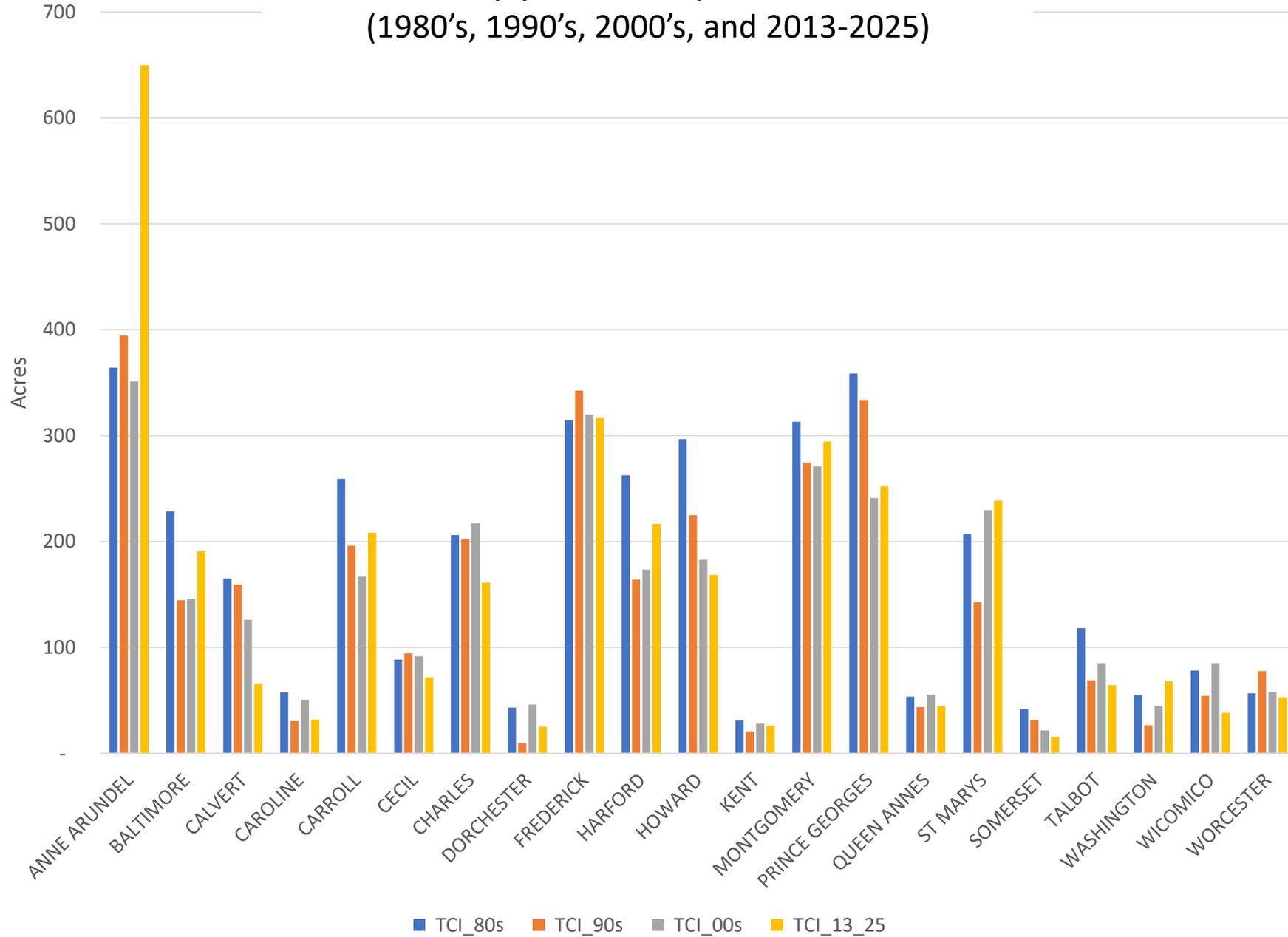
Forecasted Land Use Change 2013 - 2025



“Tree Canopy over Turf Grass” Trends (1980’s, 1990’s, 2000’s, and 2013-2025)

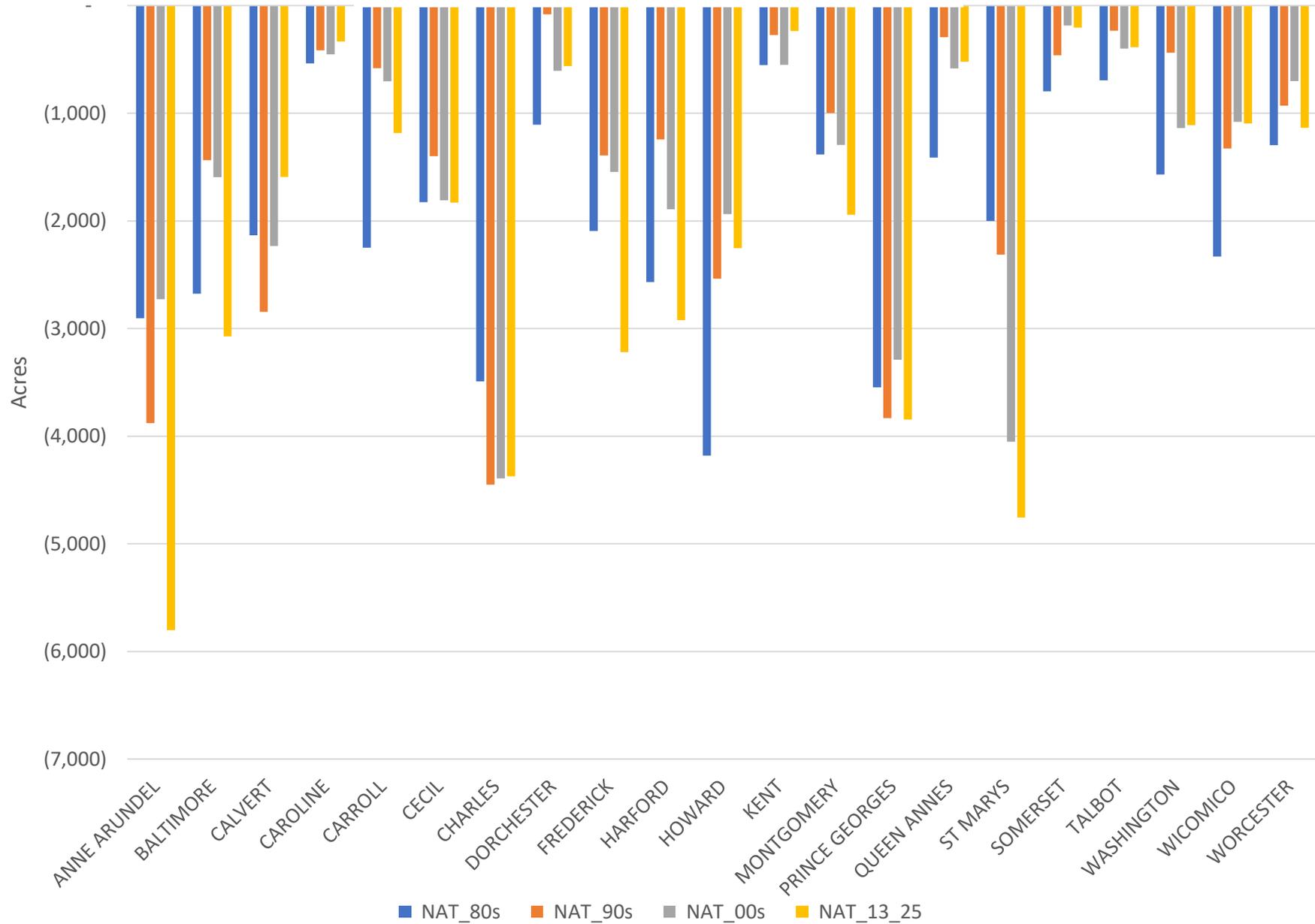


“Tree Canopy over Impervious” Trends (1980’s, 1990’s, 2000’s, and 2013-2025)



“Forest” Trends

(1980’s, 1990’s, 2000’s, and 2013-2025)

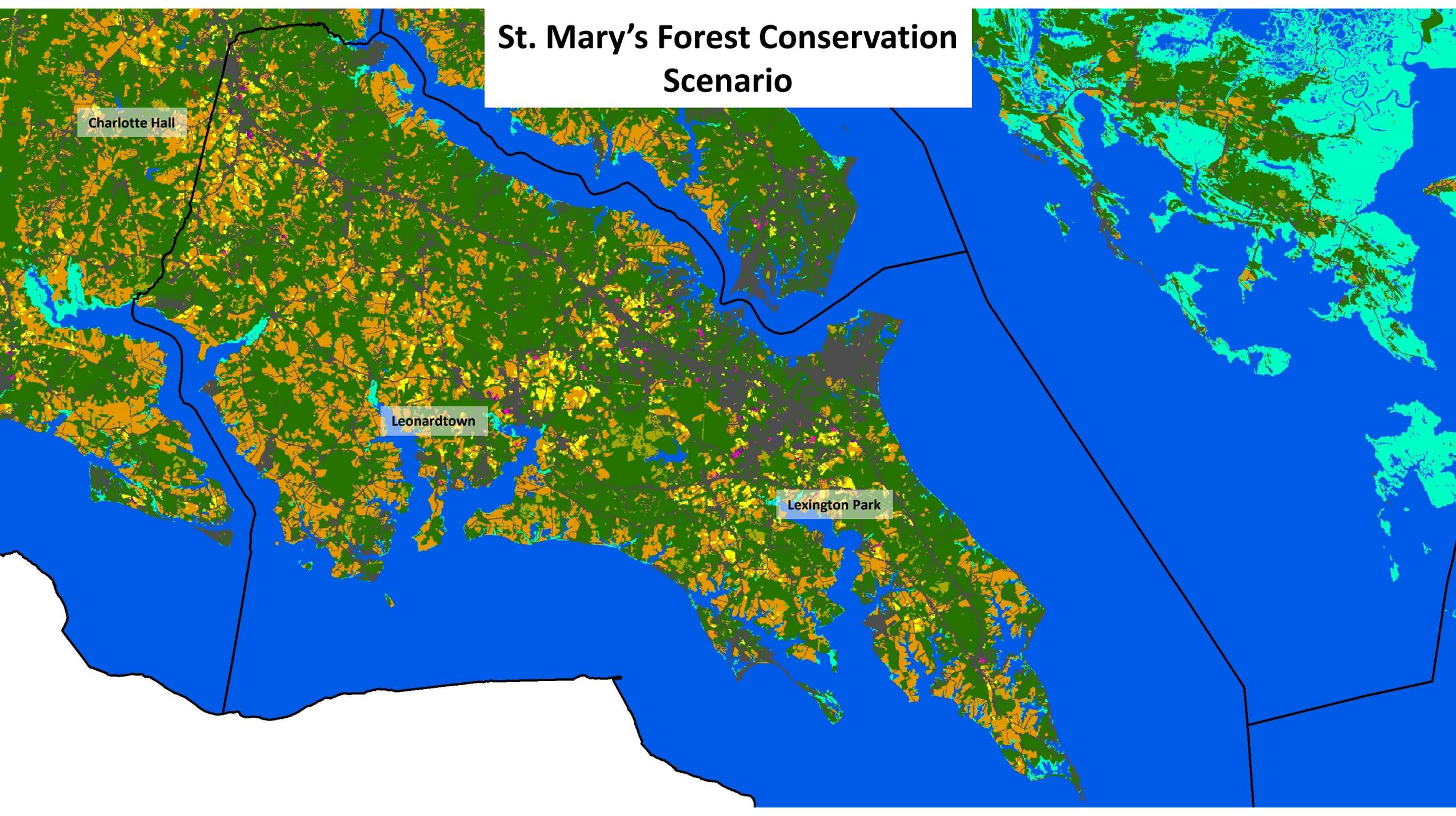


St. Mary's Forest Conservation Scenario

Charlotte Hall

Leonardtown

Lexington Park



Potential Nitrogen Reductions (lbs.) Due to Land Conservation

St. Mary's County, Maryland

	Impervious	Pervious	Natural	Agriculture	Mixed Open	
FC vs HT	(185)	333	1,152	(1,107)	(193)	
Total Nitrogen (lbs/acre/yr)	9.8	5.9	1.8	26.0	3.5	
Difference in loads (lbs/yr)	(1,817)	1,966	2,074	(28,773)	(677)	(27,227)

	Impervious	Pervious	Natural	Agriculture	Mixed Open	
FC vs CZ	(89)	221	512	(548)	(96)	
Total Nitrogen (lbs/acre/yr)	9.8	5.9	1.8	26.0	3.5	
Difference in loads (lbs/yr)	(871)	1,304	922	(14,244)	(338)	(13,227)



science for a changing world