

Demonstrating the Value of Retaining Forestland in the Chesapeake Bay Watershed



Helping Localities Reduce the Offset Requirements of Development



Be River Friendly
It's Your Backyard

The Rappahannock River Basin Commission



Why Keeping and Expanding Forest Cover is Important to the Bay



Riparian forest buffers (RFBs) rank second of all nonpoint source BMPs needed to meet TMDL targets according to data at the Chesapeake Bay Program

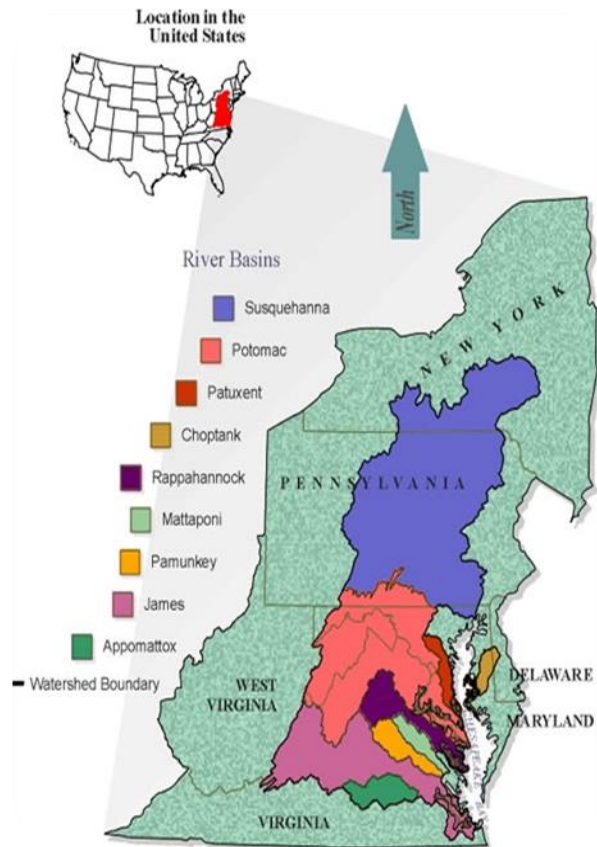


Conversion of forest to other land uses generates persistent increases in stormwater runoff, even without addition of impervious surfaces



Without forests, runoff increases **10 to 30%** or more, carrying more pollutants and increasing risk of flooding

Project Approach



- Determine if forest retention actions by localities, private land owners and others will result in a decrease in actual load over the 2025 projected TMDL load allocation land cover
- If the answer is “yes” determine way to credit localities and others for retaining forestland through the Chesapeake Bay TMDL Model

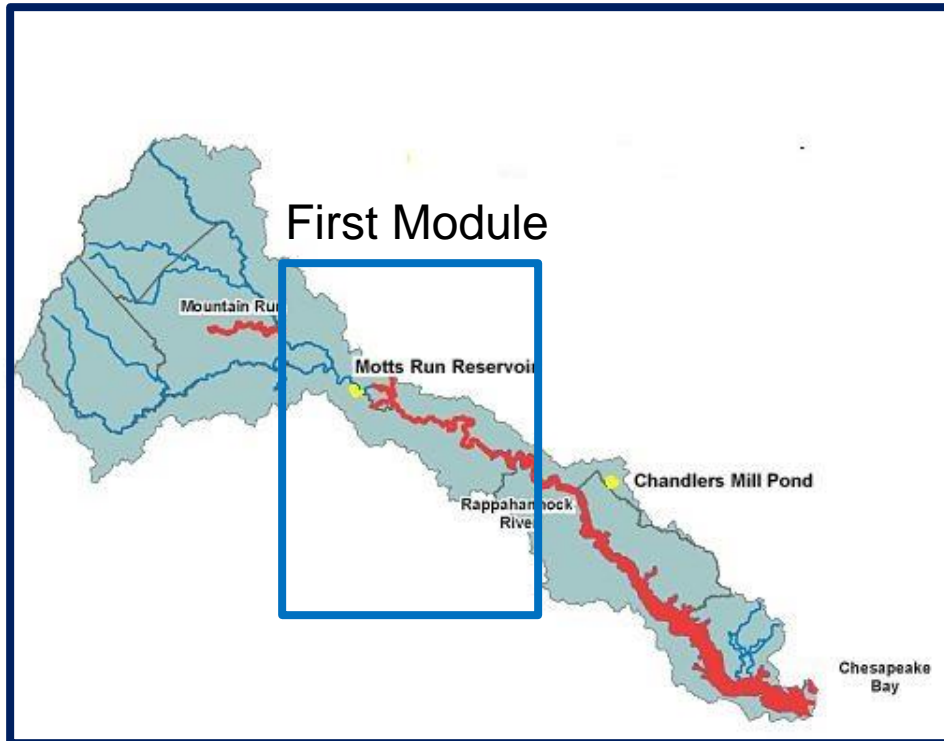
Project Partners



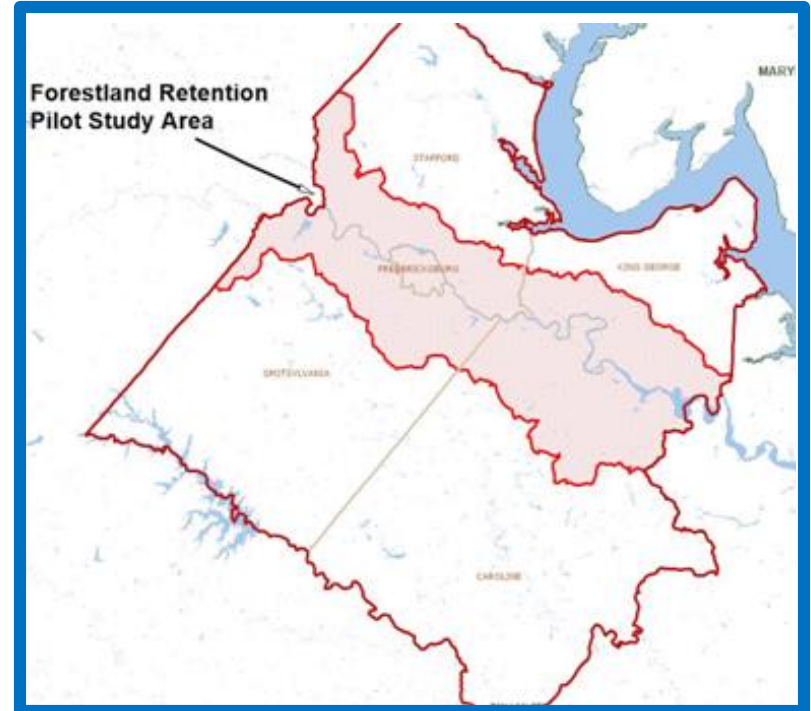
- Virginia Department of Forestry
- Virginia Department of Environmental Quality
- The Rappahannock River Basin Commission
- The George Washington Regional Commission
- The Nature Conservancy
- Chesapeake Bay Commission
- Virginia Water Resources Research Center at Virginia Tech
- Experts from the financial community

Project Sites

Rappahannock River Basin

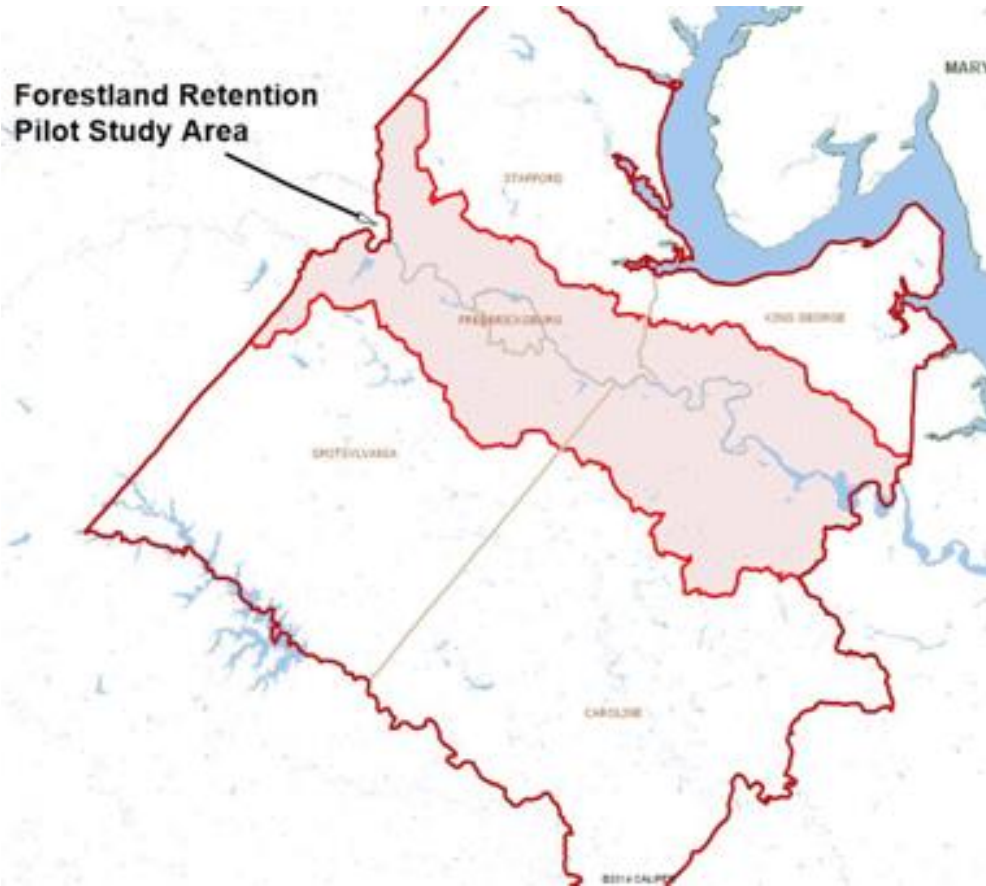


First Module Test Site



First Module Project Site

Rappahannock River Basin



Reasons for Choice:

- First module will focus on GWRC geographic area
- Area of high density development
- Includes: forest, agriculture, urban
- Strong participation from jurisdictions
- Growth scenario data available

Phase II Project Site

Rappahannock River Basin



Reasons for Choice:

Basin mirrors most attributes of CB watershed

- Headwaters to coast
- Forest, Agriculture, Urban
- Area of high density development
- 100% in VA Chesapeake Bay Watershed

Project Objectives



- Model alternative growth trend scenarios in pilot region to:
 - Determine load changes from conversion of agriculture and forests to a mix of pervious and impervious lands.
 - Model resulting load increases
 - Compare to TMDL model projections and assess costs associated with offsetting these increases
- Conduct literature review of forest types and attributes to evaluate spatial variability of water related ecosystem service values
- Share findings with localities and state officials to inform land use planning and decision making
- Provide information to EPA for consideration in 2017 TMDL model revisions

Alignment with 2014 CBWA Outcomes & Management Strategy Goals/Activities



- Healthy Watersheds
 - Maintain local watersheds at optimal health across a range of landscape contexts.
 - Vulnerability: Threat of land conversion and the ecological impacts of conversion
- Land Conservation
 - Protected Lands
 - Expanding federal, state and local funding and incentives for conservation
 - Land use methods and metrics development
- Protect and Restore Water Quality
 - Nutrient and sediments reduction
- Activity Categories
 - Regulation, Program Management, Information Management, Technical Support, Management Tool Development, TMDL Development, Enforcement, Assessment

Project Plan



- First module funded
 - Work has begun and will be completed by end of 2015
 - Goal is to be able to provide scenario data in timely fashion for consideration in 2017 TMDL model adjustments



- Second phase not yet funded
 - Expand to entire river basin and work with localities to implement forest retention land use options to reduce projected 2025 TMDL loads in return for offset credits and other incentives
 - Capture lessons learned and develop land use planning tool box for use by localities across CB watershed



Module 1 Project Schedule



Evaluate
growth
trends in
pilot region

Compare to
TMDL model
land use
change
projections

Model
alternative
growth
patterns

Conduct
literature
review
and factor
in
findings

Provide
data to
EPA for
possible
2017
TMDL
model
revisions

Share
findings
with
localities
and state
officials

April - May

June – July – August

September - December

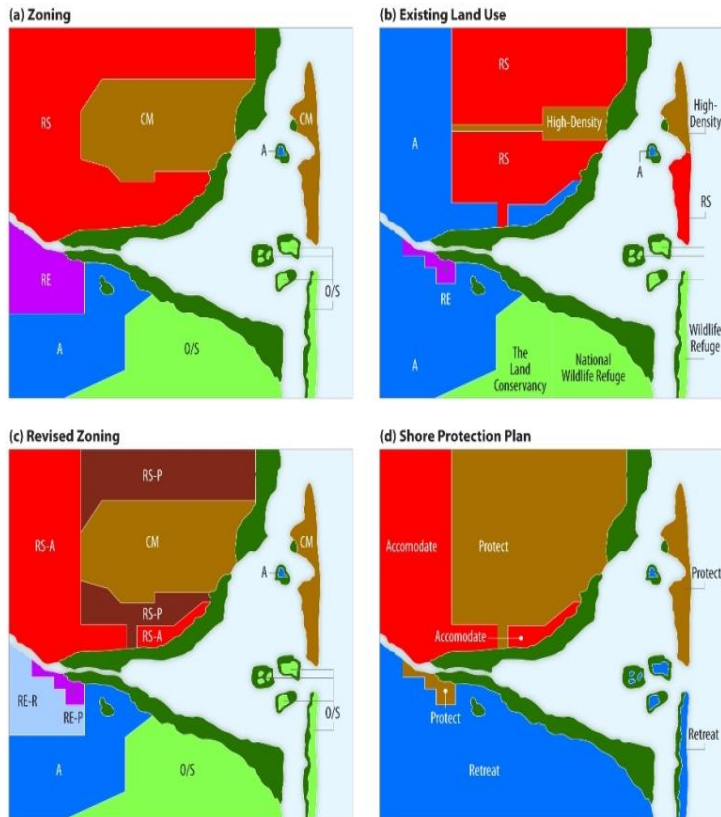
Phase II Objectives

- Raise benefit expectations among local governments and citizens regarding value of forestland retention in the design and planning of new development
- Set effective standards and guidance
- Meet both development and water quality needs for localities
- Pay attention to aesthetics and quality of life needs, e.g. views, recreation, etc.
- Provide incentives and flexibility
- Plan for the risk of failure

Questions That Need Answers

- What is the most effective way to quantify and offset development impacts that go beyond the borders of one jurisdiction?
- What are the biggest challenges associated with designing TMDL credits resulting from forestland retention actions taken now that may result in reduced offset expenditures in 2025?
- What tools and policies do local governments need to encourage compact development patterns that conserve forestland resources, promote reforestation, and tree planting infill of RPA riparian buffer gaps?

Success Outcomes



A: Zoning	B: Land Use	C: Revised Zoning	D: Shore Protection Plan
Commercial/High-Density Mixed Use (CM)		RS-P	Protect
Residential Single Family (RS)	RS-A	Accommodate	
Rural Estate (RE)		RE-P	
		RE-R	
Agriculture (A)			Retreat
Open Space and Conservation (O/S)			
Wetlands			

Adding R, A, or P to an abbreviation means "retreat," "accommodate," or "protect," respectively

- Governments empowered with planning tools and incentives to balance growth and forestland retention goals capable of initiating change locally to create quality communities.
- State and local statutes contain mix of incentives and requirements to promote forestland retention.

For further information

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