Targeting Restoration in Agricultural Landscapes to Achieve Efficient and Effective Nutrient and Sediment Reduction Pocomoke River Watershed, Maryland

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May 16, 2013

Delaware Center for the Inland Bays

Overview

- TNC's Evolving Work
- Pocomoke project and goals
- Identification of priority areas
- Implementation strategies and approaches
- Innovative approaches with poultry industry

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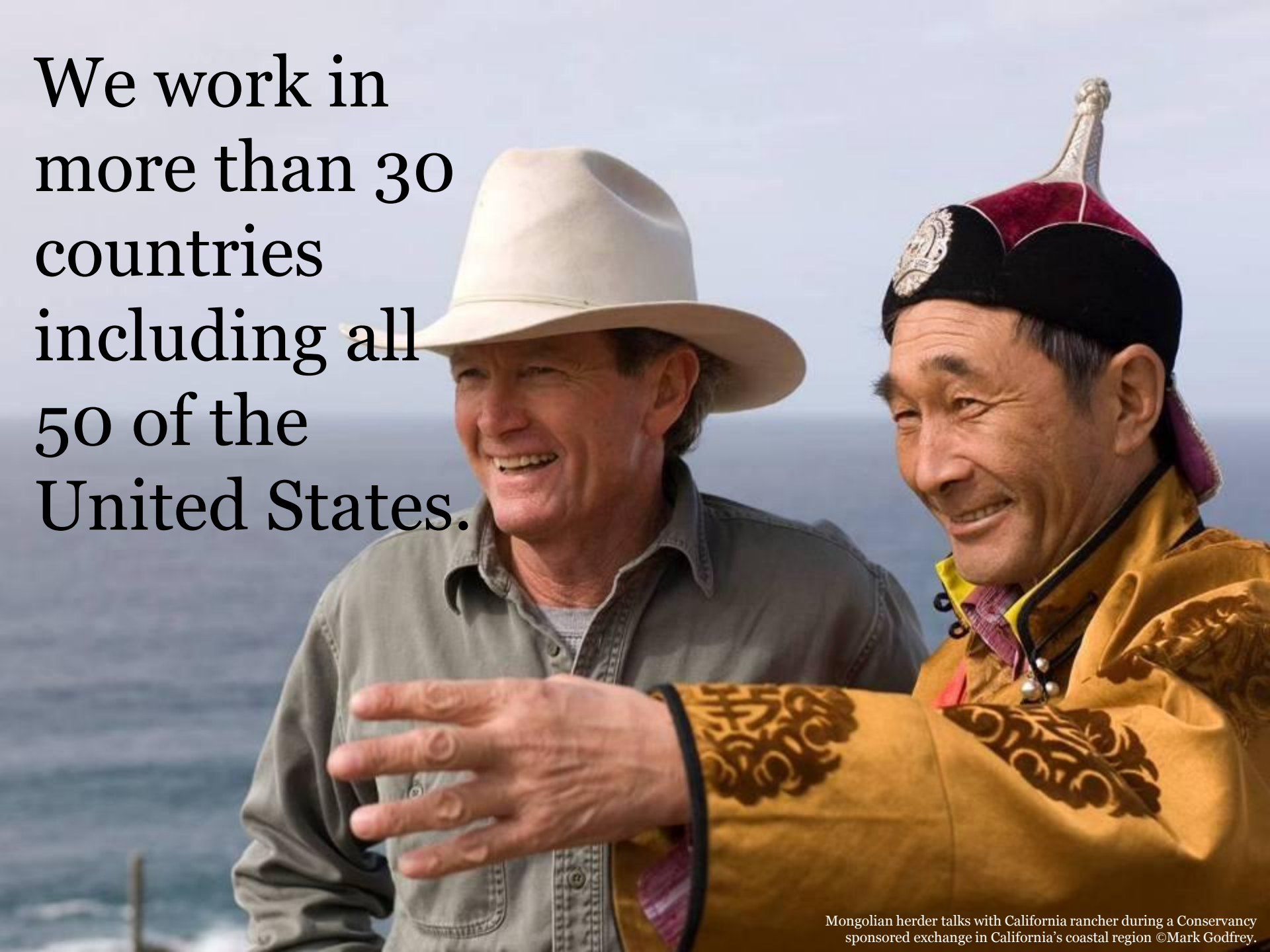
River leading to Iliamna Lake, Alaska habitat the gravel bottoms provide habitat for king salmon ©Ami Vitale

We work in more than 30 countries including all 50 of the United States.



Mongolian herder talks with California rancher during a Conservancy sponsored exchange in California's coastal region ©Mark Godfrey.

We work
with the trust
and support
of more than
one million
members.

The Nature Conservancy is evolving to meet the challenges of today…
Erika Nortemann/© 2010 The Nature Conservancy

…for the benefit of both people and nature.

Environmental gains needed in the face of..

- Increasing demand for food to meet population growth
- Sustaining the viability of producers and agriculture
- Consumer expectations for safe food and sustainable practices

Nitrogen Loads to Chesapeake Bay

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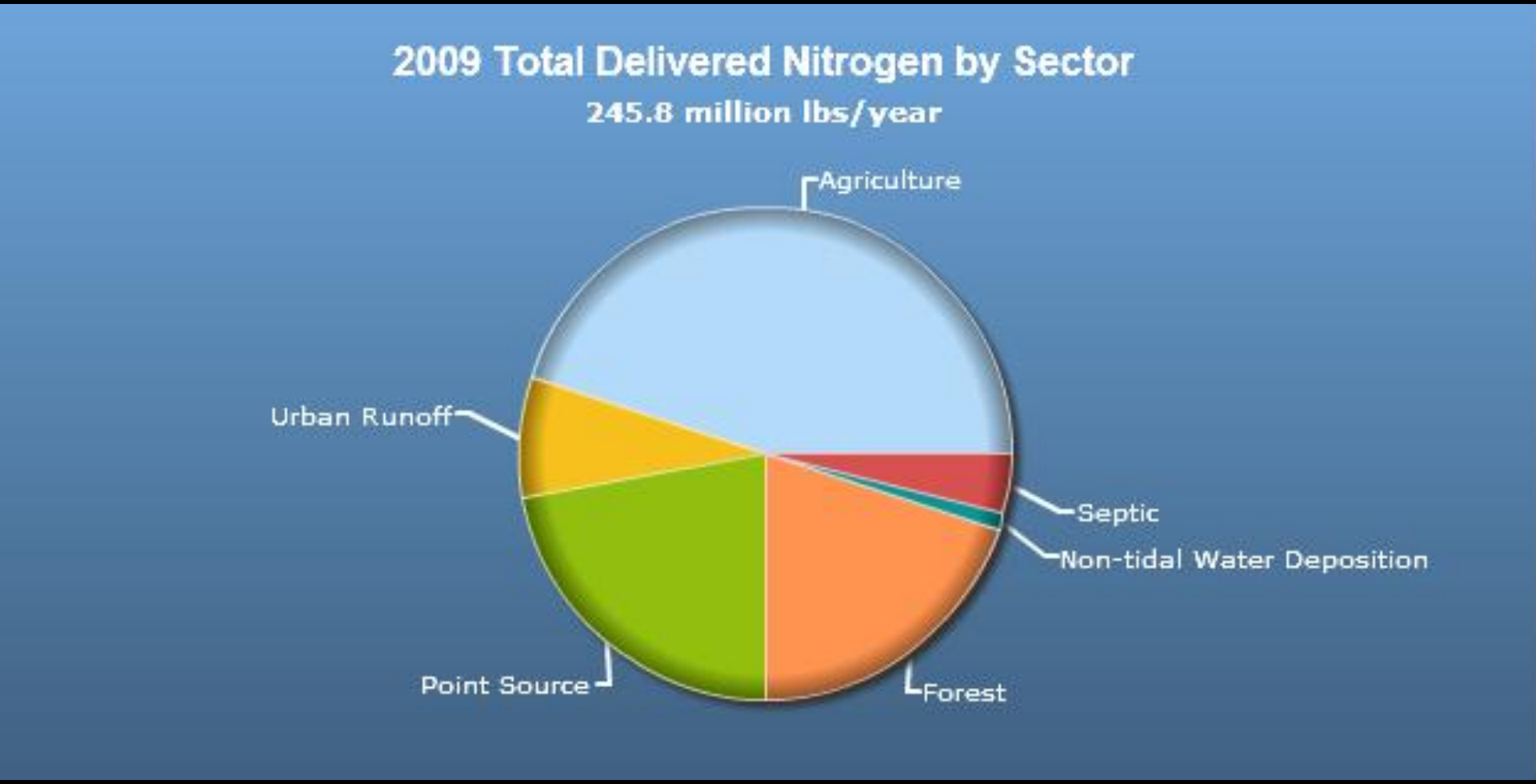

Nitrogen Loads Past and Future in Maryland

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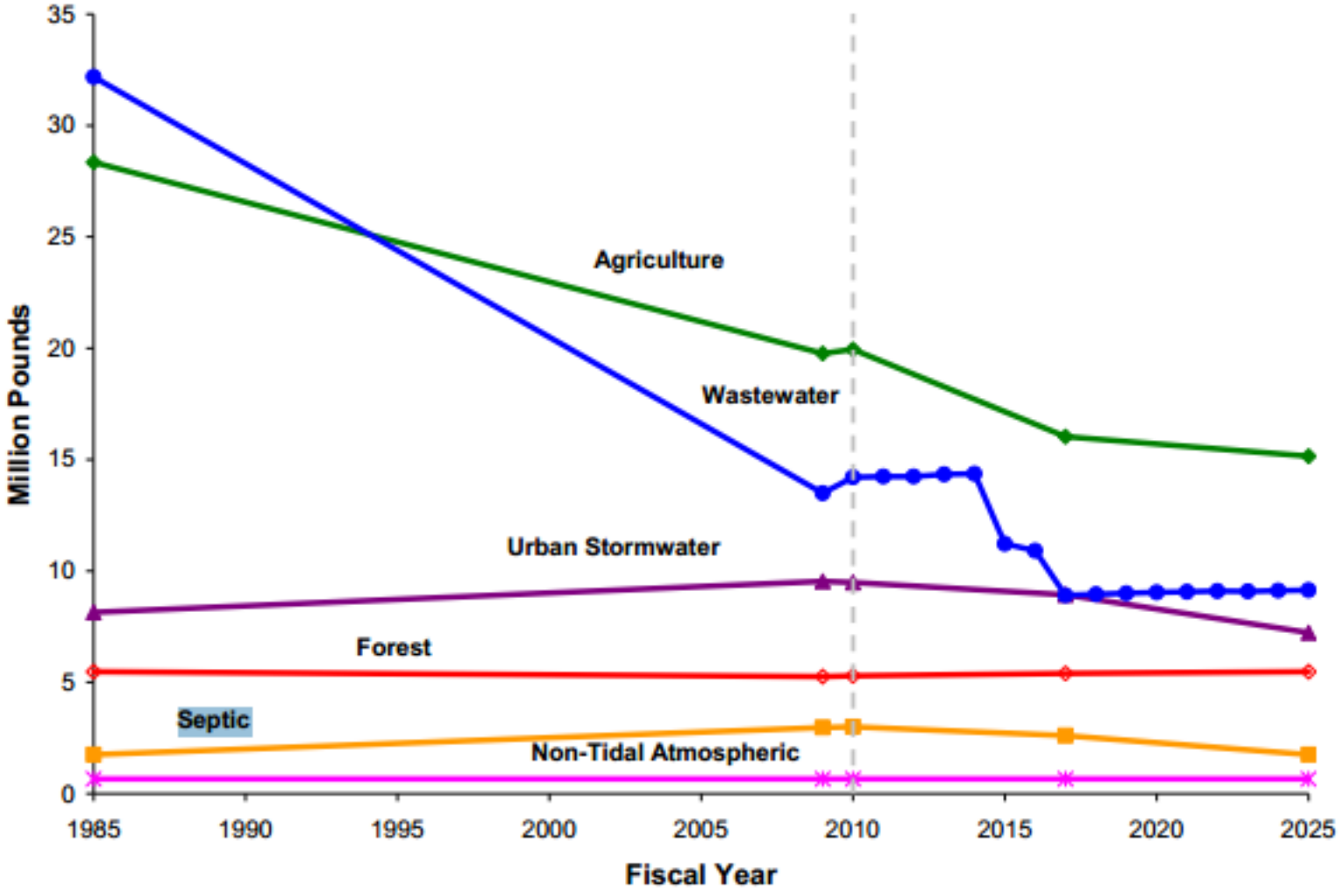

Agriculture Reductions by County (Maryland)

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Agriculture Watershed Implementation Plan Goals

WIPs 2010 - 2017	TN %	TN M lbs	TP %	TP M lbs	Sed. %	Sed M lbs
Wicomico	7.4	0.06	-10.9	-0.006	10.4	0.4
Wocester	46.0	0.34	46.0	0.03	32.0	2.1
Somerset	32.8	0.48	25.6	0.03	17.2	0.5

TNC Targeted BMP Projects in Chesapeake

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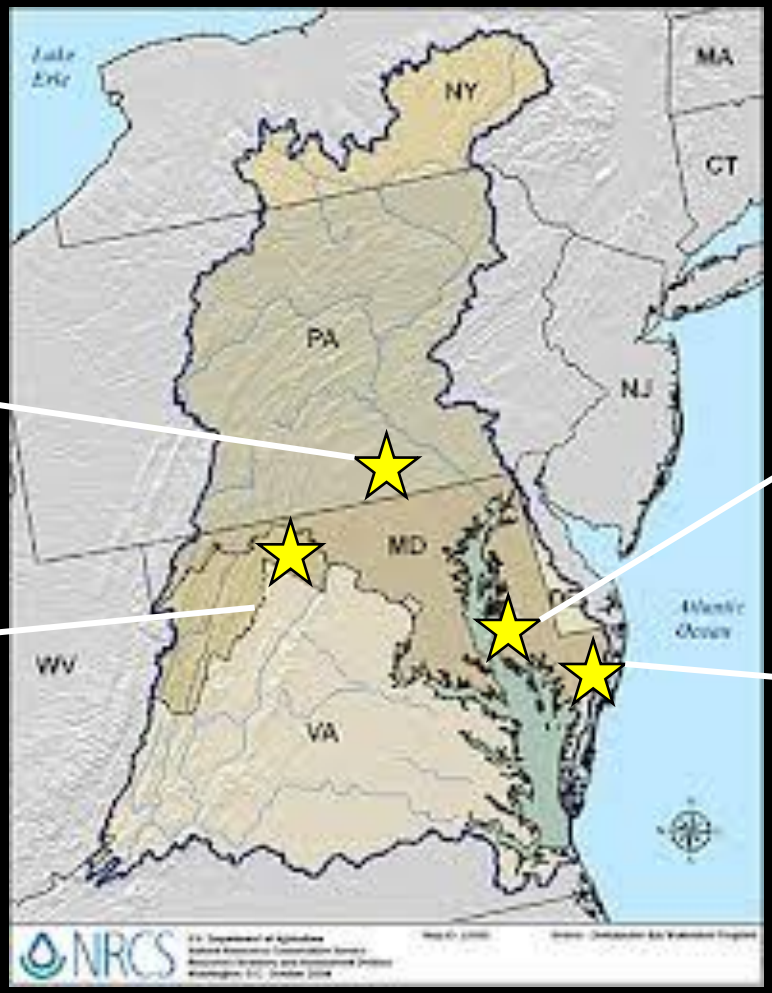
Lower Susquehanna Pennsylvania

Potomac Allegheny County



Choptank Talbot County

Pocomoke Watershed MD/ DE/ VA

Chesapeake Bay Foundation · Save the Bay ·

50 Years Trout Unlimited

USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service

The Great Seal of Talbot County · Maryland · Latrobe Praeteritum et Futurum

State of Maryland · Department of Natural Resources

National Fish and Wildlife Foundation

Pocomoke River Watershed

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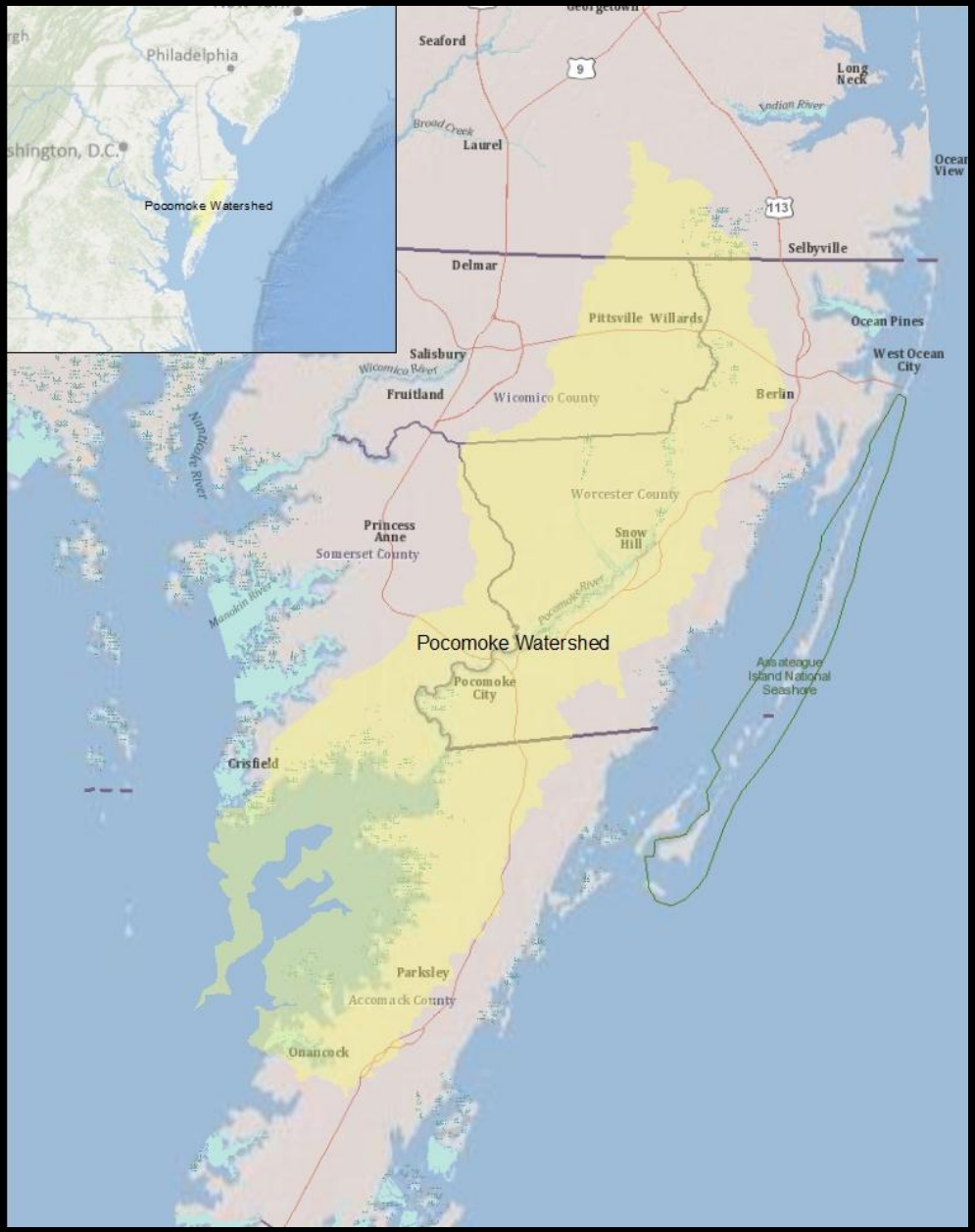

Pocomoke River Watershed Project

Protect and enhance a network of natural and working lands that sustain clean water and a diversity of habitats that meet the needs of people and nature in the Pocomoke River watershed

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Demonstrate how to achieve efficient and effective nutrient and sediment reduction with targeted restoration

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Our work in the Pocomoke will contribute to a Chesapeake Bay that has clean water and abundant fisheries

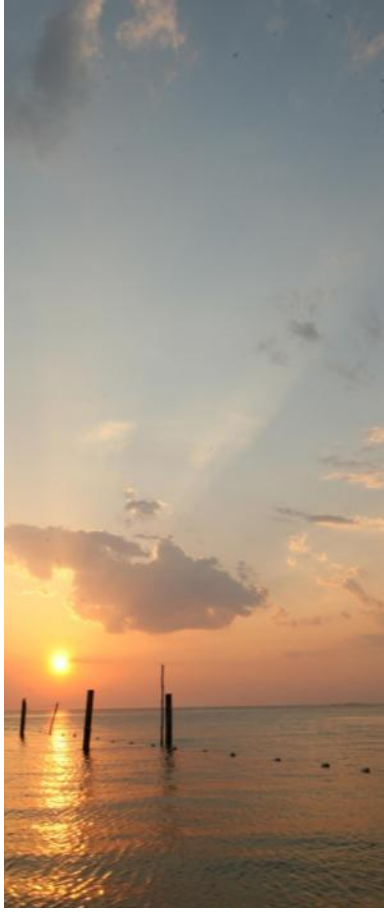

Photo credits: (top)

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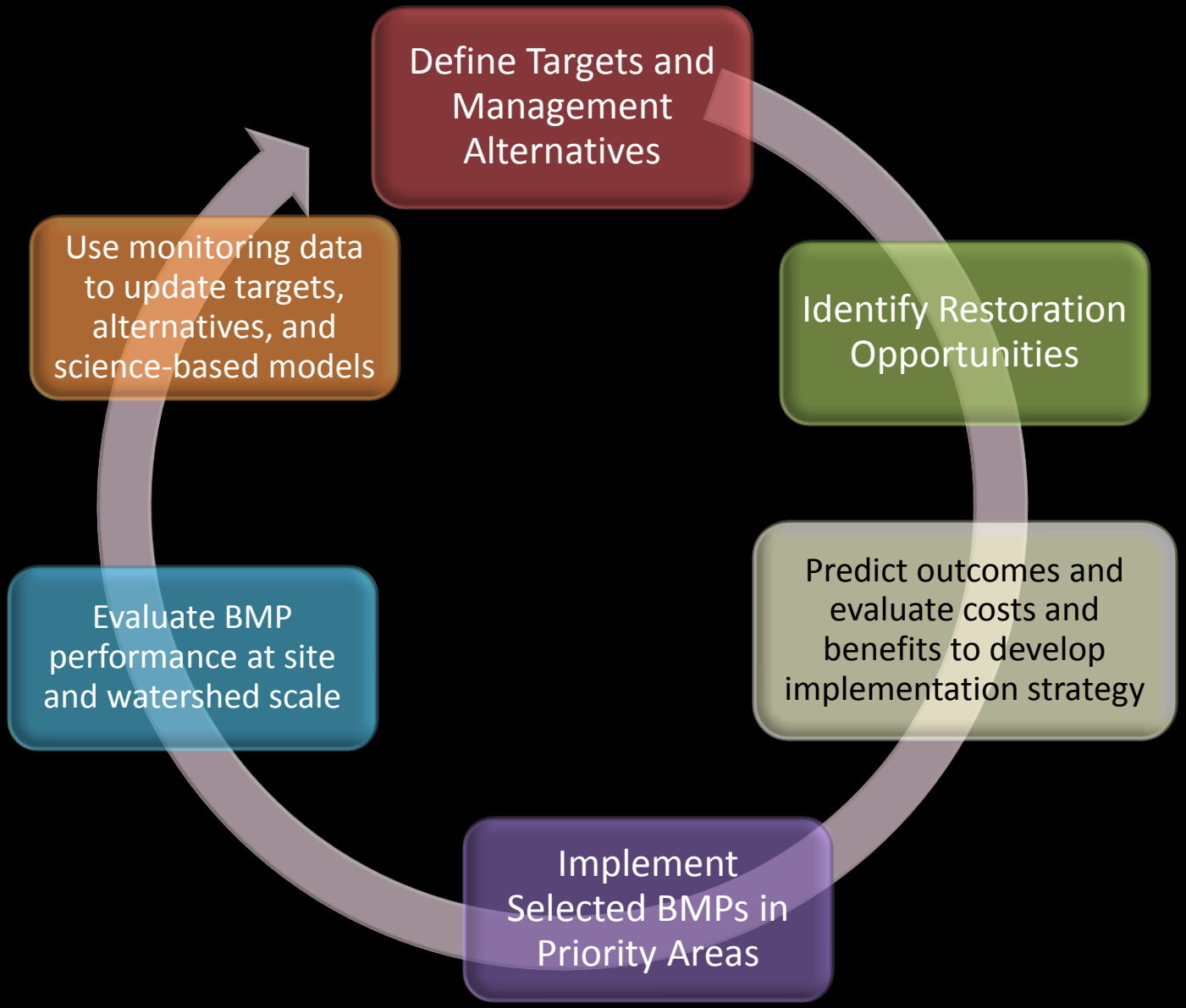
Approach

Implement a system for delivering conservation practices that:

- Considers local priorities, needs, and opportunities
- Integrates science that supports the continued improvement of practices to meet our objectives
- Achieves the highest return on our investment

Developing an Adaptive Management Program to Drive Efficient and Effective Conservation Outcomes



Targets and Management Alternatives

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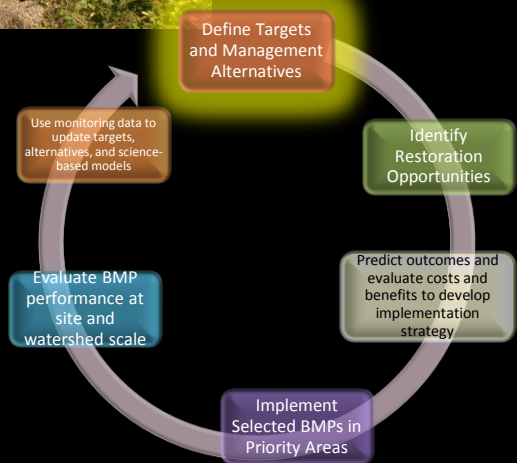
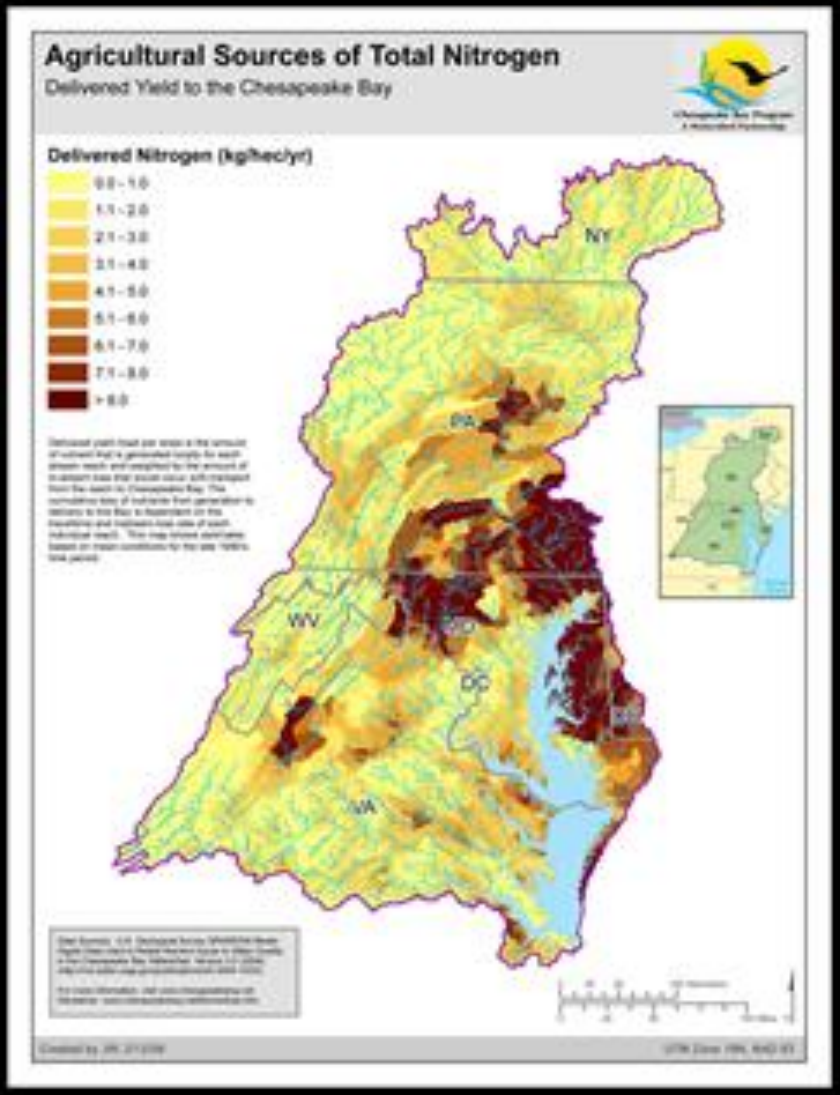
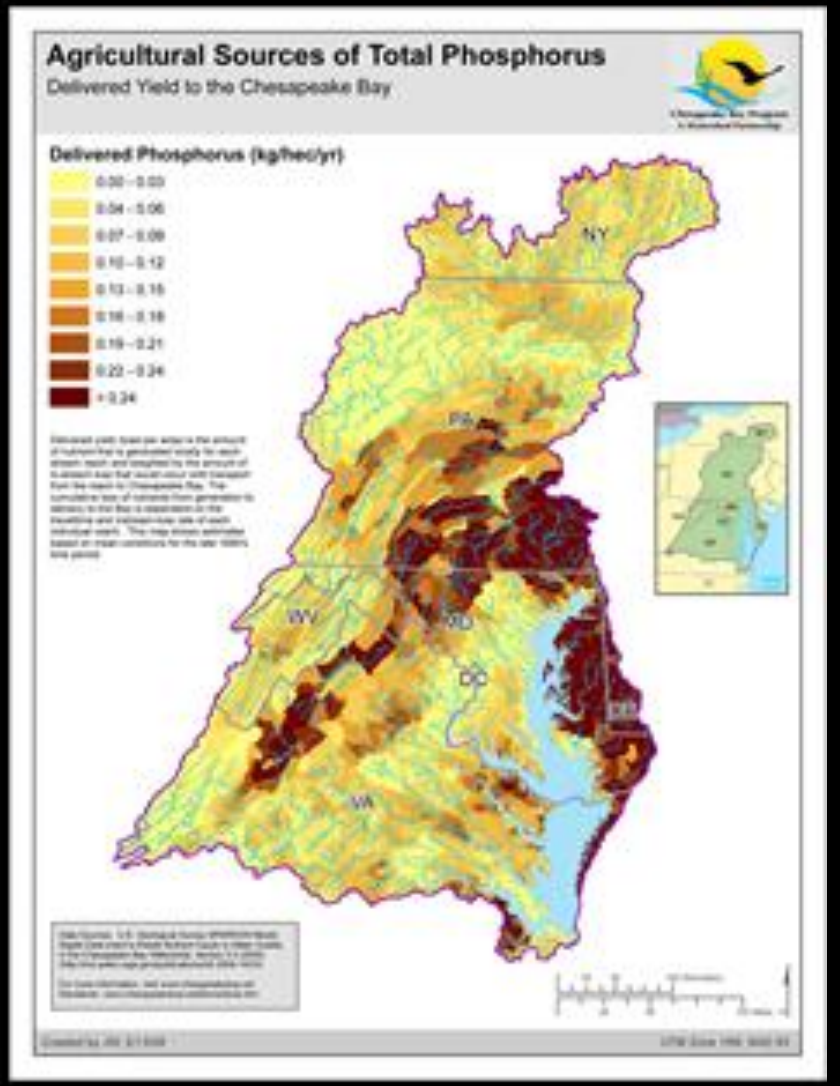
Floodplain reconnections

Headwater wetlands

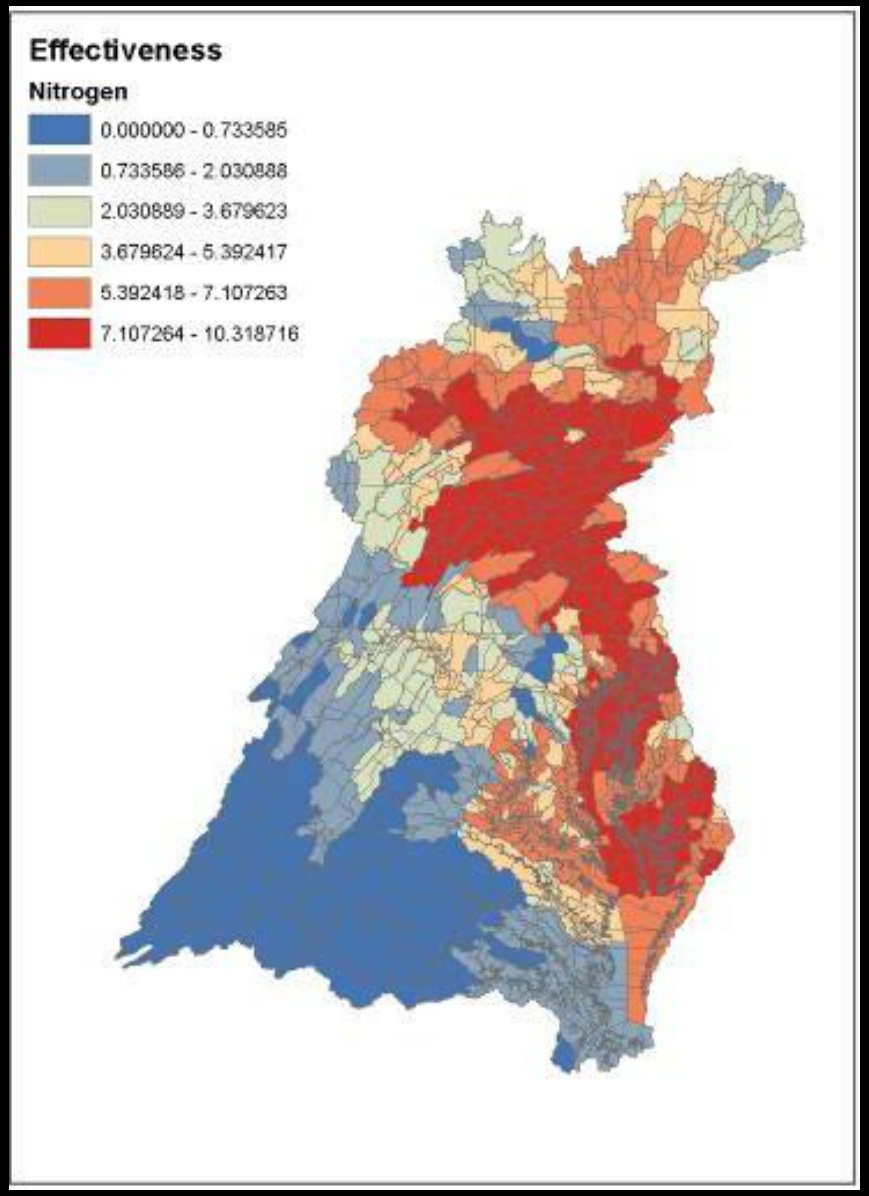


Restoration Opportunities

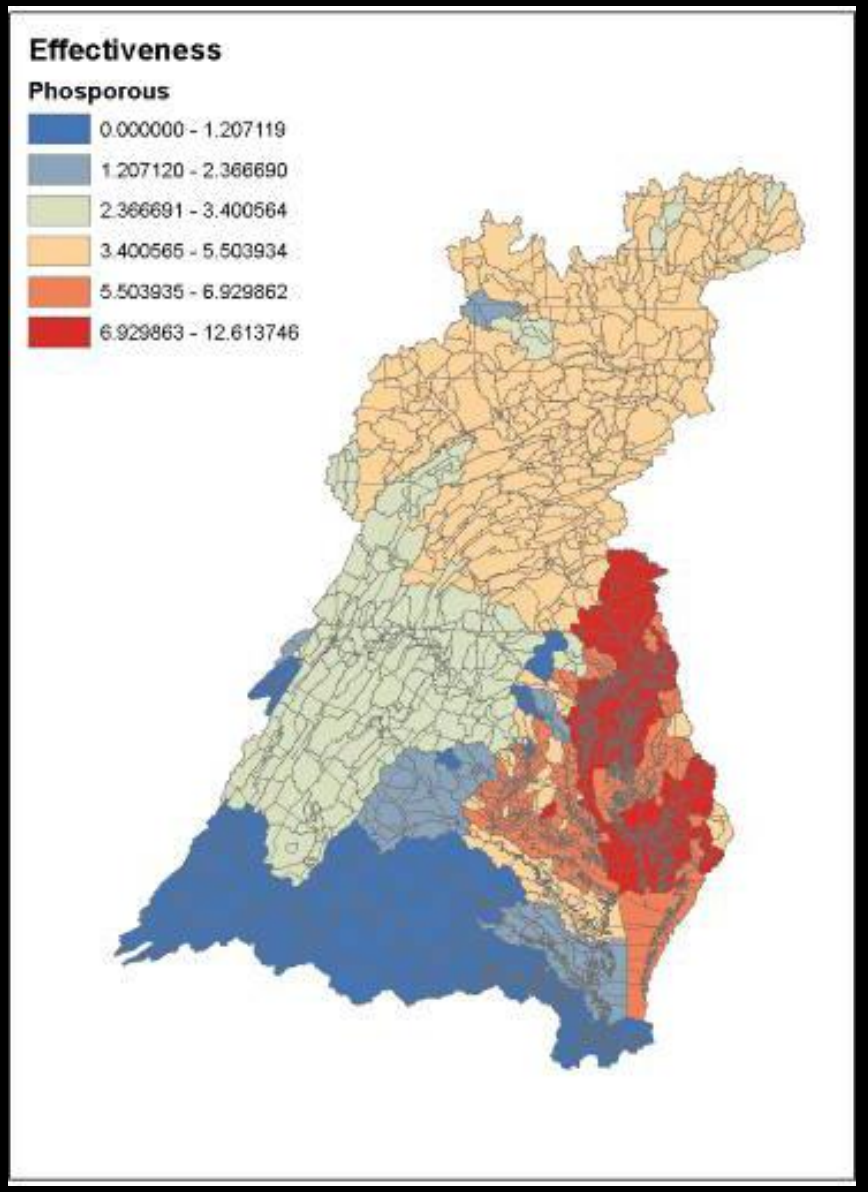




Restoration Opportunities



Nitrogen



Phosphorus

Targets and Management Alternatives

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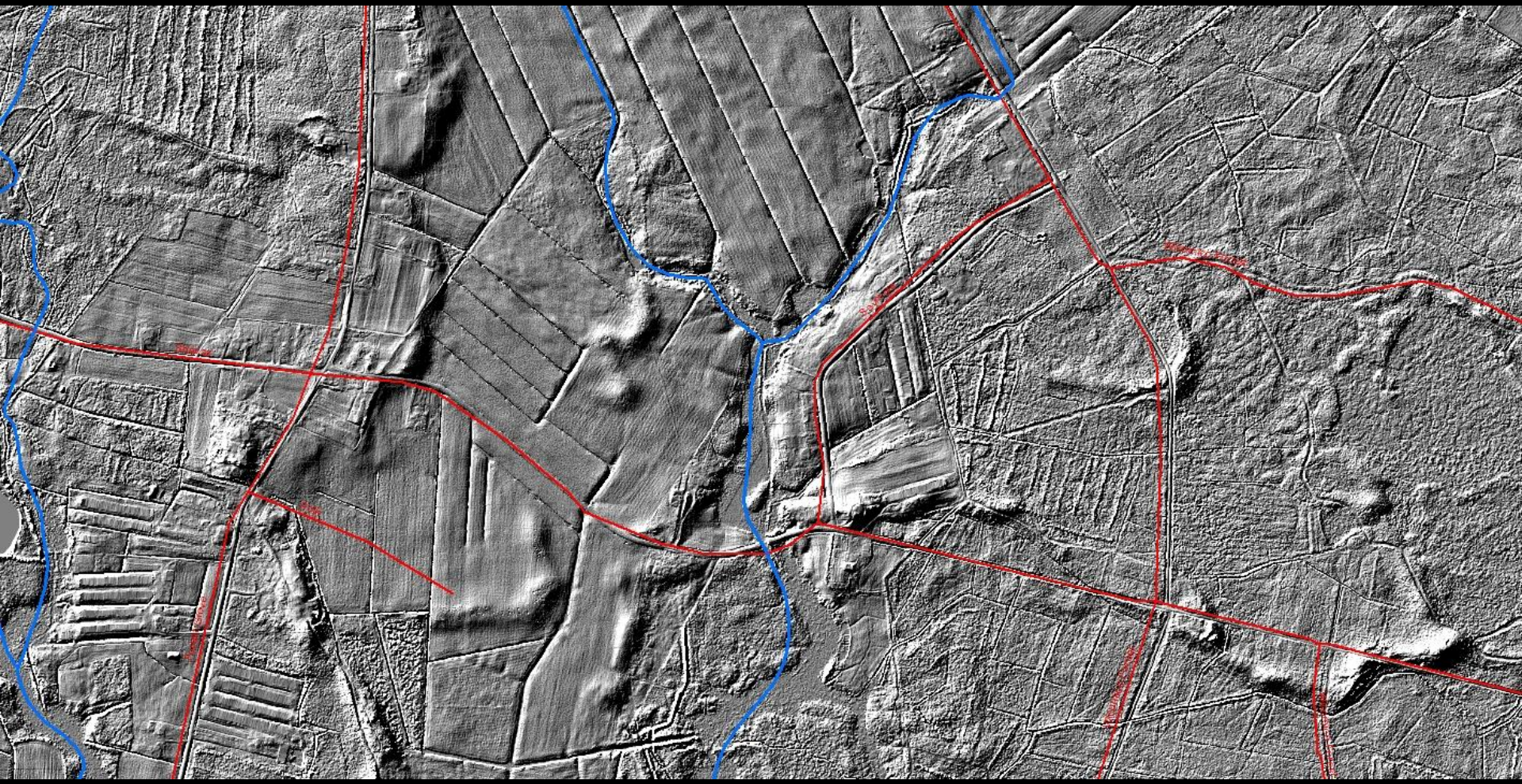

Targets and Management Alternatives

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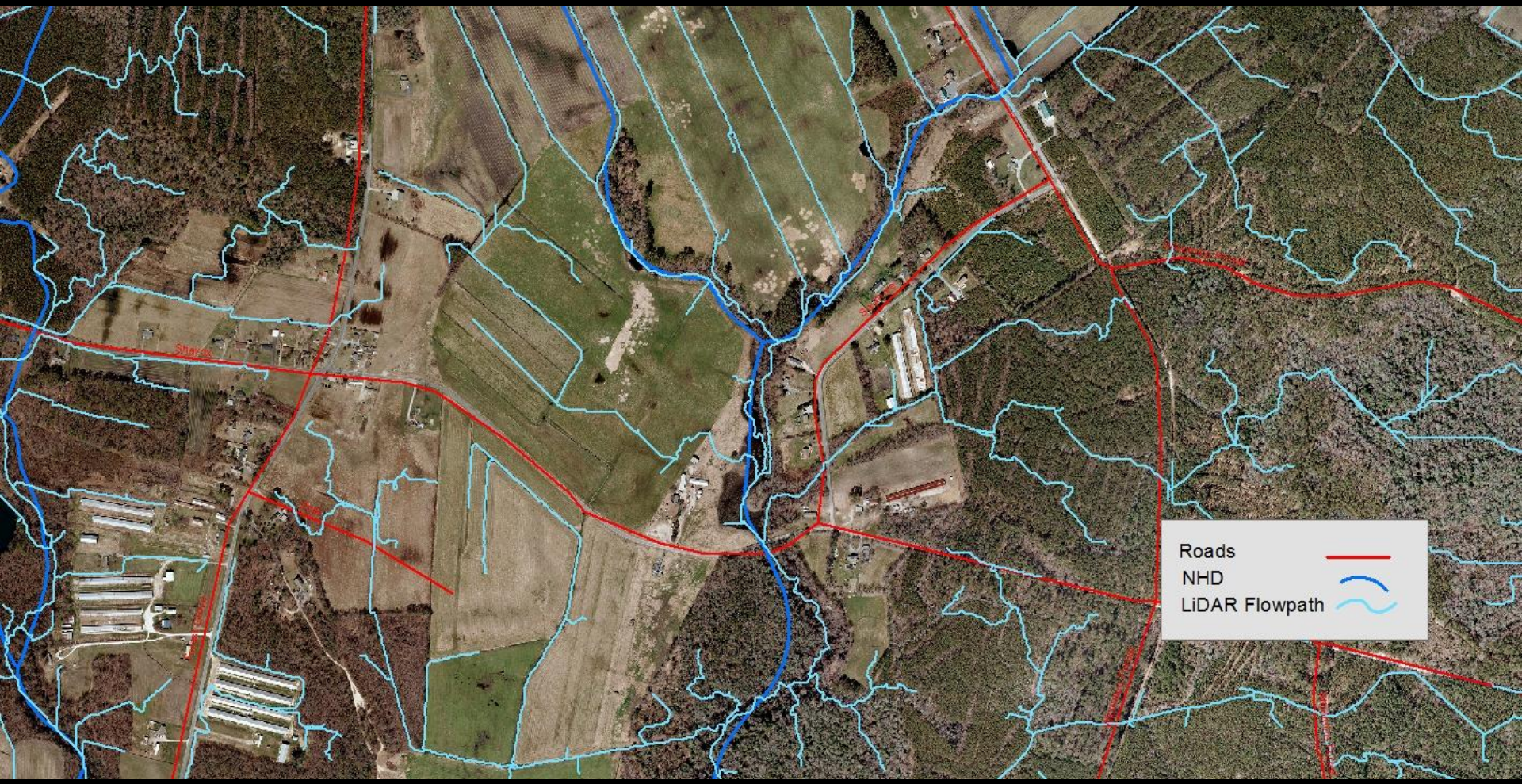

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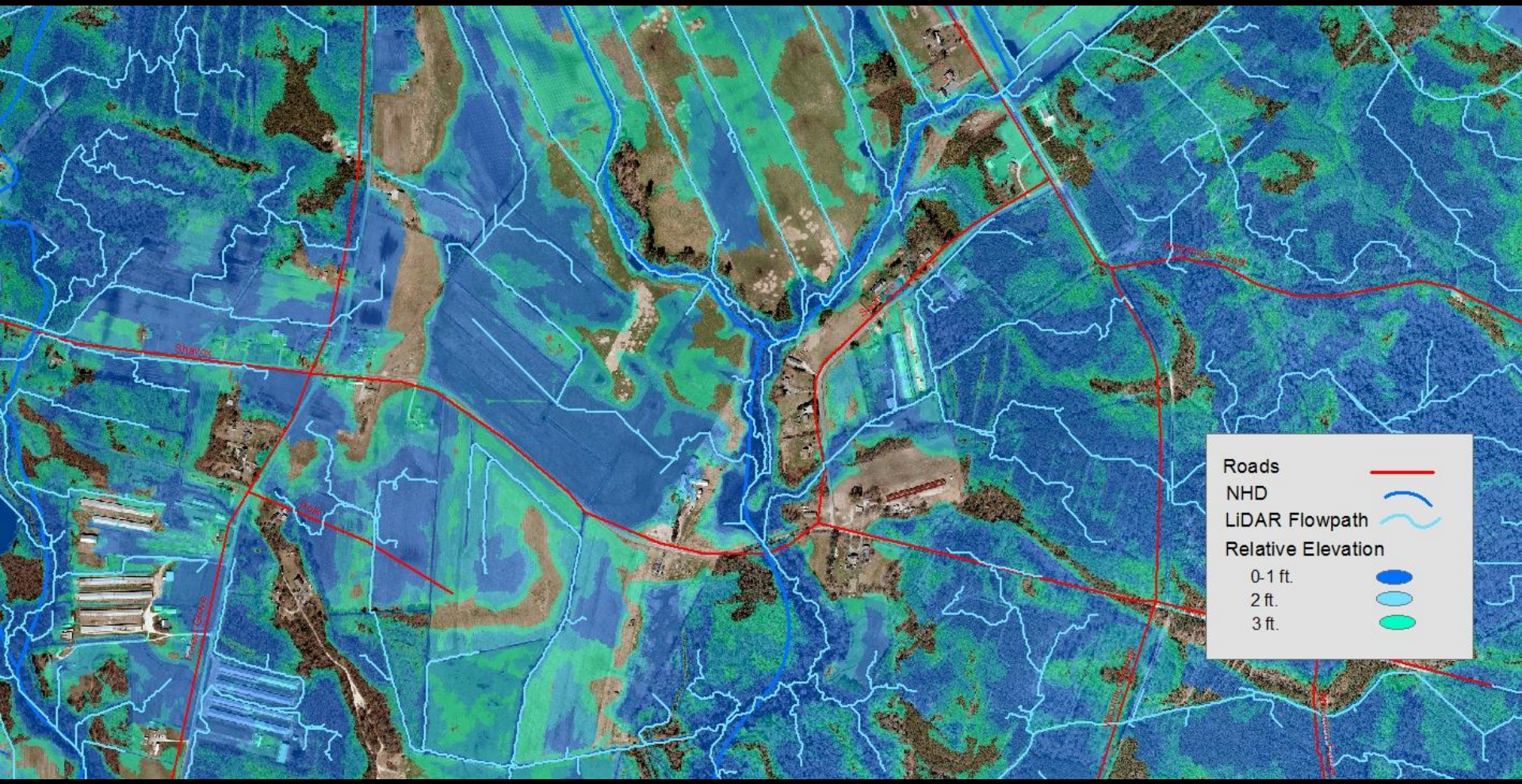

Targets and Management Alternatives

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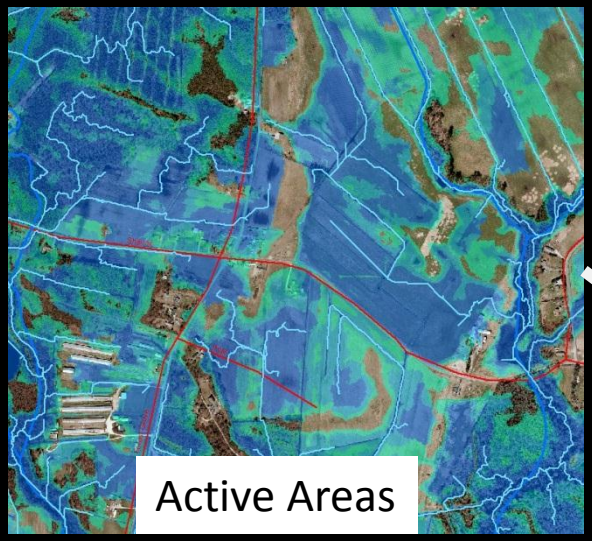
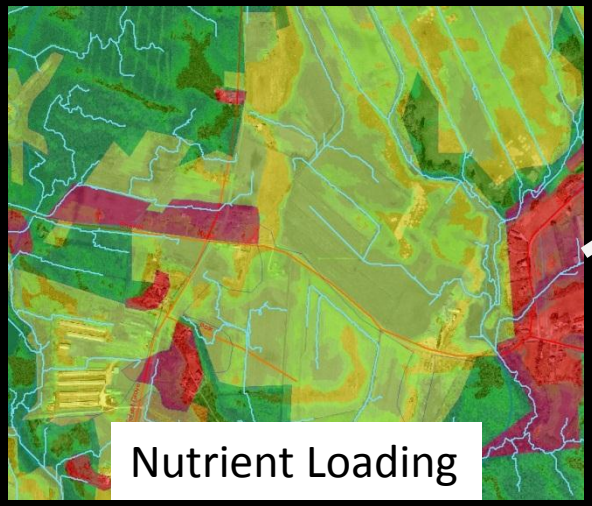
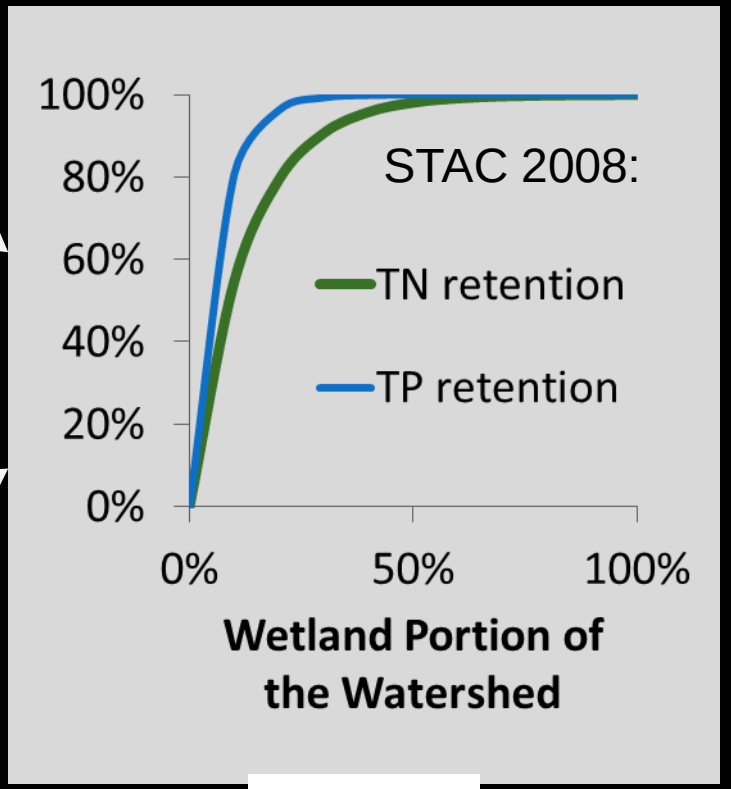


Active Areas



Nutrient Loading



Retention

Targets and Management Alternatives

Targets and Management Alternatives

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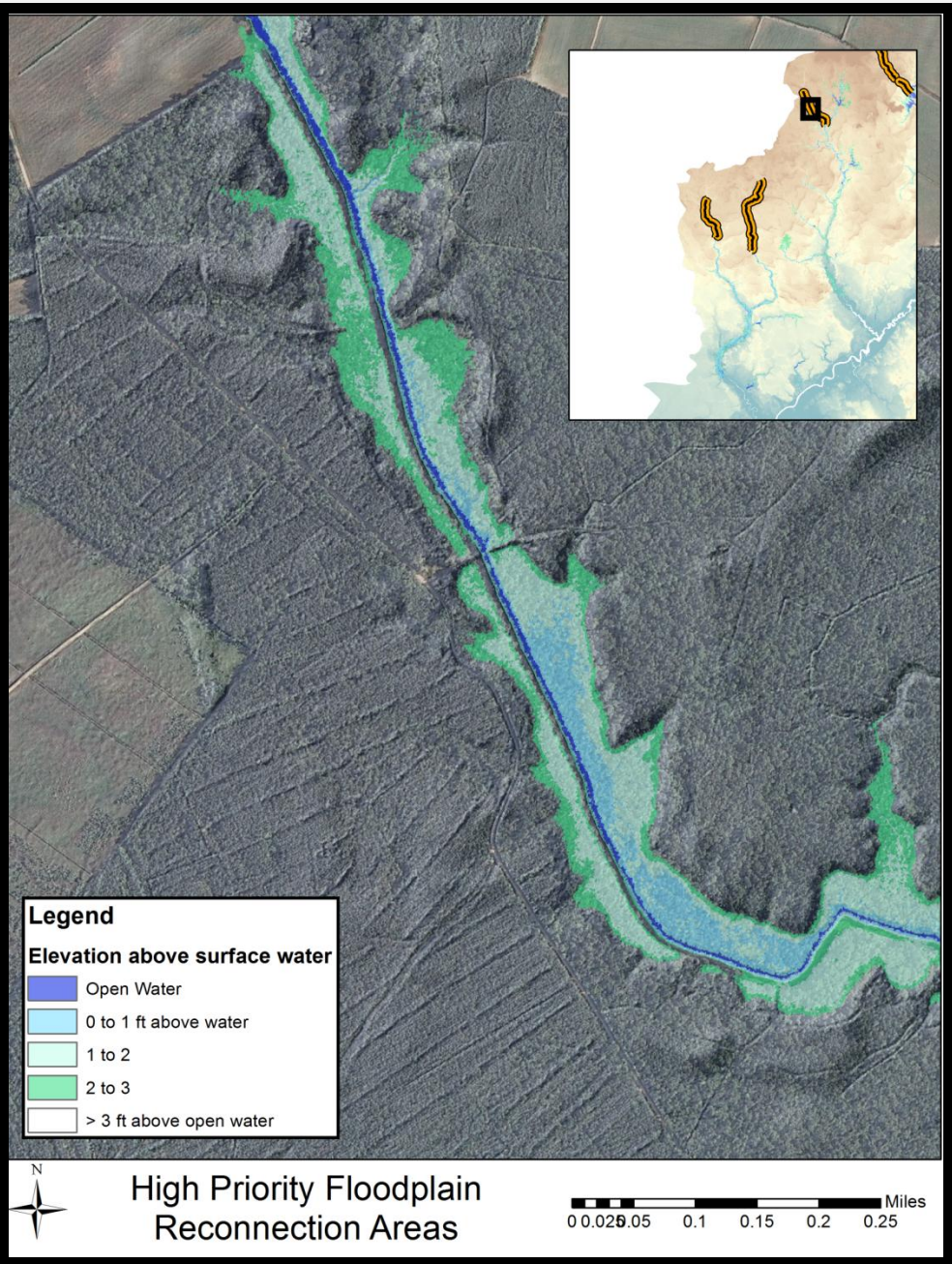

Predict Outcomes and Costs

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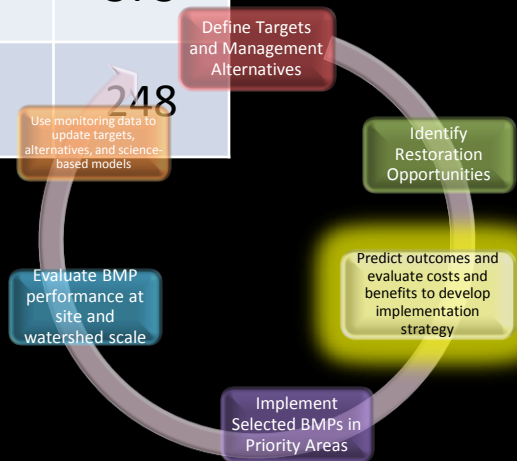
Project Comparison

Site (ac. treated)	TN ($/lb.)	TN (lbs.)	TP ($/lb.)	TP (lbs.)	Sed ($/lb.)	Sed (lbs.)
Site 1 (63 ac.)	$26	380	$184	54	$6	1,737
Site 2 (14 ac.)	$123	36	$1,539	3	$19	235
Site 3 (24 ac.)	$49	91	$614	7	$1	573
Site 4 (9 ac.)	$110	41	$1,398	3	$18	248



Implementation

- NRCS WREP Partnership
- Maryland Program Open Space/ Rural Legacy
- CREP
- State of Maryland Chesapeake Trust Fund

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Monitoring

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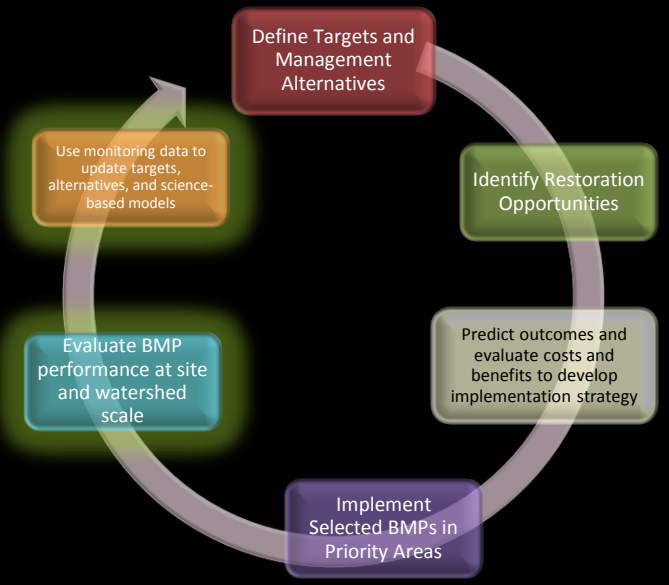
Monitoring to Improve Targeting and Restoration Practices and to Inform Bay Model



Performance-Based Financing

- The goal of all investment activity is to ***maximize return***, whether it be profit, material, environmental or otherwise

- Reduce risks and costs while moving to scale

Finding Solutions with New Partners

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Poultry Houses on Eastern Shore = 4,500

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