

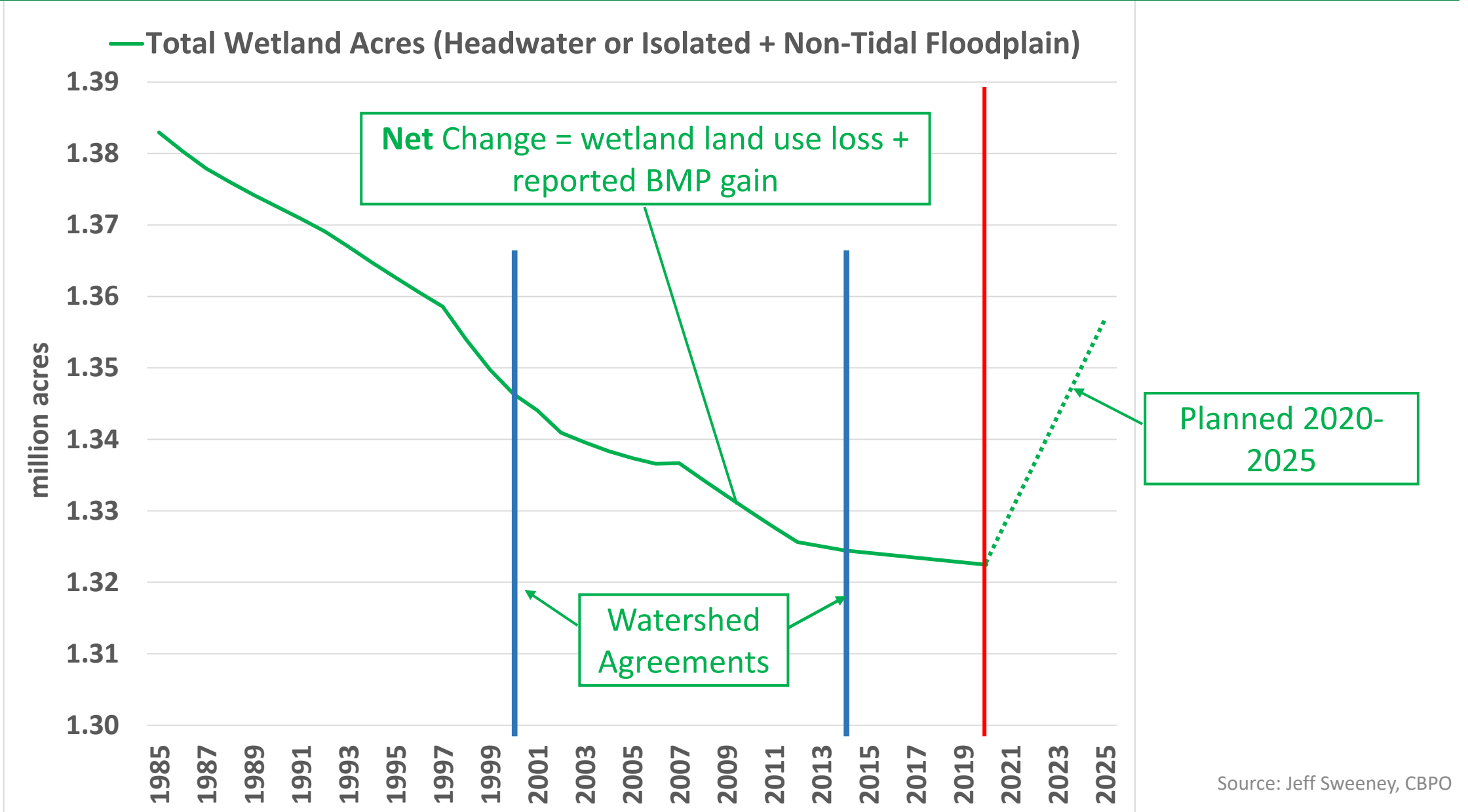
State of tidal wetlands in the Chesapeake Bay: Grand Challenges and Big Aspirations

Pamela Mason
Virginia Institute of Marine Science





CBW Wetland Acre Changes (1985–2020 + 2025)



Wetlands

Continually increase the capacity of wetlands to provide water quality and habitat benefits throughout the watershed. Create or reestablish 85,000 acres of tidal and non-tidal wetlands and enhance function of an additional 150,000 acres of degraded wetlands by 2025. These activities may occur in any land use (including urban), but primarily occur in agricultural or natural landscapes.

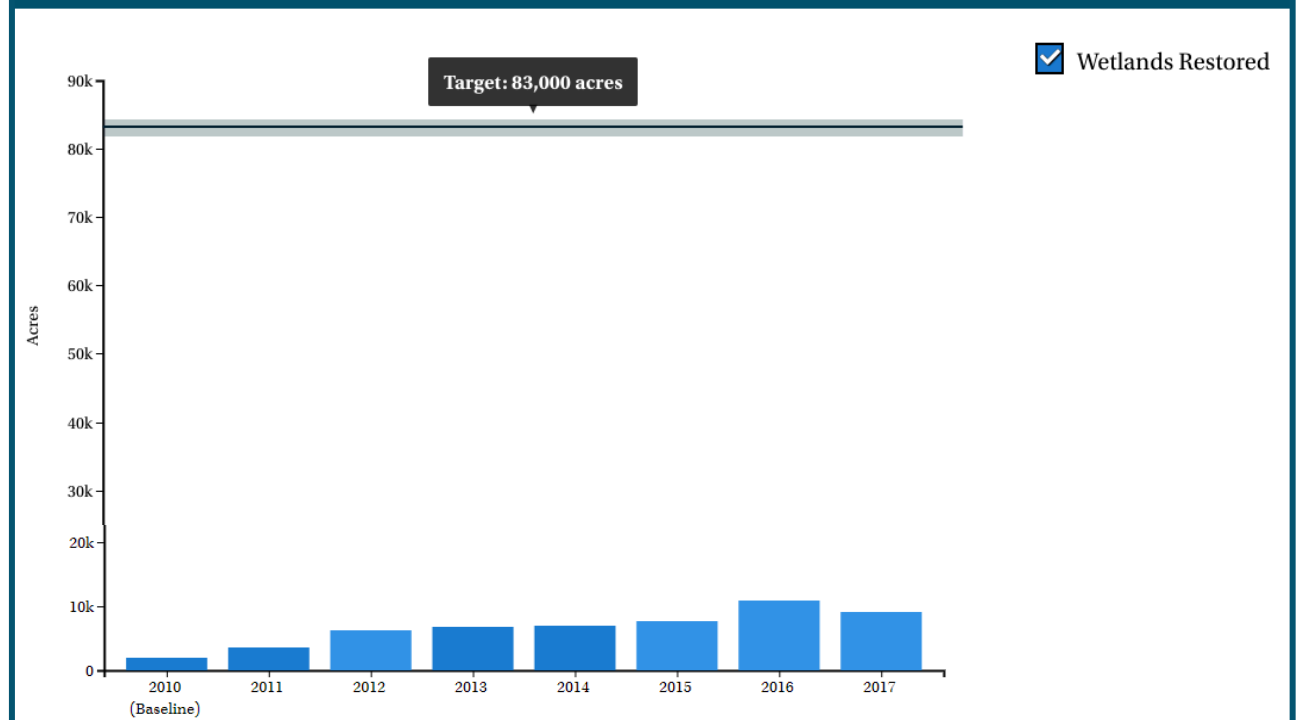
Current Progress

Between 2010 and 2017, 9,103 acres of wetlands were established, rehabilitated or reestablished on agricultural lands. While this outcome includes a target to restore 85,000 acres of tidal and non-tidal wetlands in the watershed, 83,000 of these restored acres should take place primarily on agricultural lands. The wetlands restored on agricultural lands between 2010 and 2017 mark an 11% achievement of the 83,000-acre goal.

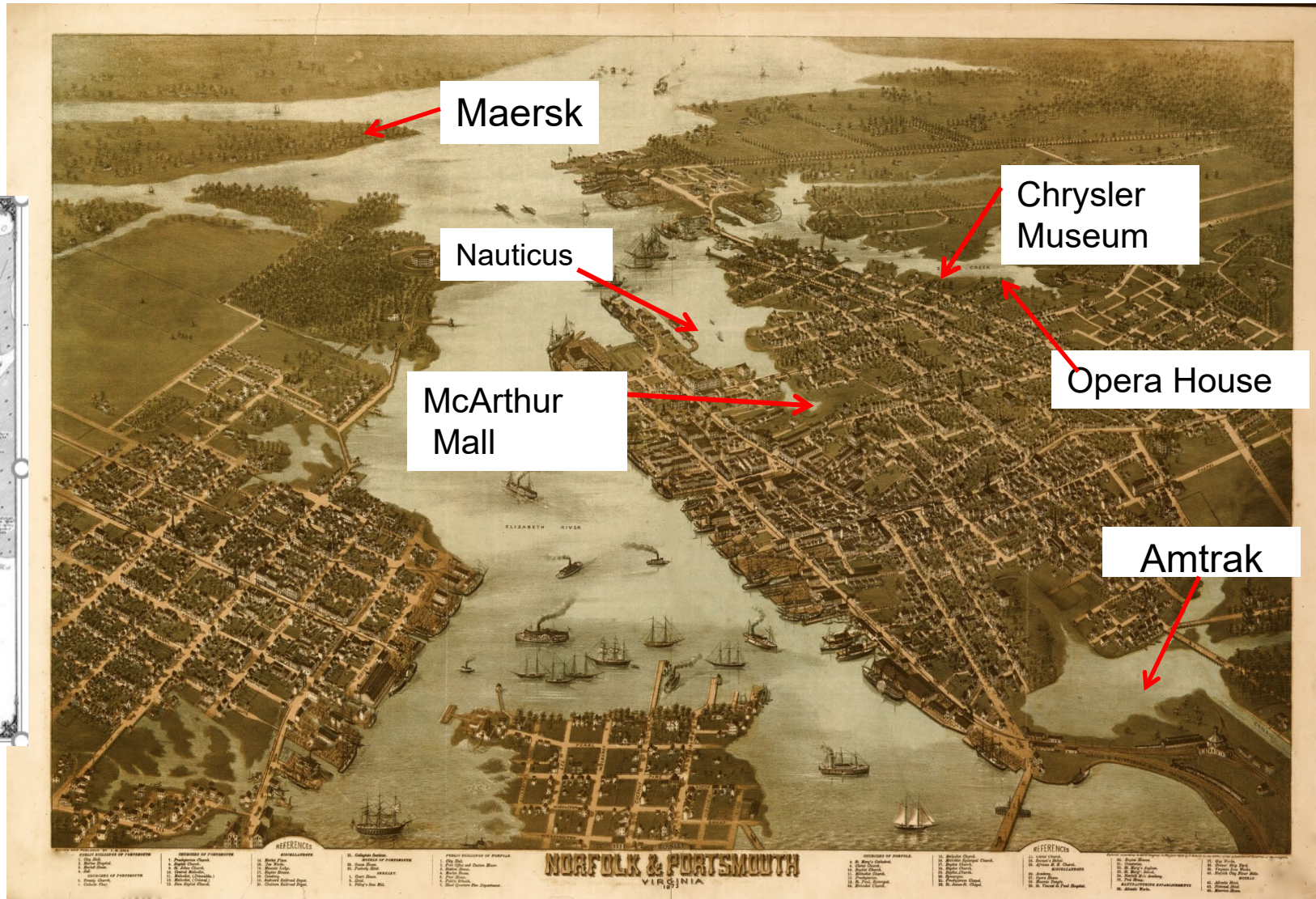
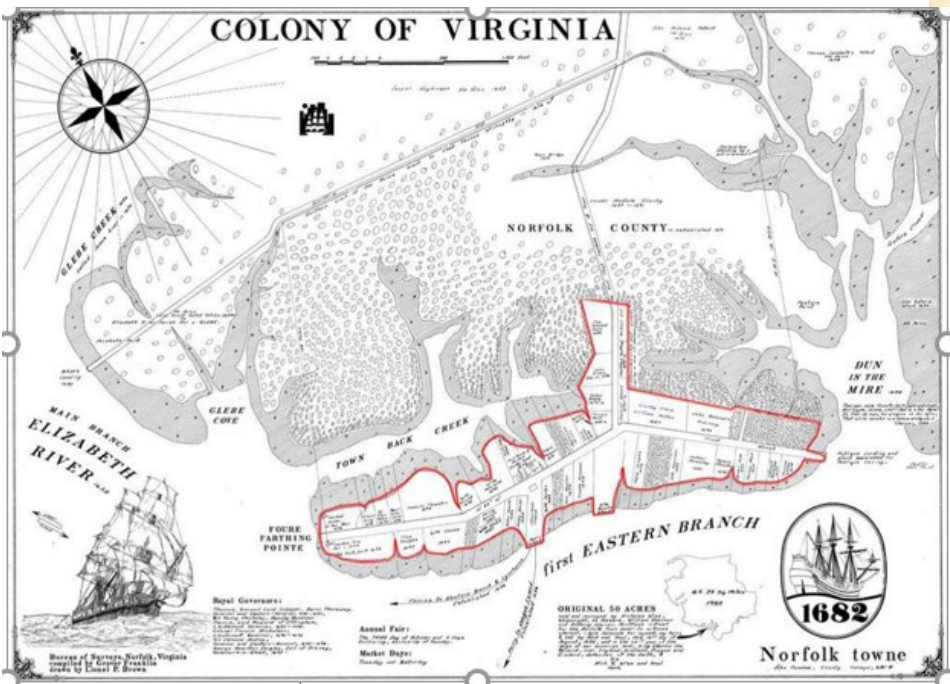
Outcome Achievement Uncertain ? !

Wetland acreage data are inconsistently reported and inaccurate for assessing progress toward this outcome. Work is underway to identify a consistent means for collecting data by maximizing existing data reporting processes.

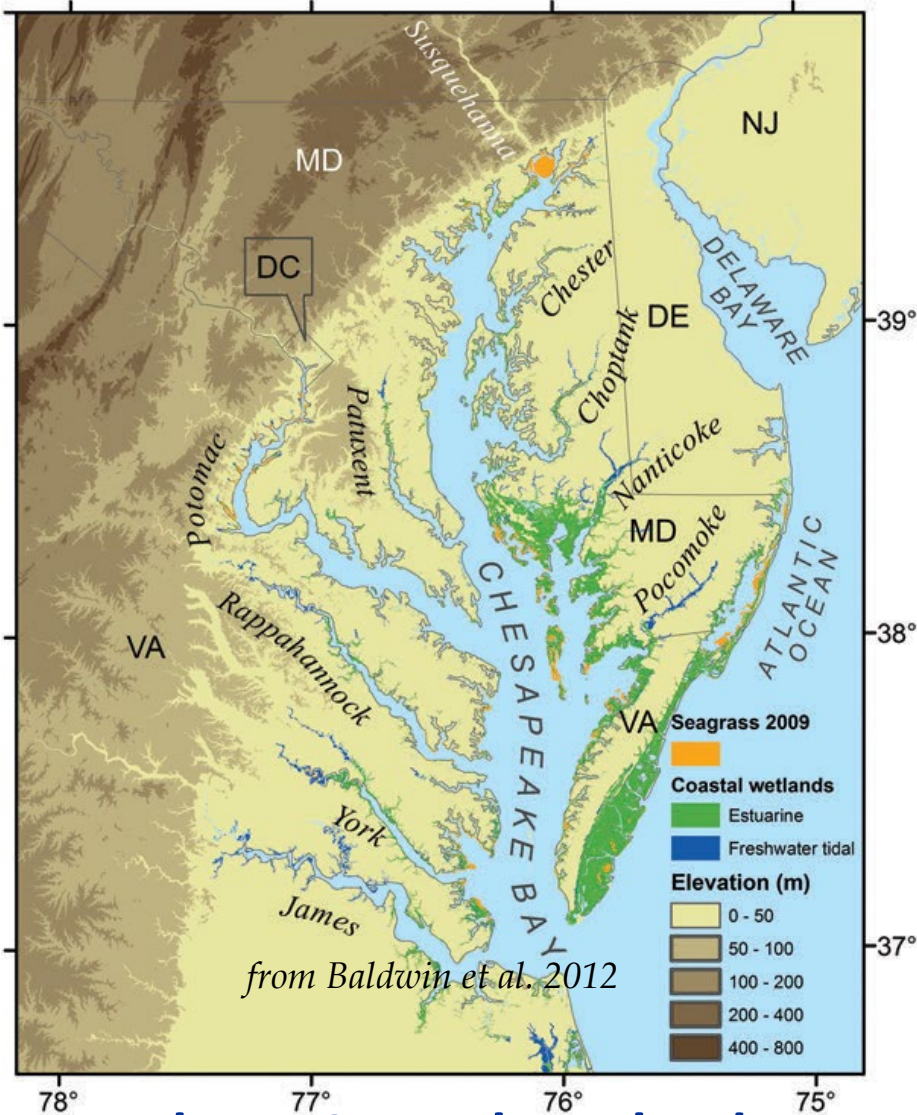
Wetlands Restored on Agricultural Lands (Cumulative) (2010-2017)



▶ Coastal Cities Built on Tidal Marsh



Existing coastal wetlands – Chesapeake Bay



Total Bay Coastal Wetlands
~~595,000 ha

BRACKISH & SALT MARSH

Salt Marsh	27,438
Brackish marsh	123,651

TIDAL FRESHWATER WETLANDS

State	(ha)
Delaware	823
Maryland	10,345
Virginia	16,000
North Carolina	1,200
South Carolina	26,115
Georgia	19,040

After: Mitsch & Gosselink 2000

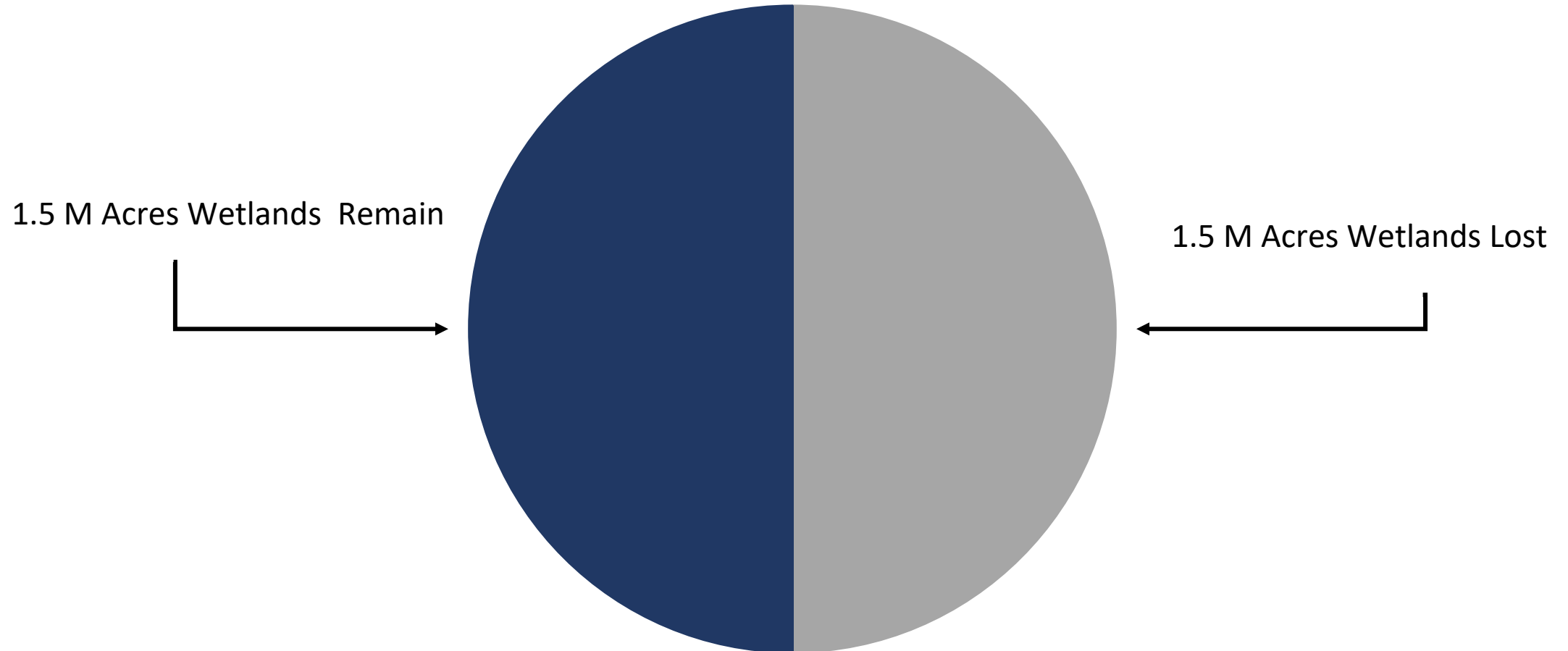
NON-TIDAL COASTAL WETLANDS

State	Coastal (ha)	%
VA	260,627	64
MD	136,558	90

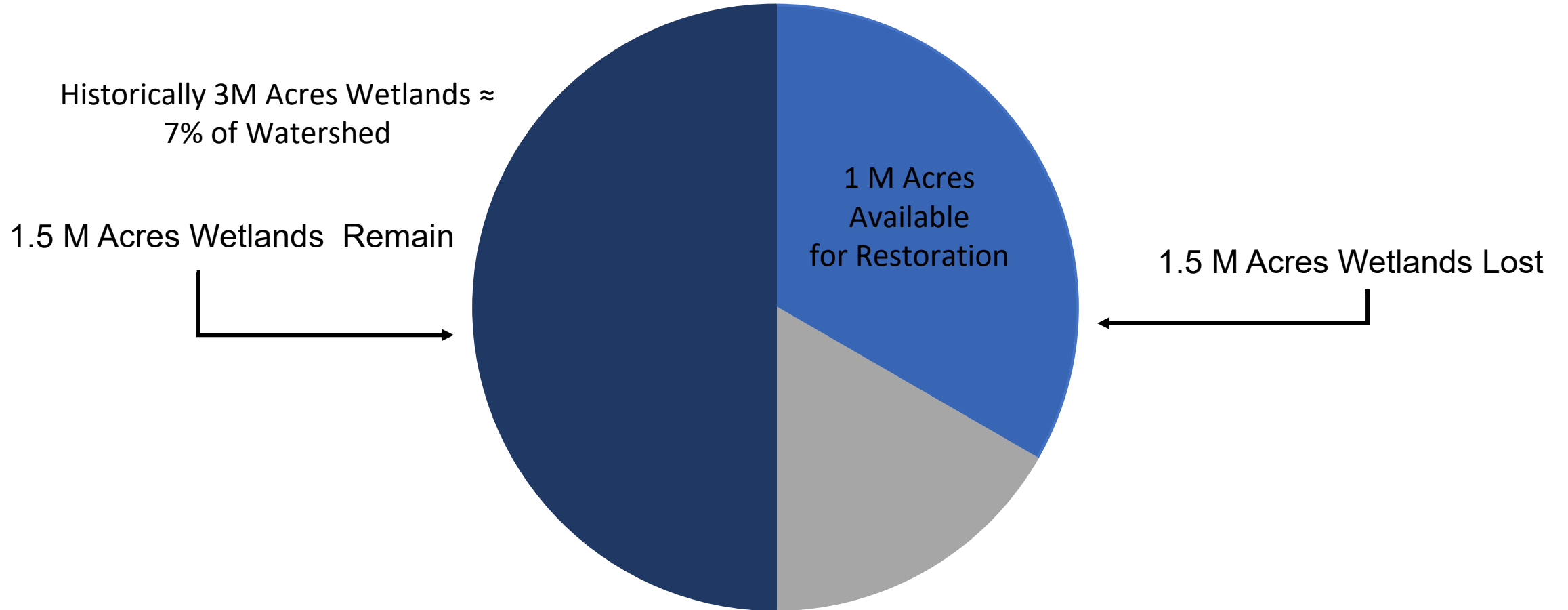
Havens, regional assessment

Chesapeake Bay Wetlands

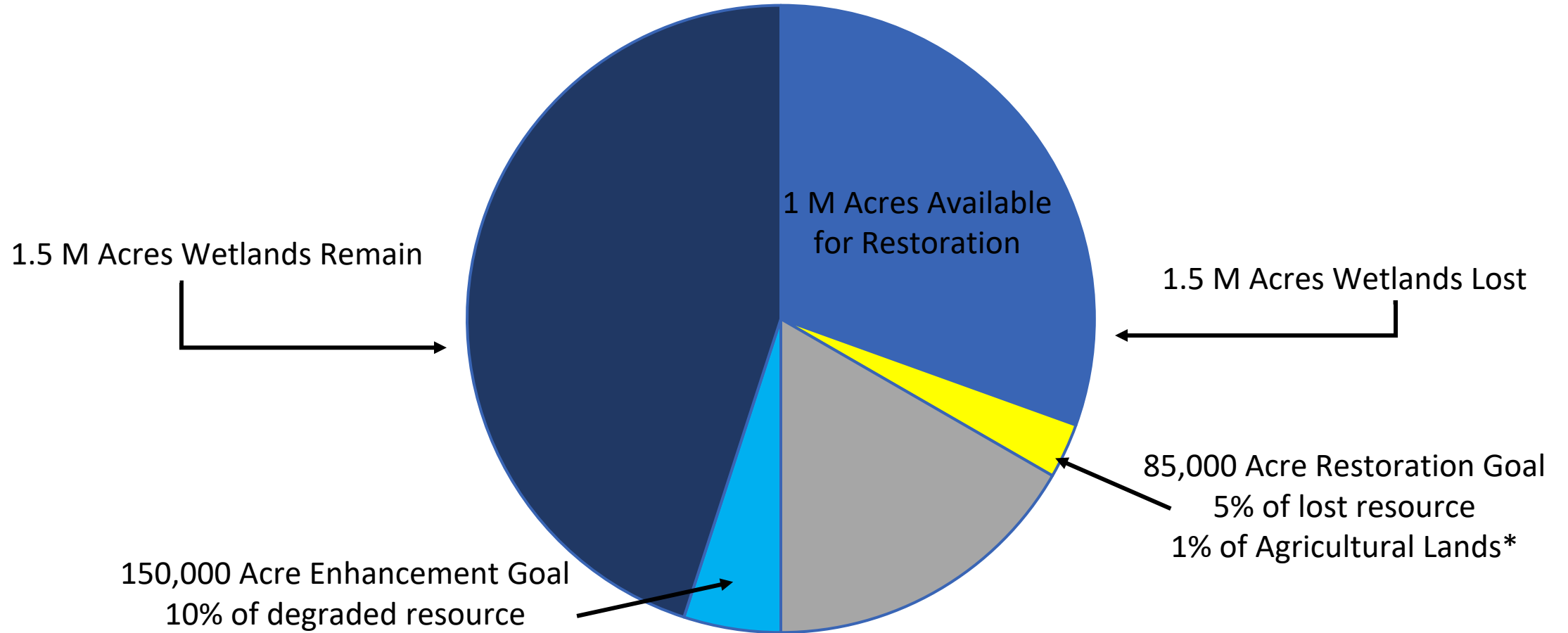
Historically 3M Acres Wetlands \approx 7% of Watershed



Chesapeake Bay Wetlands



Chesapeake Bay Wetlands Desired Outcome



Thanks Amy Jacobs for the slides!

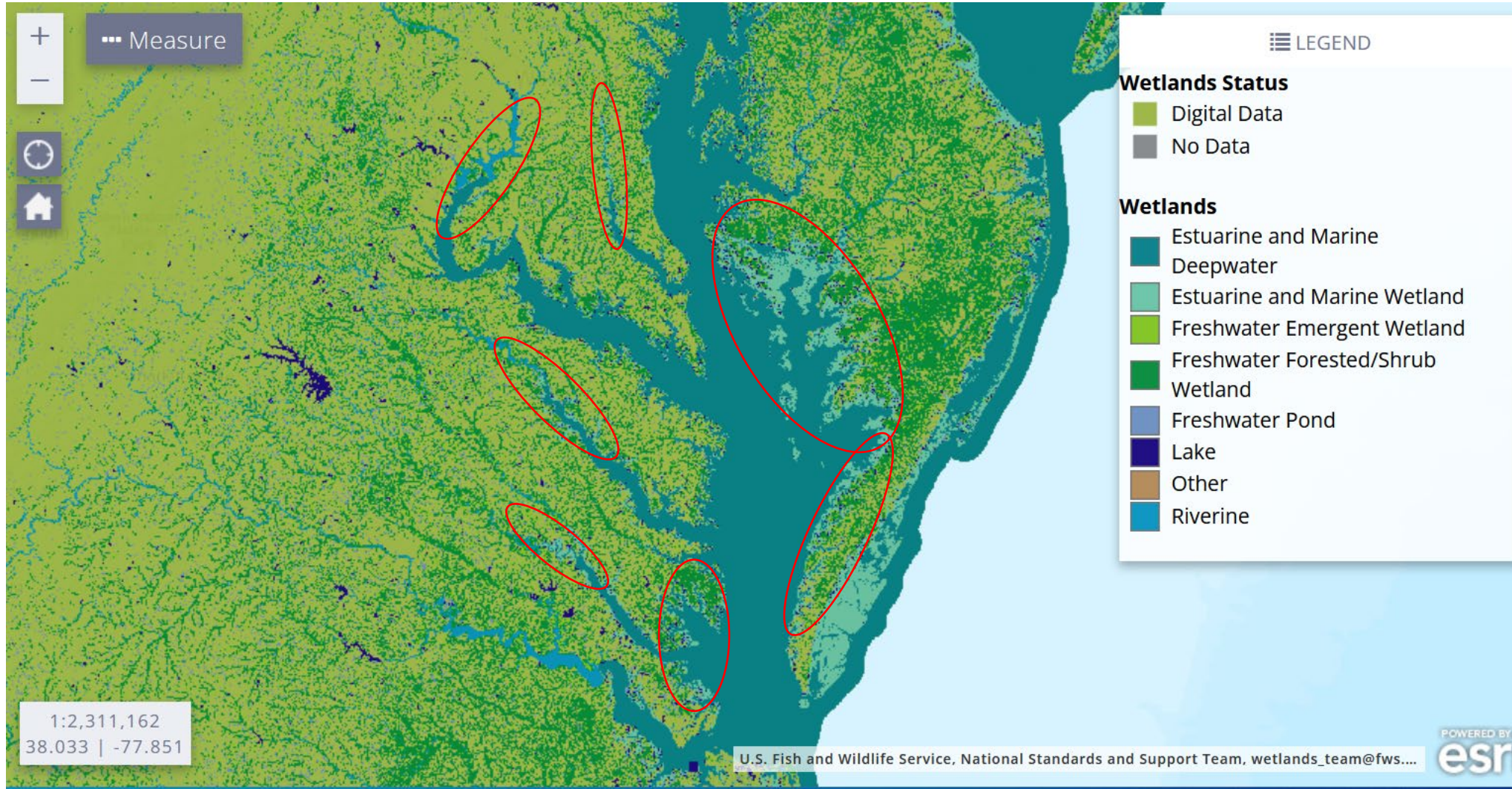
* Calculated based on 83,000 ac. Of goal on agricultural lands, 8,320,297 ac agricultural lands based on CAST data 2020

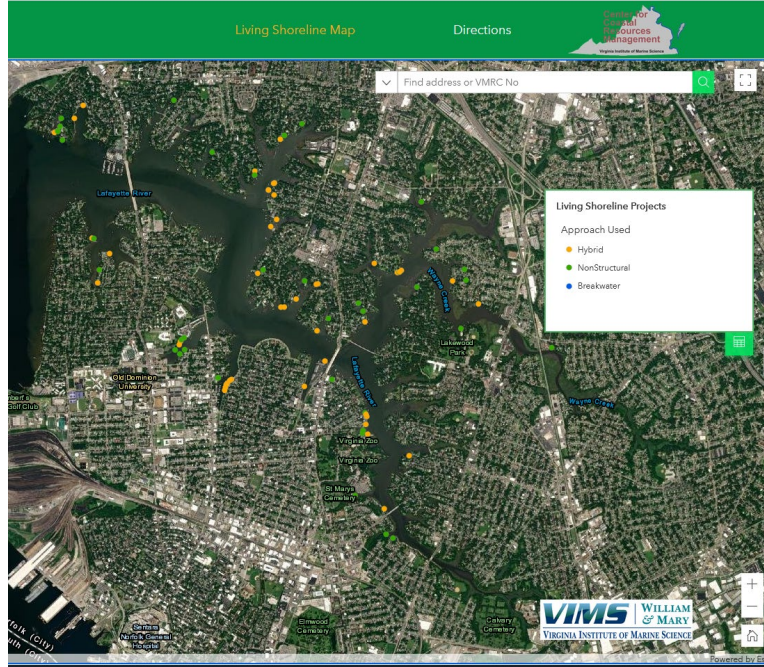
▶ What is “Large Scale”

Acreage only?

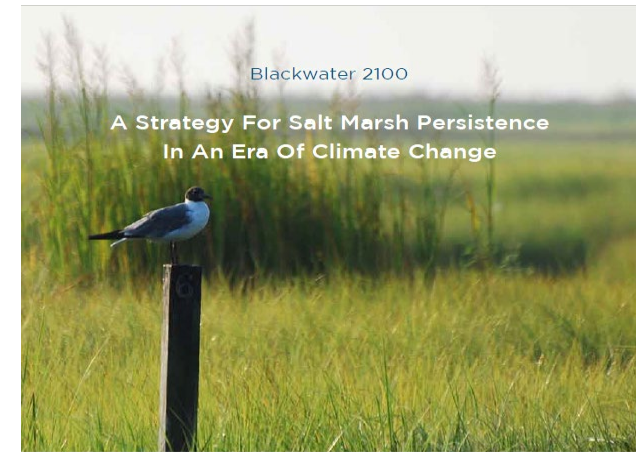
- Single big acreage project
- Cumulative focused acreage: many small projects
- Marsh projects in combination with other co-occurring habitats: SAV, Oysters, Buffers, Floodplain
- Buying time for existing large marsh complexes
- Ensuring potential migration with sea level rise

Large Marsh Complexes





Living Shorelines
 City of Norfolk n= 44
 Total Length 3.75 miles



Thin Layer Restoration Blackwater

Beneficial Dredge
 Poplar Island
 Marsh Restore/
 Create

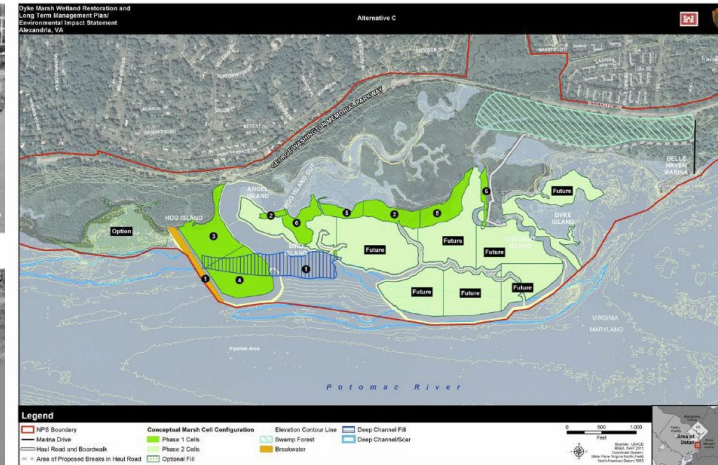
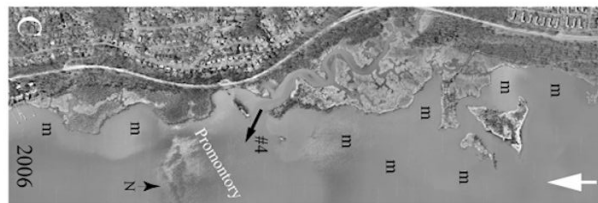


FIGURE 2-8. CONCEPTUAL PLAN OF ALTERNATIVE C, WITH POSSIBLE CONTAINMENT CELL CONFIGURATION

Tidal Fresh Marsh Restoration Dyke Marsh

Historic Loss

- Development
 - Dredge
 - Drain
 - Fill

Current/ Future Loss

- Sea Level Rise
 1. Migration limits
 2. Sediment supply
- Development impingement
 - Many small losses cumulate
 - Prevents migration
 - Storm and Flood Protection?

Capacity

- Staff limitations for project technical lead and fiscal management
- Staff limitations for property owner outreach and tech transfer
- A shrinking pool of Wetland restoration experts

VA Coastal Resilience Master Plan projects
86% loss by 2080

▶ Maximize ecosystem benefits

- Location
 - New marsh area to reach a watershed threshold?
- Habitat corridors
 - In-fill for gaps
- Marsh persistence
 - Increase longevity for marsh
- Water quality improvements for impaired waters
- Flood benefits
- Target underserved or urban communities to address scarcity



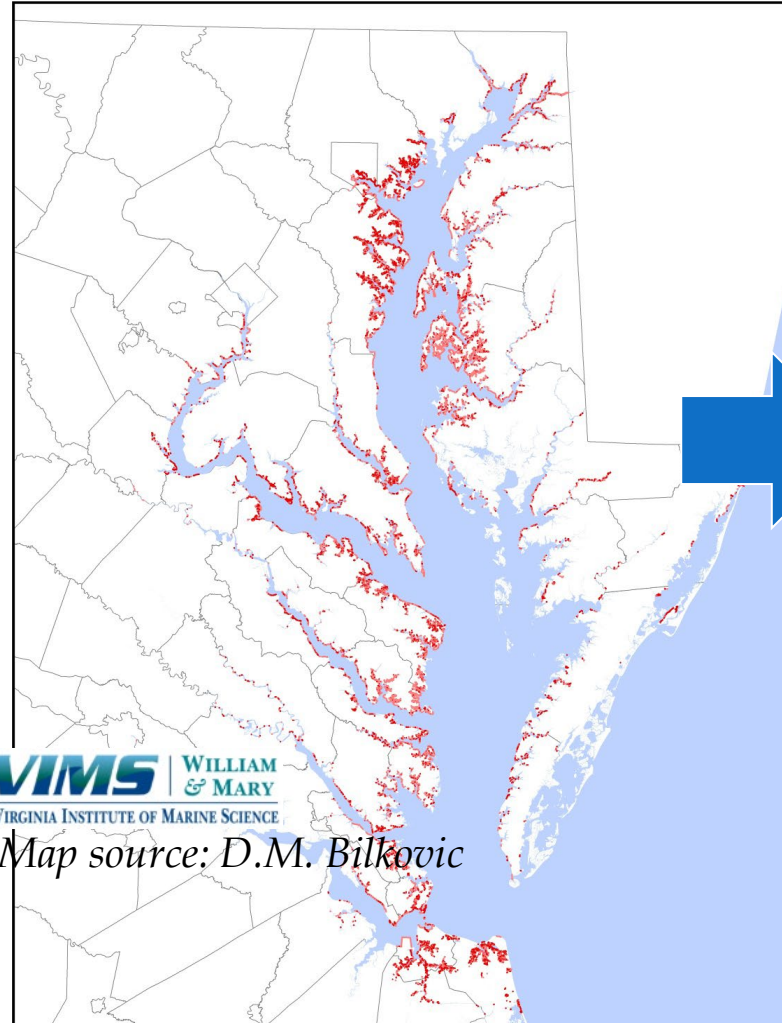
Coastal Development:

- Tidal Marsh landscapes are typical moderately or highly developed.
- Consider migration impediments in Marsh Restoration Planning

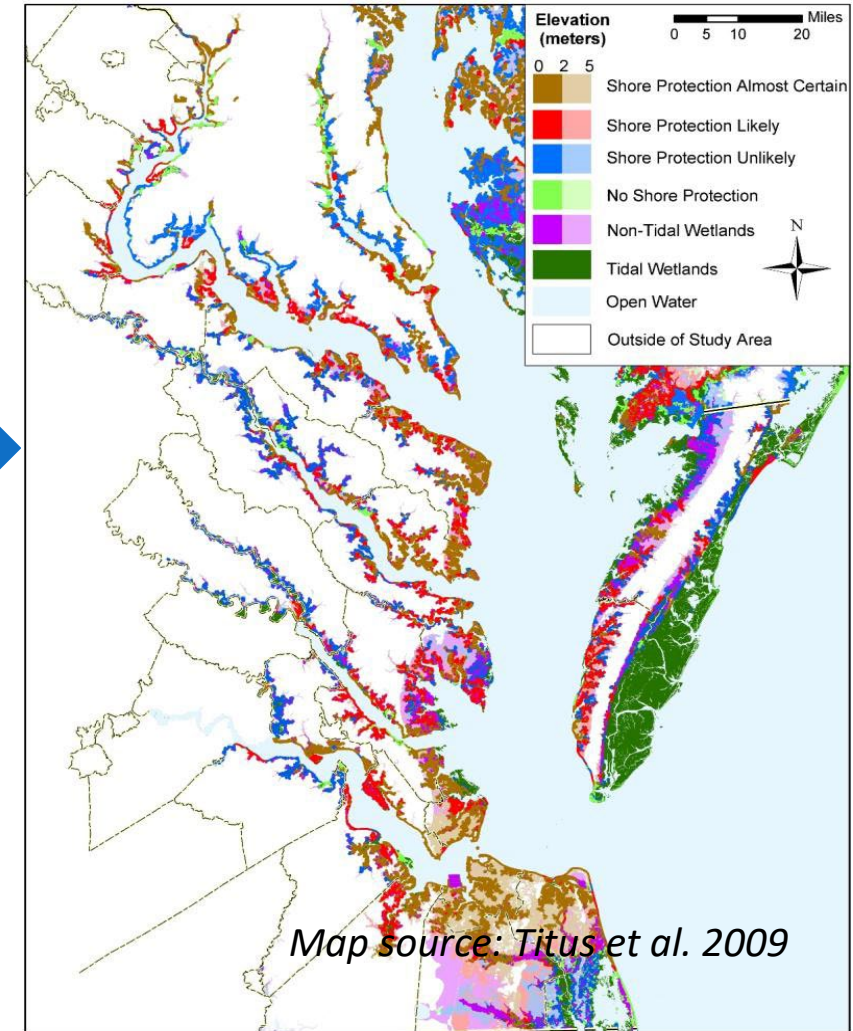
Only ~7% of coastal lands set aside for conservation

Almost 45% of the land expected to be developed

Current hardening – Bulkhead/Riprap



Future shore protection



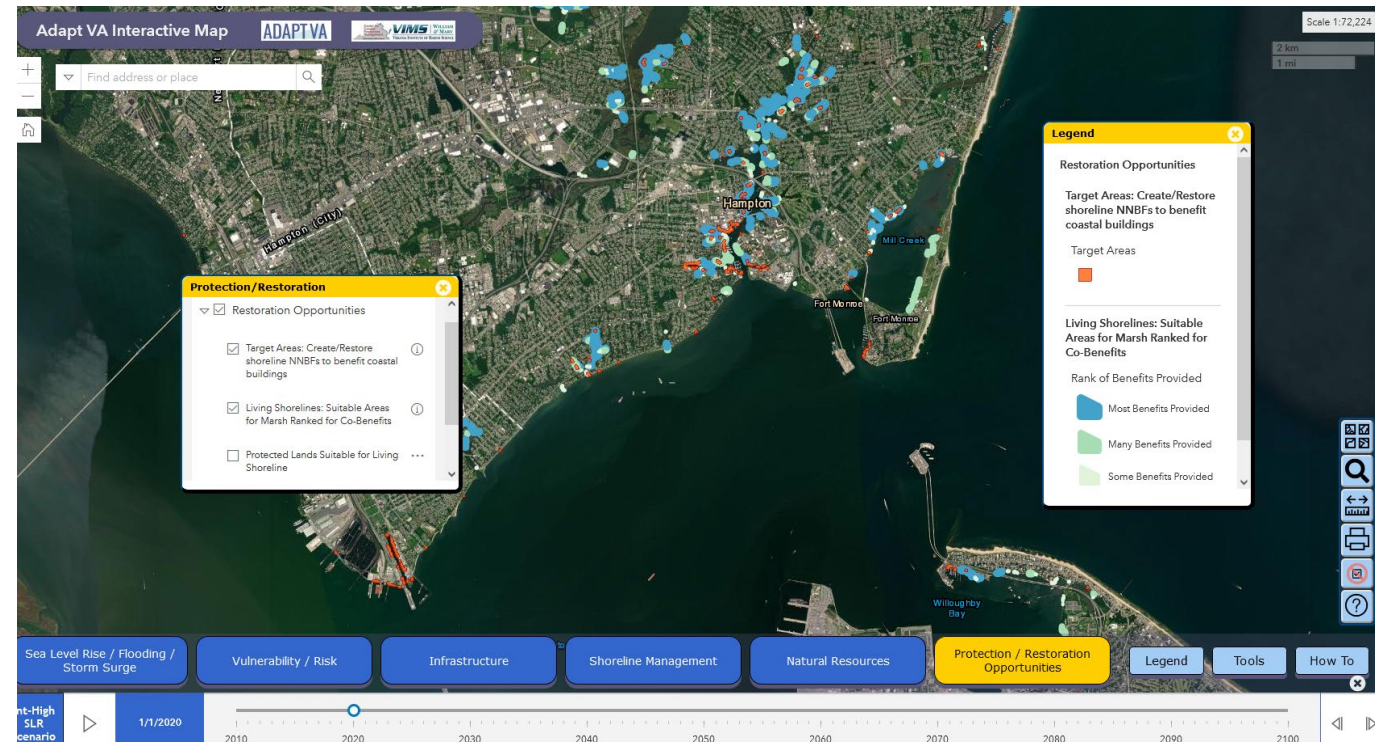


- New accounting process to properly credit wetlands projects
- Scientific and Technical Advisory Committee funded workshop on crediting beyond water quality
- Wetland Outcome Attainability Workshop
- GIT project on marsh migration models
- CBC and STAC focus on wetlands goal
- This workshop
- Pending CRWG workshop on marsh restoration

- Decision Support Tools
 - Living Shoreline Model
 - Available for VA and almost complete for MD
- Nature-Based restoration tools
 - TNC

Adaptva.com

Natural and Nature Based Restoration Targets



- Significant funding
 - Infrastructure
 - NOAA
 - NFWF
 - FEMA BRIC
 - NRCS WRE
- Renewed Focus on Tidal Marsh
- Greater Priority
- Greater Government Leadership

Restoration Drivers & Partners

CBP Wetland Action Plan and Wetland Workgroup
CBP Goals

CBP Black Duck Goal

Wildlife Action Plans

Coastal bird habitat

Flood Benefits (VA Community Flood Protection Fund)

NRCS and SWCD Programs

Watershed Implementation Plans and State Lands WIPs

Corps Ches Bay Study/ Engineering with Nature

- Specific funding for tidal wetlands
 - Not “clumped” with all nature based solutions
- Governance leadership and collaboration
- Multi-priority co-benefit decision tool(s), ie. Map viewers
- Capacity (restoration practitioners, tech advisers, grant officers, outreach)
- Increased professional wetland restoration training and wetland scientist education
- CBP Wetland Restoration Action Team (for both tidal and non-tidal)

