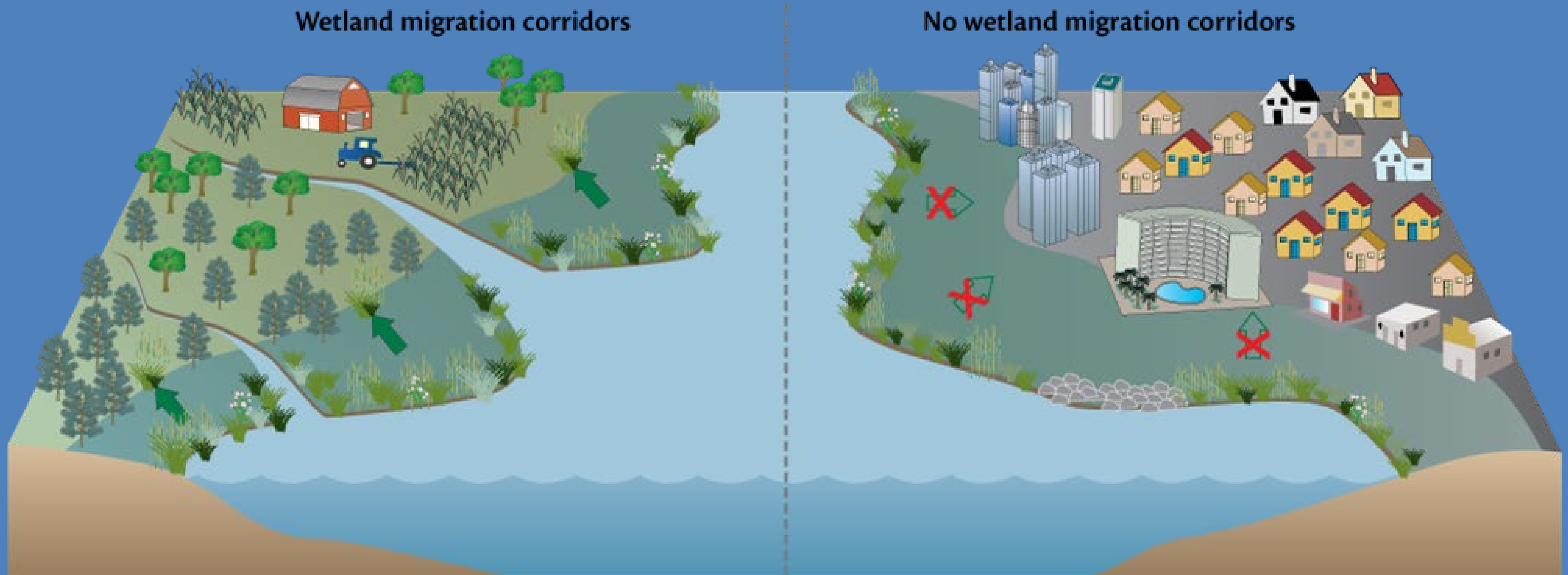


The Problem

Wetland migration corridors

No wetland migration corridors



ian.umces.edu/media-library

Wetland Adaptation Areas & Conservation Targeting

Sara Coleman
Chesapeake and Coastal Service
Maryland DNR
October 5, 2023



Why protect marshes?

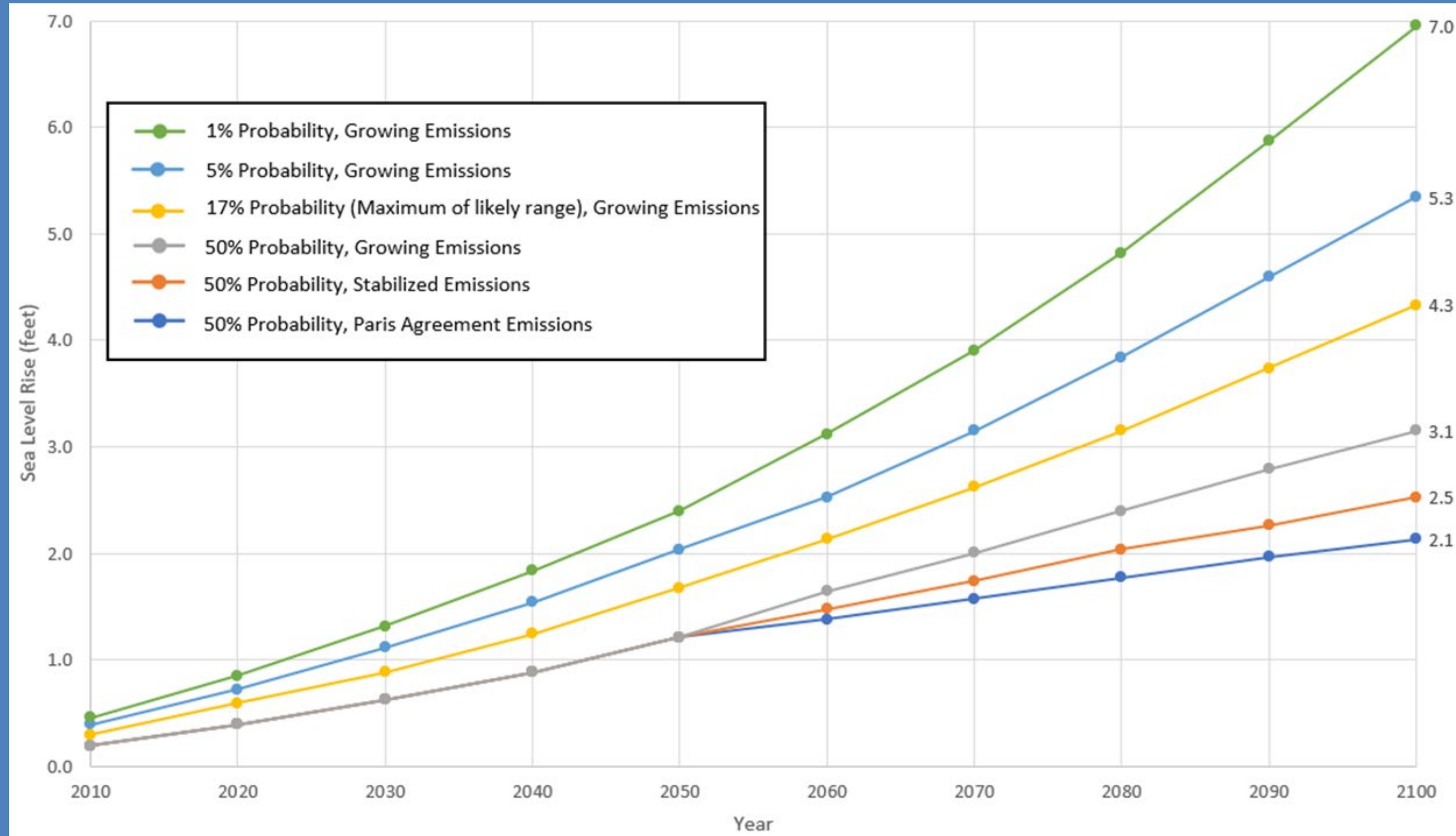
- Ecological values
 - Highly productive
 - Key breeding habitat
 - Carbon sequestration
- Benefits to humans
 - Storm surge
 - Water quality improvement
 - Buffering wave energy
 - Recreation
 - Fisheries



Impetus for updating the WAAs

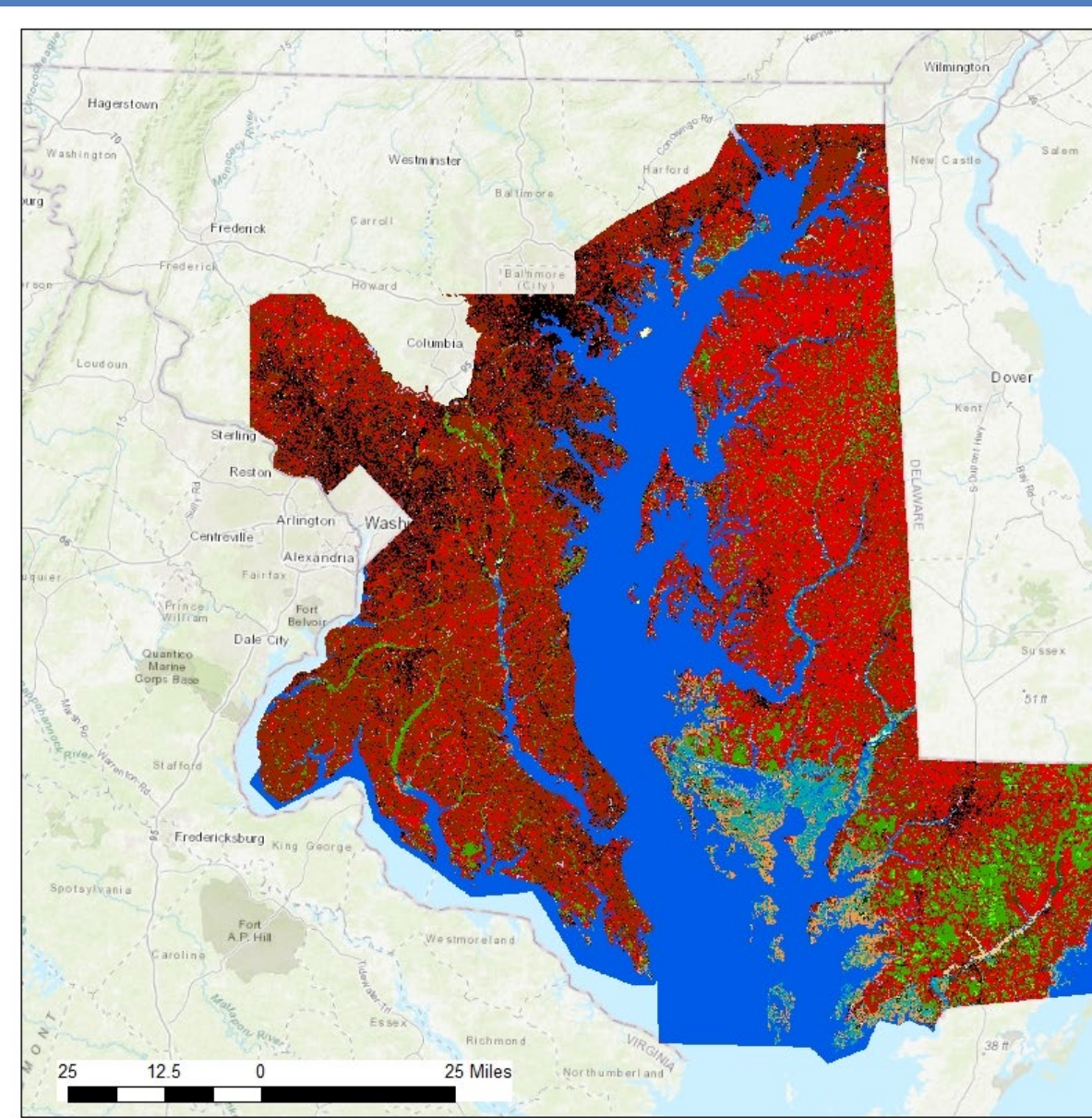
- New SLAMM data
 - higher resolution for land-use and elevation, results at 10 year time steps yields better predictions of future wetlands at more frequent intervals
- Programmatic need to distinguish between uplands that convert to wetlands and wetlands that remain wetlands
- Multiple timesteps means we can display the “corridor” for wetland migration

Sea Level Affecting Marshes Model re-run using six sea level rise scenarios

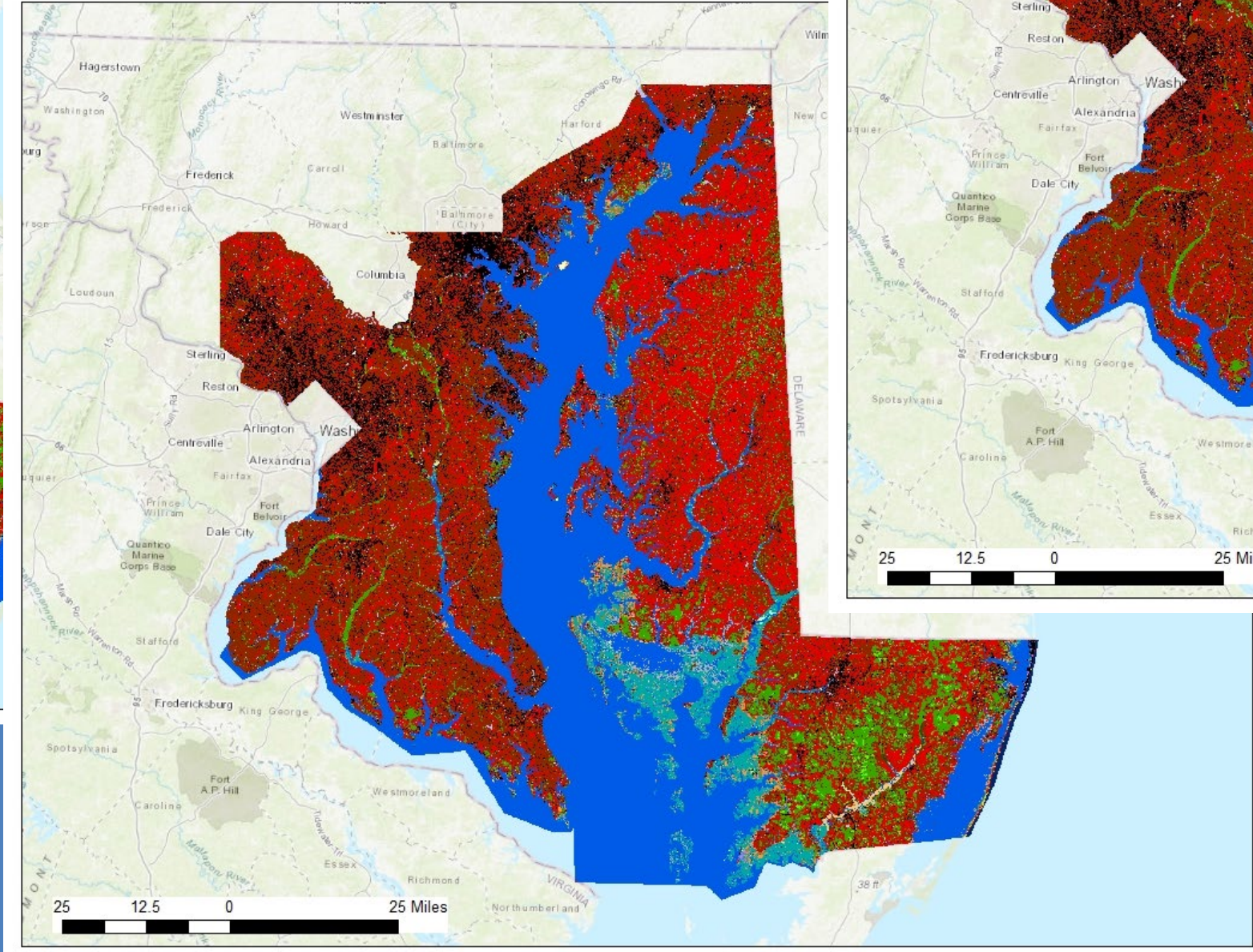


SLAMM Results for 67% Growing 2050, 2070, & 2100

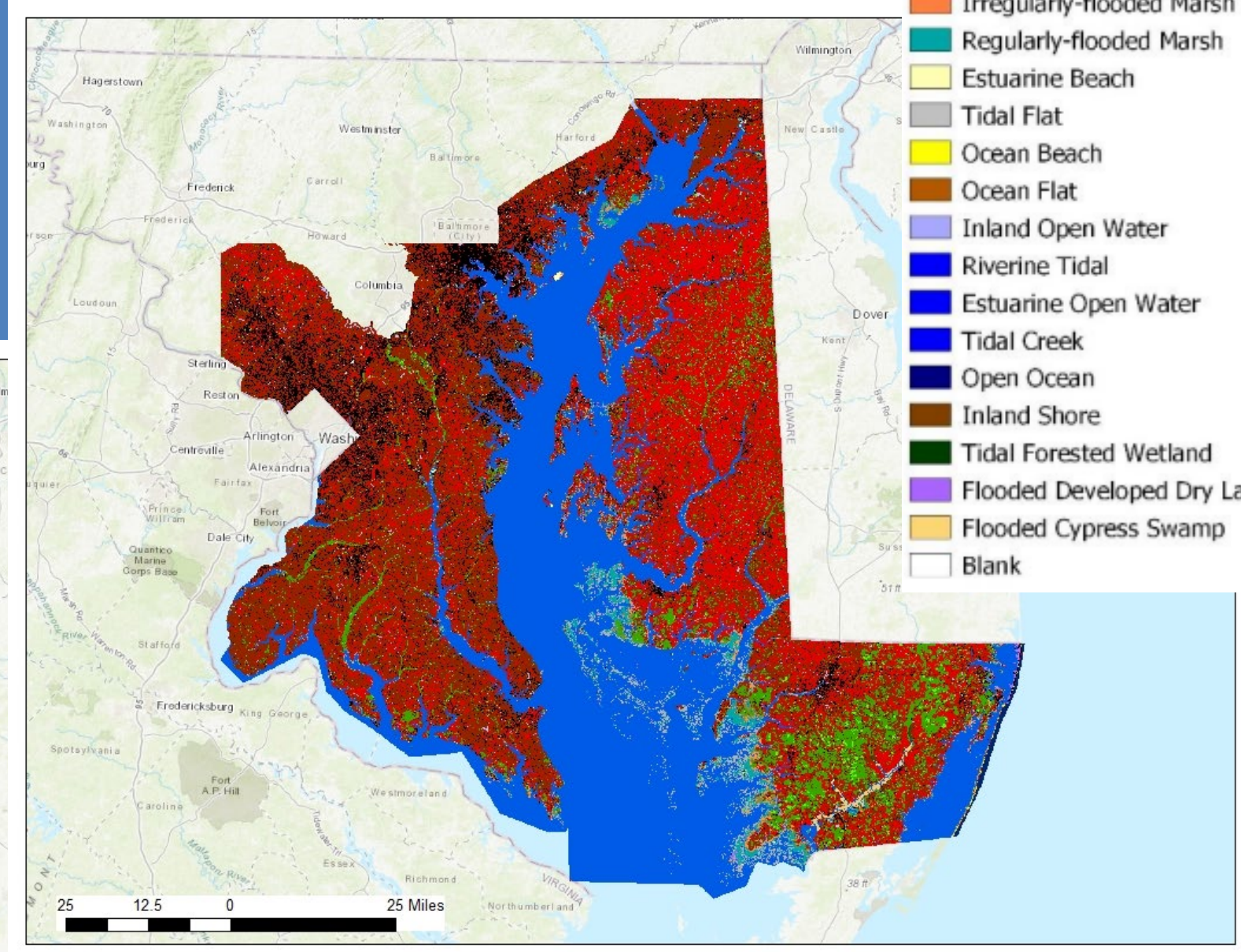
- Developed Dry Land
- Forested Dry Land
- NonForested Dry
- Forested Wetland
- Tidal Cypress Swamp
- Inland Fresh Marsh
- Tidal Fresh Marsh
- Transitional Salt Marsh
- Irregularly-flooded Marsh
- Regularly-flooded Marsh
- Estuarine Beach
- Tidal Flat
- Ocean Beach
- Ocean Flat
- Inland Open Water
- Riverine Tidal
- Estuarine Open Water
- Tidal Creek
- Open Ocean
- Inland Shore
- Tidal Forested Wetland
- Flooded Developed Dry Land
- Flooded Cypress Swamp
- Blank



2050 (2.0 ft. SLR)



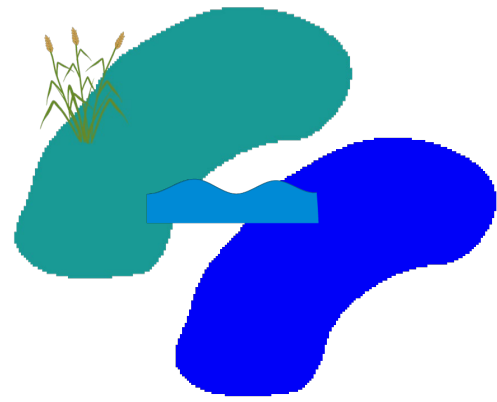
2070 (2.8 ft. SLR)



2100 (4.3 ft. SLR)

Wetland Adaptation Area Index

Is it a wetland in 2100?



10

+

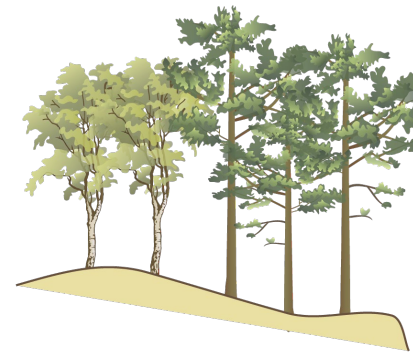
2100 wetland size



15

+

Green infrastructure



10

+

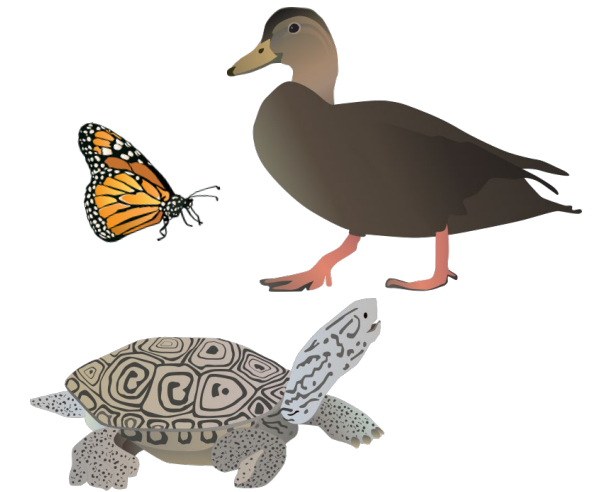
Is it a wetland in 2100?



15

+

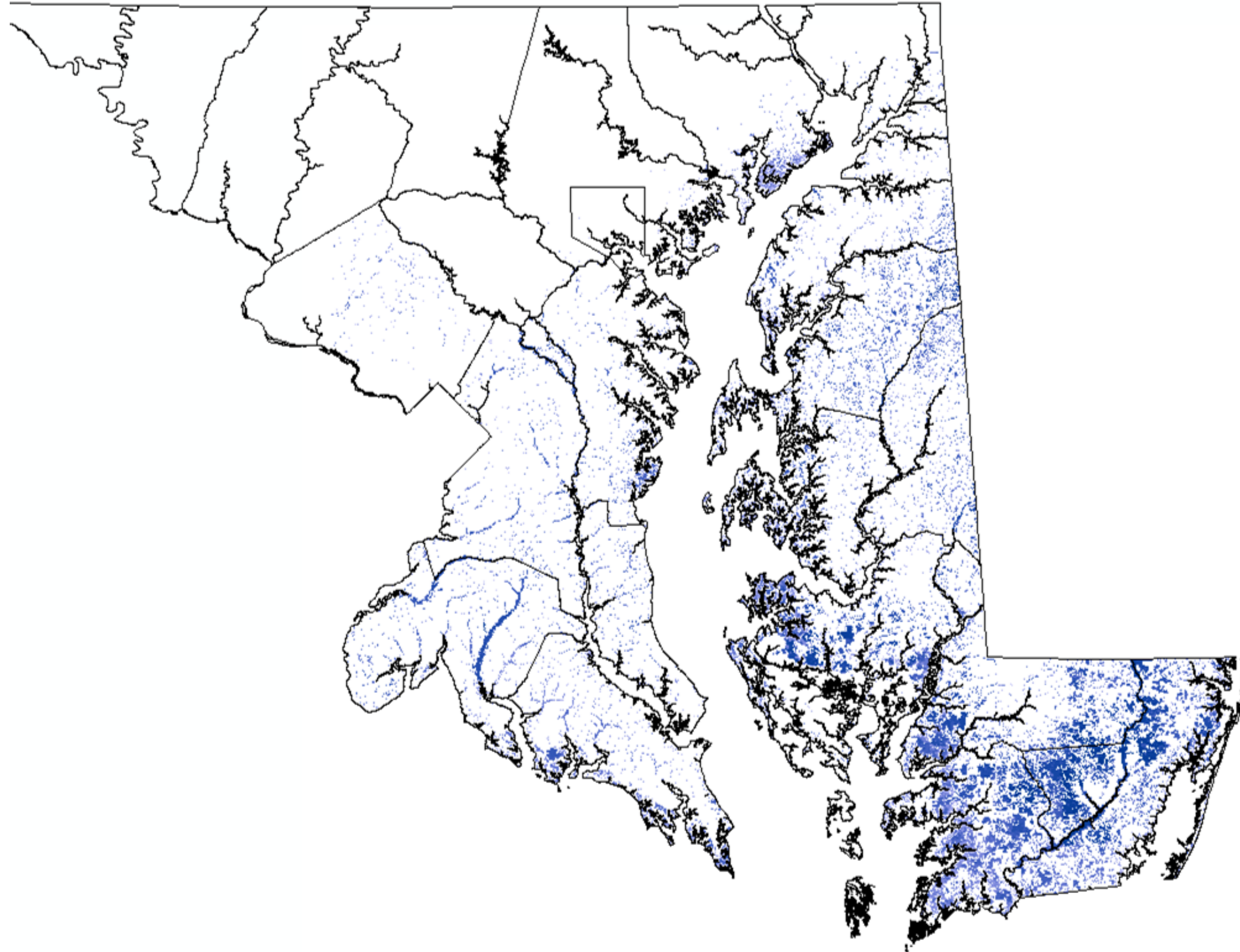
BioNet



10

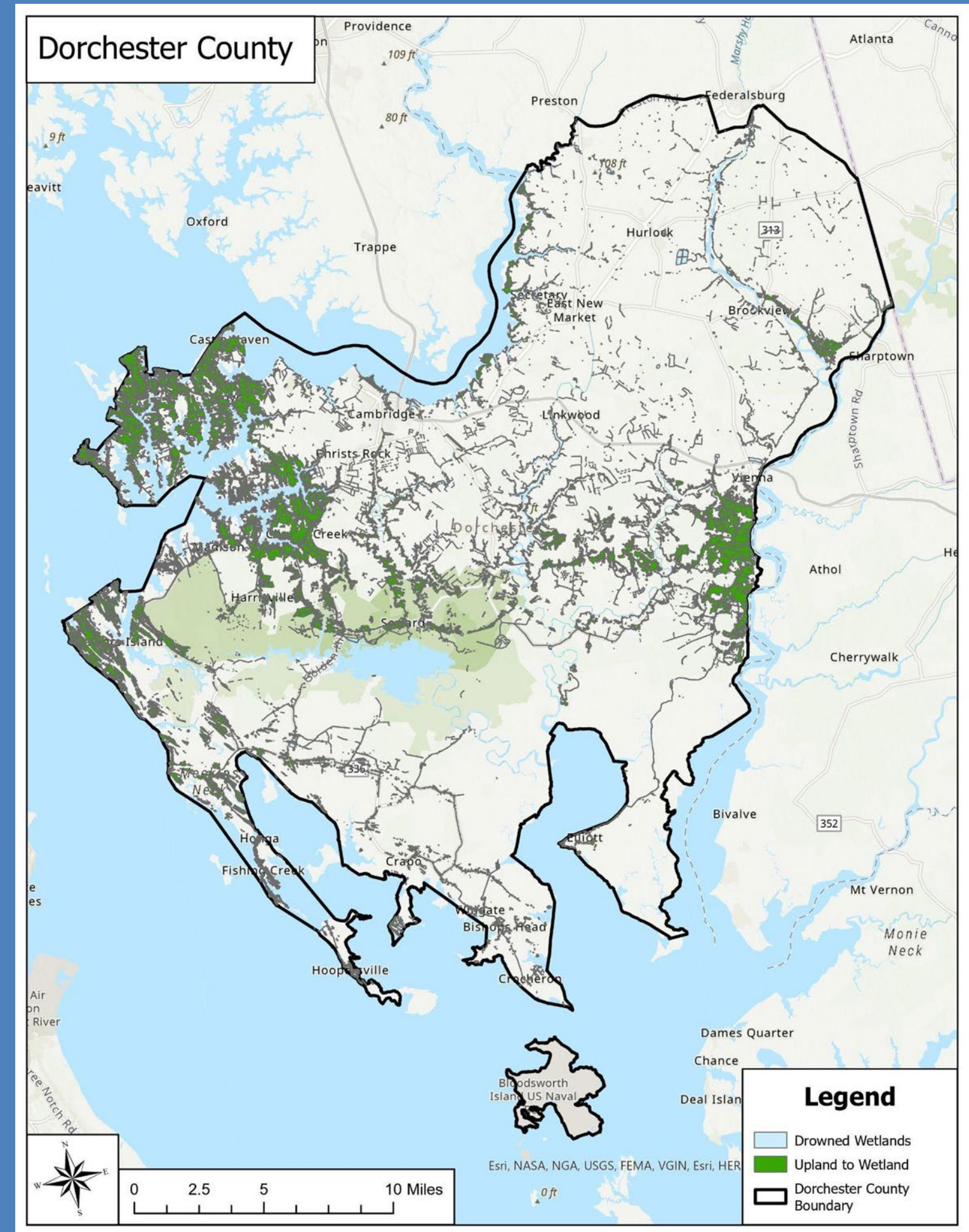
some images and symbols courtesy of IAN (ian.umces.edu/media-library)

2100 Results



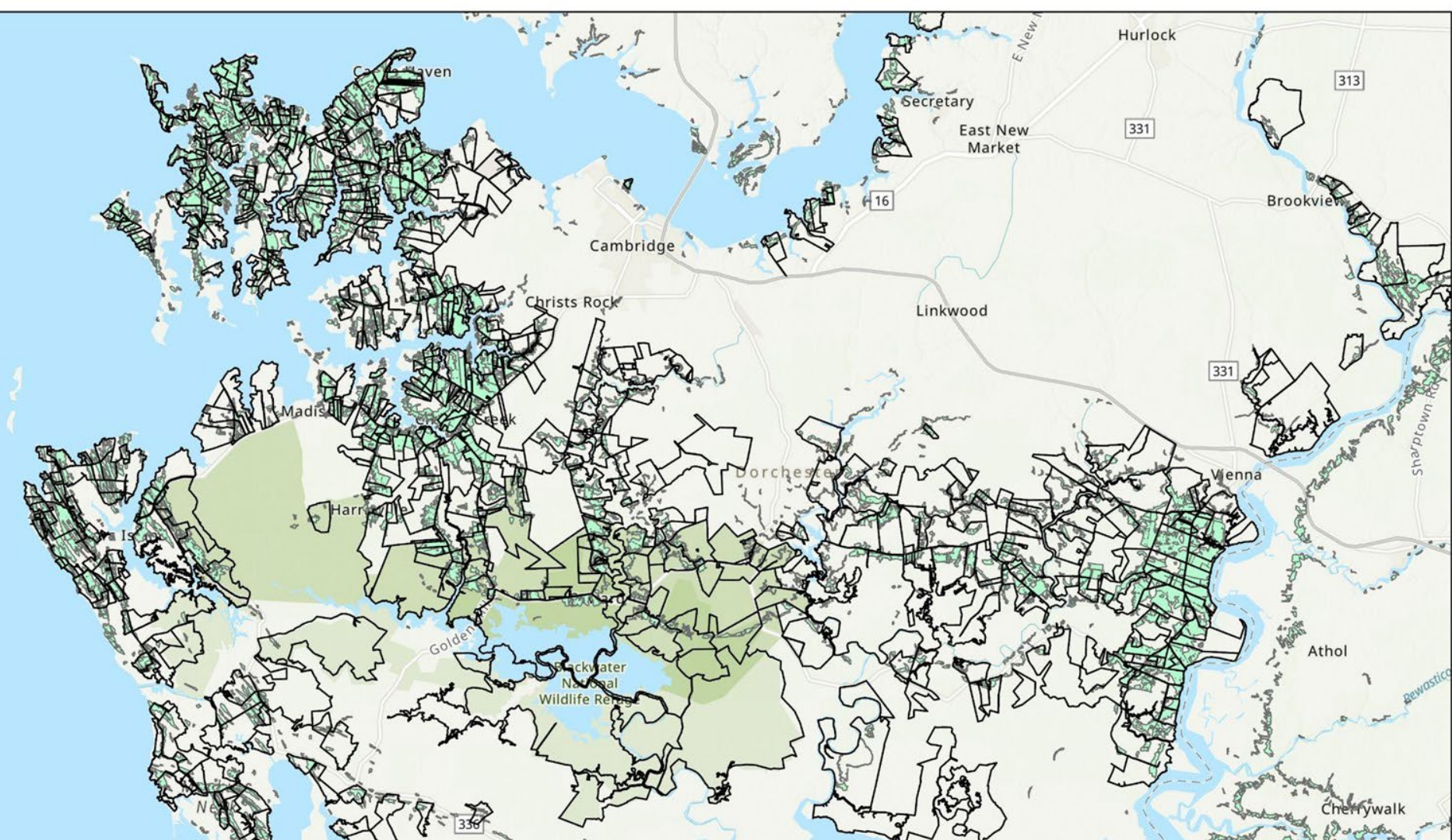
In Dorchester County, we could see over 26,000 acres of uplands be converted to wetlands by 2100.

However, the total number of wetlands in the county are projected to decrease from almost 140,000 acres down to <56,000 acres.



How will these data be used?

Targeting parcels with 10 acres or more of WAA for conservation



Reviewing proposals for funding

Many easement programs exist in Maryland

Rural Legacy

Maryland Environmental Trust

Maryland Agricultural Land

Preservation Foundation

Program Open Space

Local land trusts

Coastal Resilience Easements



How do we balance landowner financial interests and ecosystem function?



POS Stateside Scorecard



Land (capped at 50 points)

- A. Wildlife Habitat Connectivity
- B. Rare Species
- C. Support of Aquatic Life
- D. Forests Important for Water Quality Protection
- E. In a Targeted Ecological Area
- F. Restoration Opportunity
- G. Climate Change Adaptation: Future Wetland Habitat

People (capped at 50 points)

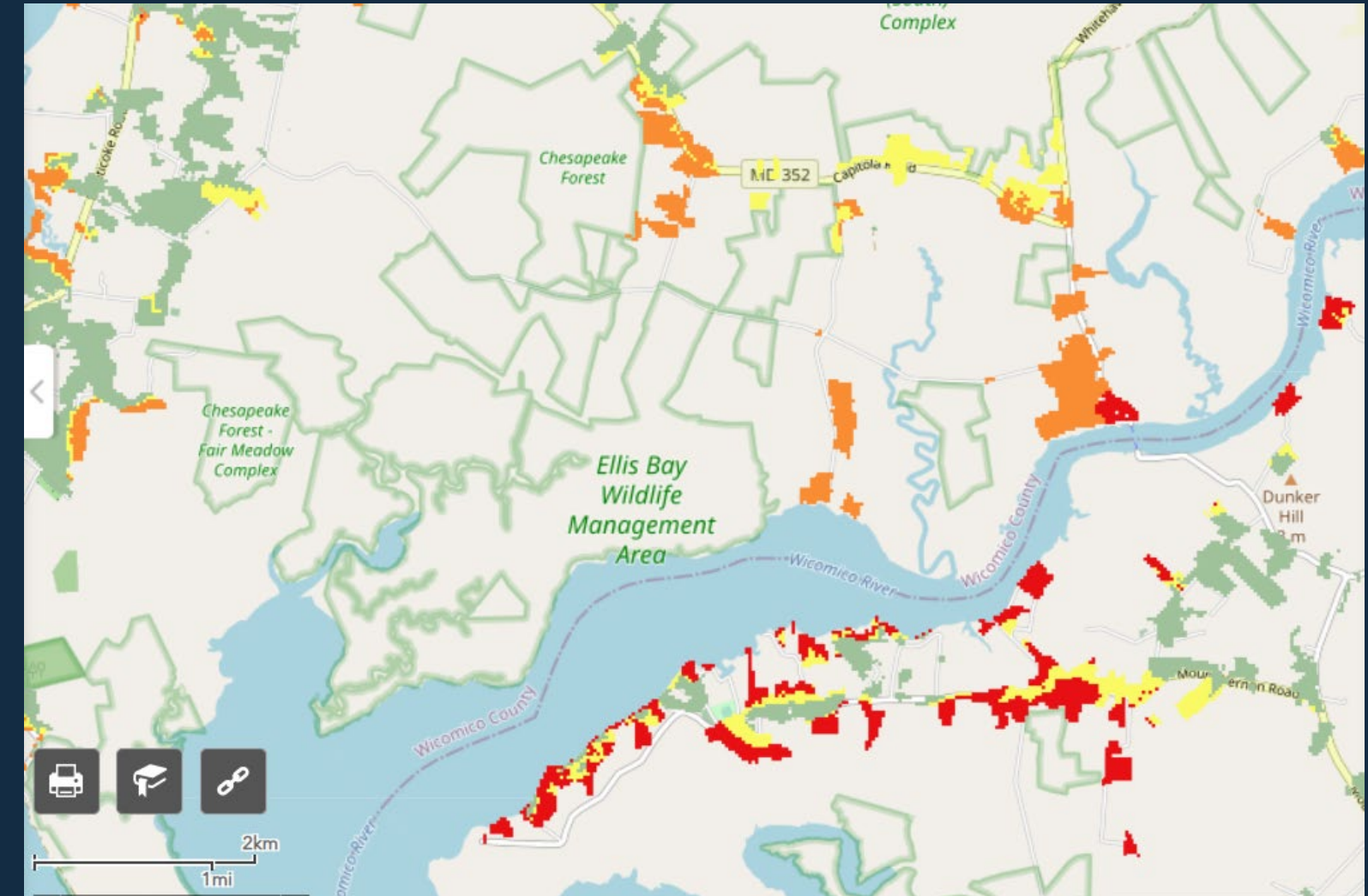
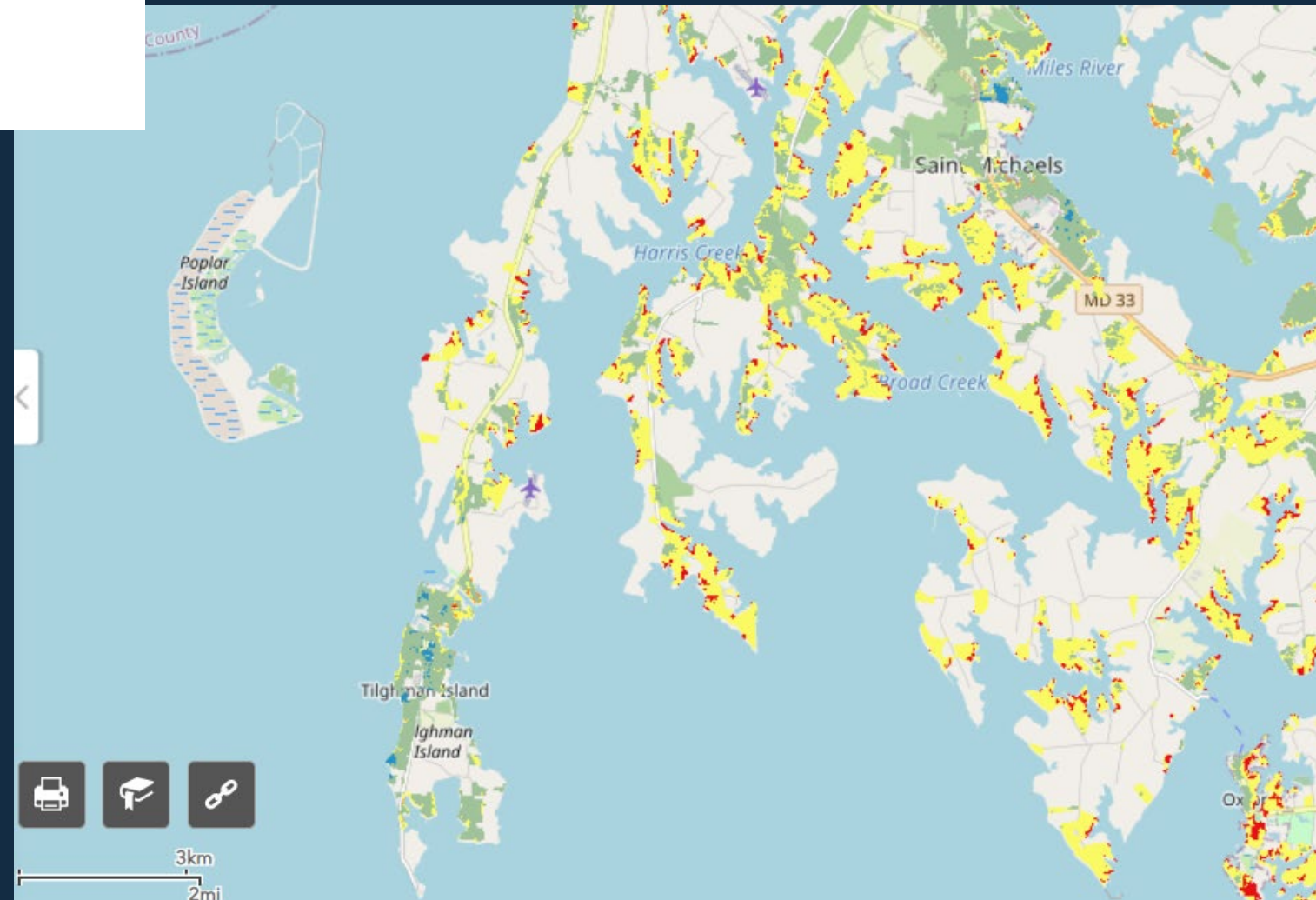
- A. Creation of New Opportunity
- B. Expansion/Connection of Existing Recreational Opportunity
- C. Land Management: Inholding or Adjacency of Existing Protected Area
- D. Buffer to Existing Recreational Lands/Large Landscape Protection
- E. Coastal Community Resiliency to Climate Change Impacts
- F. Historic or Cultural Importance

Community Resilience

Coastal Resiliency Assessment

Community Flood Risk Areas

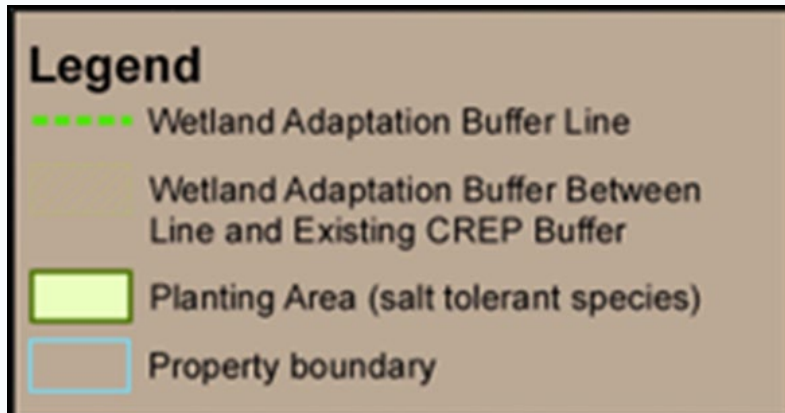
- Very High
- High
- Moderate
- Low
- Very Low



Coastal Resilience Management Plan

Updated at least every ten years:

- Changes to the ecology of the property
- Updated sea level rise models
- New management techniques
- Any unforeseen issues



Coastal Resilience Management Plan

- Provisions may include:
 - Wetland/hydrologic restoration
 - Living shoreline projects
 - Invasive species management
 - Environmental hazard management and adherence to Coast Smart Construction Codes
 - Removal of barriers to habitat migration



Questions?

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