Jug Bay Tidal Freshwater Wetlands: Sharing What We Have Learned

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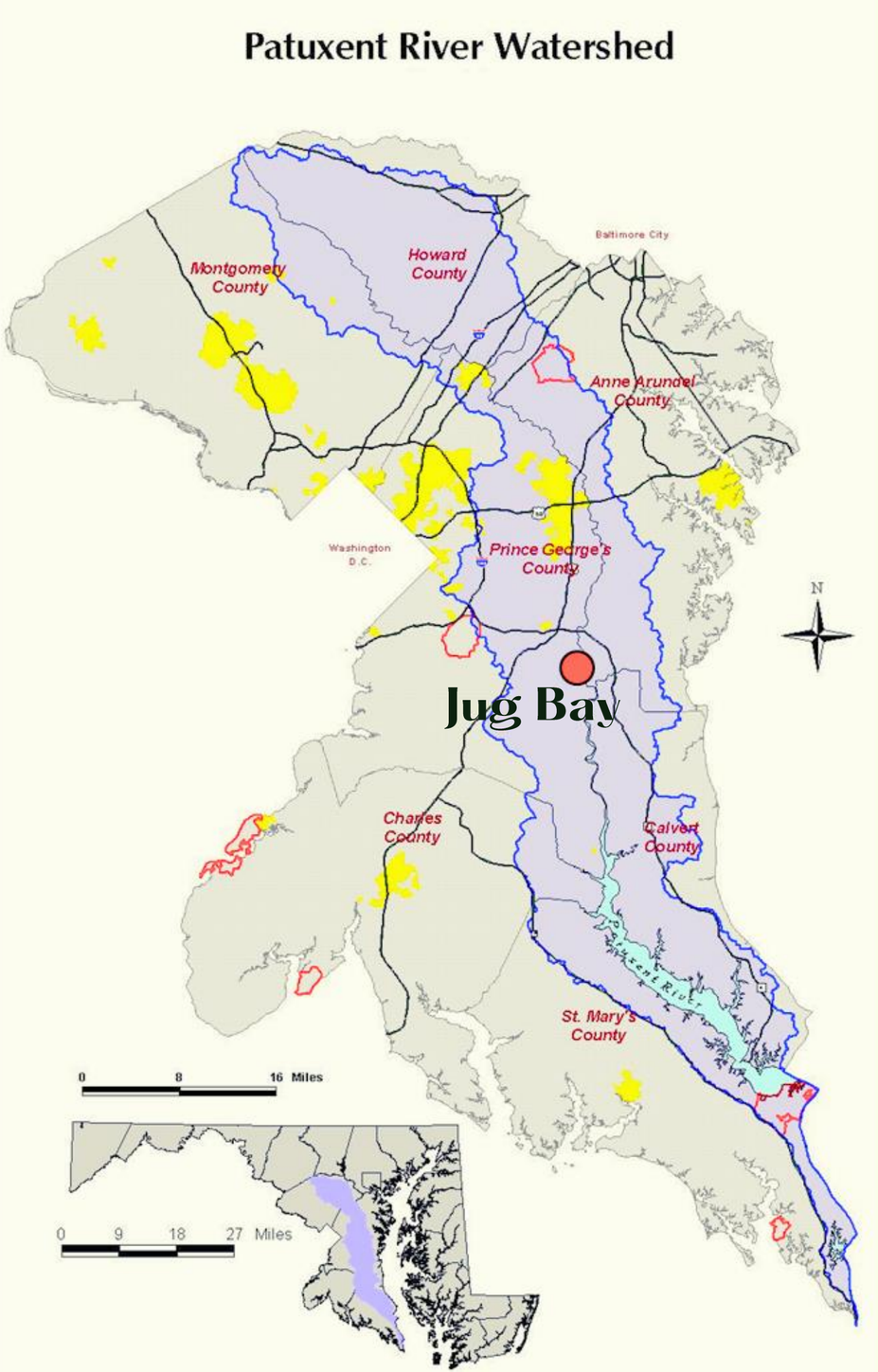
Jug Bay Wetlands Sanctuary

Envision the Choptank Marsh
Adaptation Meeting
October 22, 2024

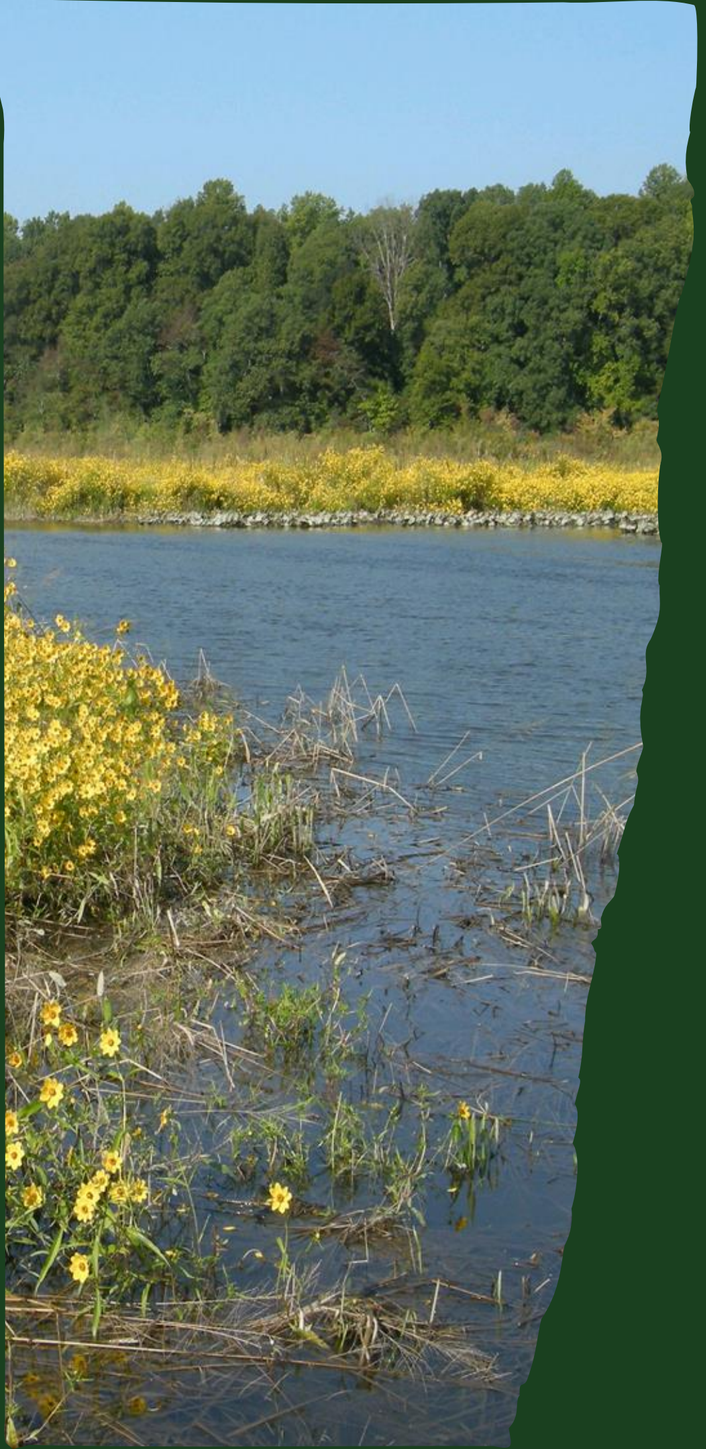

Patuxent River Watershed
Montgomery County
Howard County
Baltimore City
Anne Arundel County
Washington D.C.
Prince George's County
Jug Bay
Charles County
Calvert County
St. Mary's County
N
0 8 16 Miles
0 9 18 27 Miles

About Jug Bay Wetlands

- Shallow environment
- Salinity generally <0.5 ppt
- Semidiurnal tides; tidal range about 0.75 meters
- Vegetation dies off during the winter - some dead standing biomass remains
- A network of vegetation and water channels

Low Marsh

- Generally dominated by single spp
- Flooded 8-9 hrs/tidal cycle
- High percent vegetation cover

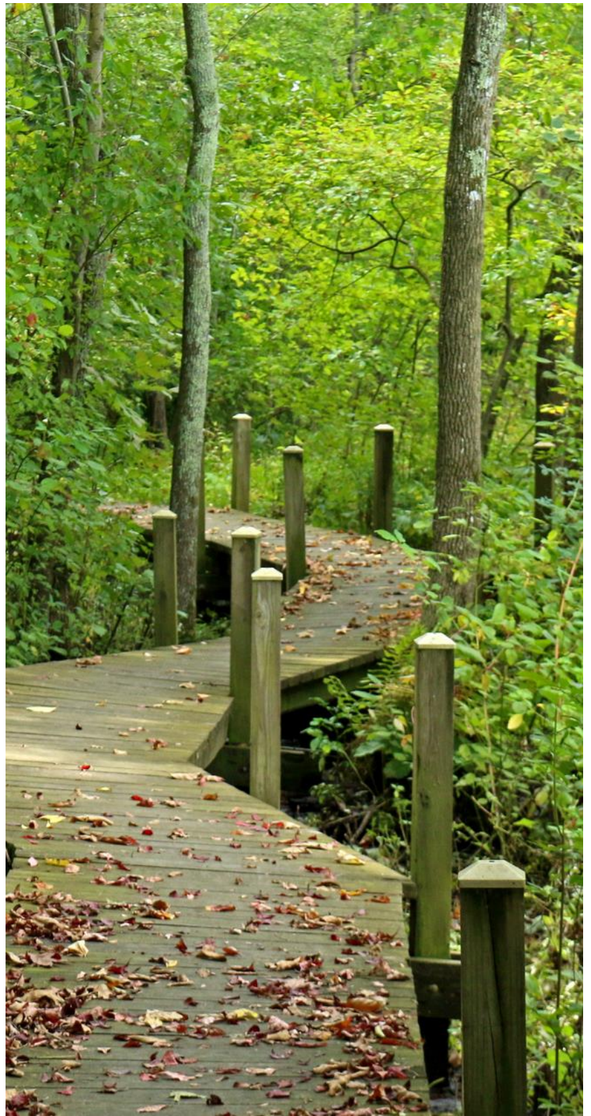


Mid–High Marsh

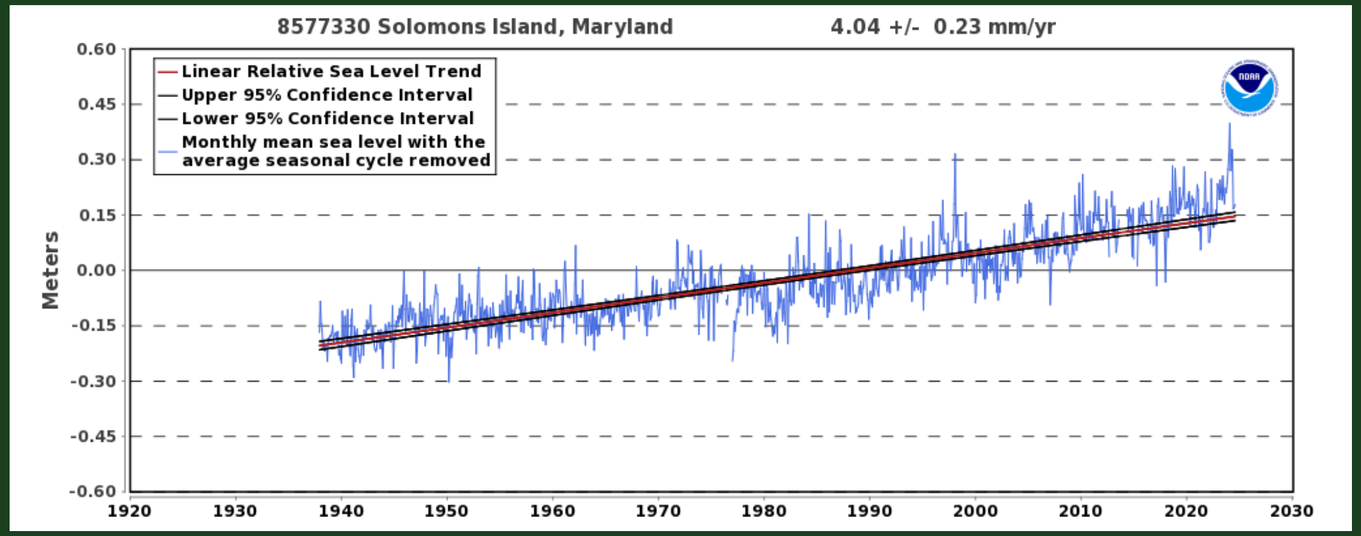
- Multiple species: 21 / m2
- Flooded 2-4 hrs/tidal cycle
- High percent vegetation cover

Scrub Shrub and Forested Wetland

- Reduced acreage at Jug Bay
- Species: maple, dogwood, ash, alder, etc.
- Forested wetland impacted by **emerald ash borer**

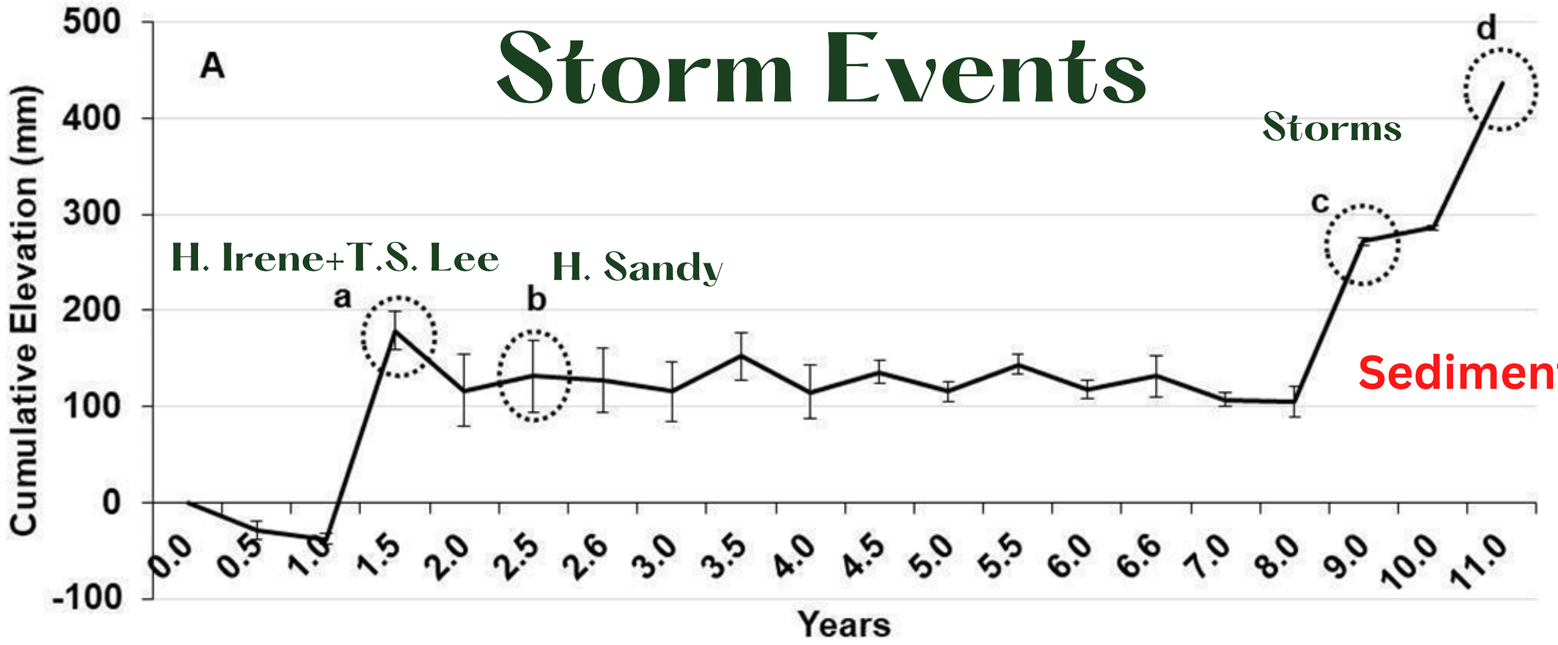


Climate Change / Invasive Species



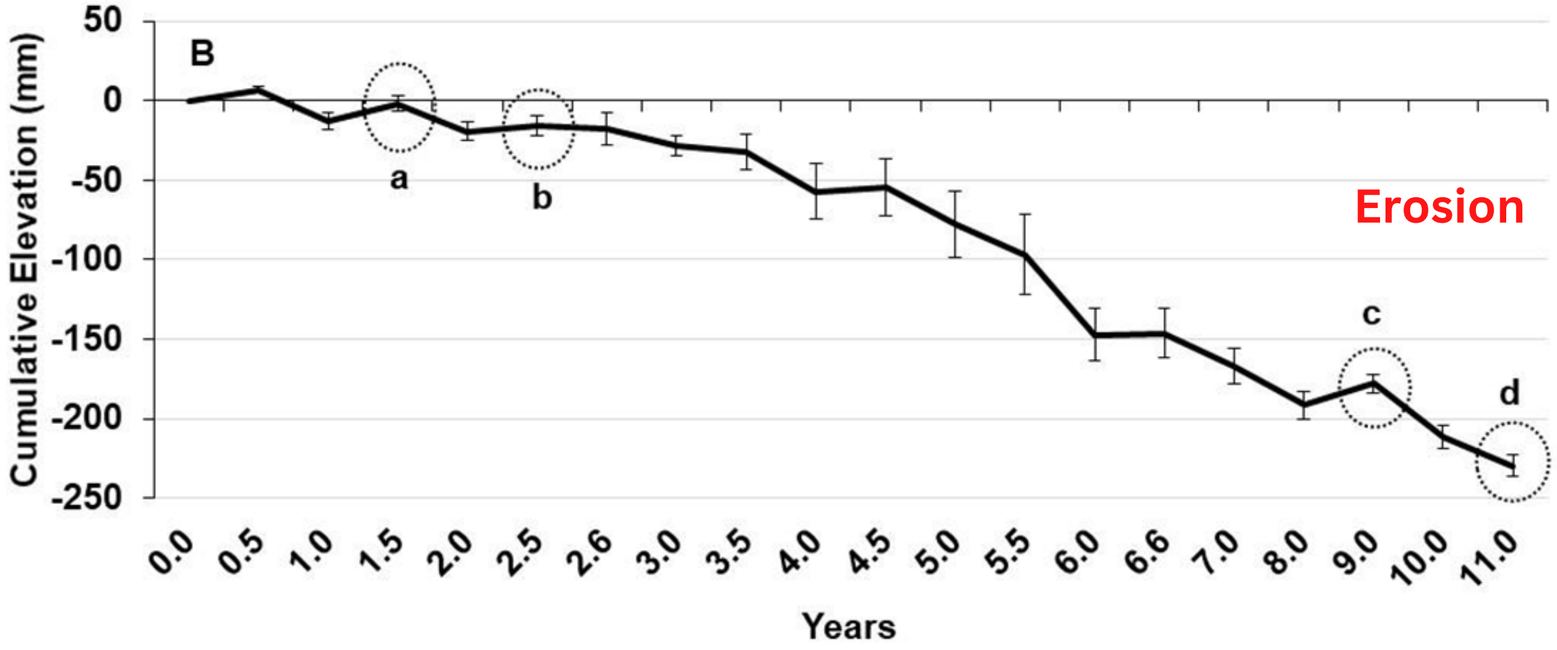

Marsh Resilience

Storm Events



Sedimentation

MC – Secondary channel

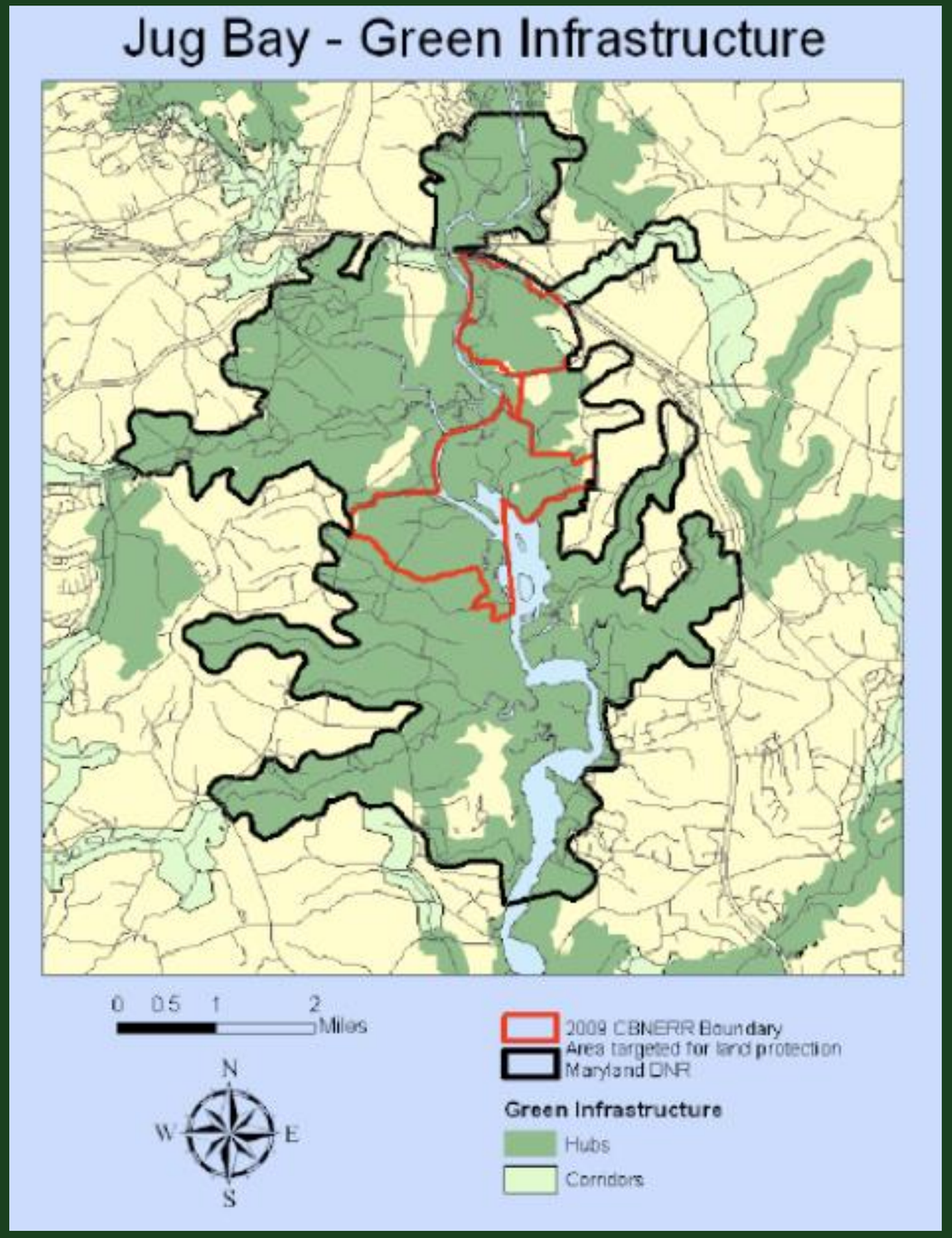


Erosion

PR – Primary channel

Upland migration
Consider the slopes

Protection & Restoration Examples



Land acquisition to allow marsh upland migration

Grants

Invasive species control

Purple loosestrife

Deer browsing
(deer population management)

Forested Wetland: Emerald ash borer

Mapping

Tree surveing

EAB monitoring

Plantings

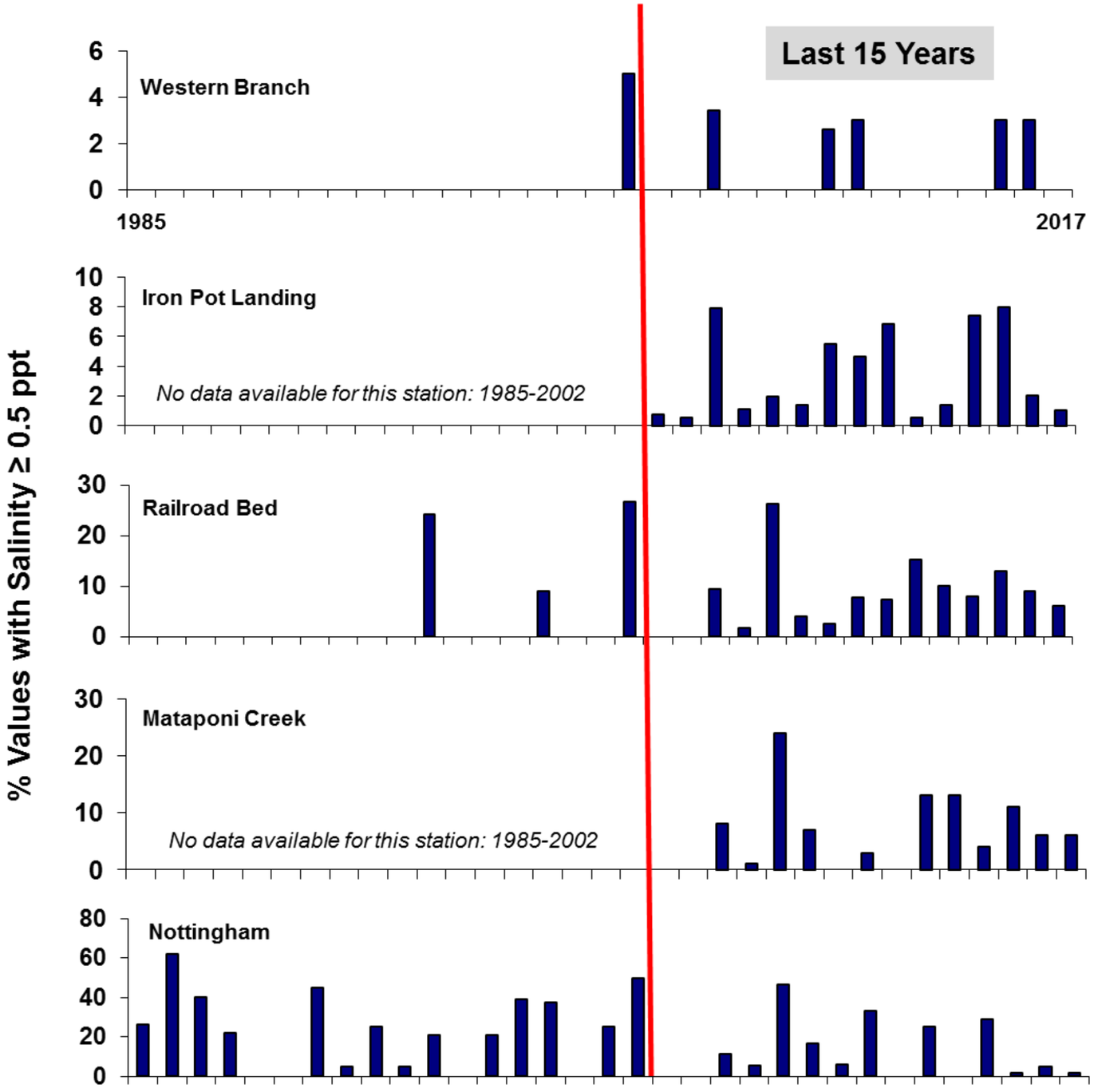
Tree innoculation

Live Staking: quick & cheap reforestation

Shoreline Restoration

Stream Restoration

Thin layering



Salinity spikes

Monitoring

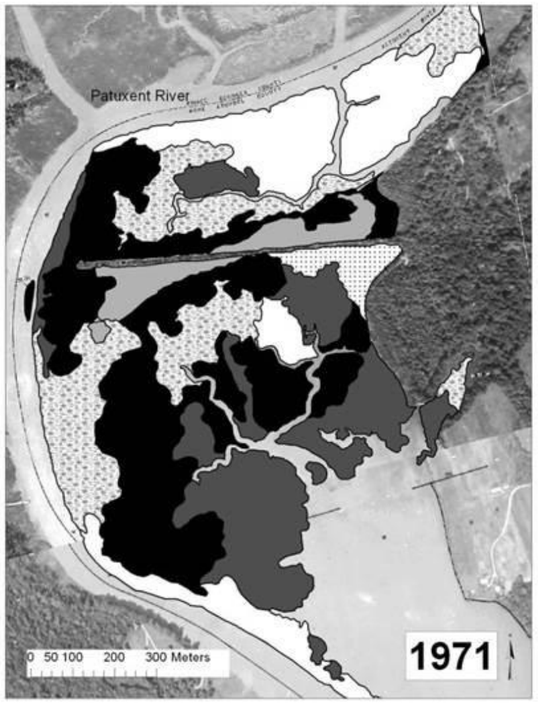
Vegetation

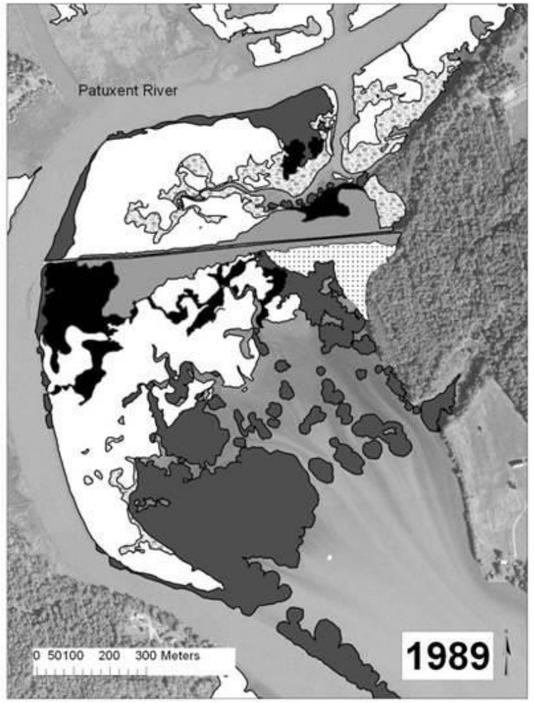
Sedimentation/
Elevation Change

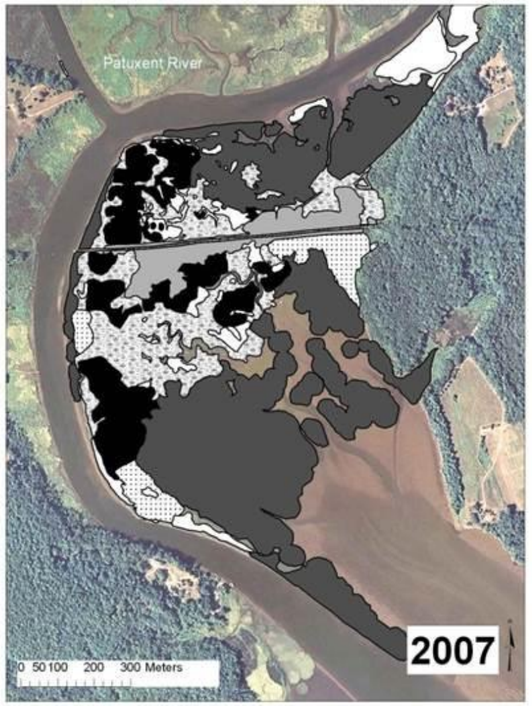
Salinity

Upland
migration

Vegetation transects







Wetland Plant Communities

- Mixed Vegetation
- Nuphar/Nuphar Mix
- Phragmites
- Scrub-shrub
- Typha/Typha Mix
- Zizania/Zizania-mixed

Mapping (change analysis)

Vertical accretion:
marker horizons

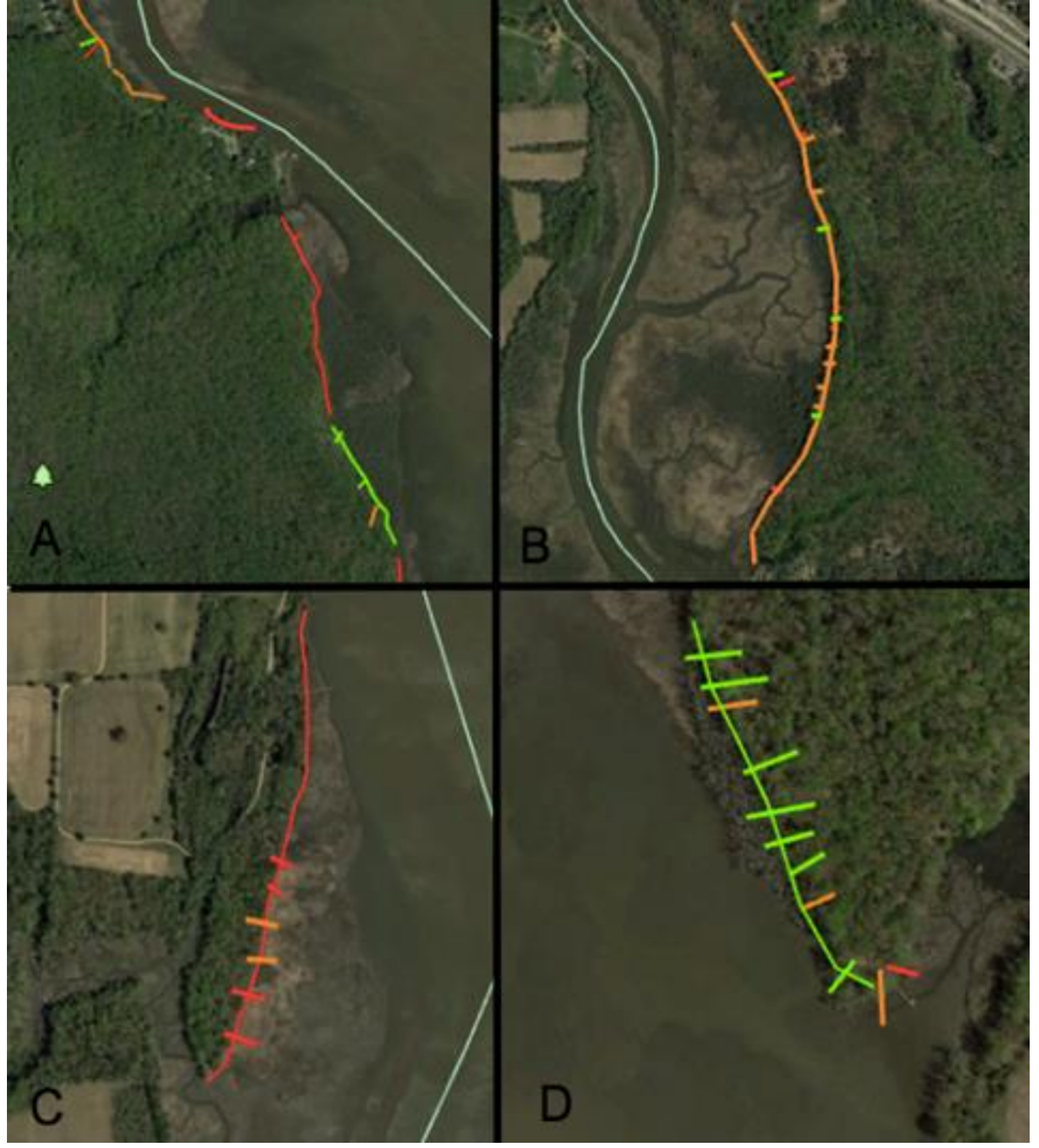
Elevation change:
surface elevation tables

Real-time kinematic positioning (RTK)

Sprinter digital level

Ground water wells – salinity

Potential for upland migration



RED NO MIGRATION
ORANGE SOME MIGRATION
GREEN MIGRATION POSSIBLE

74.4 ha potential migration

Thank you!