Science, Service, Stewardship

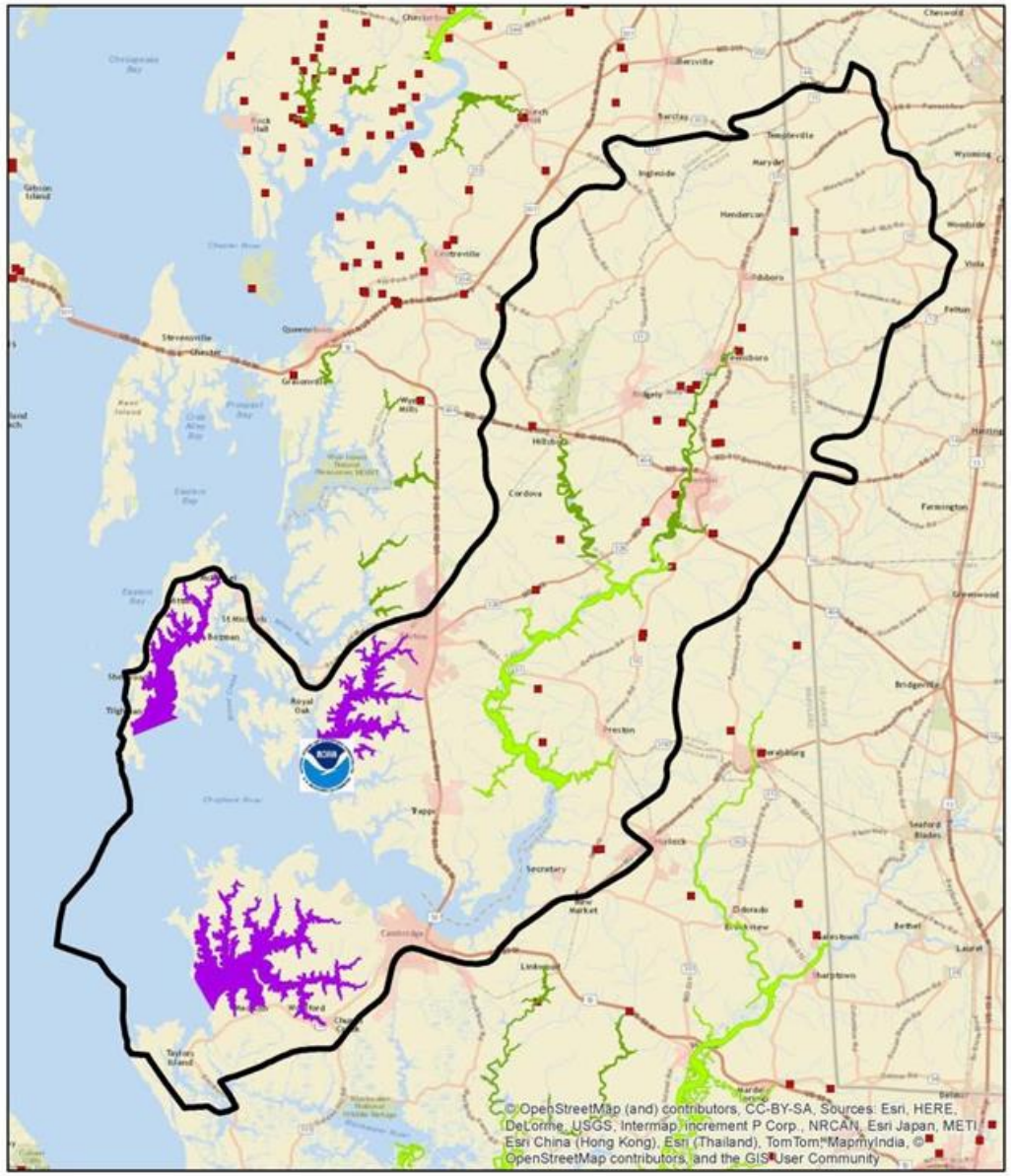
Choptank River Habitat Focus Area: Monitoring and Assessment

Bruce Vogt

April 12, 2016

NOAA FISHERIES SERVICE

Choptank Habitat Focus Area: NOAA Activities

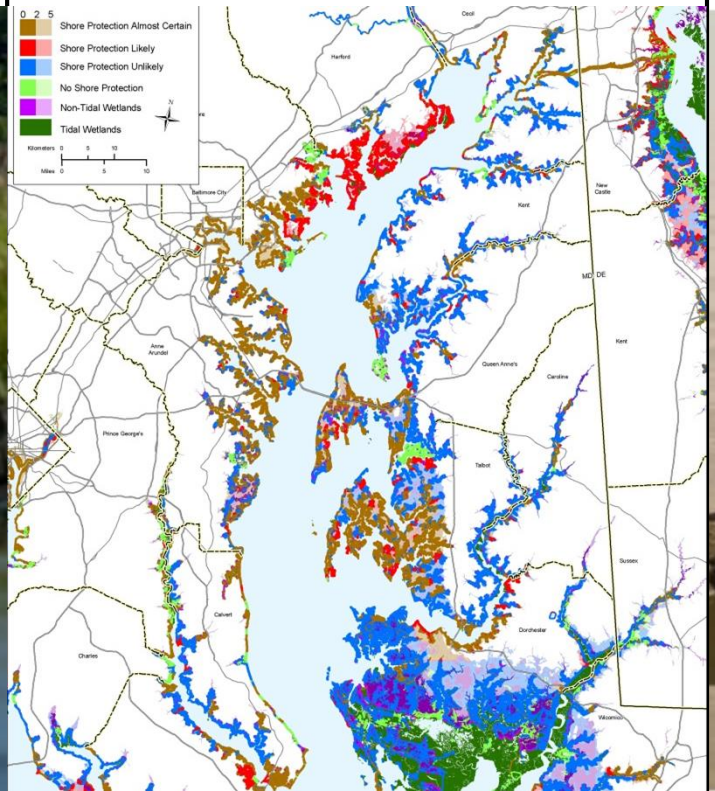


Science, Service, Stewardship

Objectives

Habitat Restoration and Protection

Using Science to Inform Decisions



Interested and Active Citizens

Science, Service, Stewardship

Habitat Restoration and Protection: Outcomes

Oyster Restoration: Oyster reefs in Harris Creek, Tred Avon River, and Little Choptank River restored to cover at least 50% of the restorable bottom in each selected tributary.

Wetland Restoration: Priority tidal wetland restoration projects implemented in the Chpotank River in collaboration with partners.

Land Use: Improved fish habitat quality within the Choptank River watershed through collaboration with state and federal agencies on coastal development and land use activities.

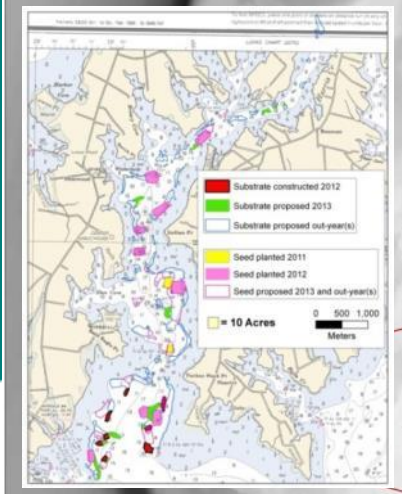
Fish Passage: Priority fish passage projects implemented in the Choptank River in collaboration with partners and landowners.

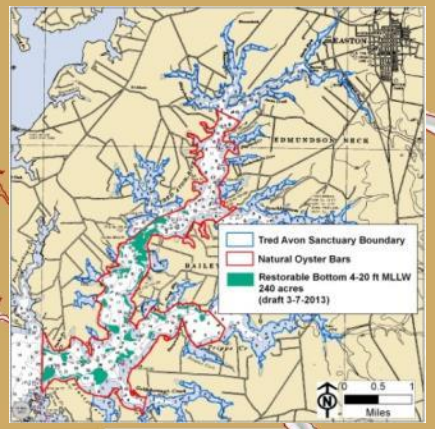
Science, Service, Stewardship

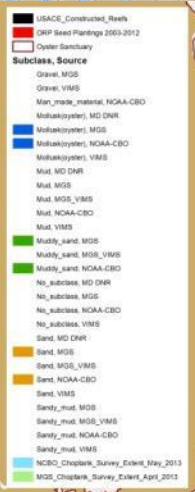
NOAA Monitoring & Assessment in the Choptank Complex

- Oysters
  - *Habitat Mapping, Success Metrics, & Ecosystem Services*
- Water Quality
  - *Profiler in Harris Creek and Tred Avon*
  - *Satellite Suspended Sediment*
- Ecological Assessment
  - *Baseline report, Wetlands, & Tred Avon*

The Choptank River Complex Restoration Atlas







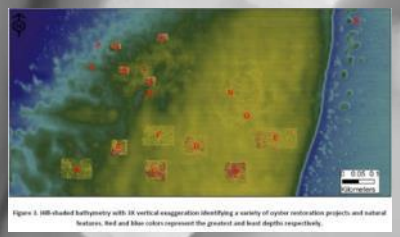
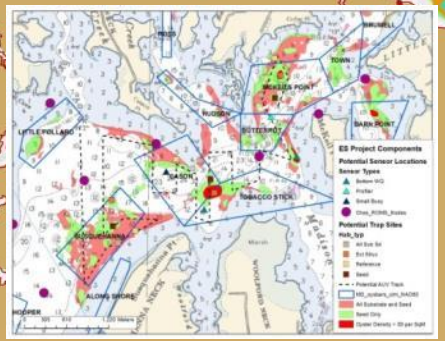


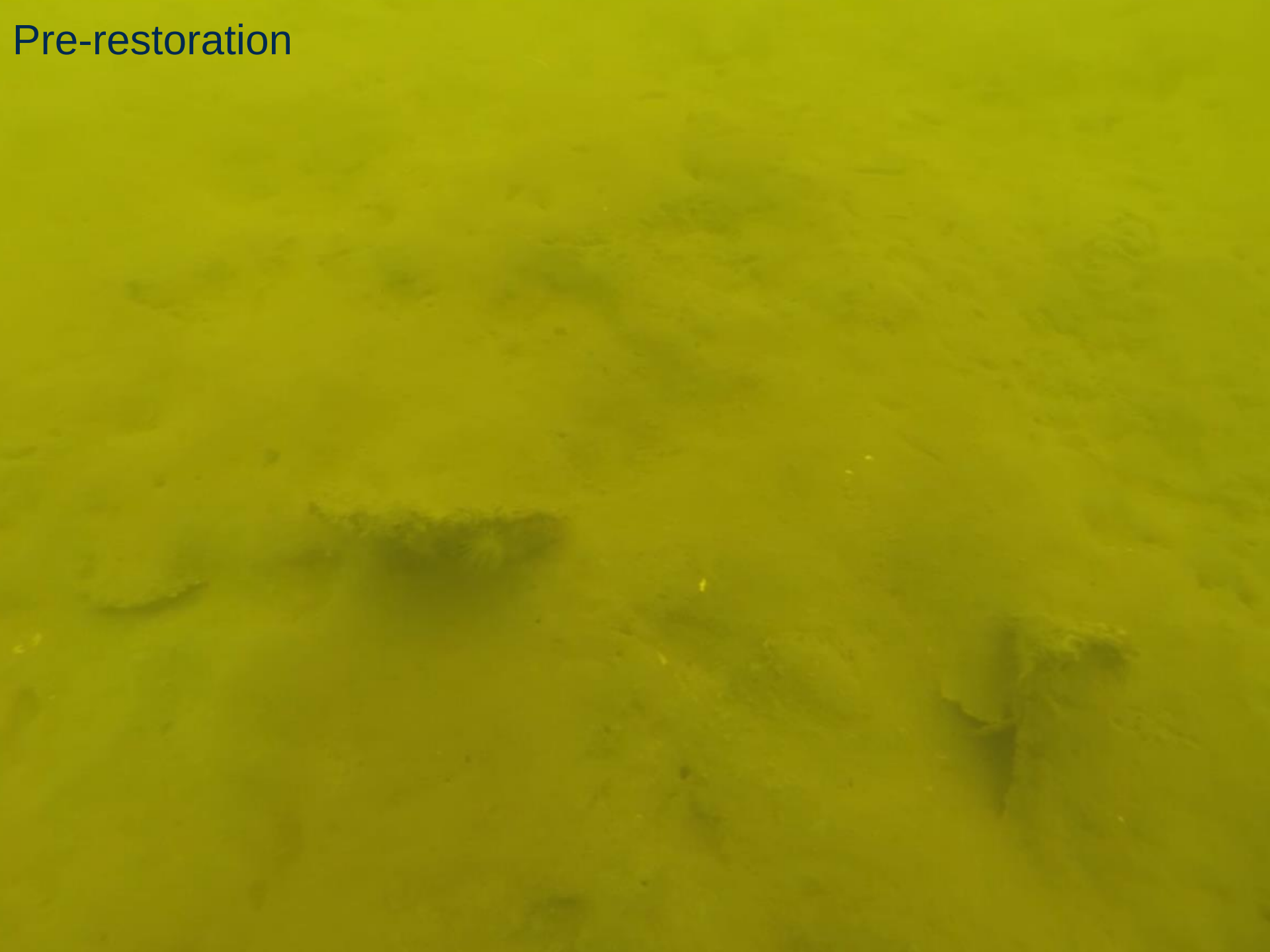
Figure 1. Hill-shaded bathymetry with 3X vertical exaggeration identifying a variety of oyster restoration projects and natural features. Red and blue colors represent the greatest and least depths respectively.

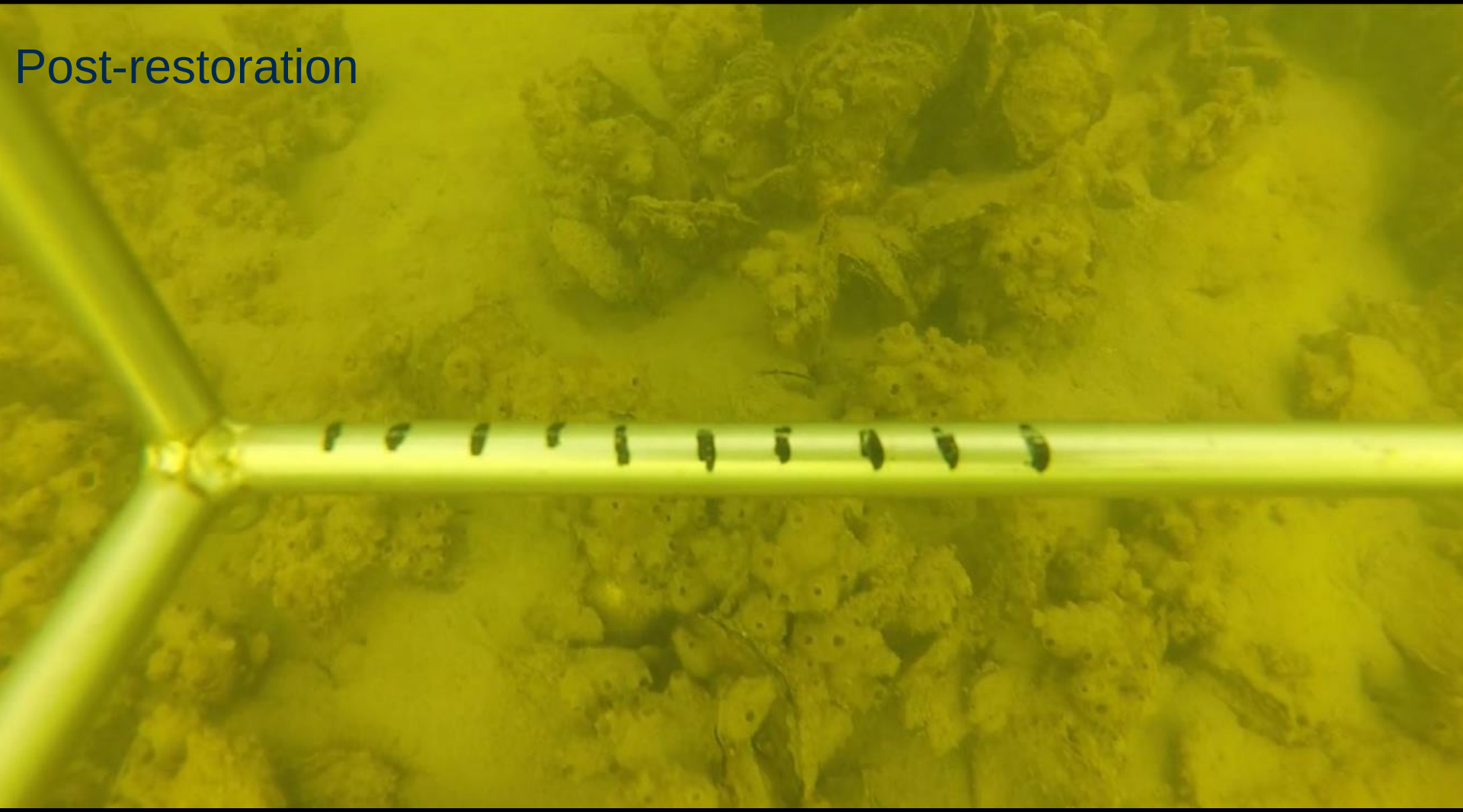
Little Choptank River

Chesapeake Bay
INTERPRETIVE BUOY SYSTEM



This Restoration Atlas covers the combined efforts of Maryland Dept. of Natural Resources, US Army Corps of Engineers-Baltimore District, NOAA Office of Habitat Conservation, Oyster Recovery Partnership, Chesapeake Bay Foundation, and the University of Maryland


Pre-restoration

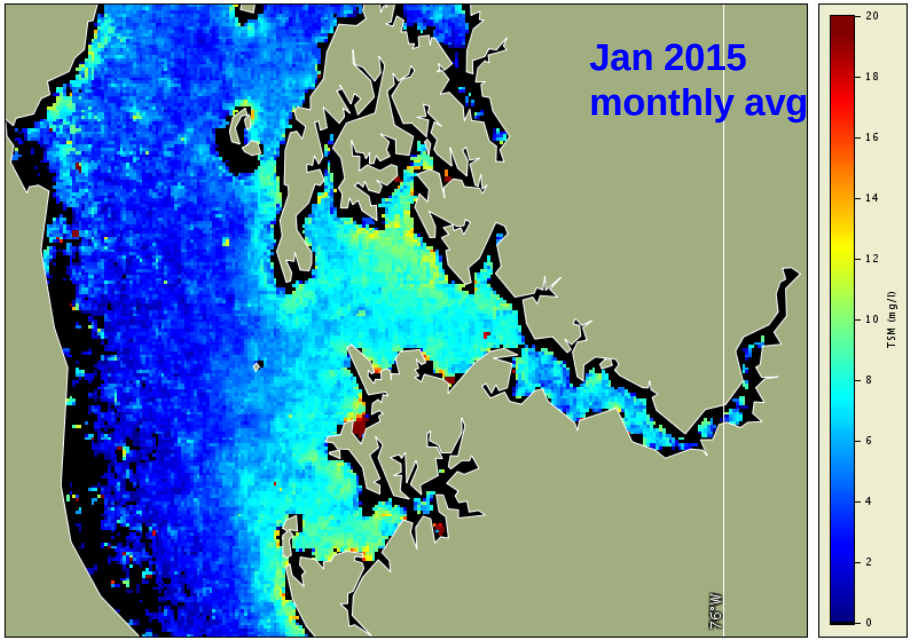

Post-restoration

Ecosystem Services

- Fish Sampling in Tred Avon and Little Choptank
- Denitrification in Harris Creek

Satellite Suspended Sediment

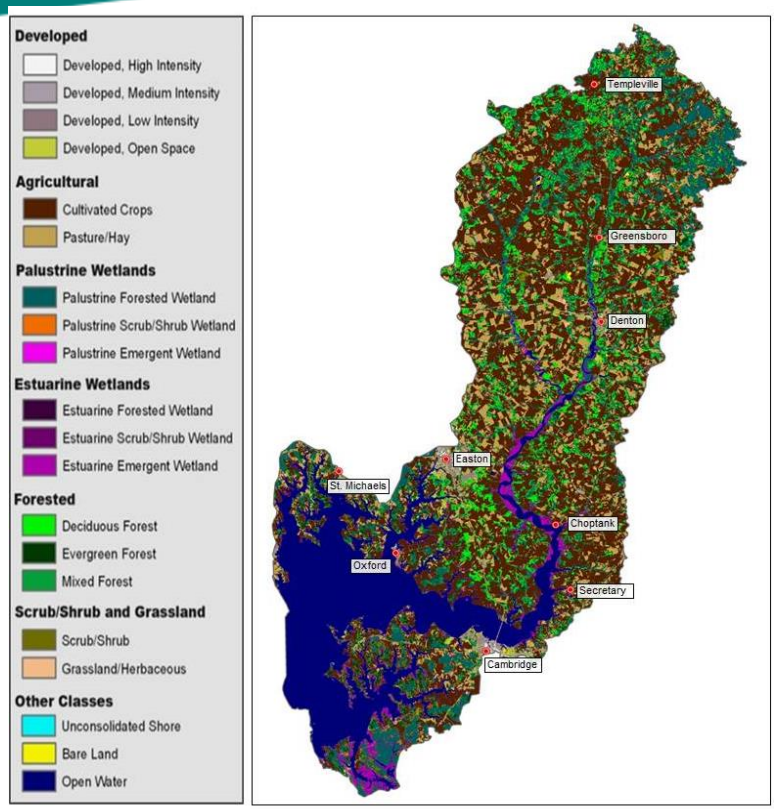
- ☑ *Construct a six-year time series of daily, weekly, and monthly averages*
- ☑ *Investigate satellite spatial resolution for oyster restoration projects*
- ☑ *Synthesize time series results for sediment variability, hot spots, and ongoing oyster restoration projects*

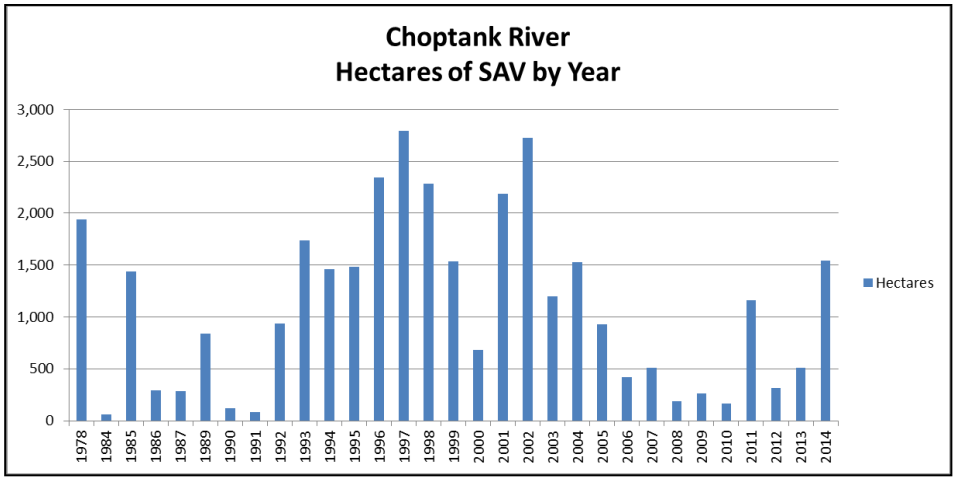


Science, Service, Stewardship

Ecological Assessment-Baseline

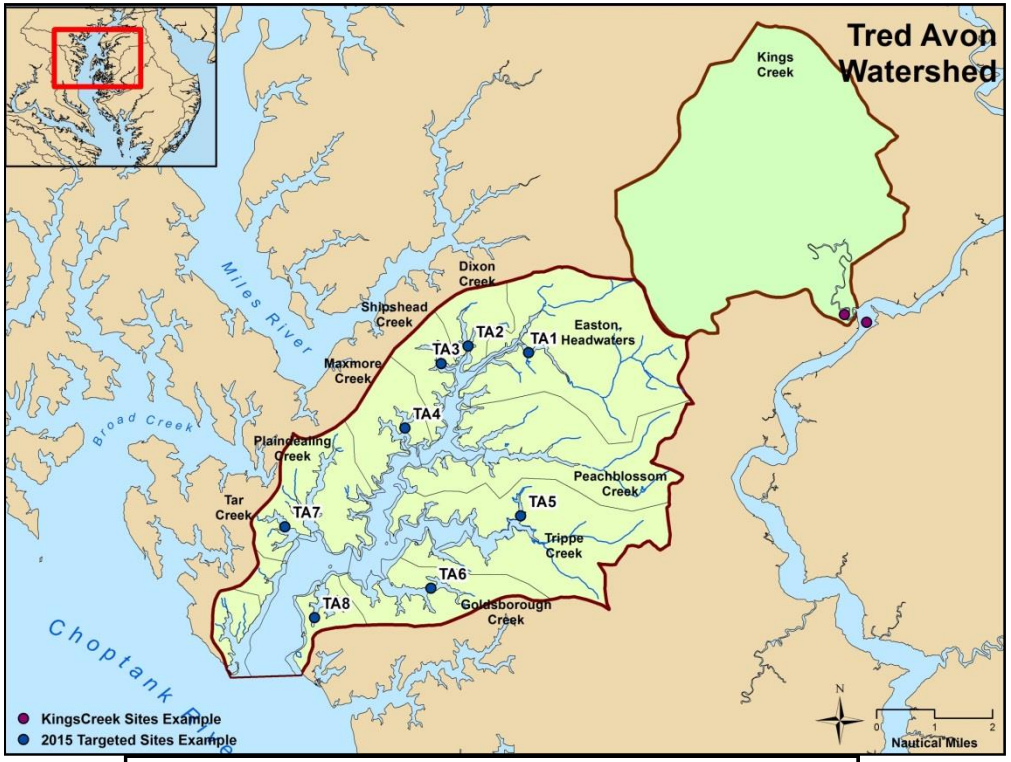
- Landcover
- Shoreline composition
- Water quality
- Benthic-IBI
- SAV
- Fish
- Oysters





Wetlands Remote Sensing Project

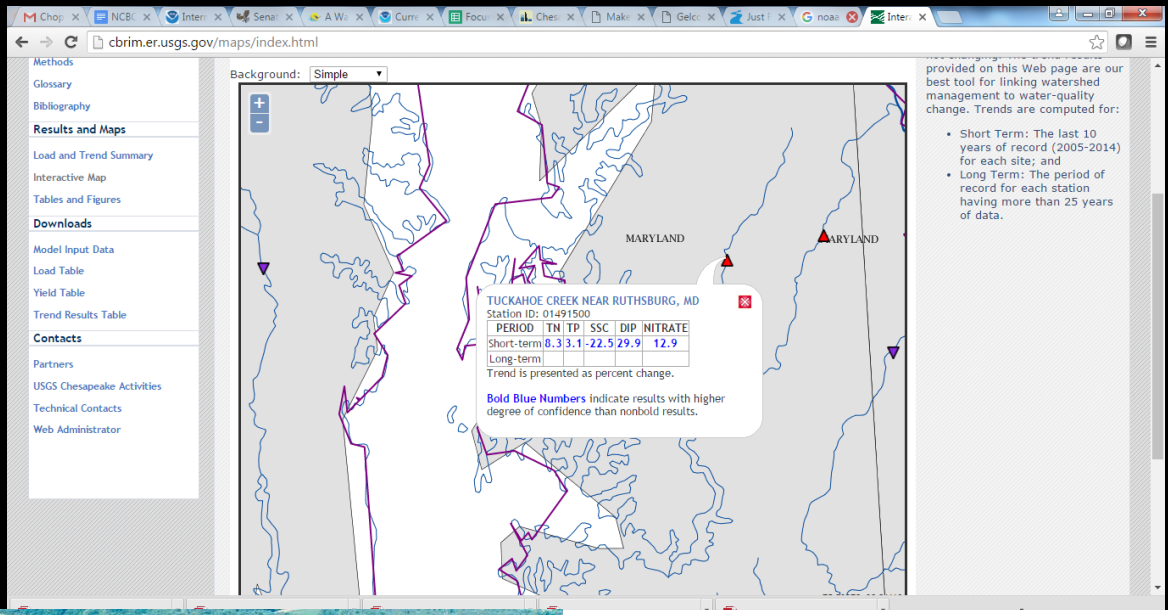
Tred Avon River

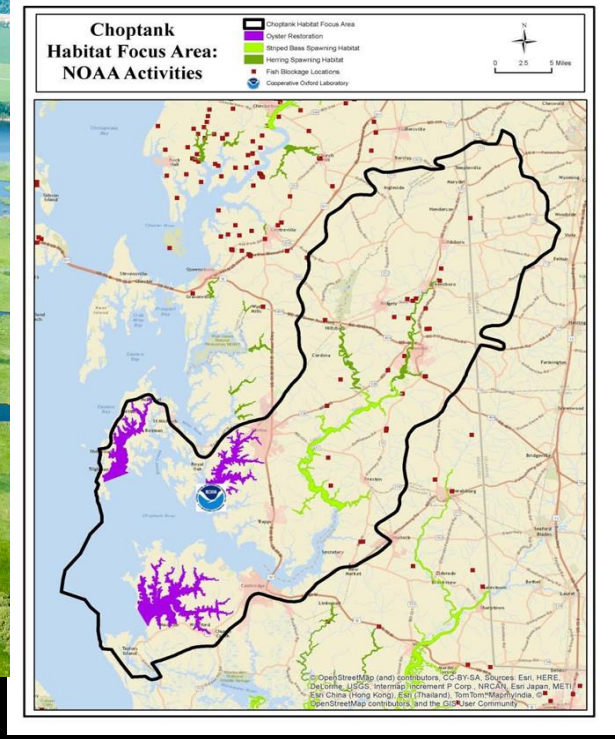


Station	Creek	Representative Landuse
TA1	Easton Pt	Urban/Golf Course
TA2	Dixon	Row Crop
TA3	Shipshead	Forest
TA4	Maxmore	Forest
TA5	Trippe	Golf Course/Low Resid
TA6	Goldsborough	Row Crop
TA7	Tar	Row Crop
TA8	Town	Urban

Telling the whole story

- Connecting land to water
- Water column habitat and resource health

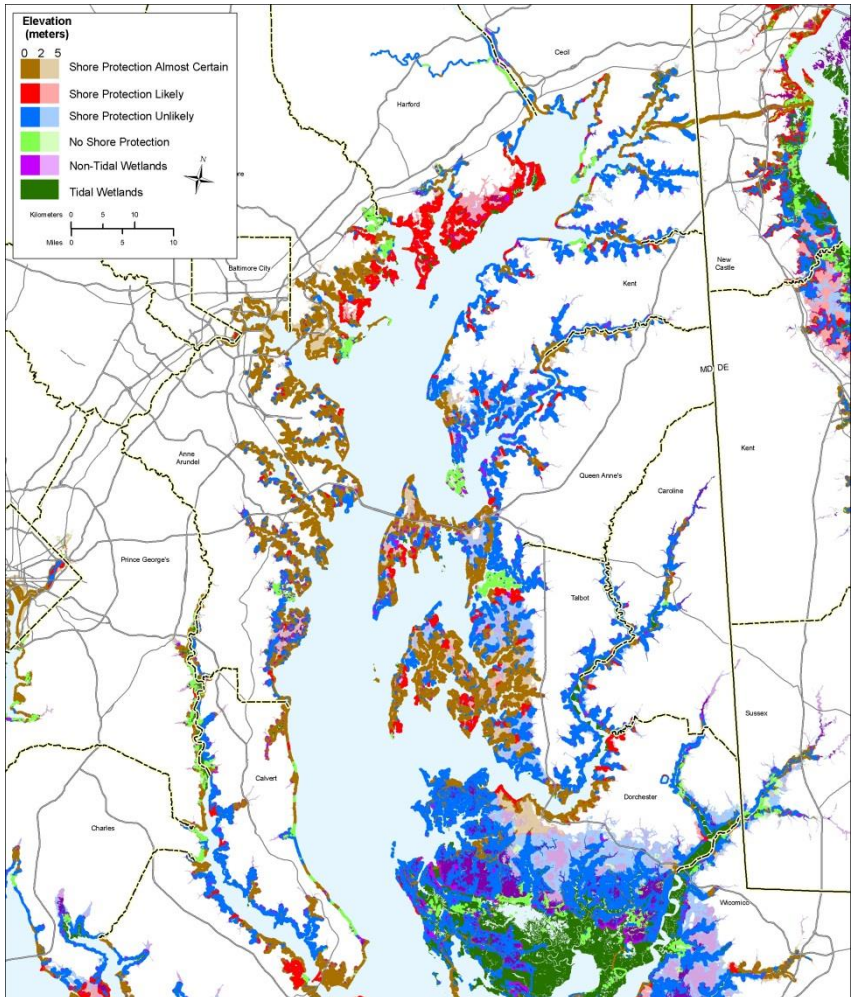




Thanks!

Opportunity: Partners

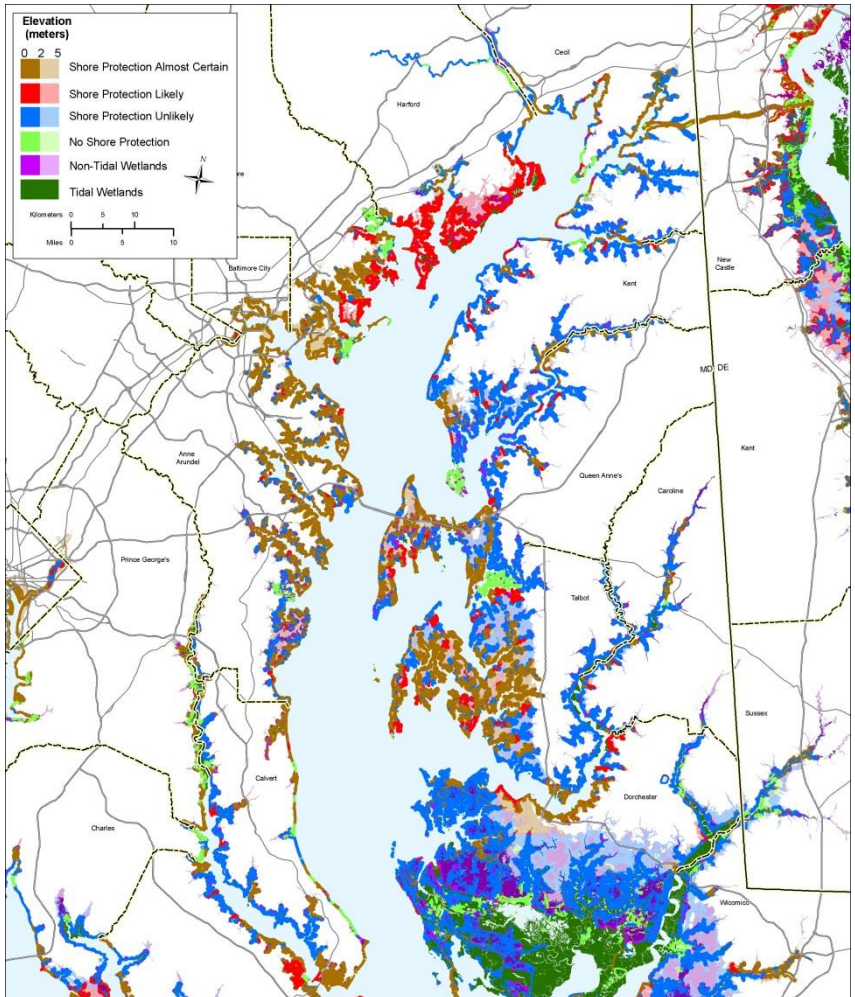
Integrating Science to Inform Management: Outcomes



Ecological Assessment: Improved scientific understanding of the ecological condition of the Choptank River system by NOAA, partners, and decision makers.

Water Column Habitat: Quantify water quality and assess its variability in the Choptank River by better understanding the effects of land use on water quality over restored oyster reefs or near other in-water/nearshore habitats that support key fish species.

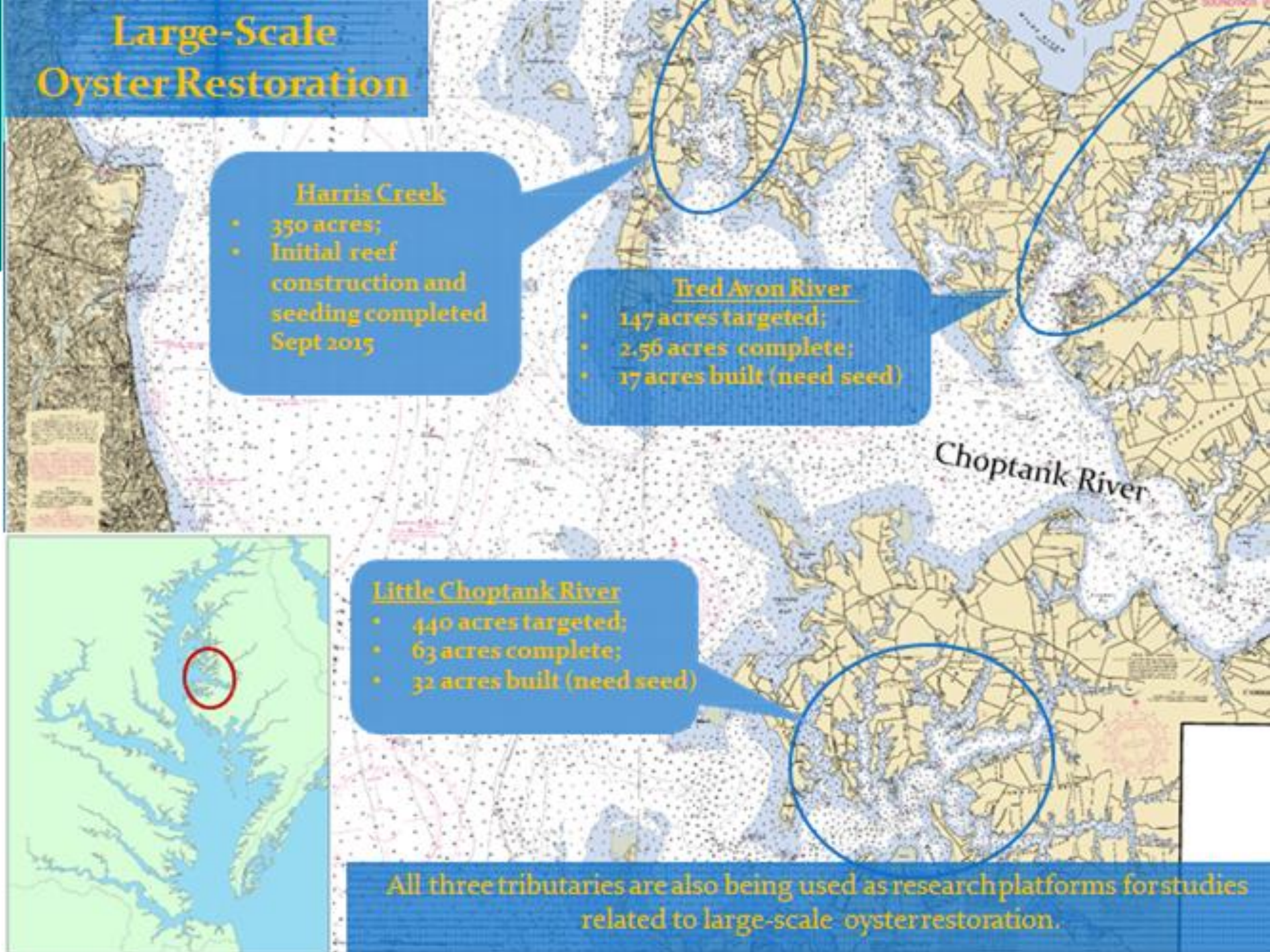
Integrating Science to Inform Management: Outcomes

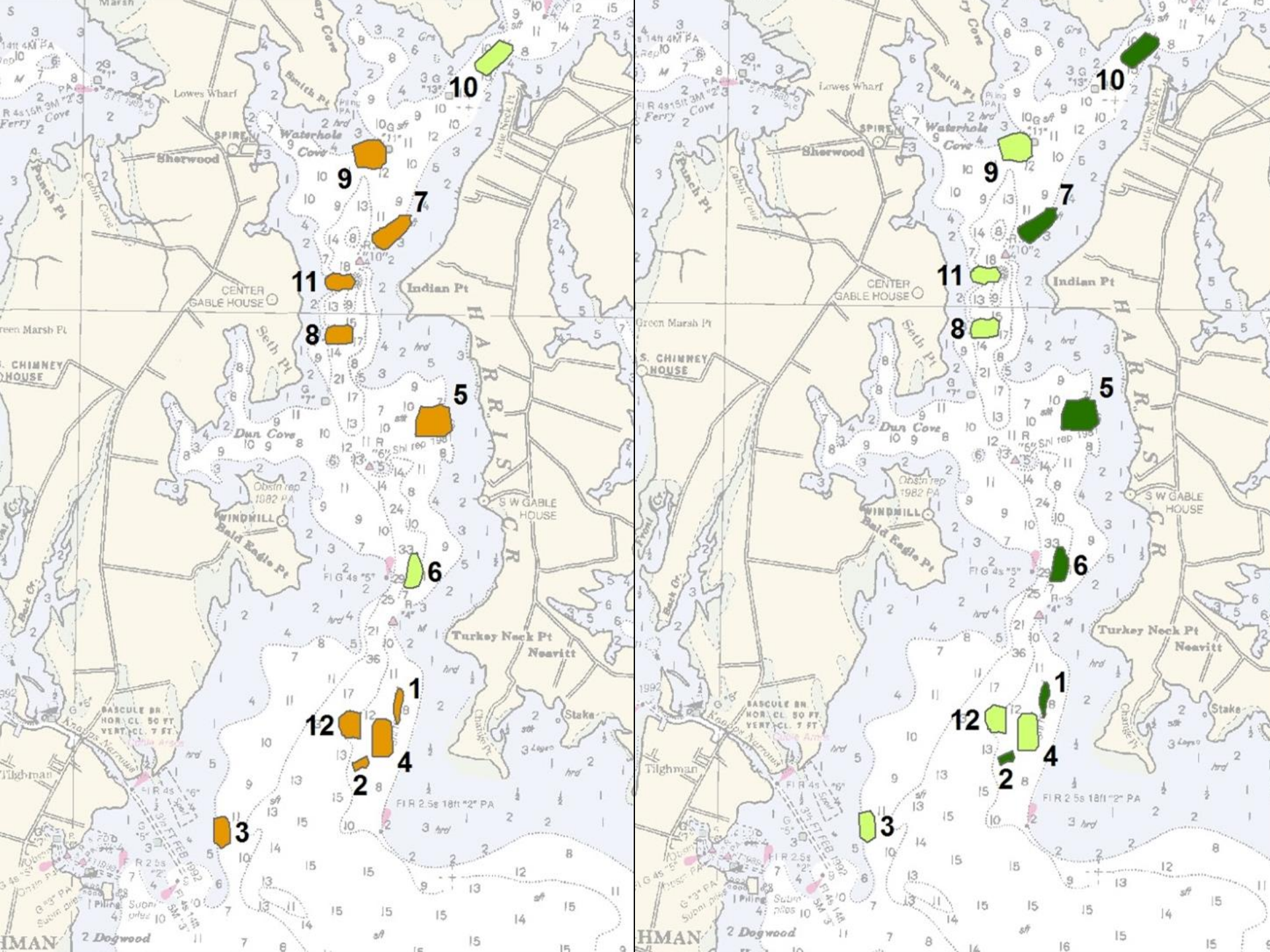


Ecosystem Services: Constituents understand and use the value of key ecosystem services and socioeconomic benefits derived from restoration and protection of oyster and wetland habitats to support decision making.

Climate Resiliency: Increased use of NOAA resources and tools to support community-led adaptation planning processes and the identification of restoration and protection opportunities to enhance resiliency.

Large-Scale Oyster Restoration




10
9
7
11
8
5
6
1
12
4
2
3
Lowes Wharf
Sherwood
Waterhole Cove
Indian Pt
CENTER GABLE HOUSE
Seth Pt
Dun Cove
WINDMILL
Bald Eagle Pt
S W GABLE HOUSE
Turkey Neck Pt
Neavitt
Stake
Tilghman
Dogwood
HARRIS CR