

# Annual Update

## Large-Scale Oyster Restoration in Support of the Chesapeake Bay Agreement Oyster Goal



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## Policy Drivers

- Executive Order 13508
- 2014 Chesapeake Bay Agreement
- Restore oyster populations in 10 tributaries by 2025

## Oyster Metrics

- NOAA, USACE, DNR, VMRC, Army Corps, UMD, VIMS + 17 consulting scientists;
- Developed Bay-wide, consensus definition of ‘restored reef’ and ‘restored tributary’;
- On-the-ground restoration is now being planned & built to meet these metrics

## Fish GIT Established

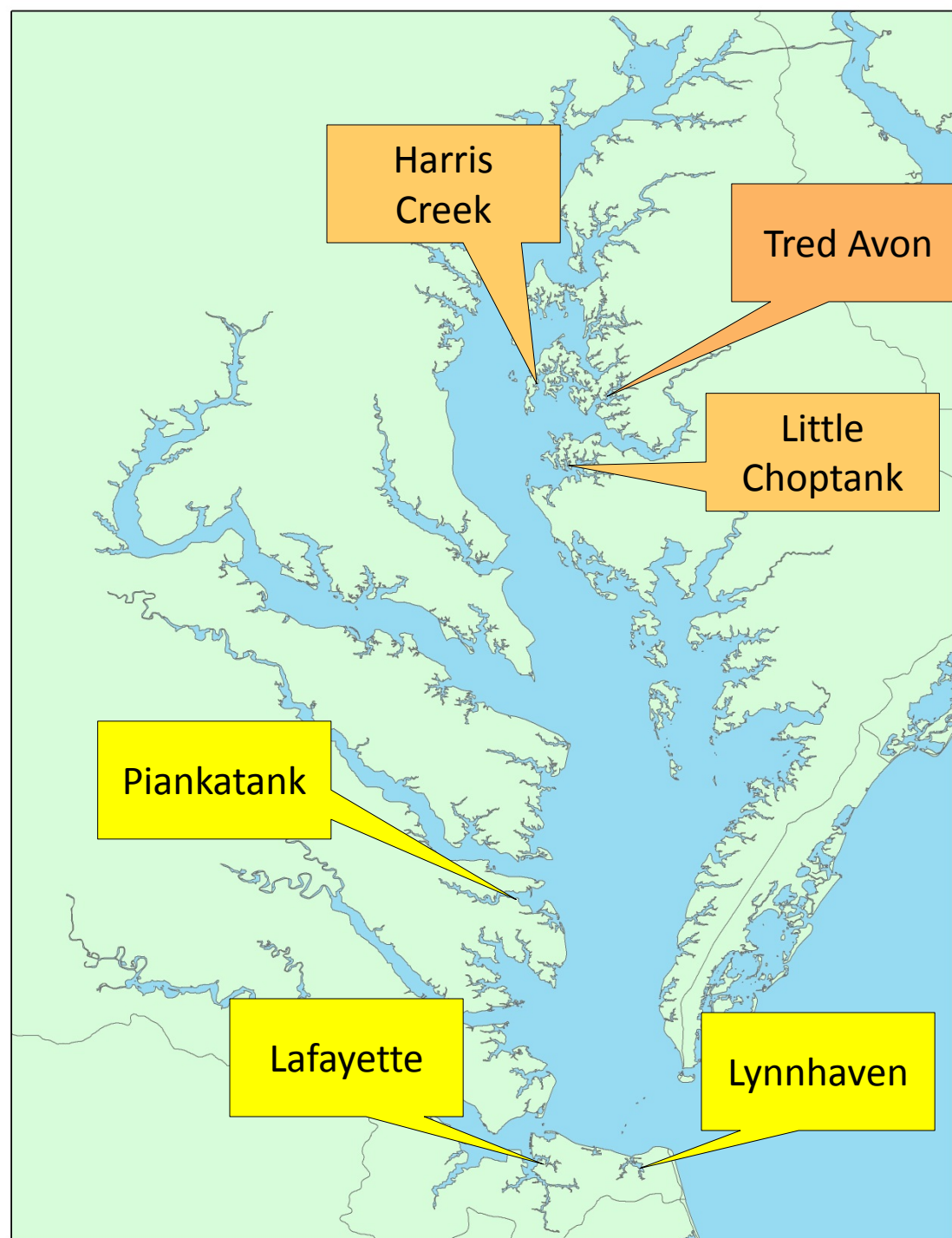
- MD & VA Oyster Restoration Workgroups

## Maryland

- Harris Creek
- Little Choptank
- Tred Avon

## Virginia

- Lynnhaven
- Lafayette
- Piankatank



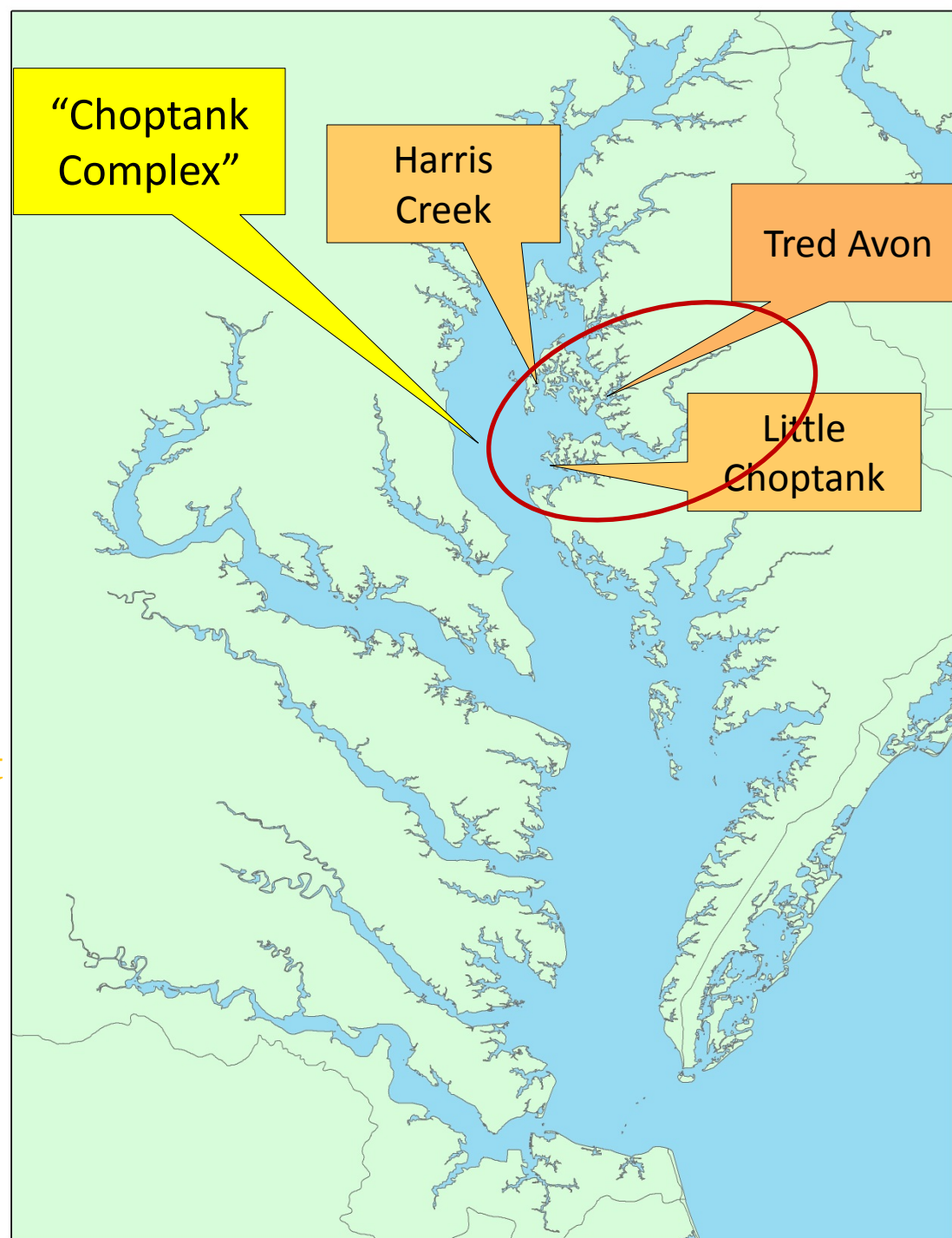
# Maryland

- Harris Creek
- Little Choptank
- Tred Avon

## Maryland Interagency Oyster Restoration Workgroup

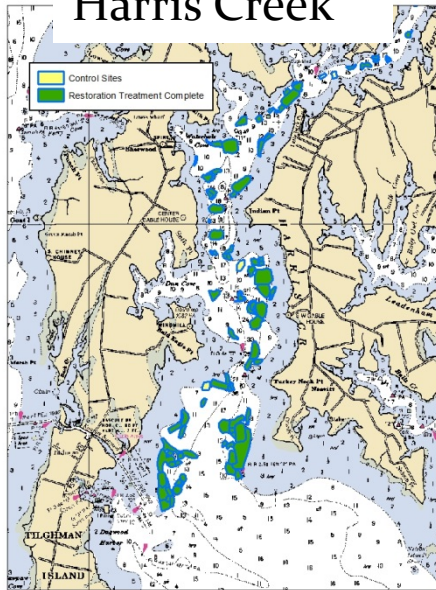


- NOAA (*chair*)
- Army Corps of Engineers-  
Baltimore District
- MD Dept. Natural  
Resources
- Oyster Recovery  
Partnership
- Trib-specific  
consulting  
scientists





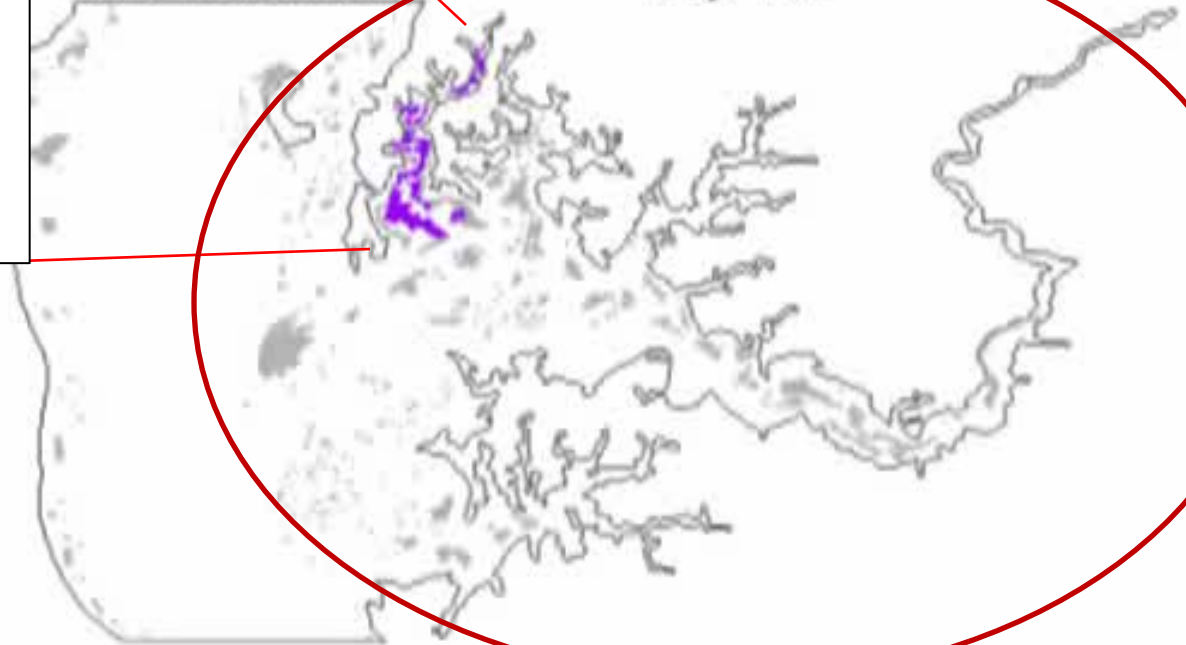
# Harris Creek



“Choptank Complex”

Start: 18 June 2010

Day: 1.62



<https://www.youtube.com/watch?v=8gryagcdGXU>

## Harris Creek: So how's it doing?

- The first 100 acres treated are being surveyed to determine whether they meet the Oyster Metrics success criteria (“3 year check-in”; oyster density; multiple year classes; structural criteria);
- Data expected Jan 2015



Natural spat set on  
Florida shell substrate,  
Harris Creek, 2014

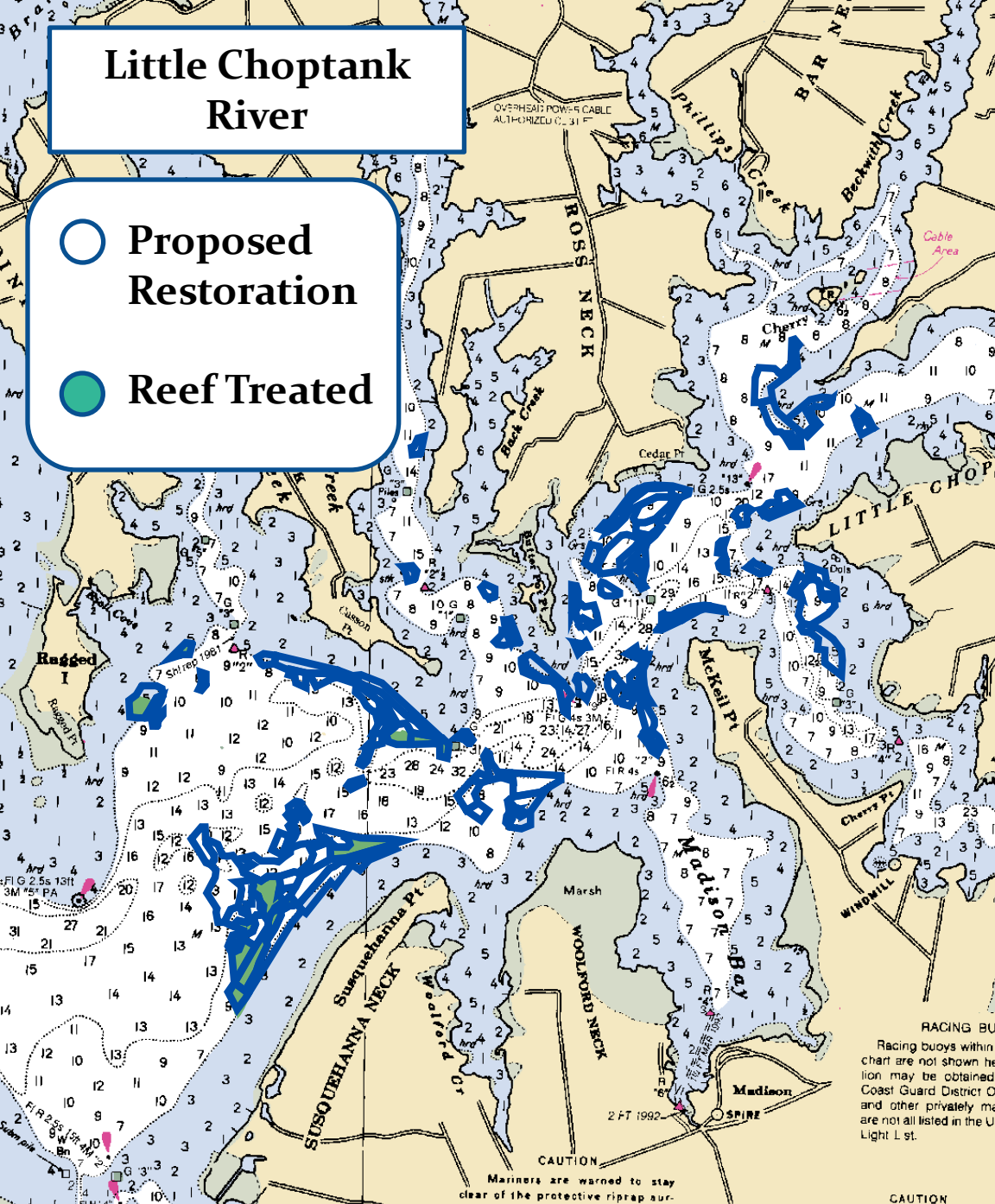


Natural spat set on  
stone reef substrate,  
Harris Creek, 2015

# Little Choptank River

○ Proposed Restoration

● Reef Treated



## Tributary Plan (“Blueprint”)

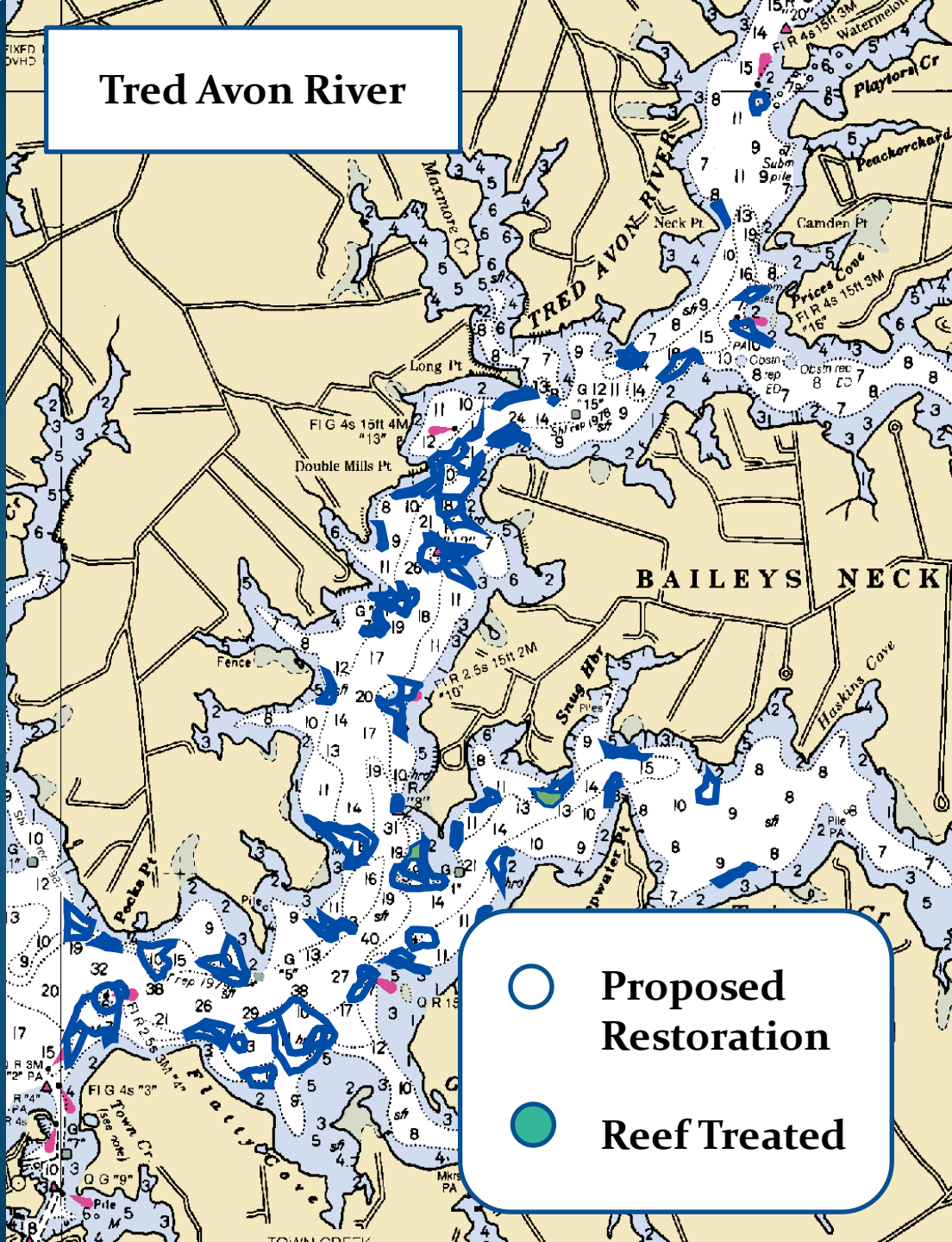
- Oyster Metrics goal = 340-680 acres
- Restoration target = 442 acres (45 of which already meet the Oyster Metrics oyster density target)

## Implementation

- 114 acres constructed by DNR in 2014;
- Of those, 35 have been seeded by U of MD and CBF (green on map);



# Tred Avon River



## Draft Tributary Plan ('Blueprint')

- Oyster Metrics goal = 125- 250 acres
- Restoration target = 147 acres

## Implementation

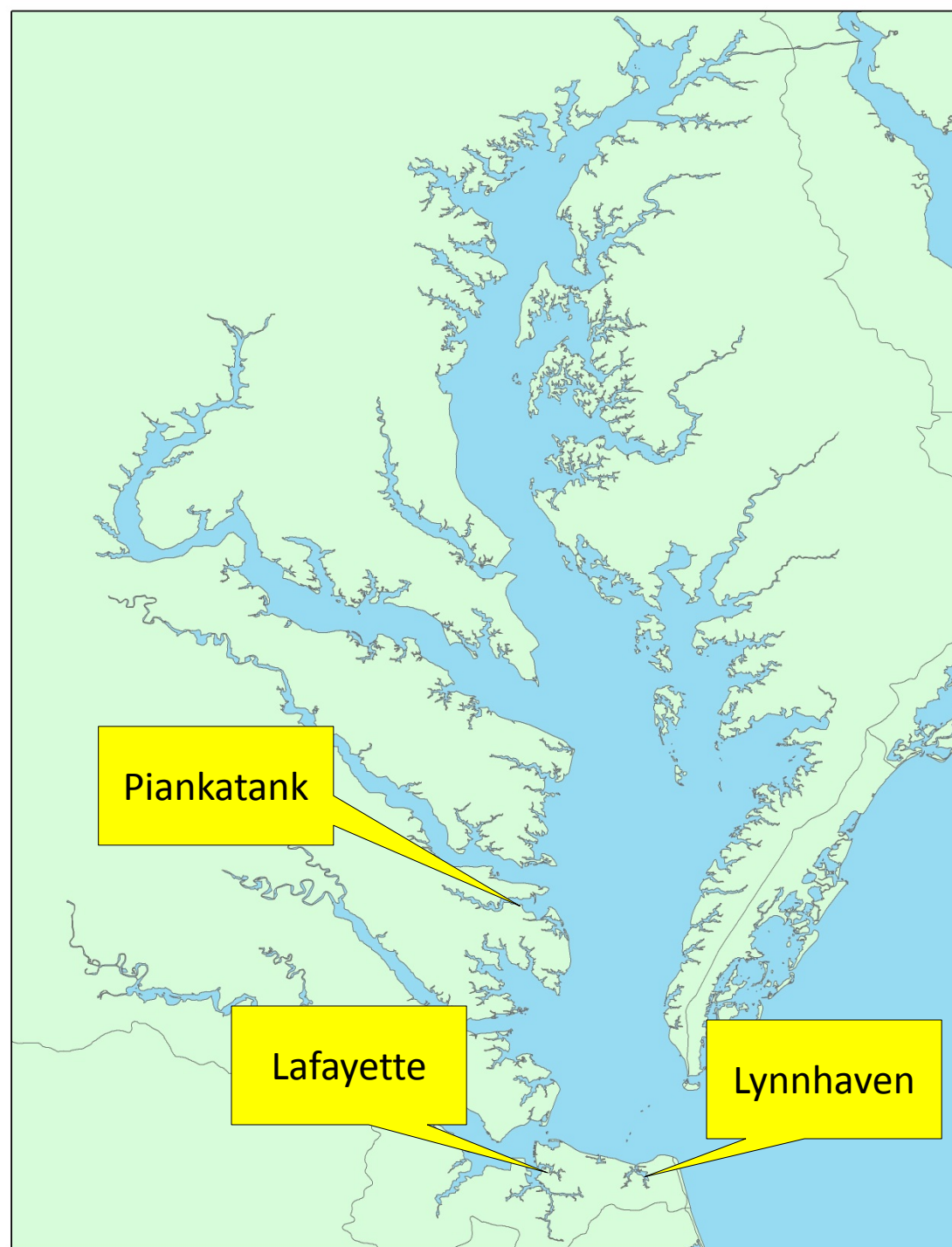
- 17 acres constructed by USACE;
- Of those, 2.6 acres were seeded in 2015; the rest to be seeded in 2016;
- USACE will build 7 acres to in 2016 (pending contractor procuring shell);
- USACE working on NEPA modification to build additional sites.

## Virginia

- Lafayette
- Piankatank
- Lynnhaven

## Trib-Specific Workgroups

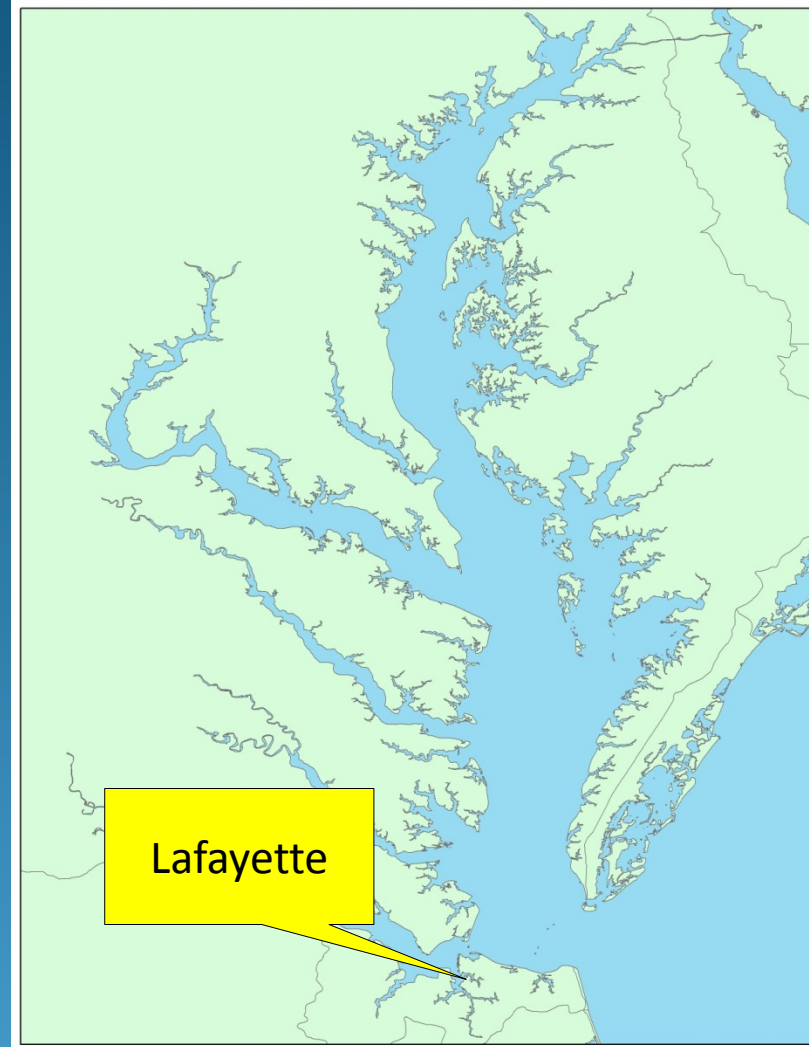
- Organizations different for each trib



# Lafayette River

## Workgroup Members:

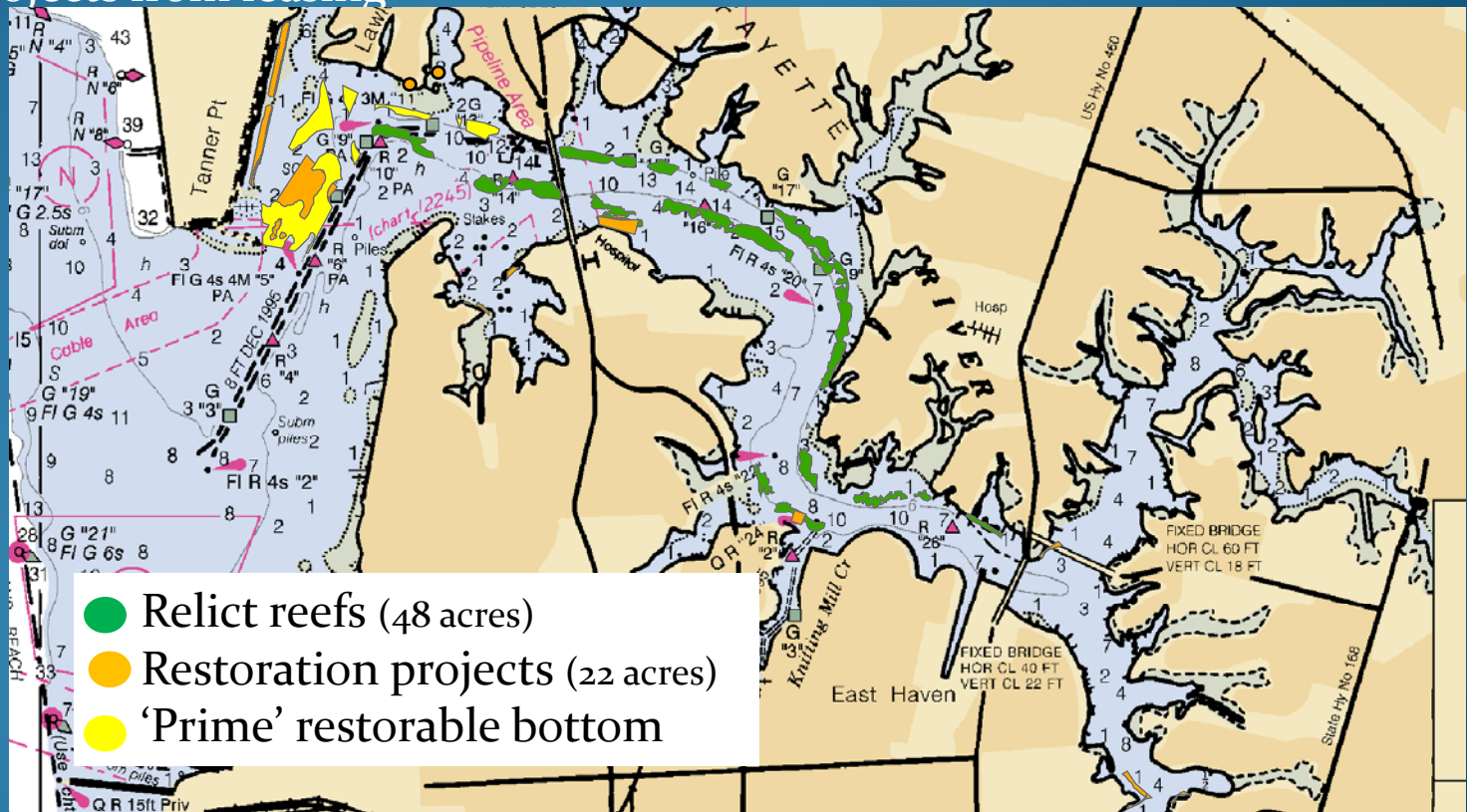
NOAA (chair);  
Chesapeake Bay Foundation;  
Christopher Newport University;  
City of Norfolk;  
Elizabeth River Project;  
Virginia Institute of Marine Science;  
Virginia Marine Resources Commission;  
U.S. Army Corps of Engineers- Norfolk District



# Lafayette River

## Workgroup Progress in 2015:

- Oyster Metrics goal = 73- 146 acres
- Restoration target = 80 acres (approx. 70 acres have already either been restored, or are 'relict reefs' which meet Oyster Metrics density criteria)
- Need restoration on 10 more acres to reach 80 acres
- Cost estimate = \$1.35 million
- Worked with VMRC to develop regulations protecting Lafayette relict reefs and restoration projects from leasing



# Piankatank River

## Workgroup Members:

NOAA (chair);  
Chesapeake Bay Foundation;  
Christopher Newport University;  
The Nature Conservancy;  
Virginia Institute of Marine Science;  
Virginia Marine Resources Commission;  
U.S. Army Corps of Engineers- Norfolk District



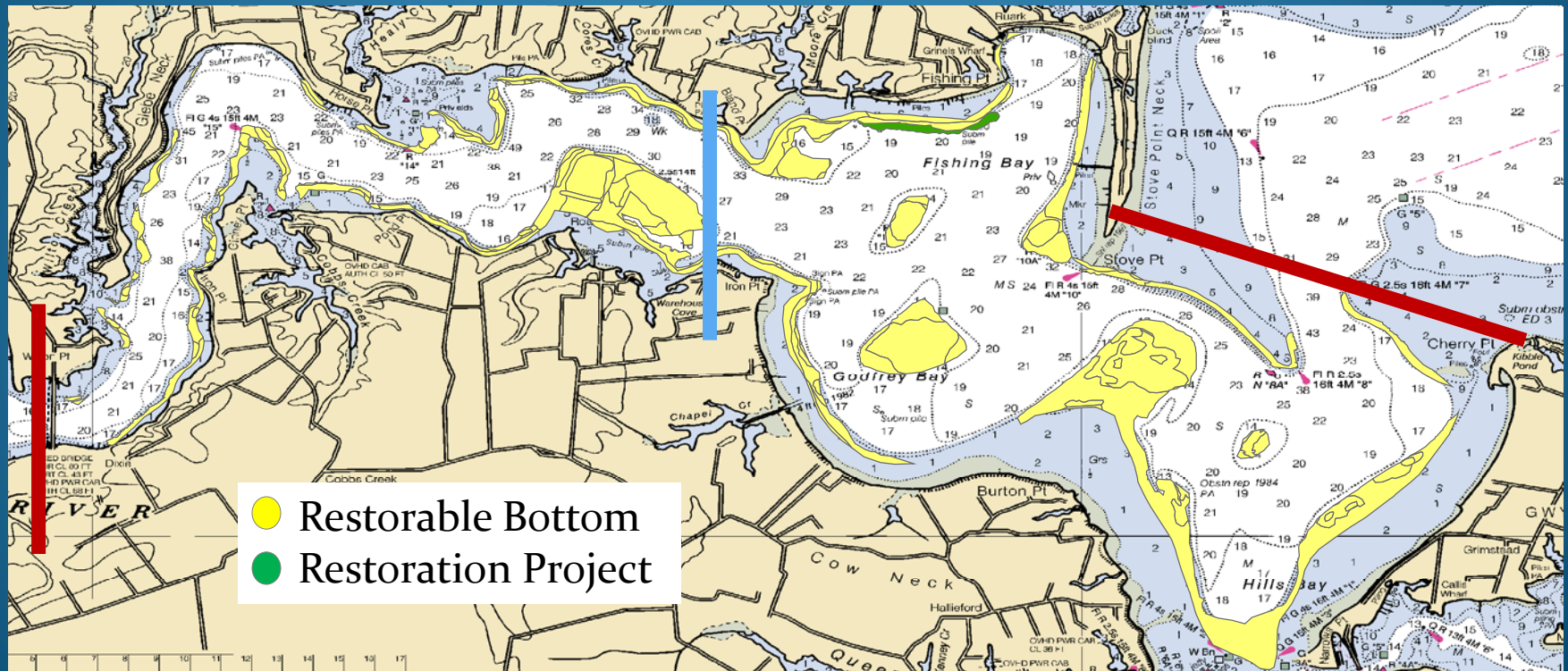
Piankatank

The image shows a map of the Chesapeake Bay region, including the main bay and the surrounding tributaries. A yellow callout box with a black border and a pointer indicates the location of the Piankatank River, which is a tributary of the main bay system. The map uses light blue for water and light green for land.

# Piankatank River

## Workgroup Progress:

- Oyster Metrics goal = 514- 1028 acres
- Restoration target = To Be Determined
  - Population survey to determine amount of acreage that is currently 'functioning as restored' (meets Oyster Metrics density criteria)
- Recent/ planned construction:
  - TNC constructed 24 acres in 2014; 3.5 acres in 2015;
  - USACE- Norfolk to construct approx. 39 acres spring 2016;





# Lynnhaven River

WHERE ARE WE NOW?

90-200 acres needed to be restored

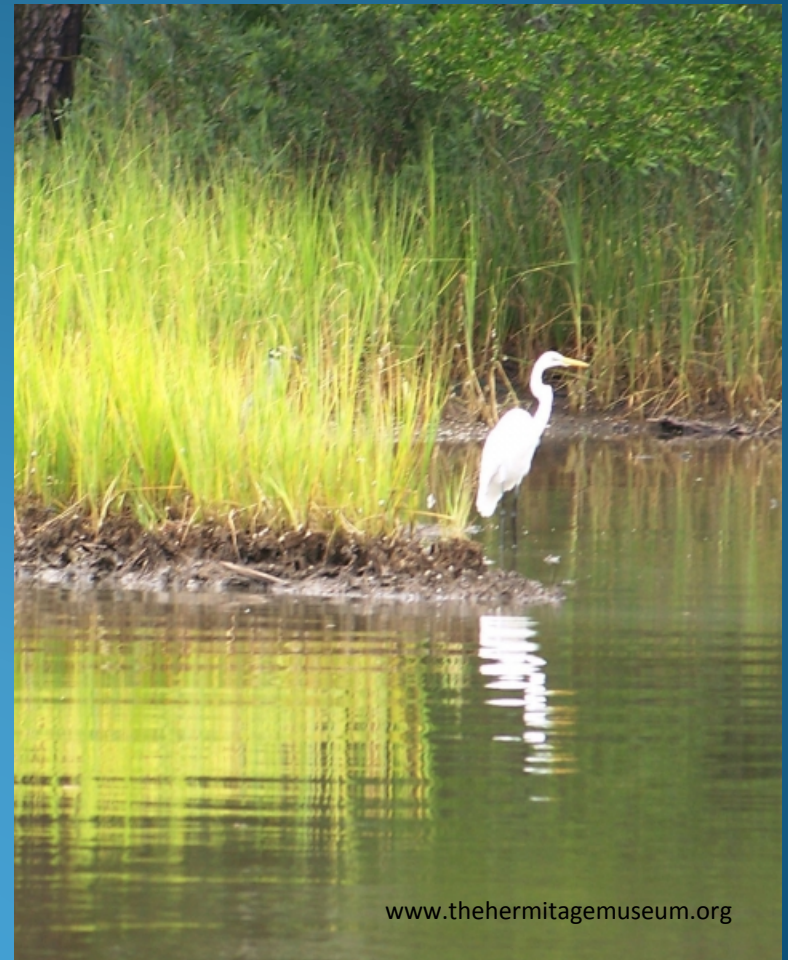
63 acres restored so far





# Future...

- 38 acres wetland restoration and diversification
- 94 acres restoration of SAV beds
- 31 acres hard reef habitat - which will meet the restoration target for the Lynnhaven



# Great Wicomico

85 acres of sanctuary reefs originally constructed  
Approximately 61 acres meeting metrics for success

2015 Rehabilitation of the Low-Relief and Poached Reefs

13 acres

VMRC collected the healthy oysters  
Brought low-relief up to high-relief













# Restoration - The Big Shift

## Past (1997-2009)

- Small- unable to impact oyster populations
- Poor results
- Scattered
- Conflicting goals
- Avoid disease
- Illegally harvested
- Poor records keeping
- Little monitoring

## Present (since 2010)

- Large
- Concentrated in select tributaries
- Clear goals
- Confront/manage disease
- Coordinated agency efforts including monitoring
- Adaptive Management of sites for success



# Challenges and Limitations

Socio-economic  
and political

Illegal harvest

Substrate- publicly  
acceptable and  
available

Shallow water  
restoration

Funding

Potential conflicts-  
fisheries (watermen) and  
navigation

Hatchery production

Predation (high  
salinity)

Disease

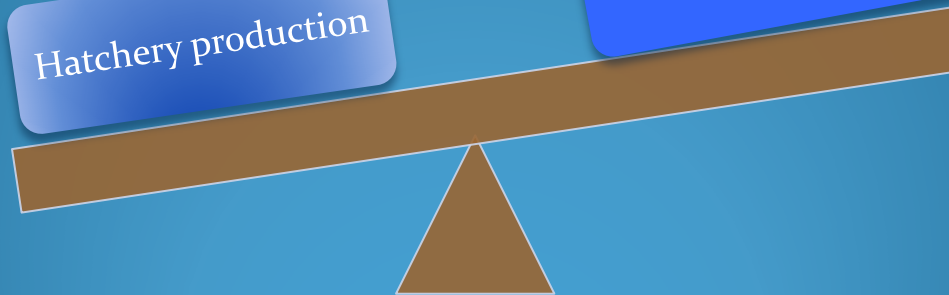
Water quality

Restorable bottom

Reproduction

Sedimentation

Natural



Tier 1 Tributaries/Areas	Restoration Target (Acres)	Approximate Achieved As Of March 2015
Great Wicomico River	100 - 400	~61
Lower Rappahannock River	1,300 - 2,600	
Mobjack Bay	800 - 1,700	
Lower York River	1,100 - 2,100	
Pomocoke/Tangier Sound	3,000 - 5,900	
Lower James River	900 - 1,800	NEXT?
Upper James River	2,000 - 3,900	
Elizabeth River	200 - 500	NEXT?
Lynnhaven River	90 - 200	63 acres sanctuary plus natural areas and aquaculture

# In the News....

- Water Resources Reform and Development Act (WRRDA) of 2014: Increased USACE total budgetary authority in the 704b program (Chesapeake Bay Oyster Restoration) from \$50 Million to \$60 Million
- At the current rate of execution, that funding will be depleted by 2018. A higher budgetary authority would be needed to continue oyster restoration under this program.



# Questions?

