Oyster Restoration Status Chesapeake Bay Program Principals' Staff Committee

Sustainable Fisheries GIT

March 1, 2017

Photo:
Oyster Recovery
Partnership

Oyster Outcome

- Continually increase finfish and shellfish habitat and water quality benefits from restored oyster populations. **Restore native oyster habitat and populations in 10 tributaries by 2025 and ensure their protection**

Sustainable Fisheries GIT

Maryland

- Maryland Department of Natural Resources
- NOAA Chesapeake Bay Office (lead)
- Oyster Recovery Partnership
- USACE Baltimore District
- University of Maryland

Virginia

- NOAA Chesapeake Bay Office (lead)
- USACE Norfolk District
- Virginia Marine Resources Commission
- Virginia Institute of Marine Science
- The Nature Conservancy
- Chesapeake Bay Foundation Lafayette River
- City of Norfolk
- Elizabeth River Partnership Lynnhaven River NOW
- City of Virginia Beach
- Oyster Reefkeepers

Management Approach

- Selecting tributaries for restoration
- Collecting appropriate data
- Setting restoration targets
- Developing and implementing restoration plans
- Tracking restoration progress
- Managing restoration efforts adaptively
- Working collaboratively to secure spat, substrate, financial and human resources;
- Considering the future protection of restored reefs

Tributary Scale

- Dramatically increase oyster populations
- Recover a substantial portion of the ecosystem functions (fish, crabs, water quality)

Oyster Metrics

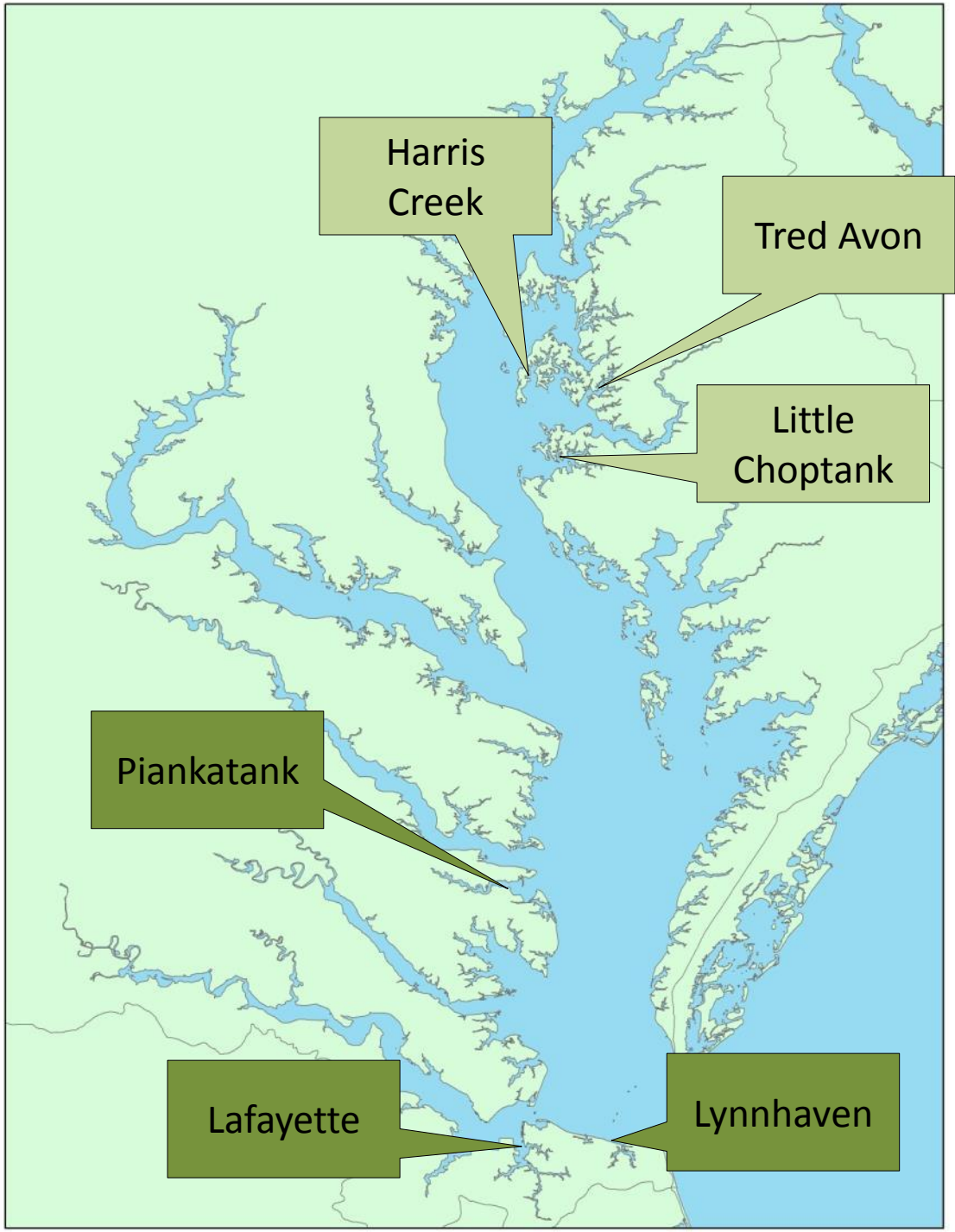
- Developed Bay-wide, consensus definition of ‘restored reef’ and ‘restored tributary’
- On-the-ground restoration planned and built to meet these metrics

Maryland

Selected Tributaries:
- **Harris Creek**
- **Little Choptank**
- **Tred Avon**

Virginia

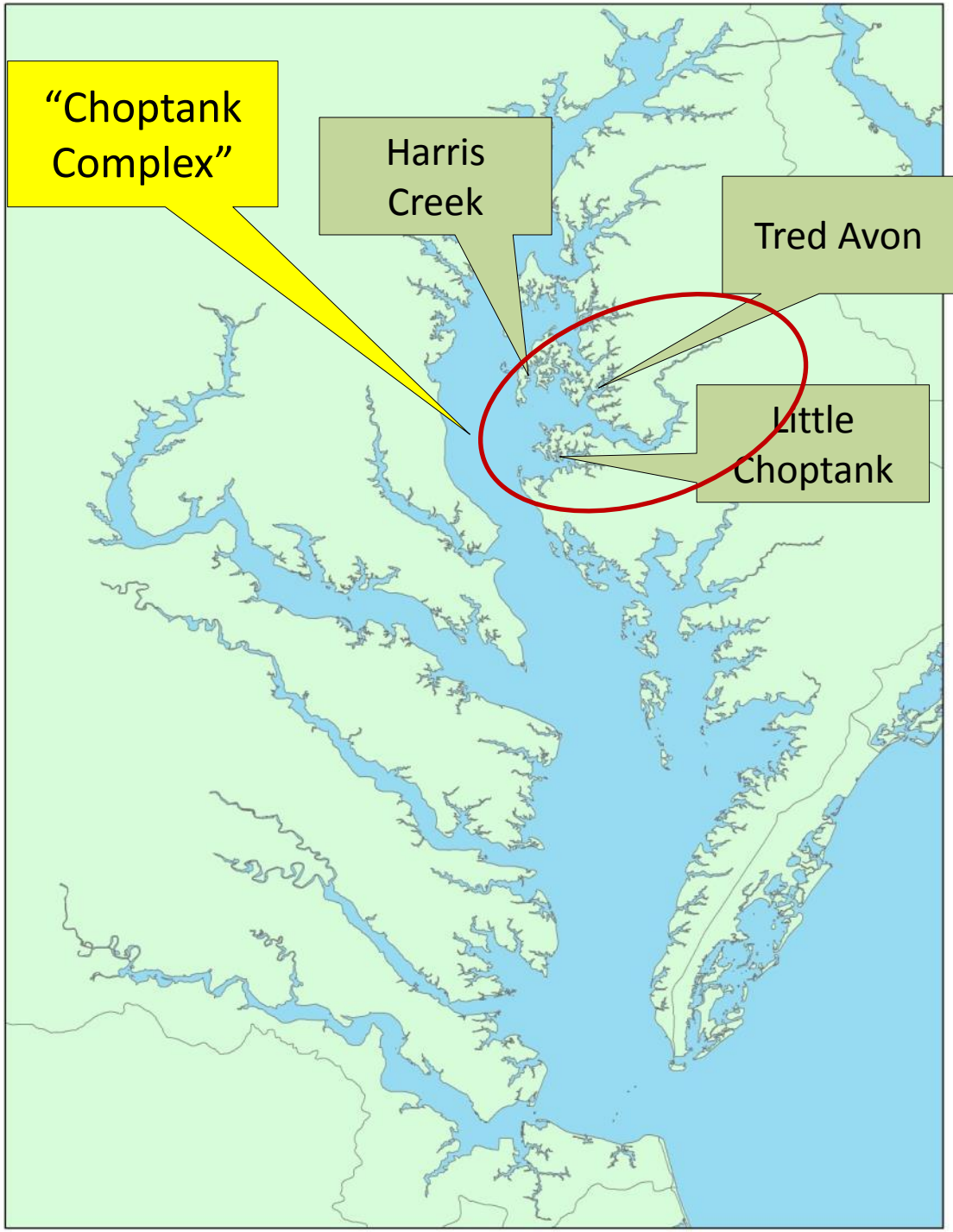
Selected Tributaries:
- **Lafayette**
- **Lynnhaven**
- **Piankatank**

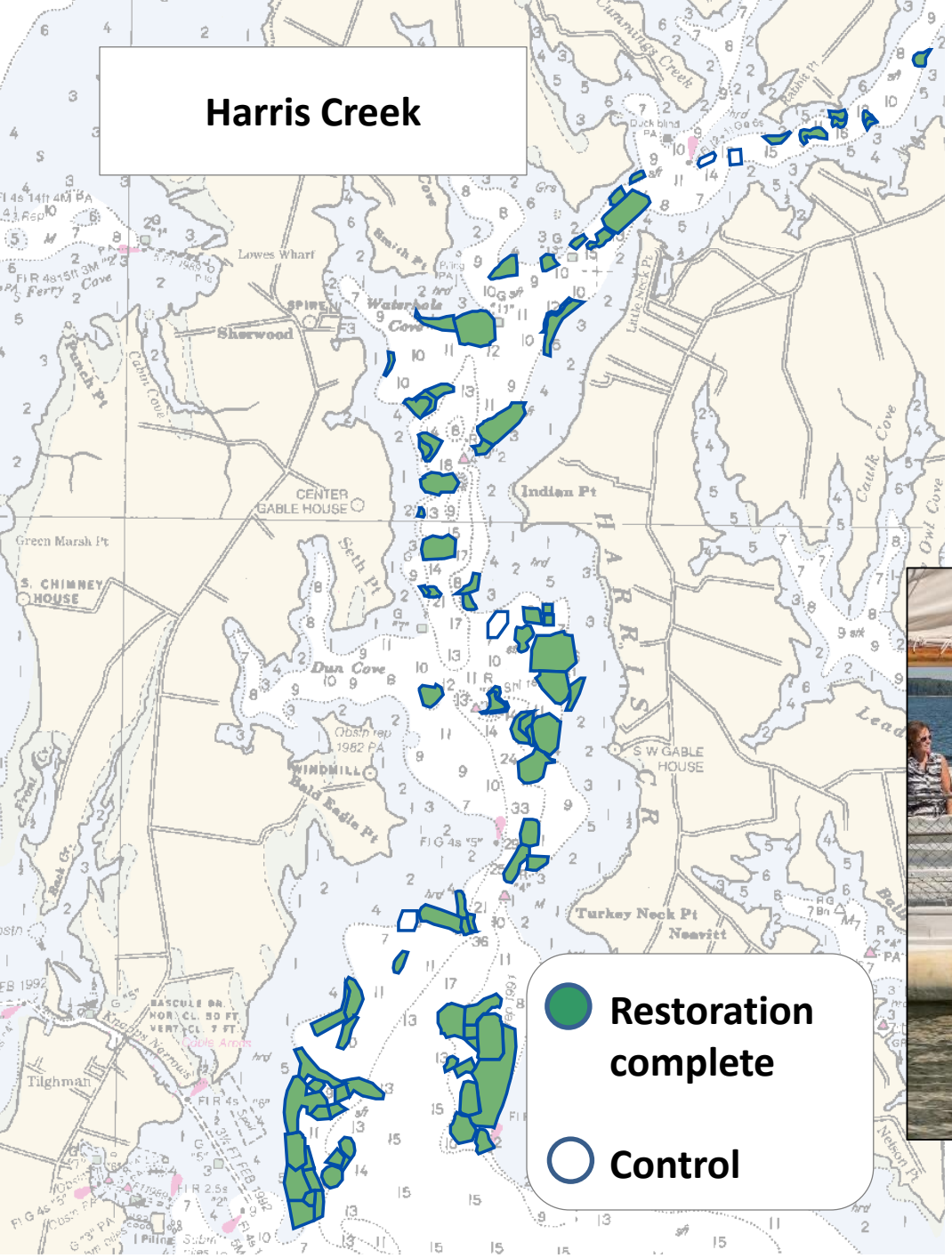


Maryland

Maryland Interagency Oyster Restoration Workgroup

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

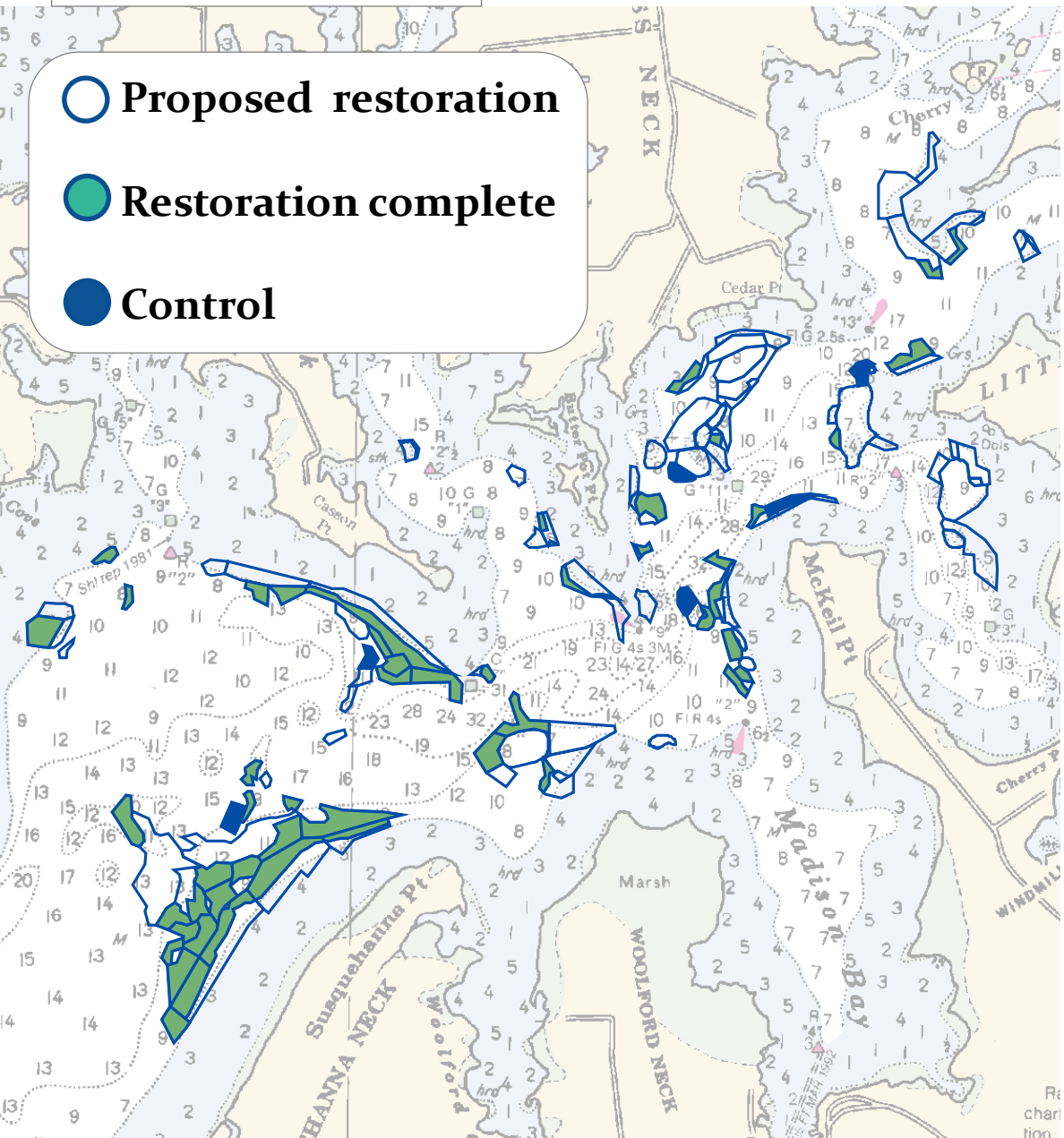




Initial Restoration Treatment Complete Sept 2015

- Started in 2011
- 350 acres
- 2 billion oyster seed
- $27 million

Little Choptank River



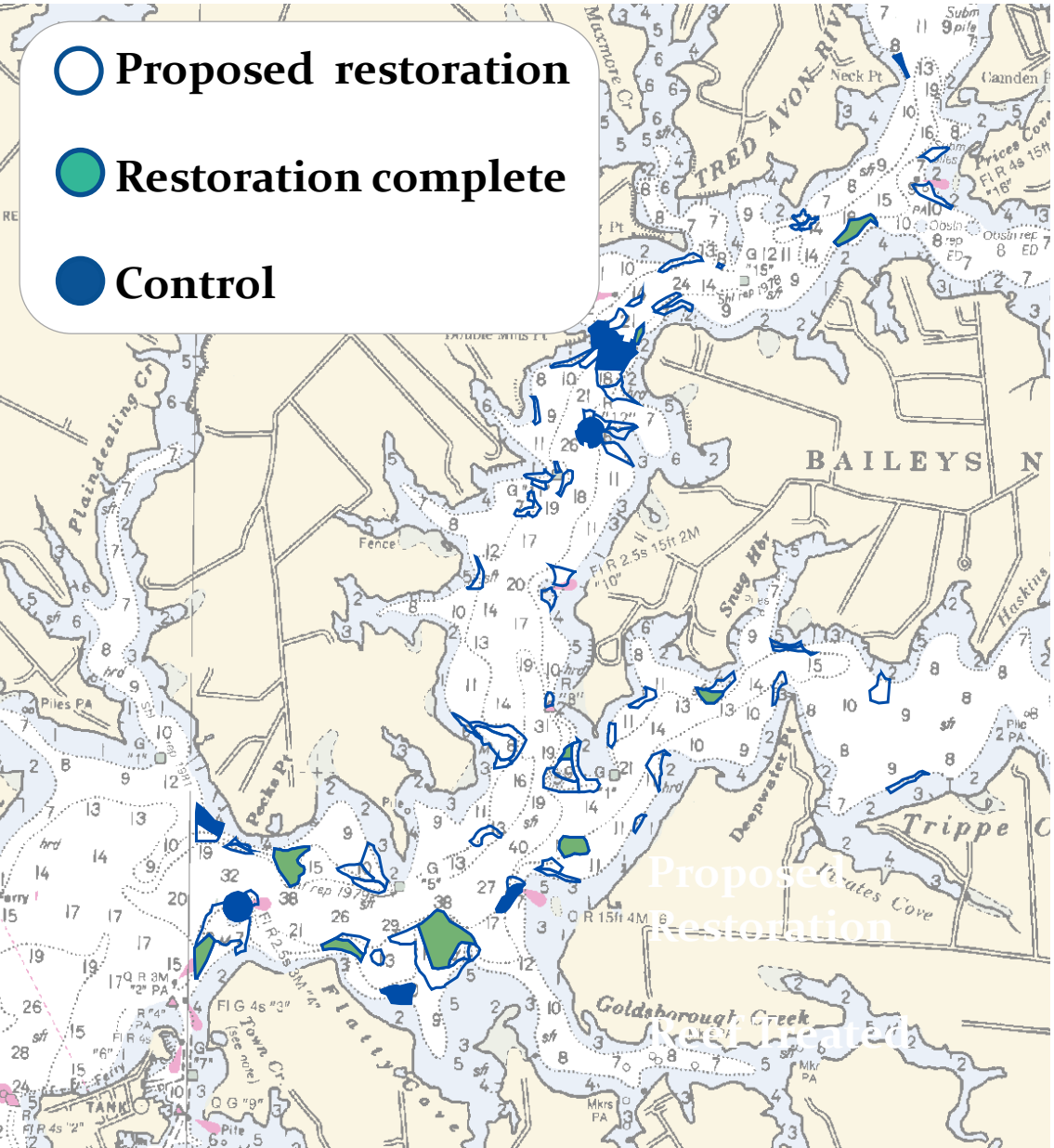
Tributary Plan ('Blueprint')

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

Implementation

- Restoration complete on 178 acres
- 814 million spat on shell planted (produced by University of MD & Chesapeake Bay Foundation)

Tred Avon River



Draft Tributary Plan ('Blueprint')

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

Implementation

- Restoration complete on 35 acres;
- 153 million spat on shell planted (produced by University of MD & Chesapeake Bay Foundation)

Mature oysters on granite, Harris Creek restoration site

12/5/2016

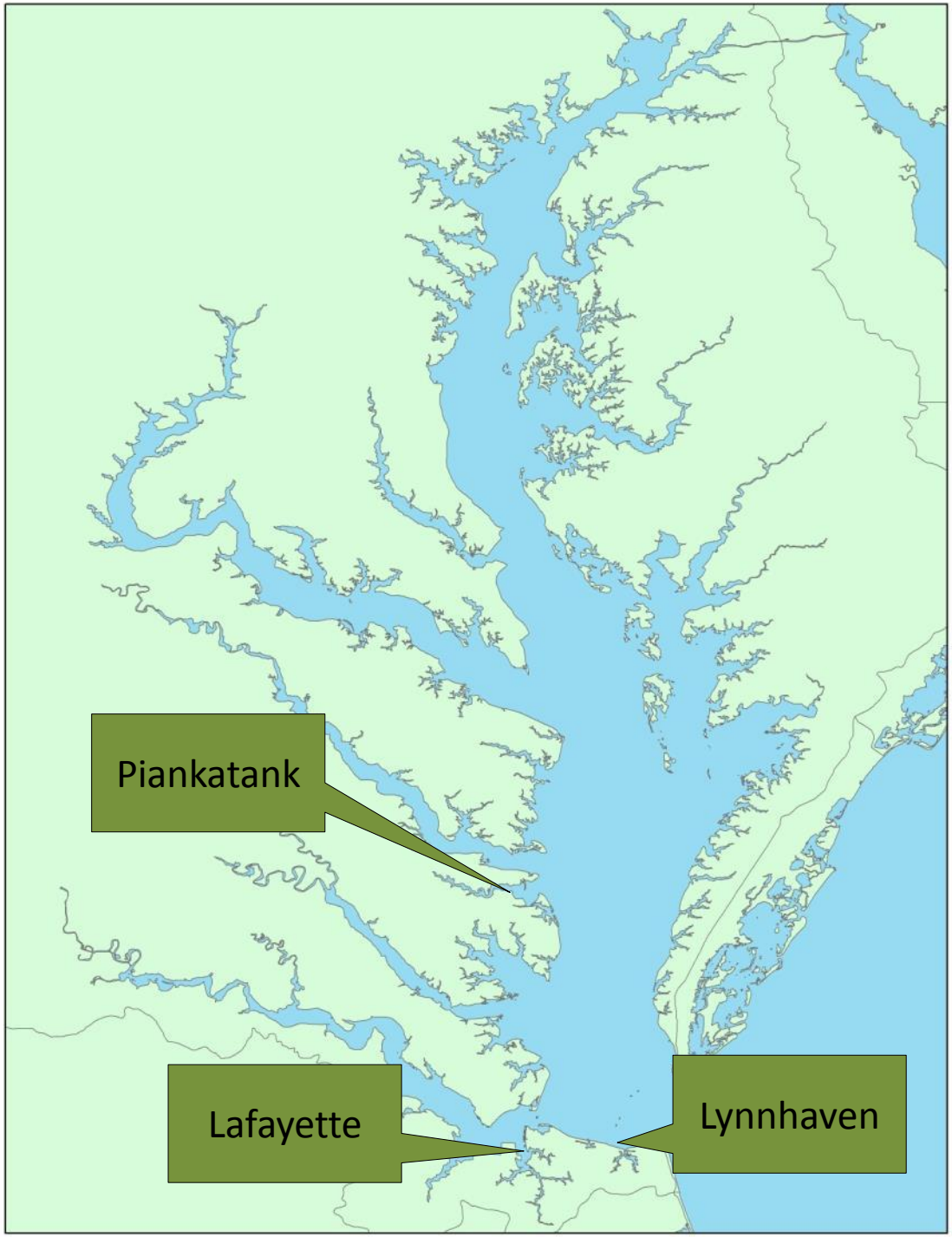
Photo by USACE-Baltimore District

Natural spat set on stone (top) and Florida shell (bottom). Little Choptank River, Nov 2015. Photos by ORP.

Virginia

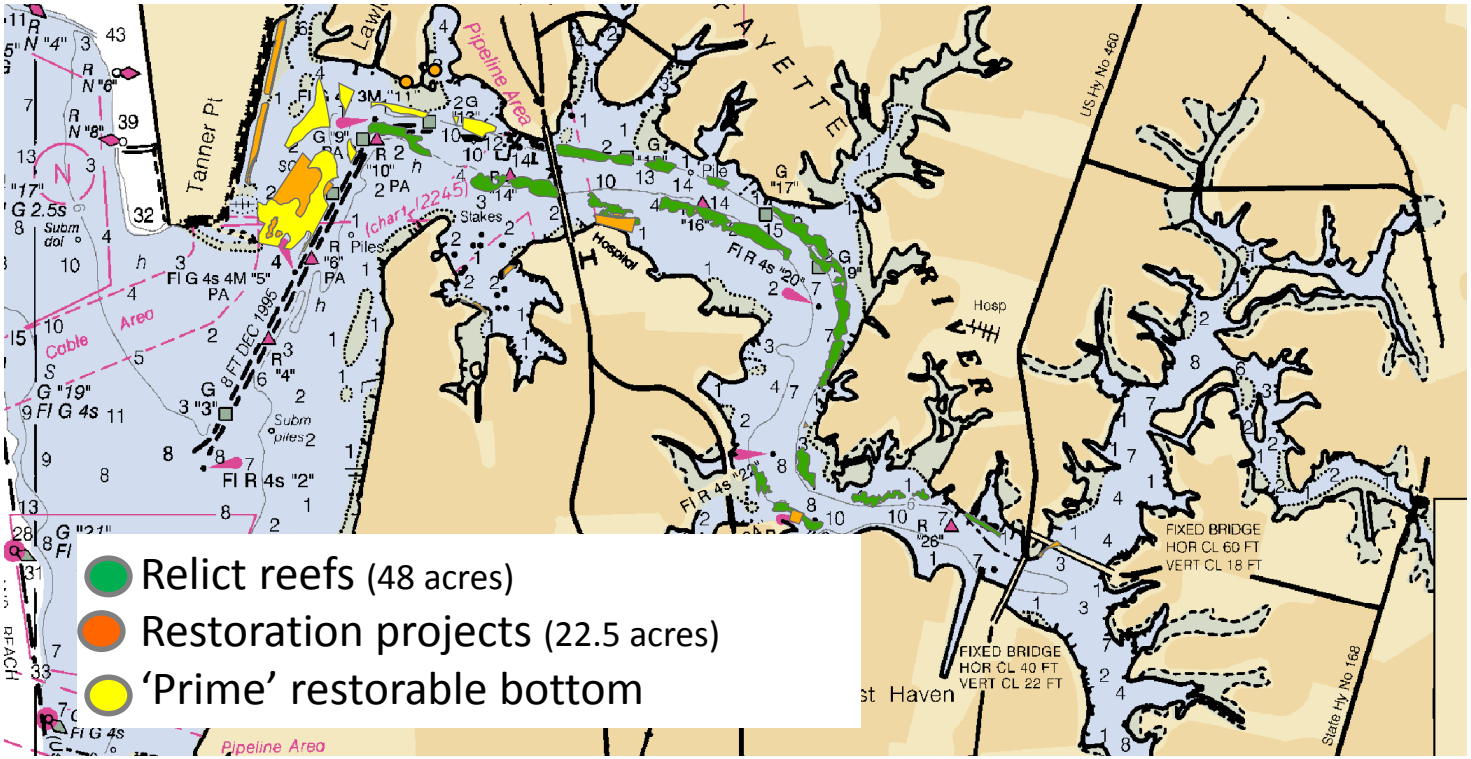
Selected Tributaries:

- **Lafayette**
- **Lynnhaven**
- **Piankatank**



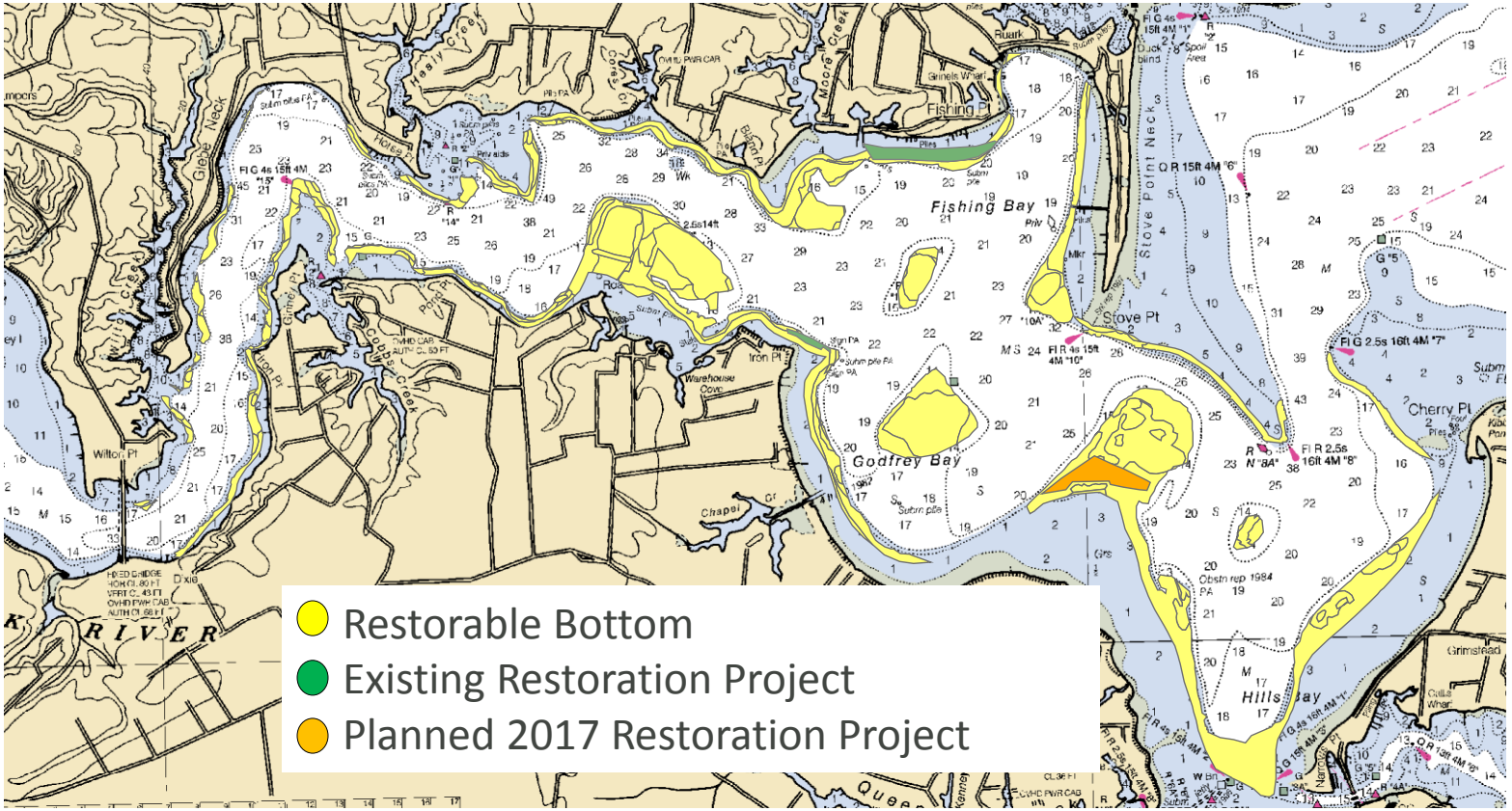
Lafayette River

- Oyster Metrics goal = 73- 146 acres acres
- Restoration target = 80 acres (approx. 70.5 acres have already either been restored, or are ‘relict reefs’ which meet Oyster Metrics density criteria)
- Need restoration on 9.5 more acres to reach 80 acres
- Cost estimate = $1.35 million
- 2017: Elizabeth River Project and Chesapeake Bay Foundation, with NOAA funding, to construct approx 2 acres.



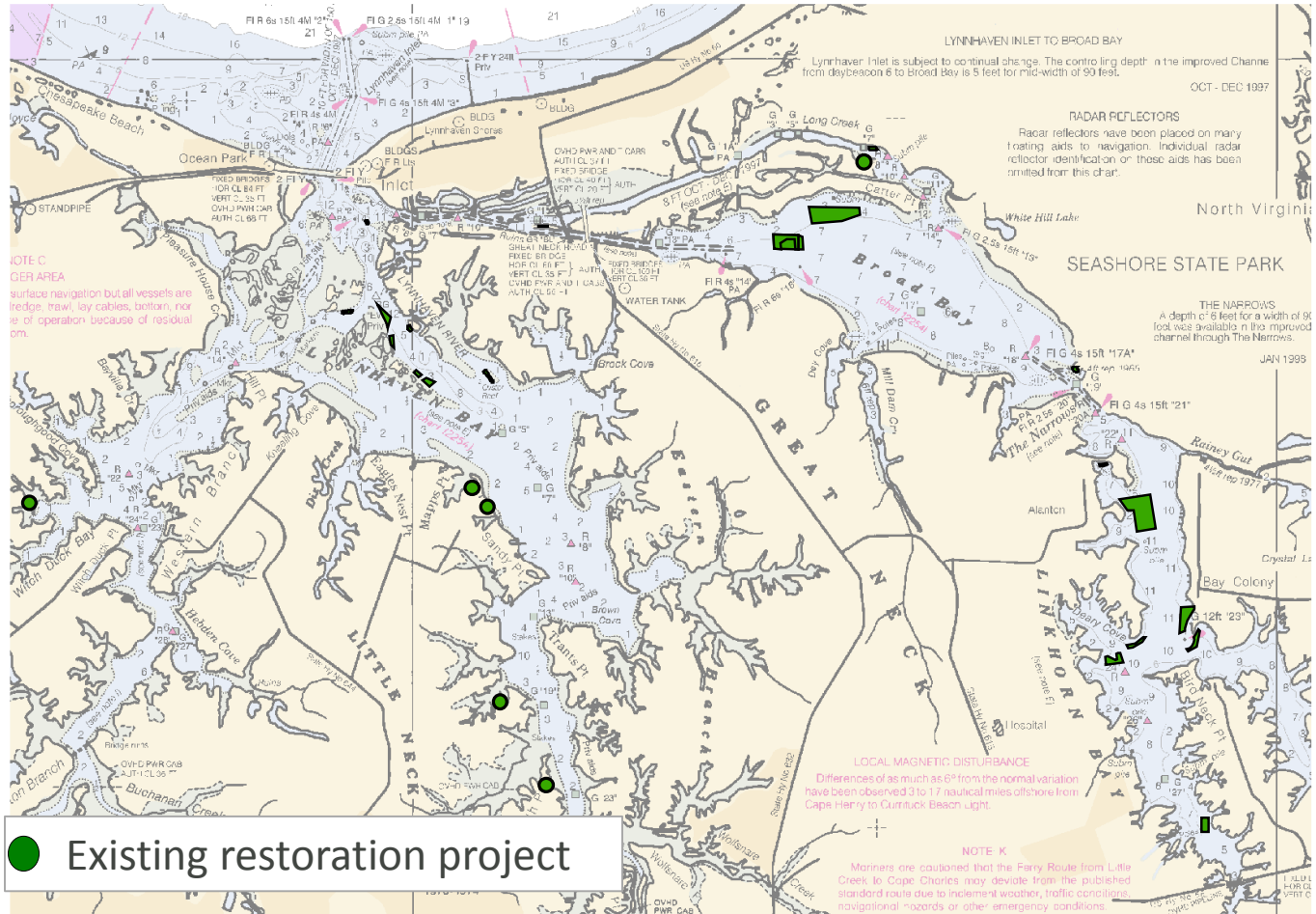
Piankatank River

- Oyster Metrics goal = 500- 1000 acres
- Restoration target = To Be Determined
  - Need population survey to determine amount of acreage the is currently 'functioning as restored' (meets Oyster Metrics density criteria)
- Recent/ planned construction:
  - TNC constructed 25 acres on two sites
  - USACE- Norfolk to construct approx. 25 acres spring 2017.



Lynnhaven River

- Developed draft Restorable Bottom Assessment to begin determining Oyster Metrics acreage restoration goal
- Note: USACE Master Plan has Lynnhaven goal of 90-200 acres (percent of historic); Oyster Metrics target still being developed.

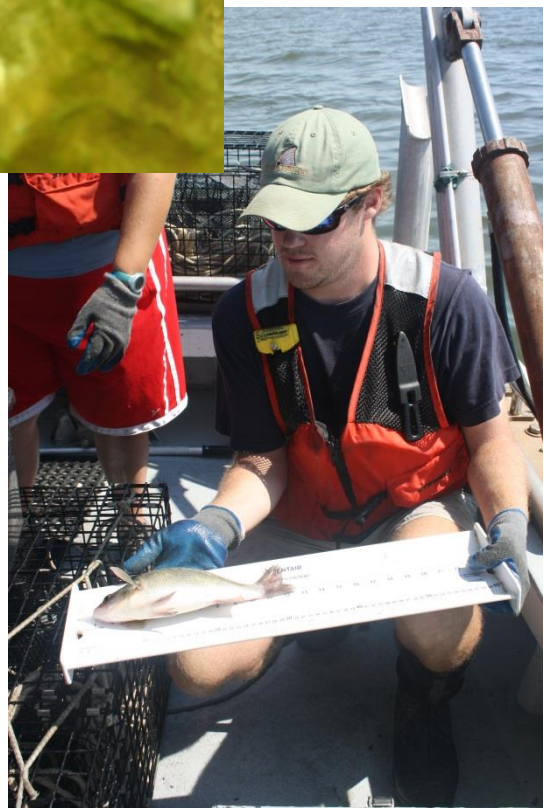


Oyster Reef Restoration Progress Dashboard

Tributary	Tributary Restoration Plan	Reef Construction and Seeding	Monitoring and Evaluation	Completed/Target Acreage (2015)
Harris Creek (Md.)	Complete	Complete	In Progress	350/350
Tred Avon (Md.)	Complete	In Progress		2.6/147
Little Choptank (Md.)	Complete	In Progress		85.8/440
Piankatank (Va.)	In Progress	In Progress		25/TBD
Lynnhaven (Va.)	In Progress	In Progress		63/TBD
Lafayette (Va.)	In Progress	In Progress		70/80

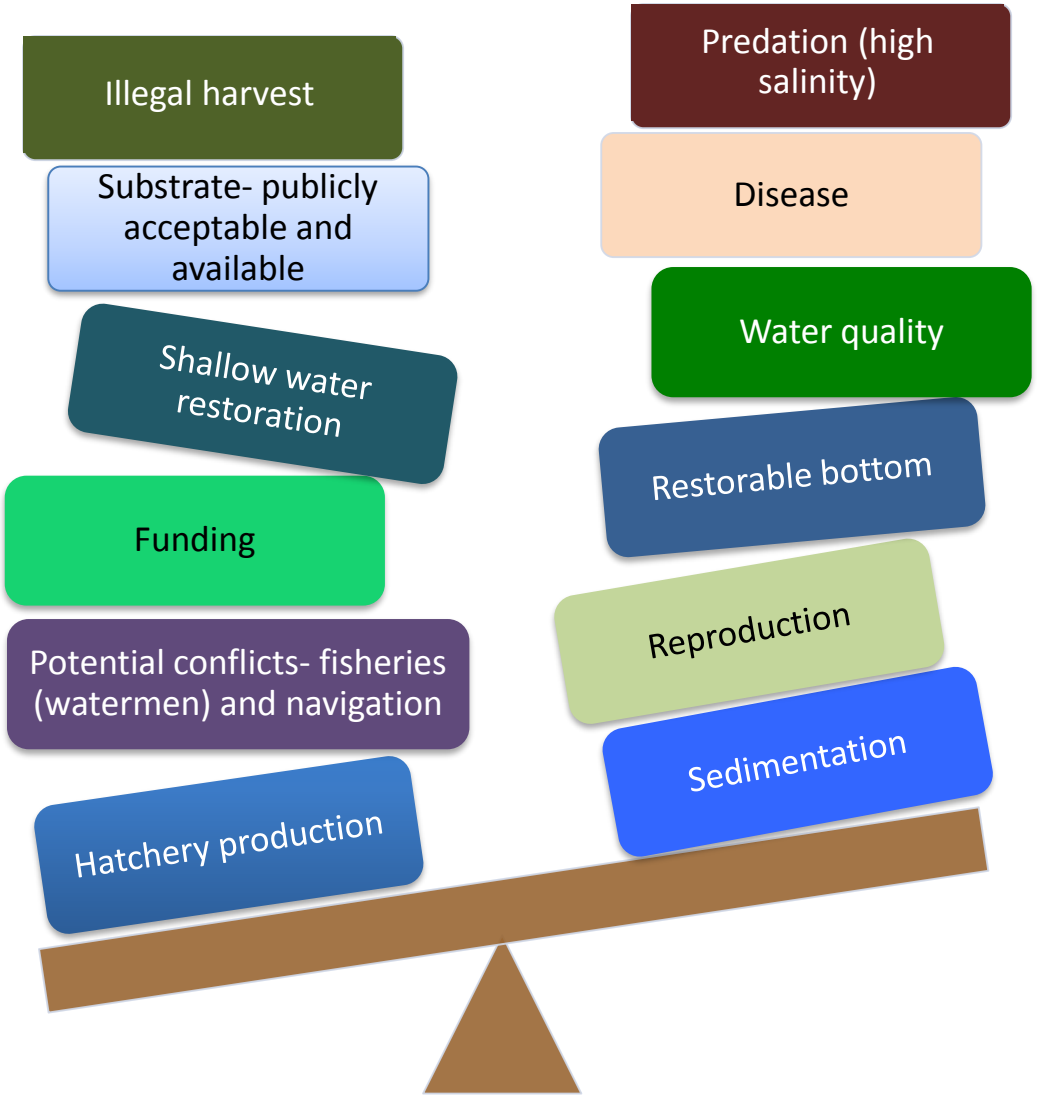
Ecosystem Services of Restored Reefs

- Enhanced denitrification
- Increased oyster survival
- Increased macrofauna density and biomass
- Foraging habitat for fish
- Seagrass colonization
- Measurable impact on water column properties



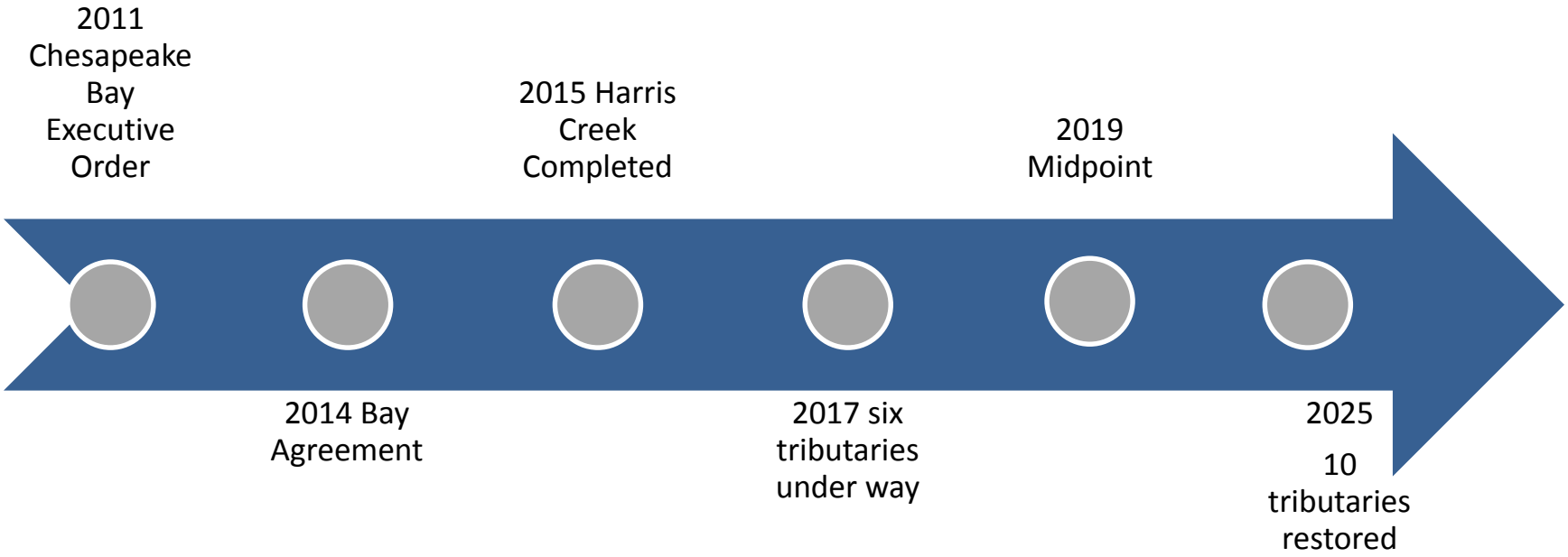
Factors Influencing

Socio-economic and political



Natural

Timeline


2011 Chesapeake Bay Executive Order
2014 Bay Agreement
2015 Harris Creek Completed
2017 six tributaries under way
2019 Midpoint
2025
10 tributaries restored

Next Steps

- Continue tributary planning
- Continue Implementation
- Select next tributaries in MD and VA
- Monitor and Evaluate toward metrics

Questions