

Urban Estuary Restoration: Large Scale and Co-Located Projects with Multiple Benefits

2018 Tidal Shoreline Management Workshop

Joe Rieger, Deputy Director of Restoration
(Elizabeth River Project)



The Elizabeth River Project

Mission: Restore the Elizabeth River to the highest practical level of environmental quality through government, business, & community partnerships.

- Ø Working on restoring the river for 25 years
- Ø 120 **River Star** facilities
- Ø Over 4,673 River Star Homes
- Ø **Government** projects with US Navy, NOAA, US EPA, VA DEQ, VA DCR, Norfolk, Portsmouth, Virginia Beach, & Chesapeake



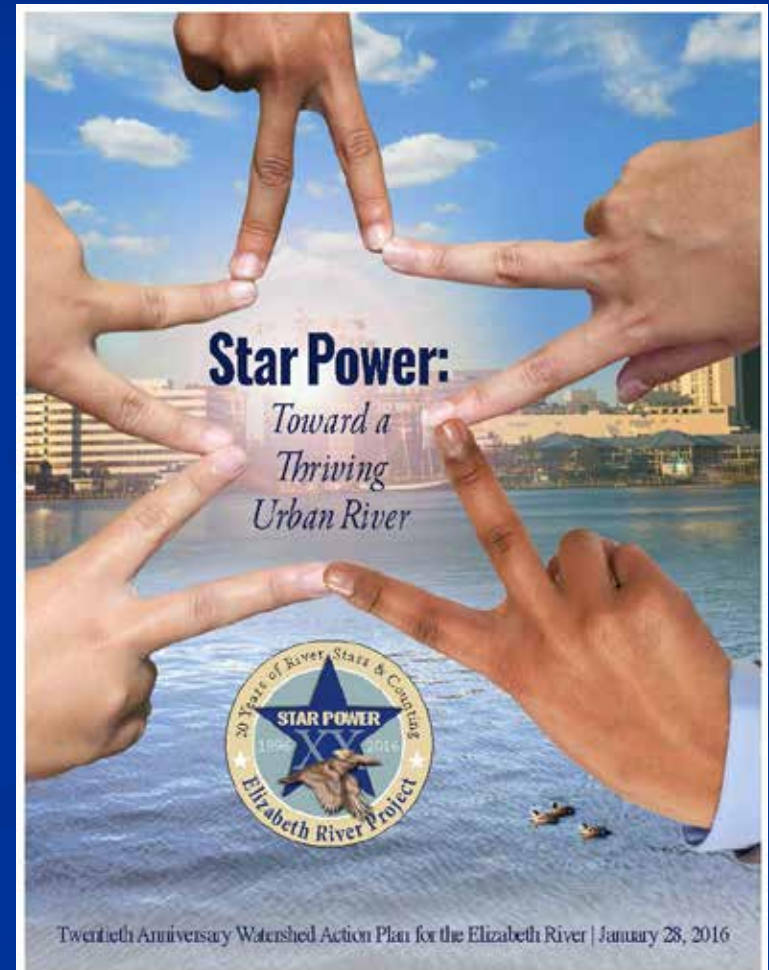
Elizabeth River Watershed



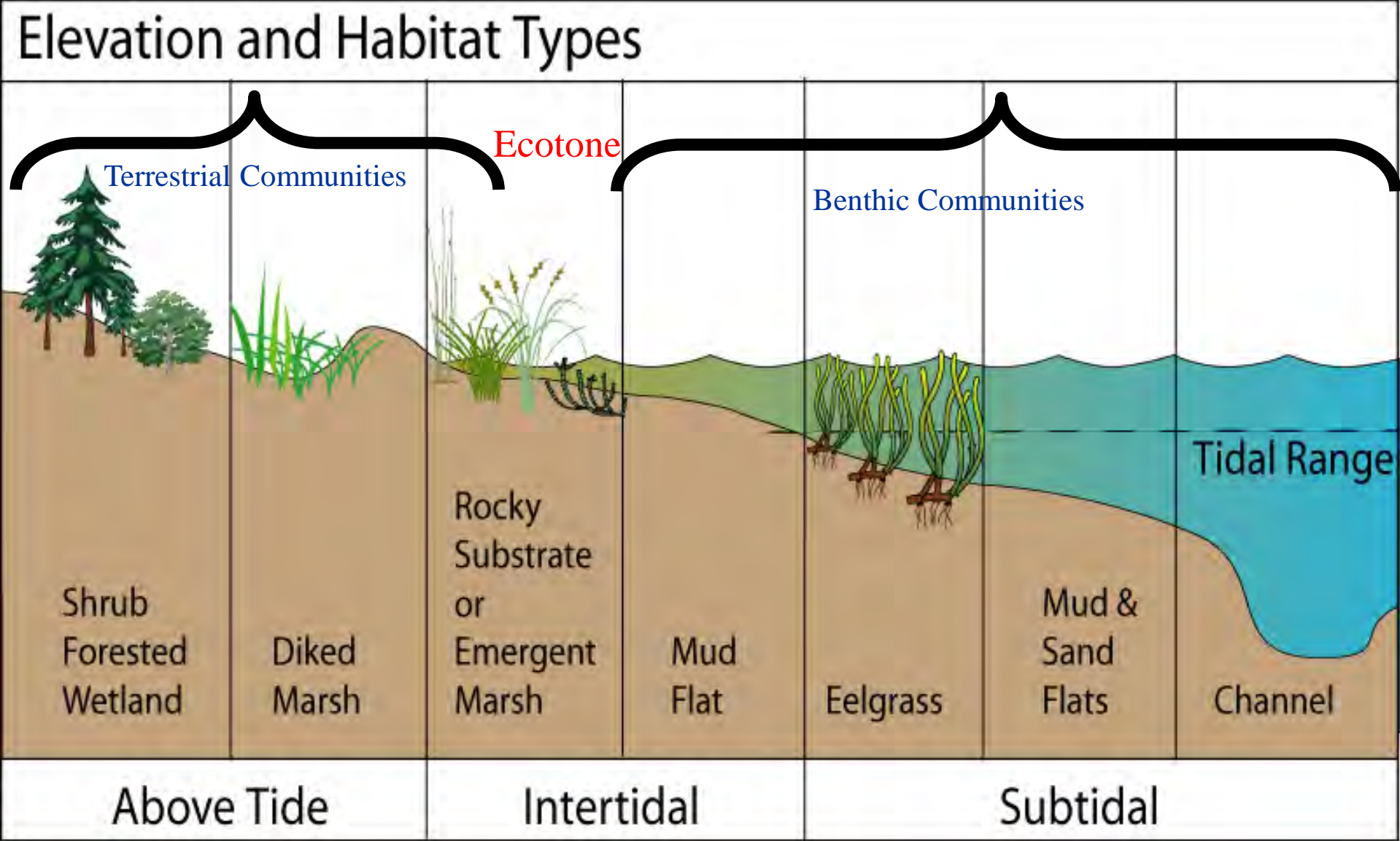
Action – Restore Resilient Shores

2025 Goal – Create or restore 20 acres of tidal wetlands and oyster reefs.

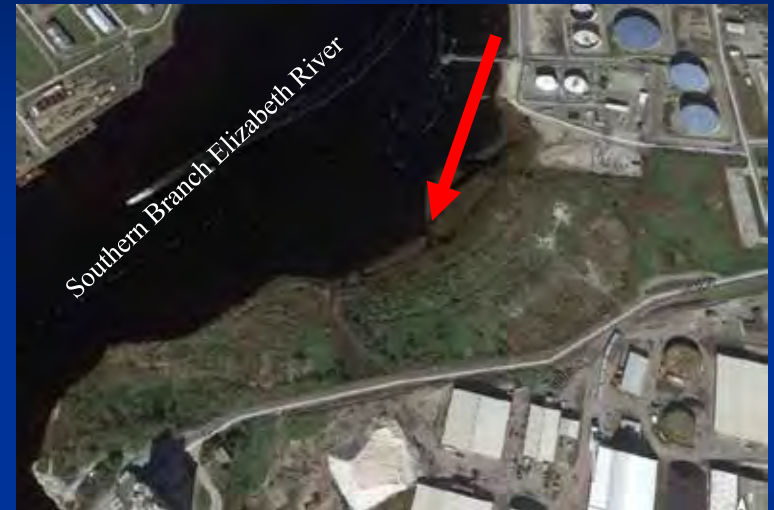
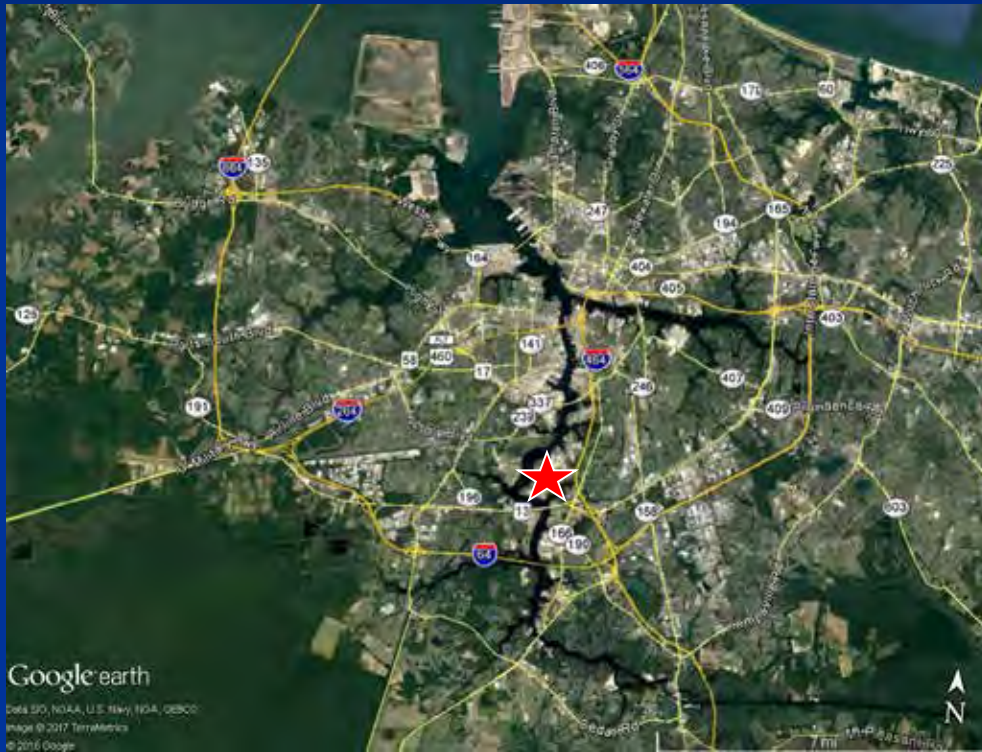
- Promote and carry out living shorelines and oysters reefs with citizens, government, business, and schools.



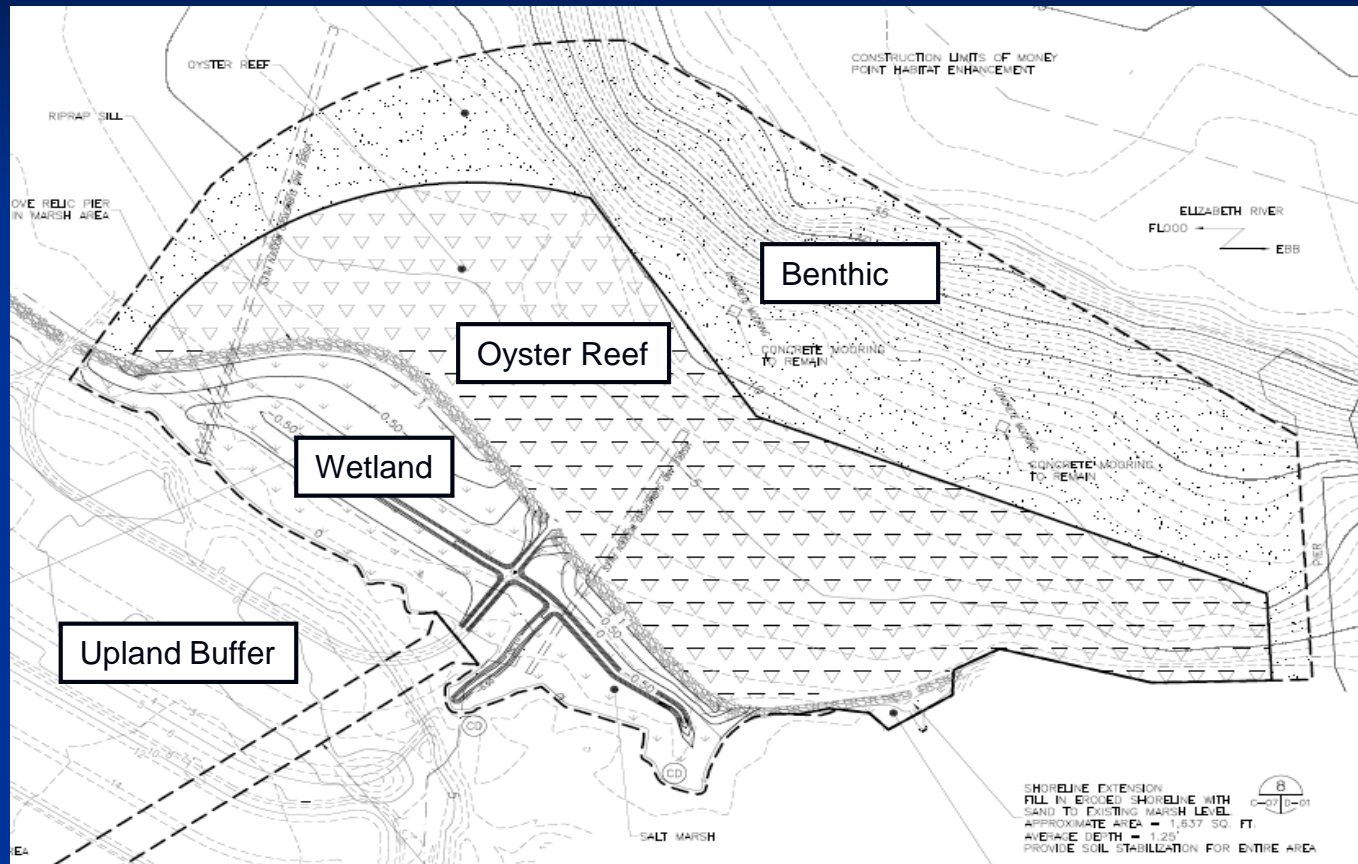
Habitat Continuum



Money Point Restoration Elizabeth River



Phase 2 Sand & Oyster Placement



Area 5

12 inches of restoration sand
12-18 inches oyster shell

Money Point Living Cap Chesapeake, VA



Living Cap



ERT Wetlands



Oyster Reef Restoration on the Lafayette River

Lafayette Winona



VA Zoo



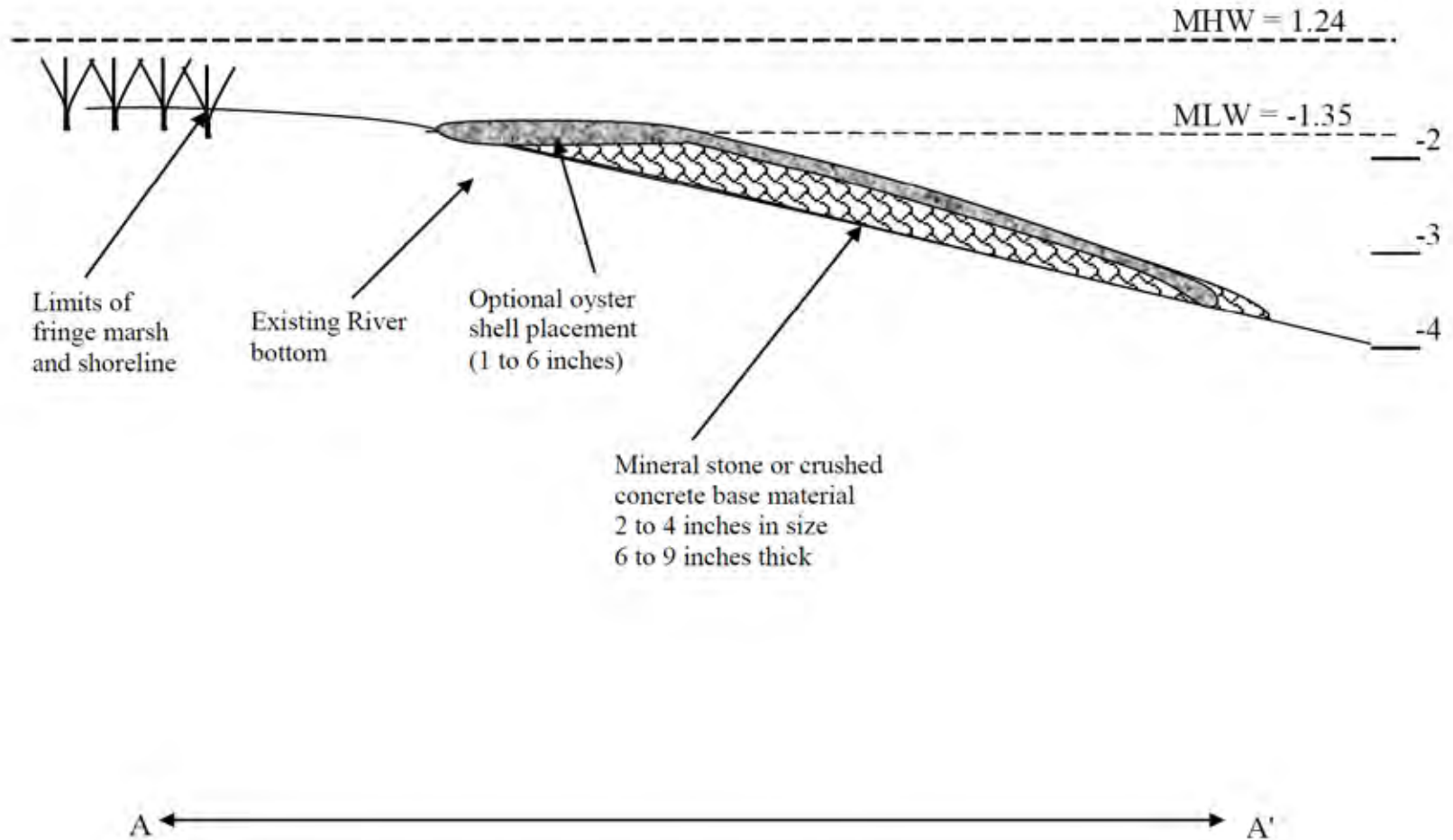
Knitting Mill Creek



Hampton Blvd



Cross-section of Typical Reef

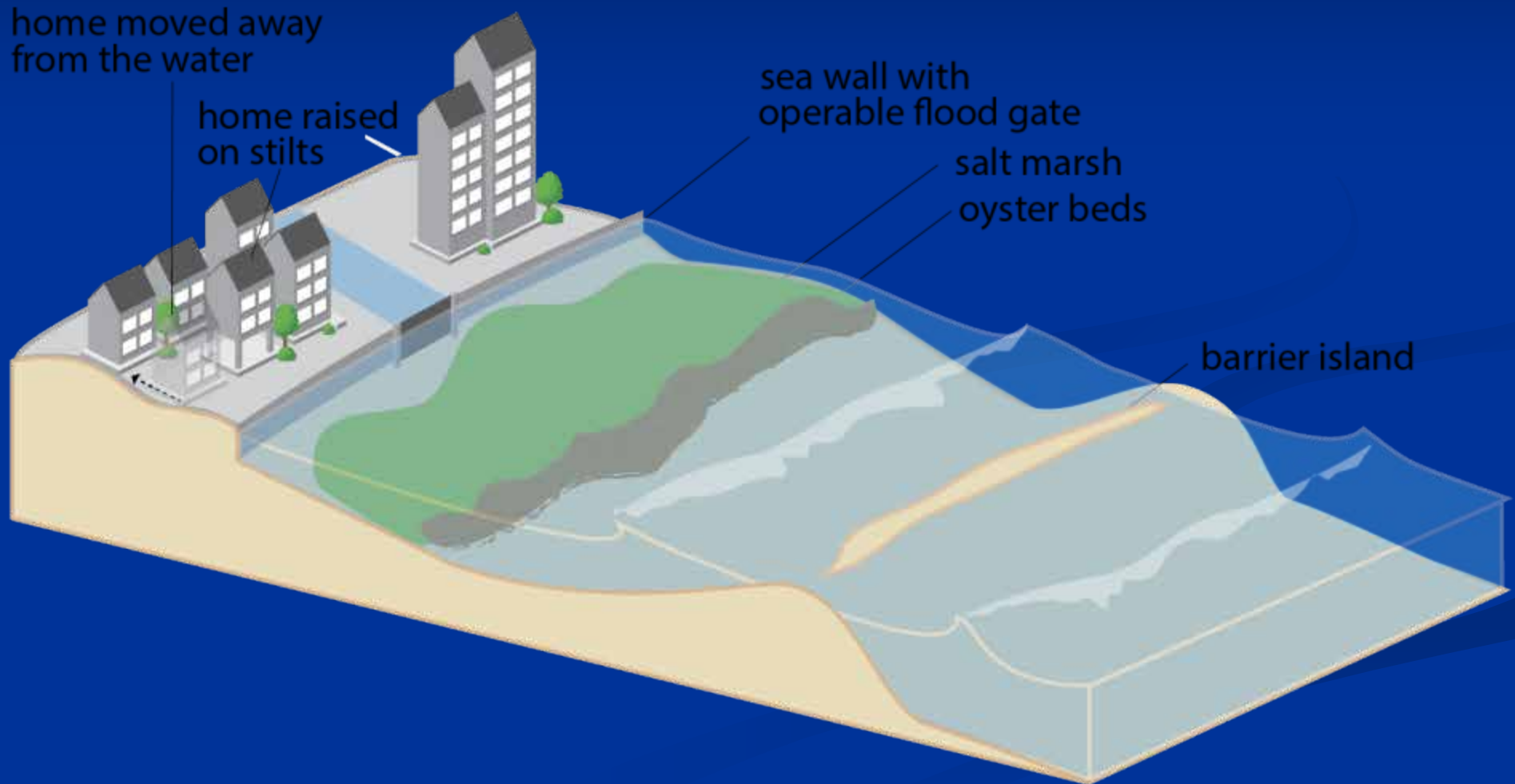


Note: Elevations listed above are in NAVD 88.

Nantuxent Hybrid Living Shoreline



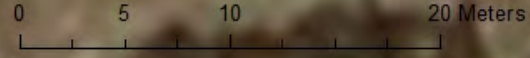
Hybrid Approach







- sq
- T t
- V v
- Breakwaters
- Log: In Tact
- Log: Damaged
- Vegline_Spring2016



Oyster Structures and Coastal Resilience



Diamond Face



Straight Face



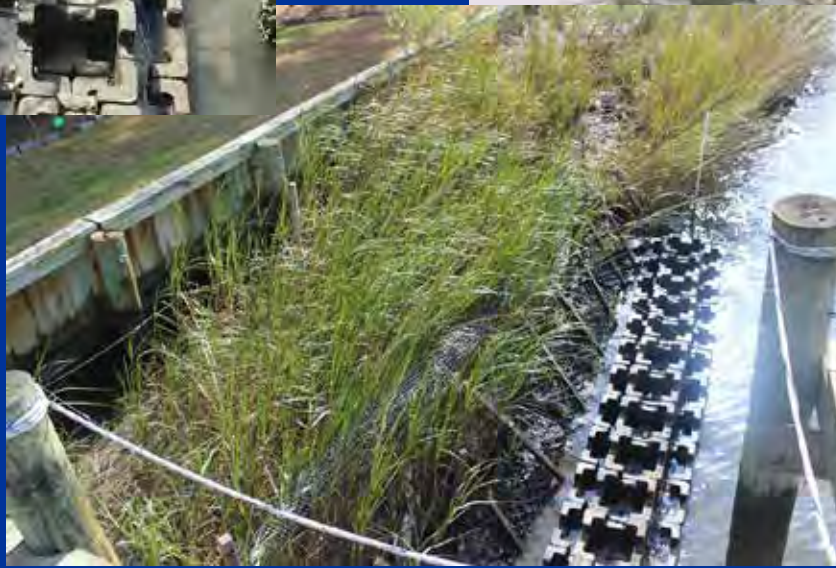
Zig Zag



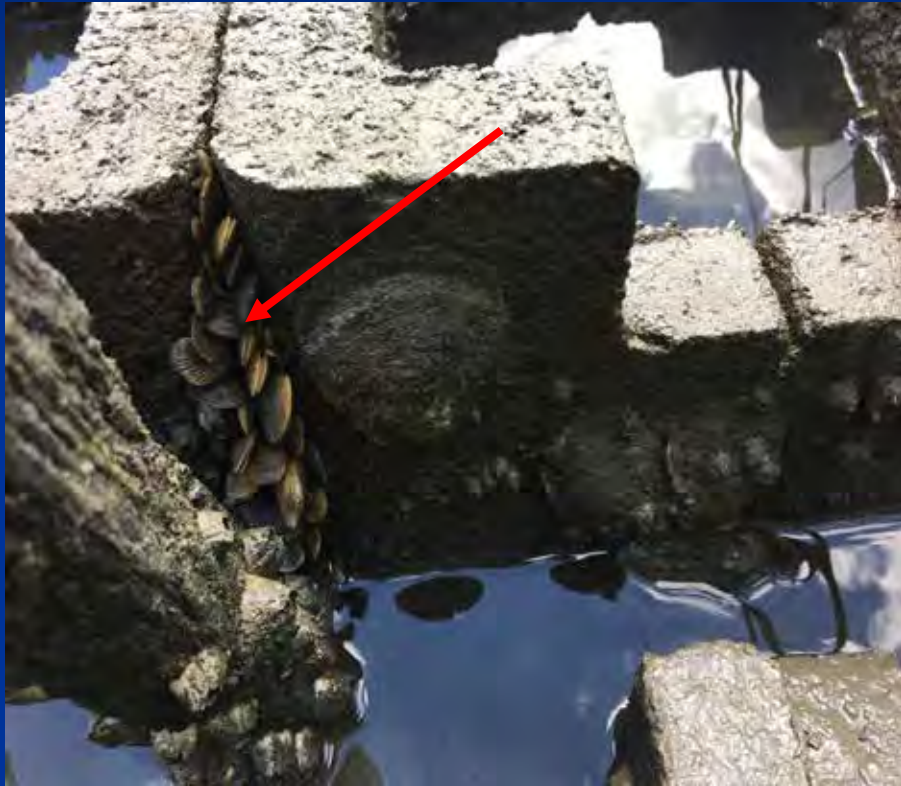
Install Completed By Volunteers



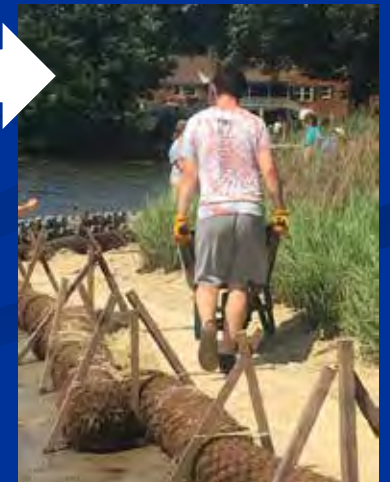
Oyster Castle Restoration Combined with Living Shorelines in Lafayette River



Oyster Castle Recruitment



Our Largest Living Shoreline Project – Rivercrest, Chesapeake 640 LF



HELP INSTALL A LIVING SHORELINE!



With Elizabeth River Project on Indian River in Chesapeake

Help us revitalize Indian River by constructing a 670-foot "Living Shoreline!" We will place some oyster castles, sand and native wetland grasses to protect the site from erosion and create habitat. We'd love to have you join us!

OYSTER CASTLES & SAND

Help install Oyster Castles® and place clean sand.

- WED, JUNE 13 (1P-5P)
- MON, JUNE 18 (8A-10A)
- TUE, JUNE 19 (8A-11A)
- WED, JUNE 20 (8A-NOON)
- THU, JUNE 21 (9A-1P)
- FRI, JUNE 22 (9A-2P)

Attire - Please bring gloves and wear shoes that can get muddy. We'll have tools, water, snacks, sunscreen, but please bring your own lunch (if applicable).

Age - This will be hard work, so we recommend adults or young adults and not young children.

RSVP - Grace Saunders, gsaunders@elizabethriver.org, 399-7487.

Contact numbers - Grace Saunders 651-3446, Pam 288-1379 or Joe 348-2047.

Location- 3800 Rivercrest Place, Chesapeake (off Indian River Road). Limited parking available at Rivercrest Condo. Overflow parking at Post Office next door (3810 Indian River Road).

Dates, duties, and times are subject to change due to weather or other factors.

PLANTING & FENCING

Help plant 2,000+ wetland grasses and install goose exclusion fencing.

- MON, JUNE 25 (NOON-4P)
- TUE, JUNE 26 (1P-5P)
- WED, JUNE 27 (2P-5P)
- THU, JUNE 28 (2P-5P)



Sylvan Street Norfolk This Past Weekend



Knitting Mill Creek Shoreline Restoration



New Product Ideas



Concrete Oyster Reef Restoration Tile
from Grow Oyster Reefs, LLC

Lessons Learned

- Start permitting early, be persistent with your permit writer, and try to permit multiple habitat projects together.
- We need to do better as a community sharing ideas and new designs for living shorelines.
- Never underestimate how much work you can get done with volunteers.
- Make sure you have a reliable contractor who is willing to use these materials.
- Always be looking for better materials and ways of building these projects (e.g. gap designs).
- Use high density coir logs