

Marling Farms “Beaches”

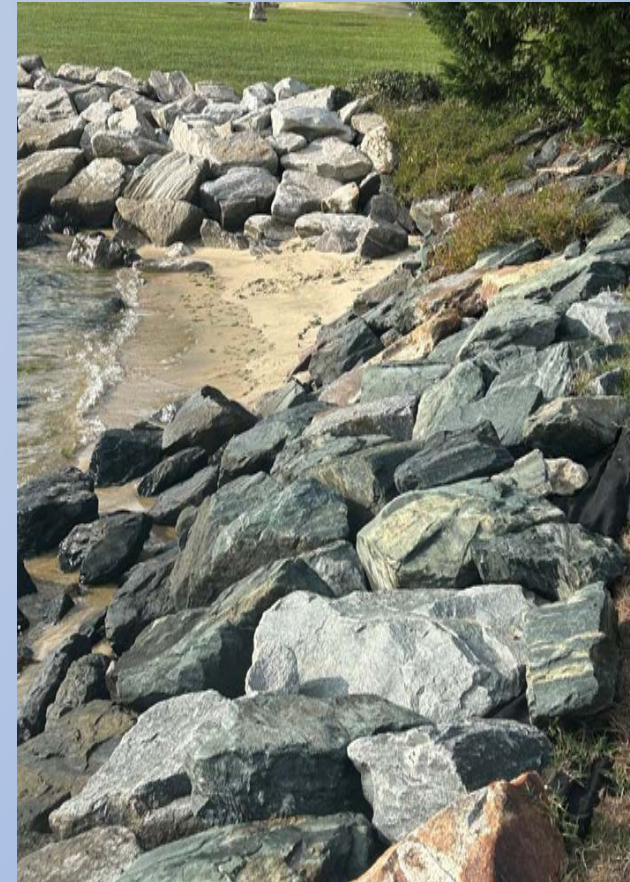


- Shoreline Erosion

- Infrastructure Deterioration

- Recent Activity

- Remediation Budgets



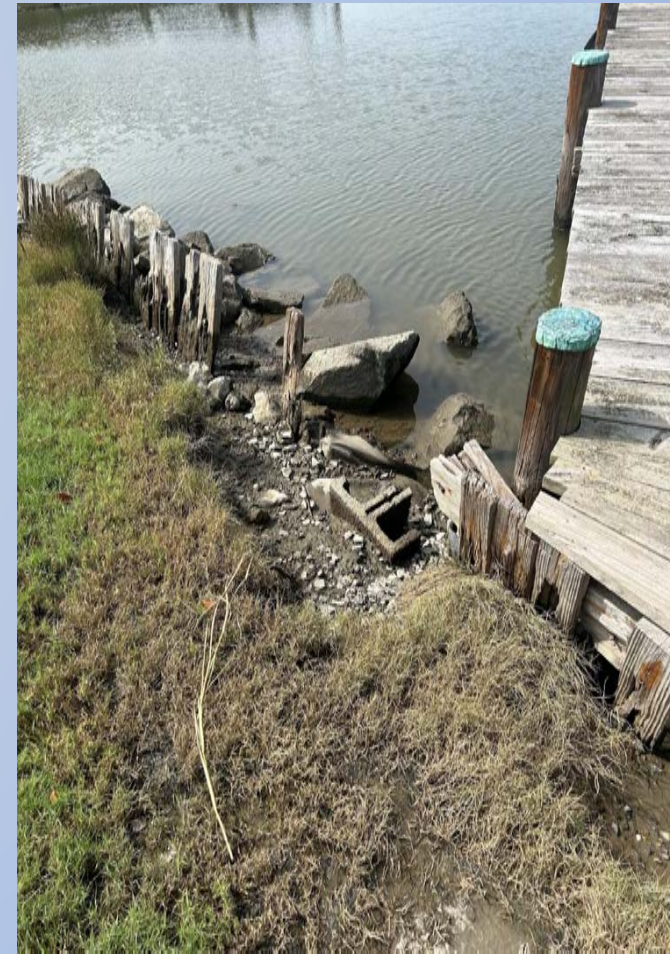
**SHORELINE
EROSION**

Whoa! Look at the time.
Gotta run..... but hey,
good luck with that erosion
thing.



Objectives of this Investigation

- To document shoreline erosion issues and notable deterioration of associated structures – bulkheads, piers, stone revetments, ramps, etc.
- Seek input and recommendations from the Maryland Department of Natural Resources on code compliant remediation methods and possible grant, low or no interest loan options. Get educated on the application and feasibility of “Living Shorelines” at Marling Farms beaches.
- Conduct site visits with local marine contractors to secure recommendations and budgetary estimates for potential large ticket projects.

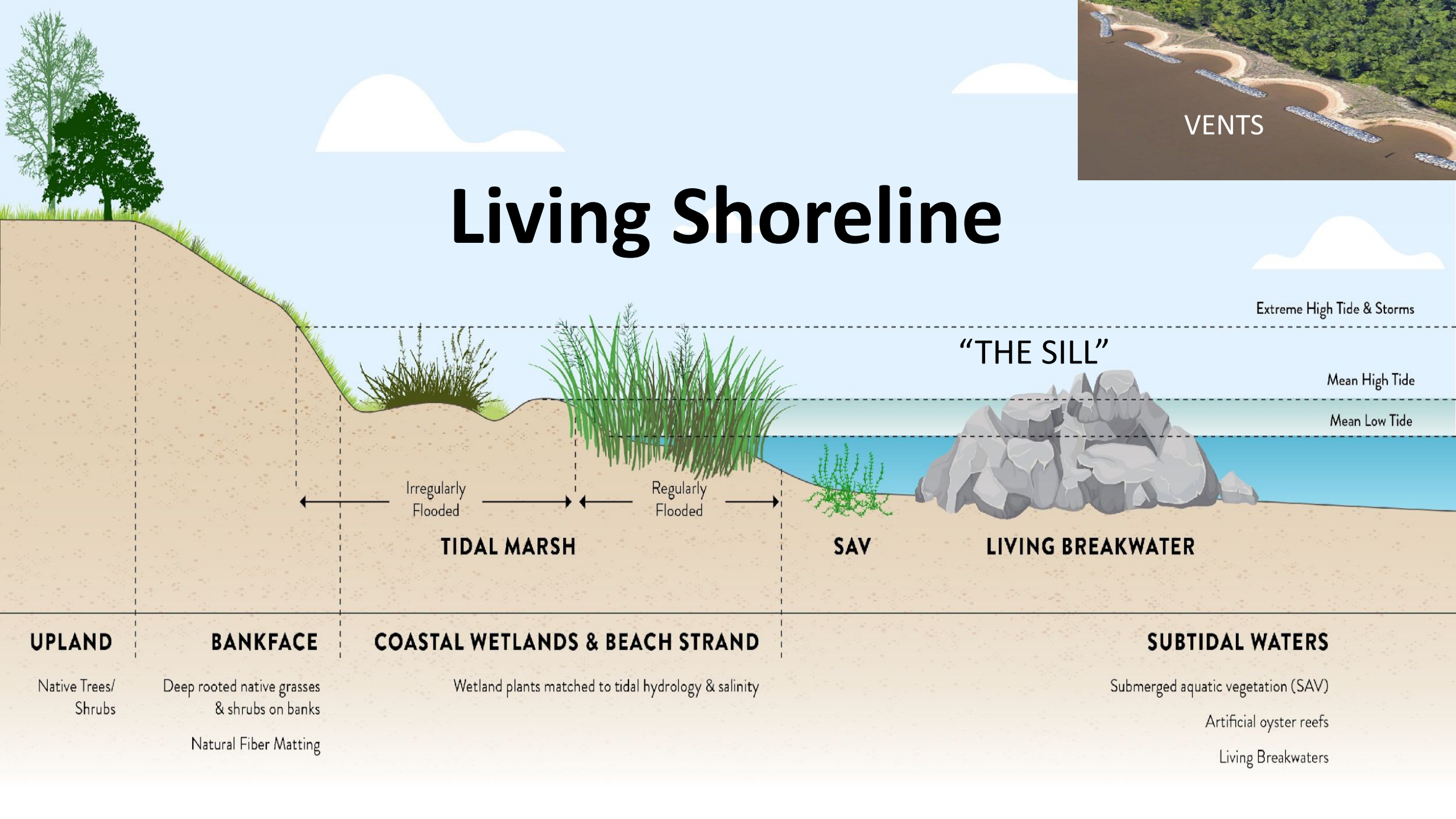


What is a “Living Shoreline”?

Living shorelines are the result of applying erosion control measures that include a suite of techniques which can be used to minimize coastal erosion and maintain coastal process. Techniques may include the use of fiber coir logs, sills, groins, breakwaters or other natural components used in combination with sand, other natural materials and/or marsh plantings. These techniques are used to protect, restore, enhance or create natural shoreline habitat.

(copied from the Md DNR Grants Gateway website)

Living Shoreline



UPLAND

Native Trees/
Shrubs

BANKFACE

Deep rooted native grasses
& shrubs on banks

Natural Fiber Matting

COASTAL WETLANDS & BEACH STRAND

Wetland plants matched to tidal hydrology & salinity

Irregularly
Flooded

TIDAL MARSH

Regularly
Flooded

SAV

“THE SILL”

LIVING BREAKWATER

Extreme High Tide & Storms

Mean High Tide

Mean Low Tide

SUBTIDAL WATERS

Submerged aquatic vegetation (SAV)

Artificial oyster reefs

Living Breakwaters



VENTS -10% of linear footage.

Potential Contractors

H&H Marine	Grasonville	Could not make contact via phone or website.		
Ches Shore Marine	Shady Side	Don Burgess	410-703-7211	Visited site.
T. Allen Marine		Todd Allen	410-804-1495	Visited site.
M & M Marine	Grasonville	Todd Kerchner	410-827-4977	Visited site.
Dissen & Juhn	Stevensville		410-604-1802	Offered referrals.
Shoreline Solutions	Centreville	Clay Campbell	410-924-7432	Visited site.
Big Island Ventures	Queenstown	George Johnston	410-991-0713	No response.
Weems Brothers, Inc.	Easton	Brandon Weems	410-822-0510	No bid, too busy.
Lerian Marine	Easton	Dan Lerian	410-822-7777	No response.



Department of Natural Resources

Phone Support:

Wesley Gould
Section Chief, Shoreline Conservation
Chesapeake & Coastal Service
Md Dept. of Natural Resources
Ofc: 410-260-8812
Cell: 240-434-1285

Shawn Ryan
Shoreline Conservation
Chesapeake & Coastal Service
Md Dept. of Natural Resources
Ofc: 410-260-8926
Cell:

Site Visit:

Nicole Carlozo
Section Chief, Waterfront & Resource Planning
Chesapeake & Coastal Service
Md Dept. of Natural Resources
Ofc: 410-260-8726
Cell: 410-980-3248

10/24 Kim Euler and Kevin Moore attending.

DNR Takeaways

Zero Interest Loan Program

- \$ 5M DNR loan fund to support Living Shoreline projects
- Funding for Design and/or Construction phases
- Distribution through local County tax administration
- Marling Farms applies for a “**S**pecial **T**axation **D**istrict” status
- Repayment appears as a line item on each homeowner’s County tax bill
- Requires 75% community buy-in (DNR encourages 100%)

Example: \$30,000 loan, 10 year term, 300 homes = \$10/yr for 10 years

DNR Takeaways

Grant/Loan Opportunities

- DNR website portal “Grants Gateway”
- Third party grant opportunities vary year to year
- Approval process is competitive, cumbersome and lengthy
- DNR focus is wildlife habitat (non-human wildlife)

Nicole went as far as to advise us not to use the word “beach” in any proposal or justification documents.

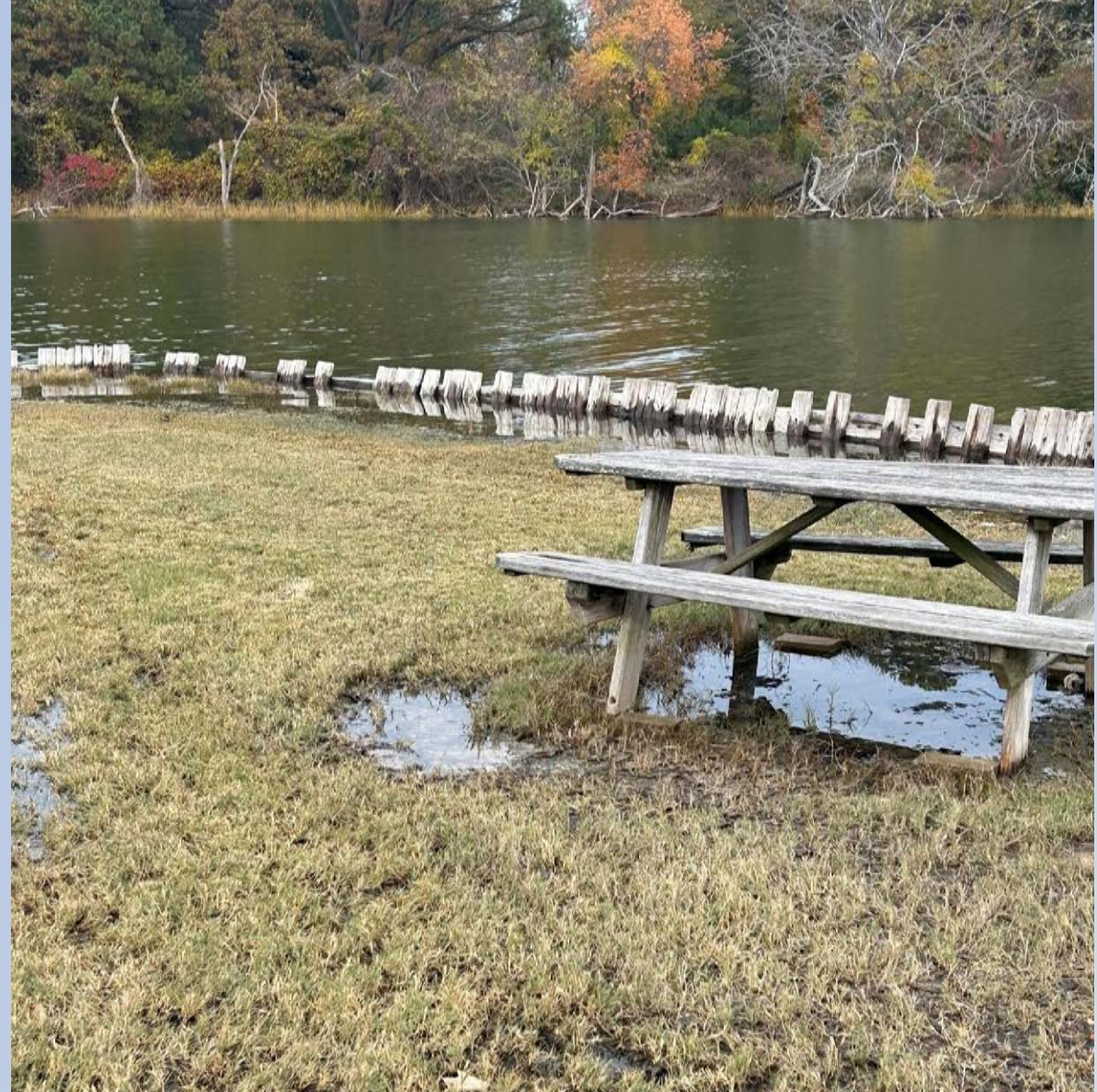


Beach 1 – Deteriorated Bulkhead



- Bulkhead totally decayed
- Sparse distribution of stone
- Considerable soil/grass erosion
- Little to no defense against wave
- Tidal flooding and rainwater runoff

Beach 1 – At High Tide



The Fishing Pier at Beach 1



- Easily accessible from mushy grass
- Structurally unsound
- Potential liability
- Who owns this pier?

Welcome to Marling Farms



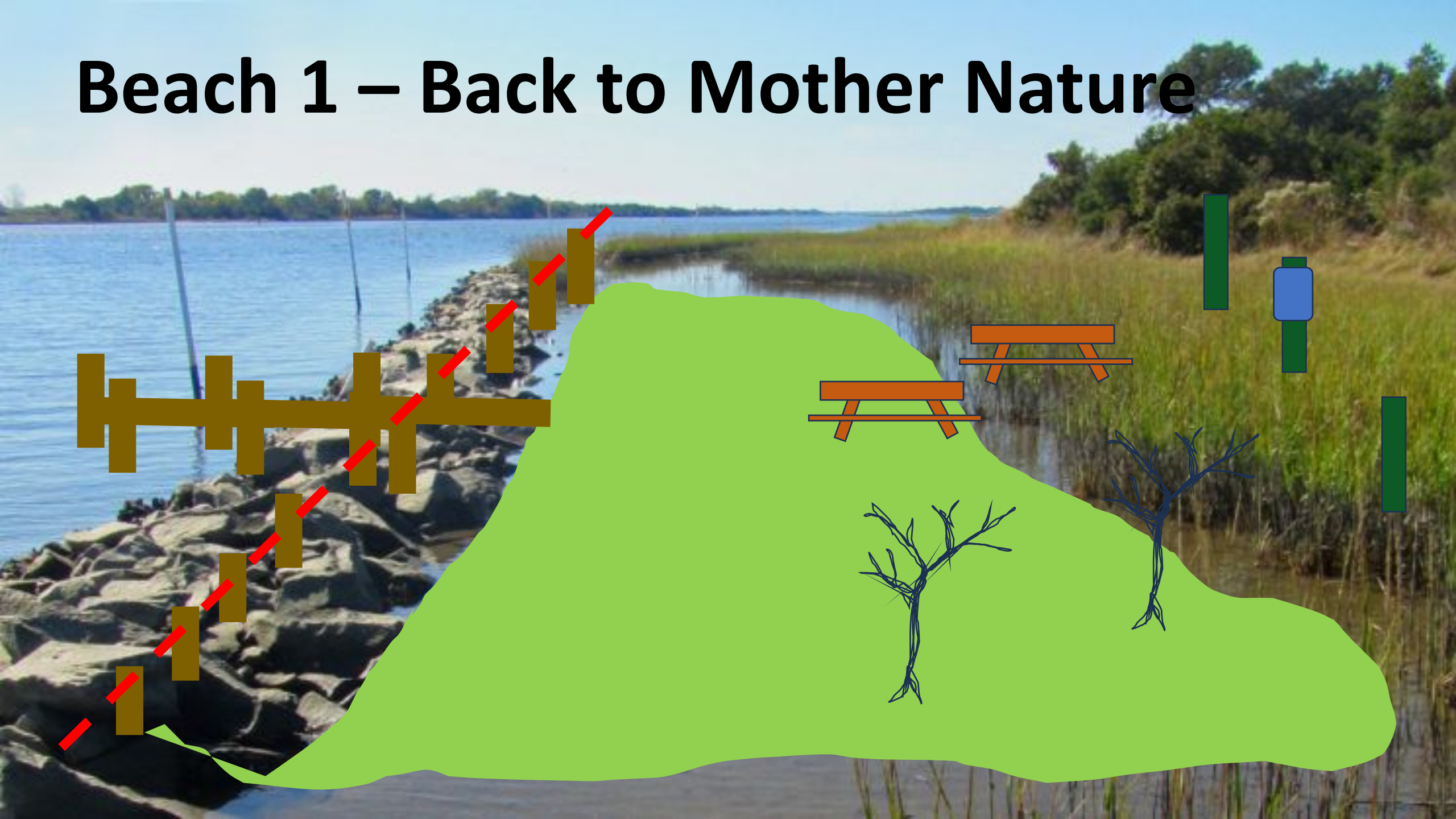
DNR Takeaways



Beach 1 Living Shoreline Cost/Benefit

- Living Shoreline carries too high a cost per benefit
- Provides no abatement of tidal flooding or runoff
- Does not restore area as “human friendly”
- Ruled out a “soil lift” (contractors agreed)
- Recommended a “back to nature” approach

Beach 1 – Back to Mother Nature



Beach 1 – Back to Mother Nature



Beach 2 Status



The Beach 2 revetment can be best described as a simple “rock dump”. There is no safe access across the rocks.

There is noticeable soil loss due to there being no “splash apron” behind the stone ridge.

Two trees at the revetment’s edge are dead or dying and should be removed.



The kayak rack and swing set are in good shape. The picnic table (not shown) is not.

There is a seasonal mat of rotting sea lettuce. Very bad odor.

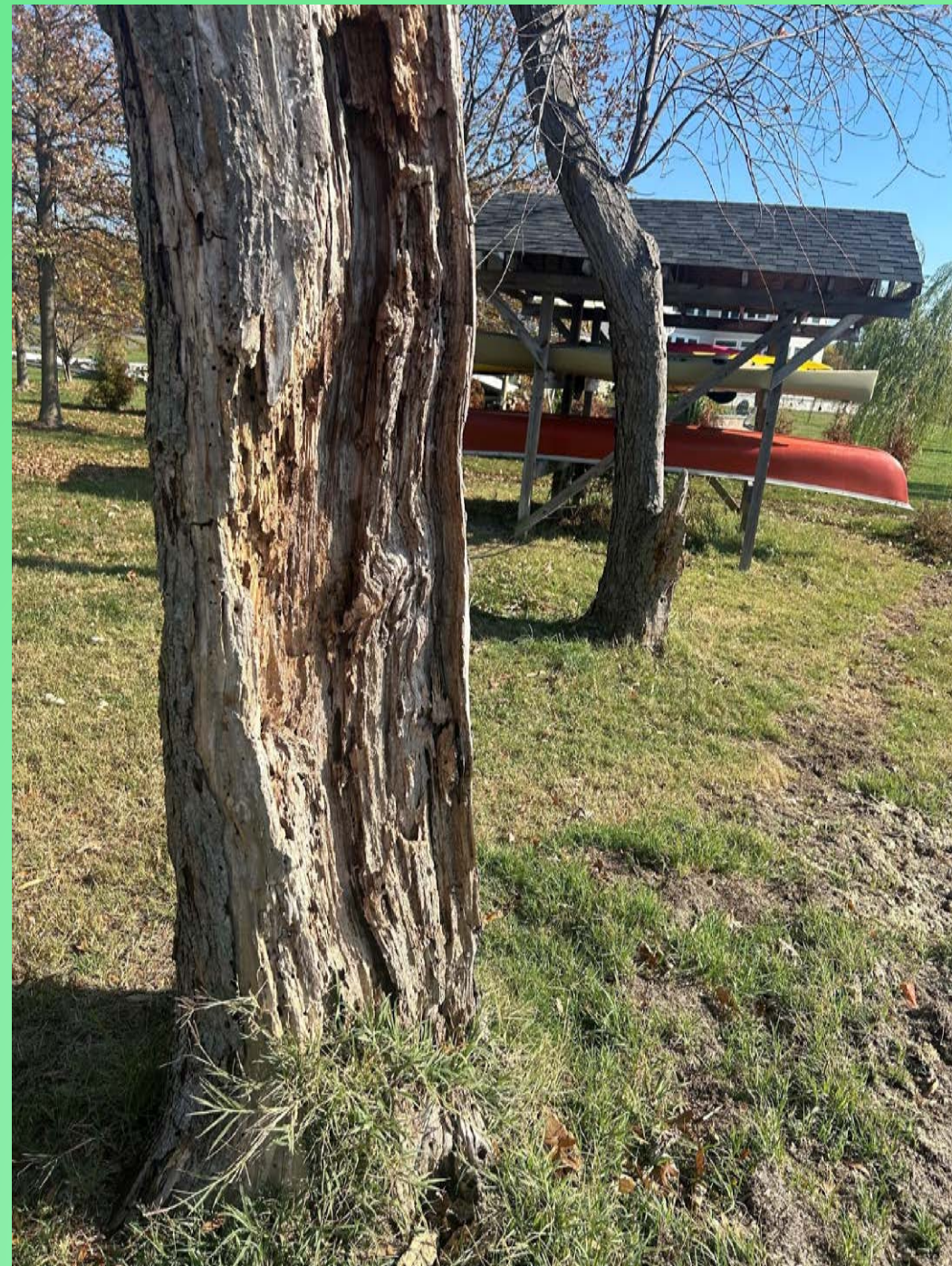


Beach 2 Rotting Sea Grass

- Expansive and thick floating mat of rotting sea grasses.
- Entire length of Beach 2.
- First noticed mid-October, lasts for several weeks.
- Extremely odiferous. (Smells like sewage run-off.)
- Environmental analyst?

Beach 2 Dead Trees

DIY
Opportunity



Stone Revetment w/Splash Apron



Lerian Marine



DNR Takeaways

Beach 2 Living Shoreline

- Good candidate for Living Shoreline
- Relocate stone as starting point for “sill” construction
- Cannot disturb existing sea grass (it would)
- Place sill closer to current stone location, marsh grasses inward



Beach 2 - Conceptual



- Add stone and reconfigure
- Create safer access to water
- Incorporate a “splash apron”
- Take down dead trees
- Add some playground equipment

Beach 2 has the potential to be a lower cost project with possibly a larger aspect of community volunteer work.

Beach 3 - Park is in Good Shape





Beach 3 Issues

- Soil erosion
- Loss of beach sand
- Dangerous access
- Dilapidated observation deck
- Boat ramp deficiencies



Beach 3

Stone Revetment

- Ridgeline “dips” 2 – 3 feet
- Extensive soil and grass erosion
- “Erosion funnel”
- Washout in front of deck
- Various large stone “roll-outs”

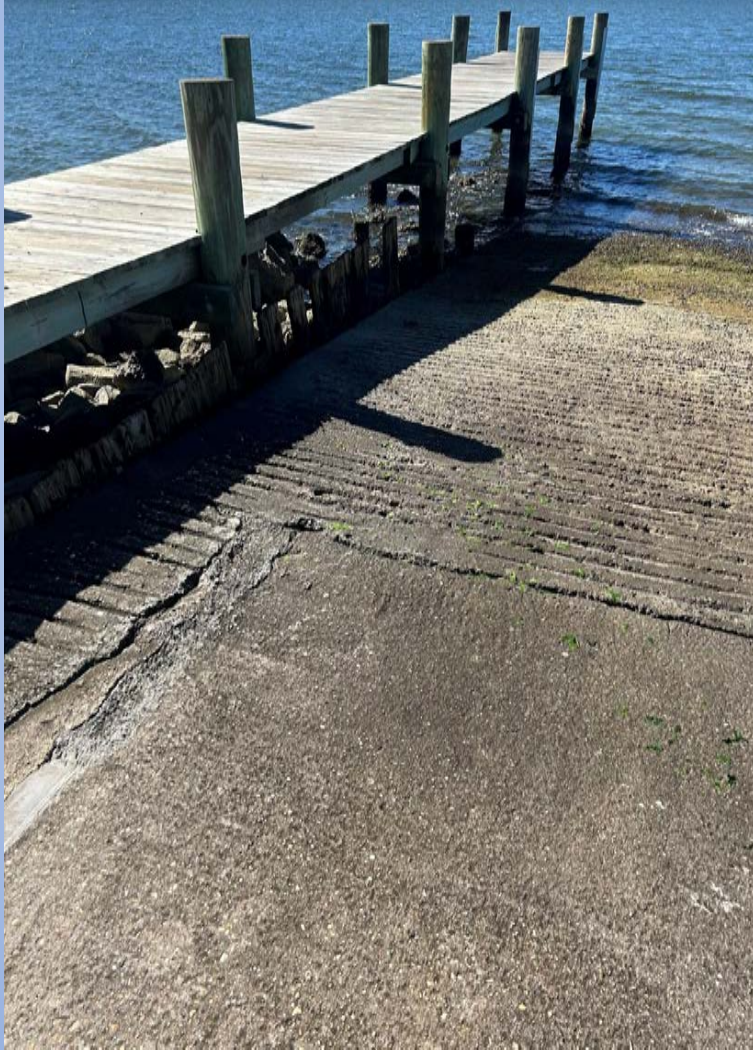


Beach 3

Or rather, what's left of it.

Those of you who have been around a while may recall when there were actually stairs to access Beach 3 and enough sand to spread a towel or lie in a chair as your children played.

Beach 3 Boat Ramp Issues



- No wave abatement
- Ramp is too flat - wet axles and tailpipes
- Ideal slope of a boat ramp is 7° to 8.5°
- Too steep – no traction on wet ramp
- Beach 3 ramp is at 4.8° vs. 7° minimal optimal.



Beach 3 Tree

The tree at beach 3 is showing similar signs of distress as that seen on the two trees at Beach 2. Not as bad, but this should stay on our radar. This tree falling down unsupervised could damage the pavilion.

(Or kill somebody!)

DNR Takeaways



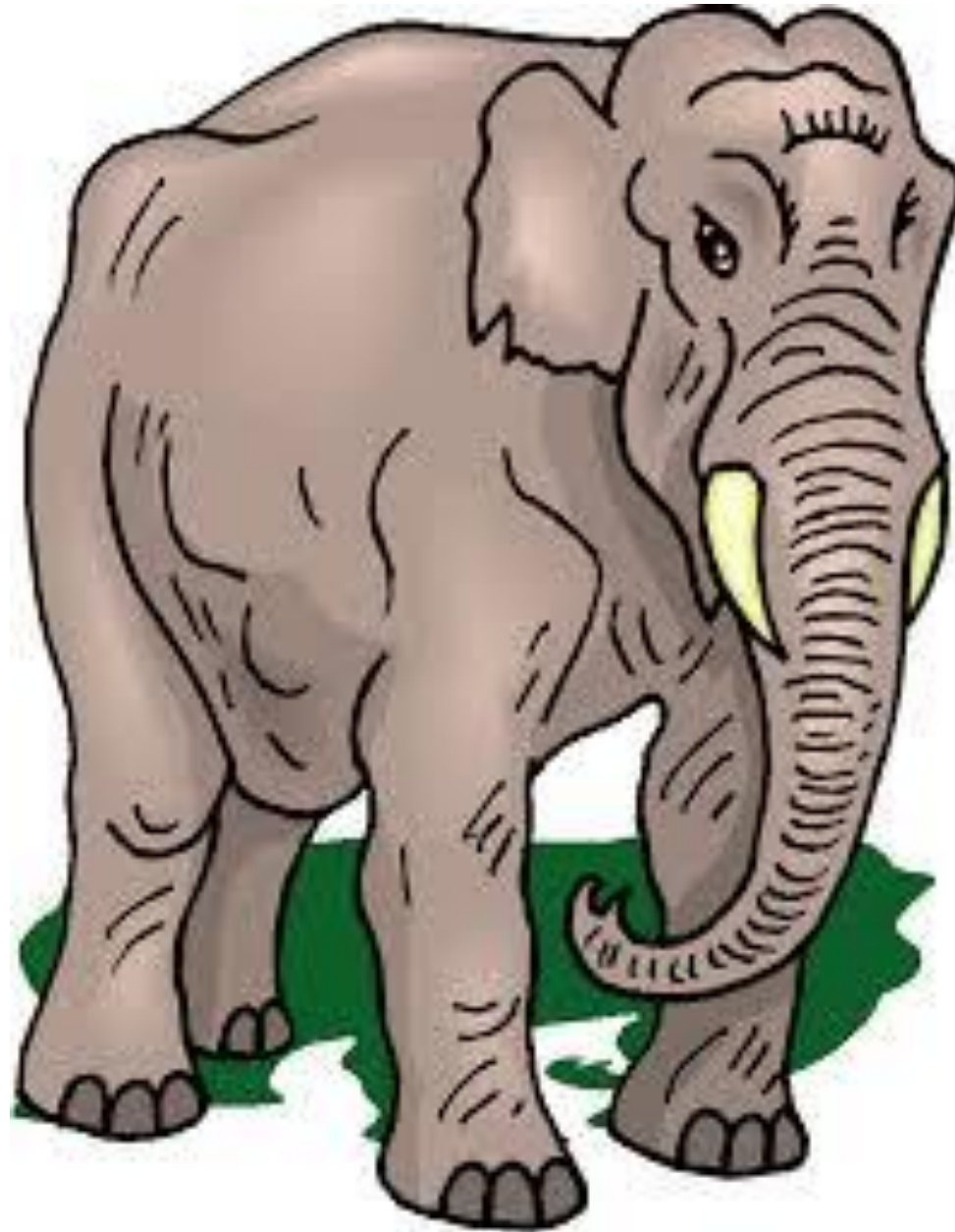
Beach 3 Funding Issues

- Revetment repair not likely a candidate for State or Federal assistance
- Must be associated with erosion or flooding of multiple homes

Living Shoreline?

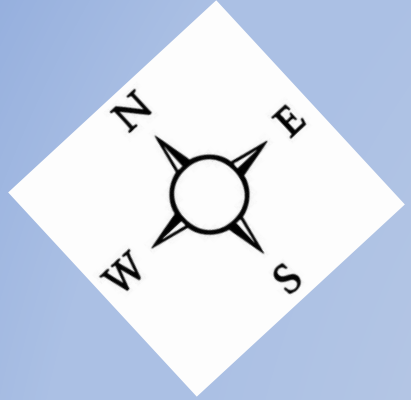
Nicole compared the length and topography of the Beach 3 revetment to a recent Living Shoreline project with which she was associated. Her recollection was that the cost of design and construction on that project was on the order of a quarter of a million dollars. \$\$\$\$\$\$

How do you
eat an
elephant?



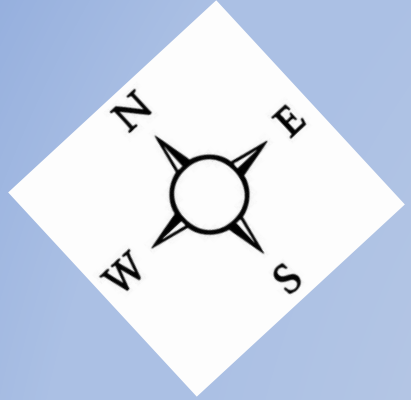
One bite at a time.

Beach 3 - Conceptual - As Is



Boat Ramp

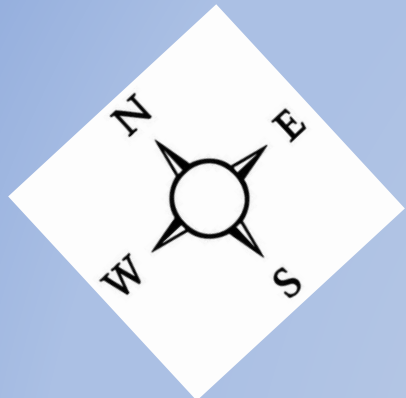
Beach 3 - Conceptual - Phase 1A



Demolish the observation deck.

Repair the revetment.

Beach 3 - Conceptual - Phase 1B



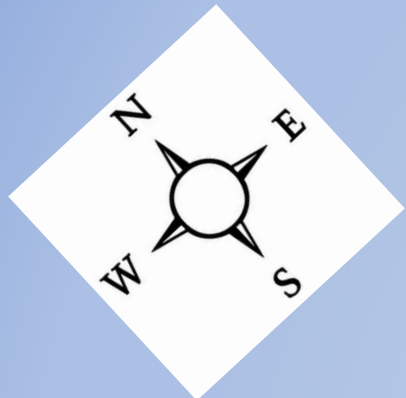
New stone steps.

Two new pilings.

New jetty perpendicular.

Beach 3 - Conceptual - Phase

2

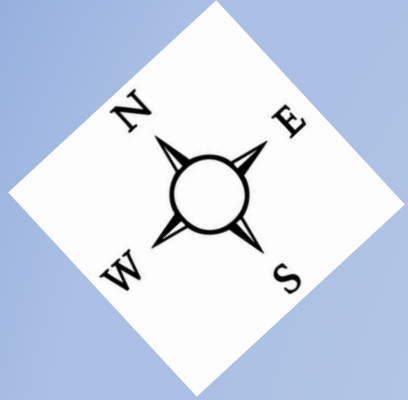


Restore the
observation
deck.

(Potential
DIY.)

Beach 3 - Conceptual - Phase

3



Expand the jetty system to include legs parallel to the shore.

Beach 4 Status

The Beach 4 bulkhead is in good shape and does not receive as harsh a beating as do Beaches 2 and 3 when severe storms roll in. There is no serious soil erosion in this area and it already has an attractive and self-maintaining shoreline.

The kayak rack at Beach 4 is in good working order. However, the swing set, grill and picnic table area there could certainly use an upgrade at some point.





Beach 1 Budgetary Costs

- Demolish pier and bulkhead. \$ 85 – 110 K
- Create 170 - 220 feet of Living Shoreline.
- Additional sand and 2000 marsh plantings.

- Demolish pier and bulkhead. \$ 15 – 20 K
- Plant marsh grasses along existing shoreline.

DIY opportunity. (Bulkhead and pier demolition.)

Beach 2 Budgetary Costs

- Remove two dead and dying trees. \$ 25 K
 - Add to and re-configure existing stone.
 - Create “splash apron” of flat stone or gravel.
 - Safer access to beach for canoe and kayak users.

 - Living shoreline. (No direct quote, but comps.) \$\$\$
- DIY opportunities. (Tree removal, gravel apron.)

Beach 3 Budgetary Costs

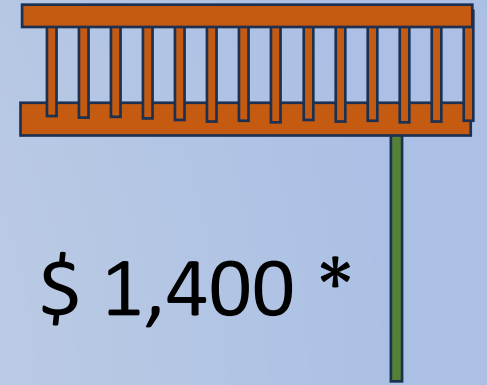
(Phases 1A and 1B.)

- | | | |
|----|---|--------------|
| 1A | - Demolish the observation deck.
- Repair the erosion funnel.
- Repair stone “roll-out” locations. | \$ 15 – 35 K |
| 1B | - Reconfigure stones as “steps” in NE corner.
- Add pilings for future observation deck.
- Add perpendicular jetty. | |

Beach 3 “Stretch” Projects

(Phases 2, 3 and the boat ramp.)

- Rebuild the observation deck (in kind).
(Phase 2) * DIY – Material cost only
- Additional jetty legs to better retain sand.
(Phase 3.)
- Renovate the Boat Ramp ??

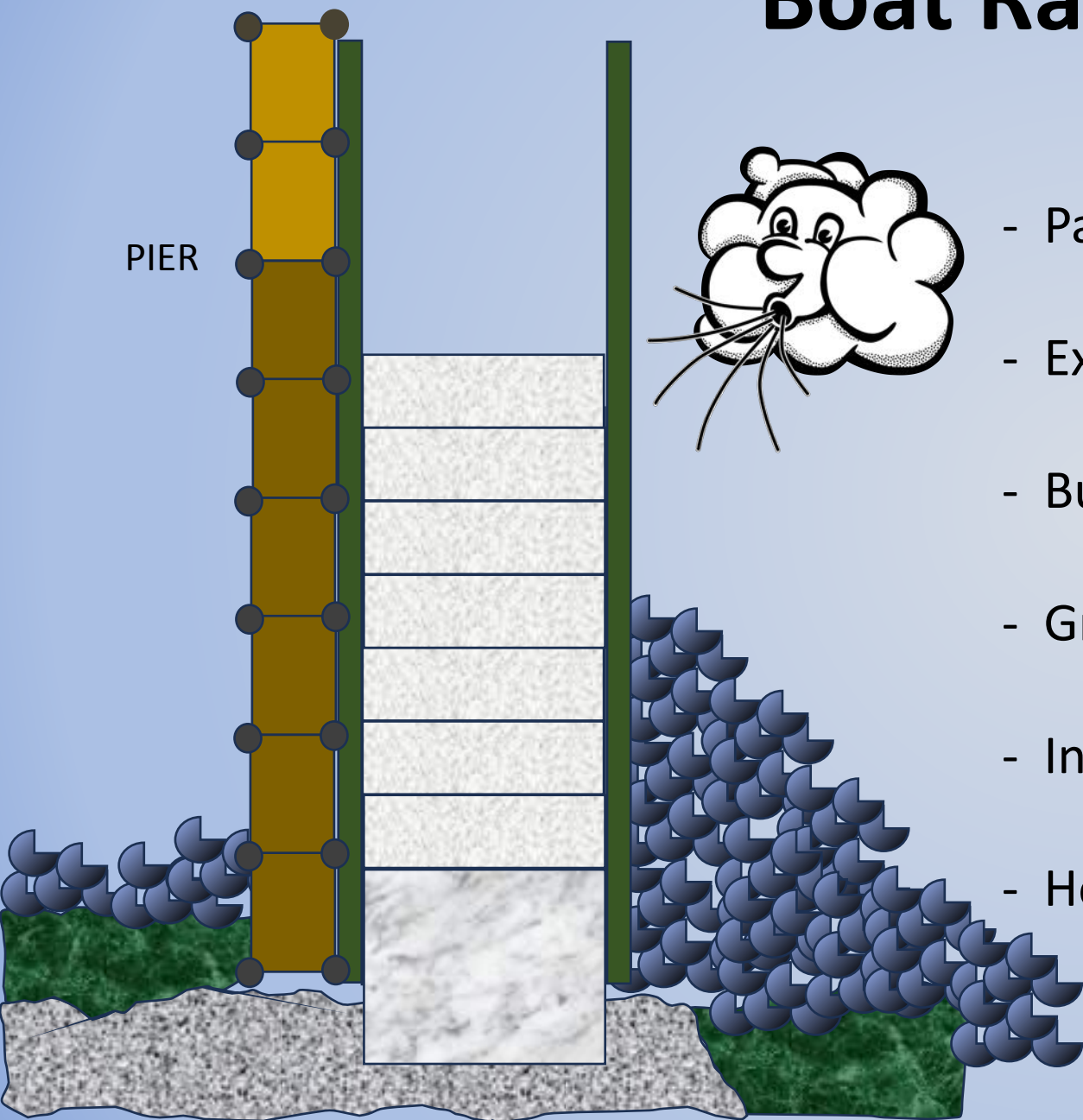


\$ 1,400 *

\$ xx K

	16'	20'
In Kind	1400	1700
Trex/Stain	1700	2100

Boat Ramp Construction



- Partial demolition of the existing ramp
- Extend the pier to deeper water
- Build timber breakwaters both sides of ramp
- Gravel fill to establish new grade (slope)
- Install pre-cast concrete planks (interlocking)
- Horizontal slab to connect ramp to parking lot

\$ 85-100 K

What Comes Next?

- Clarification of legal standing of Marling Farms (HB 107)
Who owns the beach properties?
- By-law revision and adoption (Restructured accounting)
- Gauge community support for large ticket improvements
- Design phase (plans, drawings and written specifications)
- Explore grants and financing options
- Secure firm-price bids, hire a contractor, manage the project



o
**great place to
live!**



**Questions or
comments?**