COASTAL TECHNOLOGIES

Revolutionary Products based on Proven Efficacy and Established Principles of Geomorphology, Sedimentology & Natural Sciences

They are SOLUTIONS, not band aids

- **Mitigation of Coastal Erosion**
- **Passive Shore Rebuilding**
- **Bluff, Cliff, Slope & Shore Stabilization**
- **Coastal Wave Surge Control**
- **Mudslide Mitigation**
- **Shellfish Reef, Water Bioremediation**

Awarded 13 US Utility Patent Claims

Internationally Patent Pending

Quick & simply installation. No cranes, barges or heavy equipment are required, and are endlessly adjustable-in-the-field.

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Deposition & Wave Erosion Control:

CTC's patented systems accrue sand the way plants evolved to trap & hold sediments, by flexing to slow water & wind forces, protecting shores and causing sediments to drop out of suspension. Capturing sediment in this manner is an ***additive process .***

Conversely, nourished-sand washes away in a continuous ***subtractive cycle*** from the very moment it is applied. This sand is also inherently less stable, speeding its erosive depletion.

In addition, CTC systems do not block littoral drift as hard barriers do. Shoreline is rebuilt naturally.

Promotion of Vegetation:

CTC technologies function to allow ***plants or reef to establish*** where continuous erosive pressures prohibit colonization.

This unique resilience ability at shores, floodplains, river banks, mudslide paths, etc. is revolutionary and proves new methods to protect vulnerable communities and cause crucial positive ecological feedbacks.

Problem:

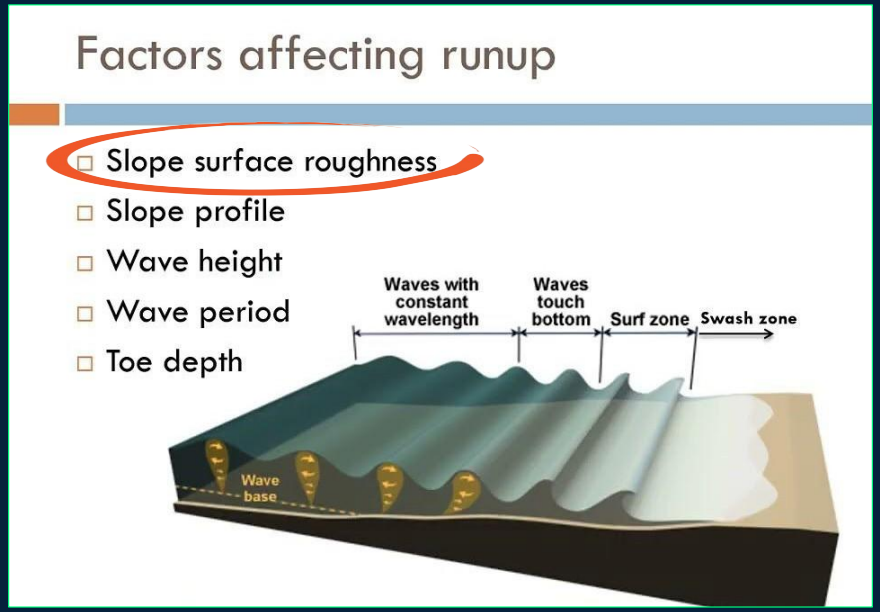
Coastal Surge Damage & Beach Erosion

NOAA:

“Wetlands dissipate wave energy by *creating drag, friction, & turbulence* ”

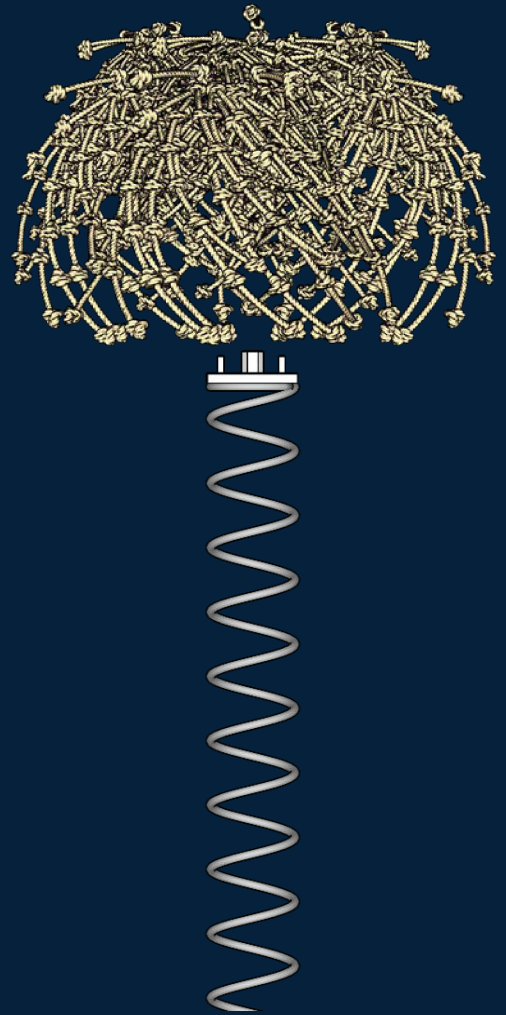
“Coral reefs reduce wave energy up to 97% through *bottom friction* ”

Sand beaches provide low resistance to wave runup due to their shifting nature

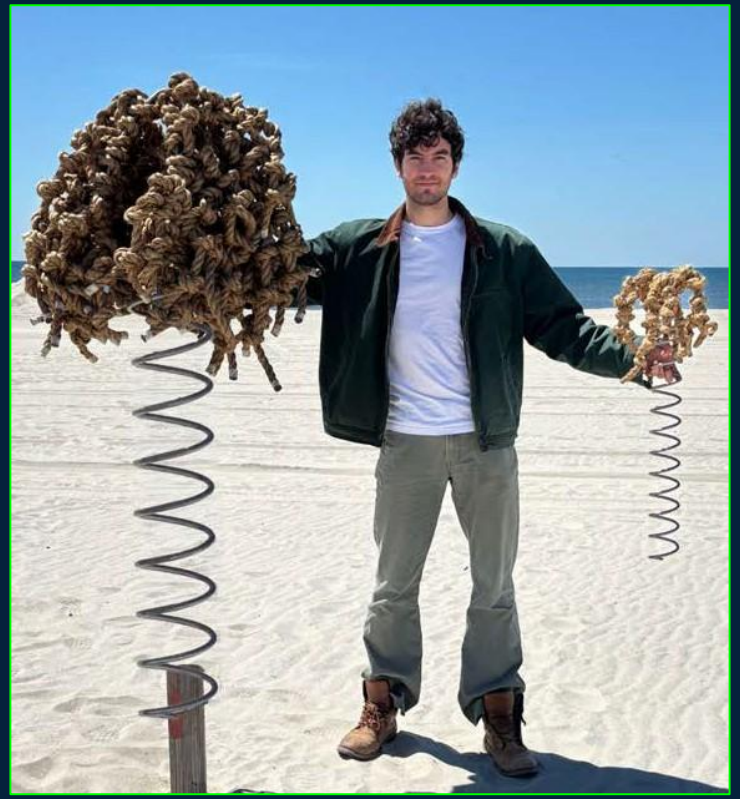


Solution: ShoreGuard

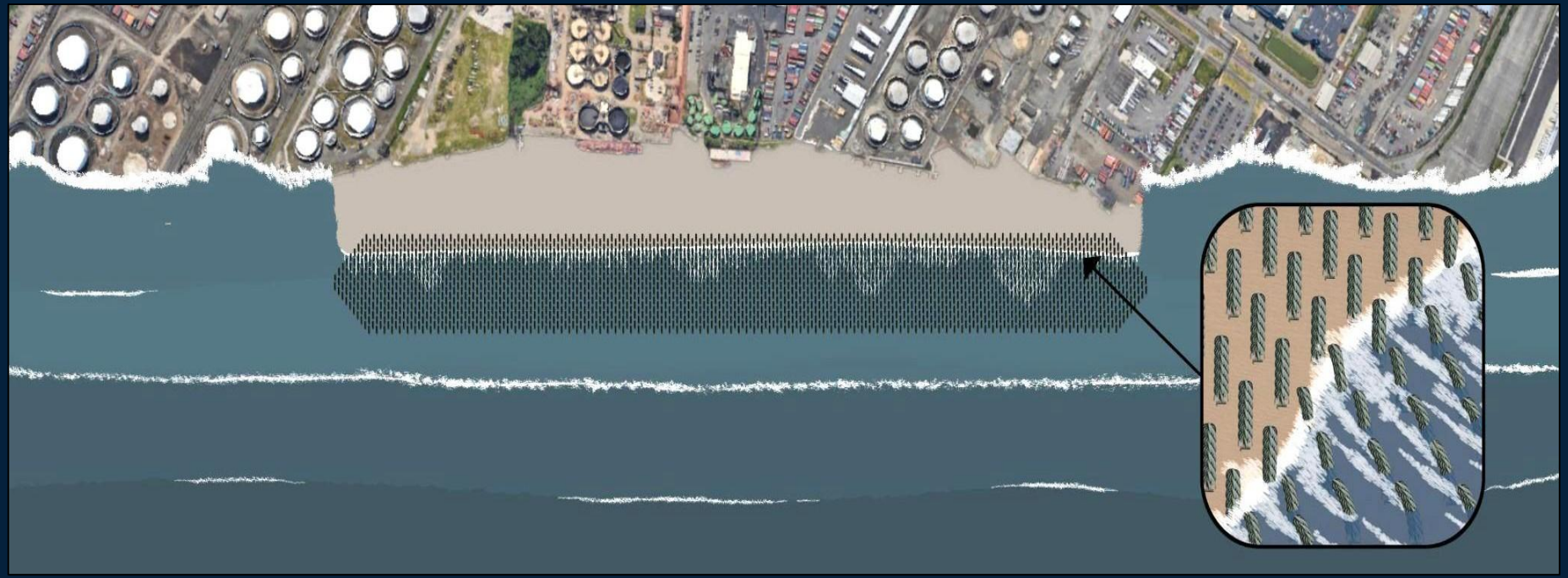
- ***Absorbs wave runup by increasing surface texture/roughness***
- **Powerful protection of coastal communities and assets is now easily to enable**
- **Rapidly deployable & removable**
- ***R*eplicates the “superpower” of wetlands & reefs**
- **“Tops” can be fabricated to be attached with linchpins for even faster deployment**



Video: These 100 *ShoreGuards* were installed within 20 mins



Various sizes are available

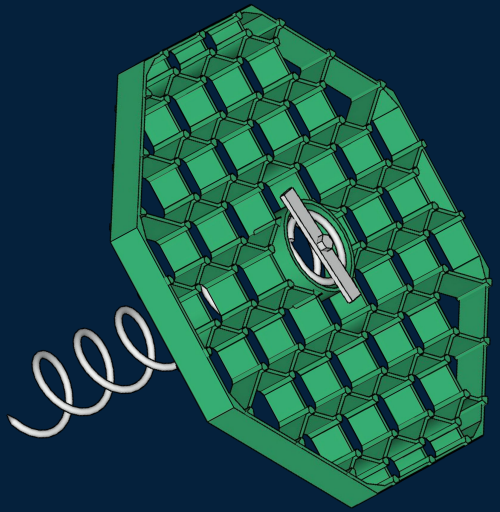


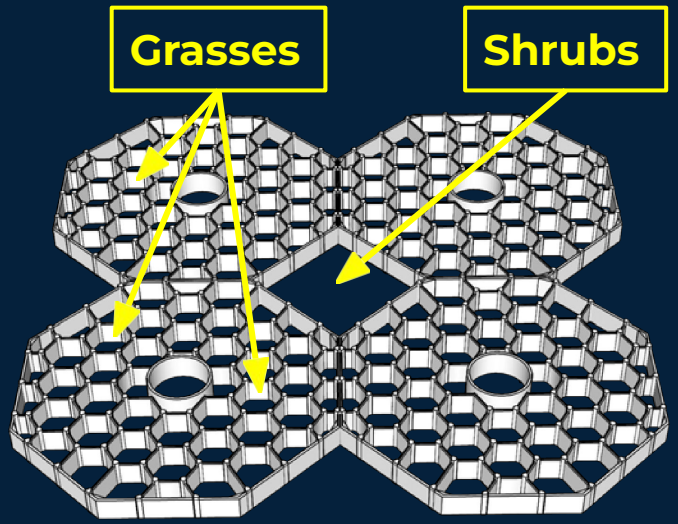
Rendering of a field of *ShoreGuards* protecting coastal assets.

Problem: Cliff, Bluff, Mudslide & River Bank Erosion

Solution: Cliff & Bluff Stabilizer

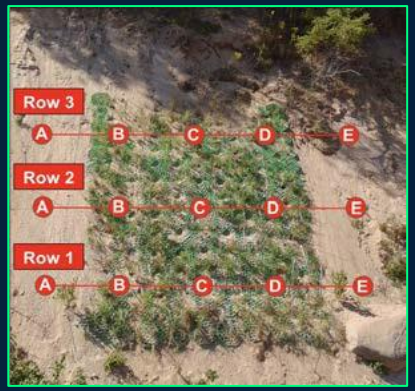
- **Instantly locks loose or steep sediments**
- ***Allows Stabilizing Plant-Colonization of Rapidly Eroding Slopes, Shores, Banks, Slide paths etc***
- **Removable & Reusable. Available in bamboo.**





NEP RAE Restoration March 2026:

20,000 sq ft, 48 native species.
Will sequester over 25 tons of nitrogen, phosphorus & carbon, reducing turbidity & HABs in the Long Island Sound estuary



Nassau County Soil & Water Conservation District:

49 degree slope, loose sandy glacial till.
Experienced no runoff erosion, plant or device damage from Hurricane Erin, Oct. 12 or 30th nor'easters

St James, Long Island, NY

30,000 sq ft private homeowner stabilization. Restoration saved homeowner 30 feet of cliff-top property due to steeper pitch

Leah Hill, Nantucket Coastal Resilience Coordinator:

"Watch the Instagram movie I put up on @nrdack to see how they held up with wave run up. It was amazing all the grasses in just the grass section were flattened & the grass with Cliff Stabilizers were standing up."

Areas of Dionis Beach without *Cliff Stabilizer* protection lost large sections of bluff during Hurricane Erin

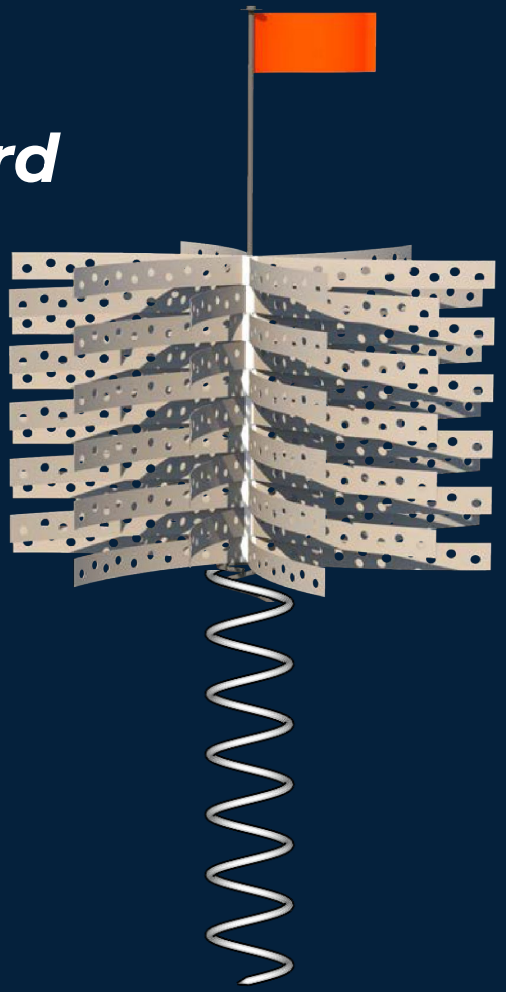
Nassau County Soil & Water District - Successful Long Island Sound plant rooting stabilization of a 49 degree, loose, rapidly eroding sand bluff face.

Devices will be removed in Spring 2027

Problem: Wetland Degradation & Shore Erosive Loss

Solution: MarshGuard & DuneGuard

- ***Quickly & passively rebuilds lost shoreline***
- **Attenuates edge erosion**
- ***Protects living shoreline plantings***
- **Instant heterogeneous habitat**
- **Fills mosquito ditching, accrues wind blown sand, etc.**



Westhampton NY, Pre-install

Shore is crescent shaped with continuous erosive loss

24 Hours

3” of *natural* deposition builds

14 Days

Entire shape of coastline is altered

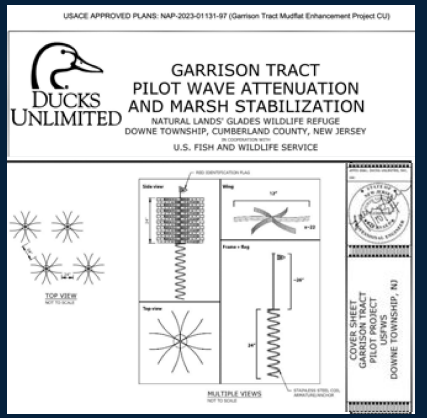
One week post-removal for horseshoe crab season

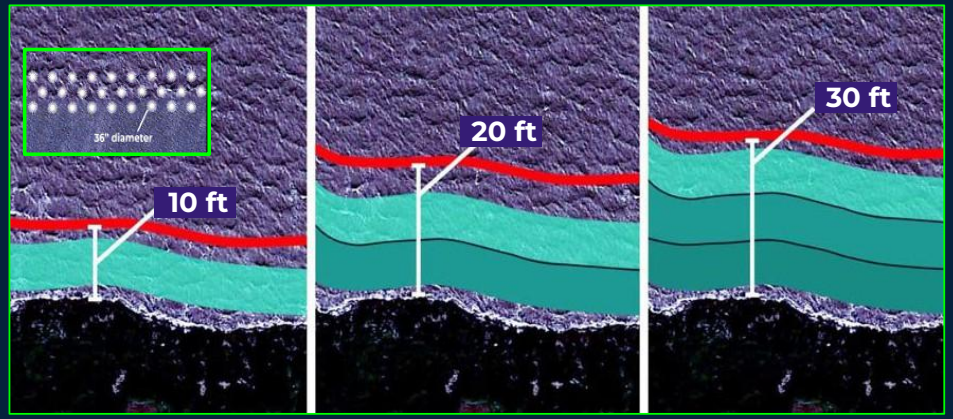
Tons of sand remain both seaward & landward

Coastal land can be reclaimed **by advancing bands of** ***passively accrued*** **sediment buildup, and plantings.**

A seasonal strategy of alternating deployment & storage, can be instituted for a net-positive coastal rebuilding with minimal impacts.

MarshGuard array raising elevation for SAV planting in NJ





Ducks Unlimited & USFWS are deploying MarshGuards to build wetland deposition & reduce wave edge erosion for eelgrass restoration

“Closing the Zipper”

Resealing ***mosquito ditches*** can be accomplished by installing a ***MarshGuard*** field at the base & up along the edges.

This gathers sediment and organic material naturally, allowing spartina to recolonize. As deposition builds, the field is moved seaward, essentially closing the zipper. ***No fill needed.***

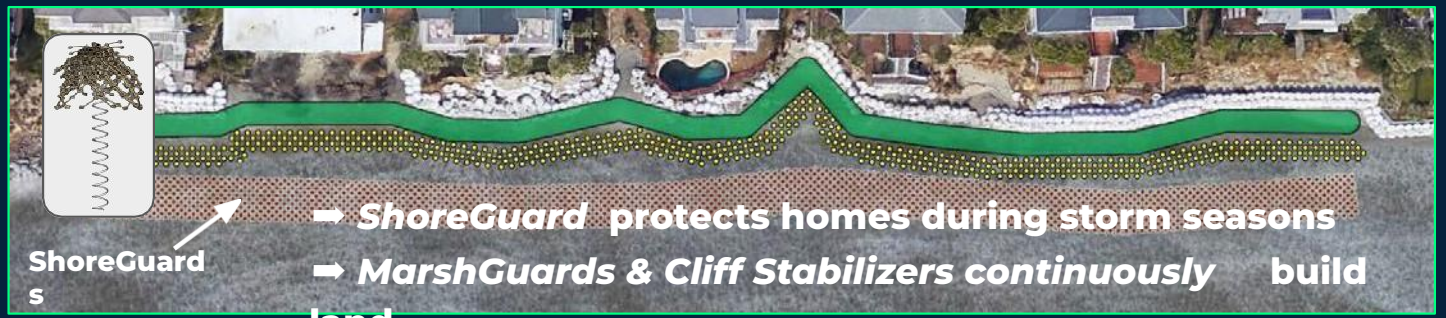
This process is elegant & economical, treating the main cause of wetland degradation at its source.

Removing erosive pressure will alter the dynamics & allow an increase of passive spartina rhizomal growth over time, and/or increased planting success.

Video: 2-hour test at Gilgo, NY gained 2” of passive aeolian sand deposition

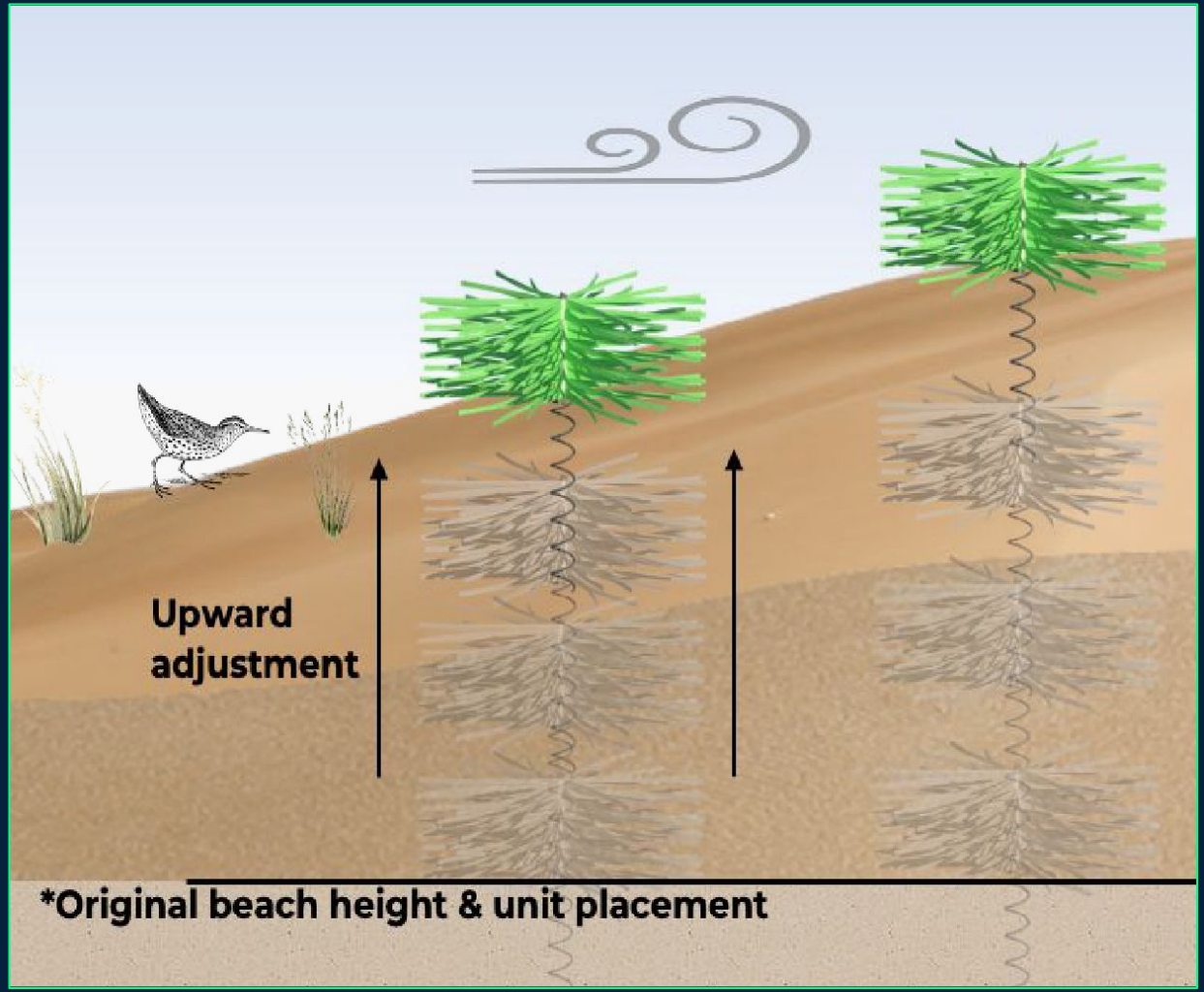
Sequenced Land Reclamation

Stepped process to build land through natural deposition and securing this new land by allowing plant to establish.



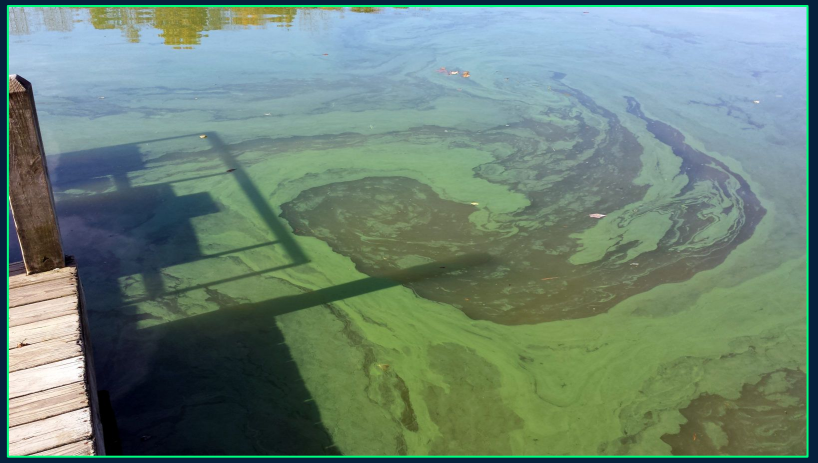
Devices can be progressively “unscrewed upwards” to build dunes & berms to desired dimensions.

Trials show wildlife identifies the devices as vegetation.



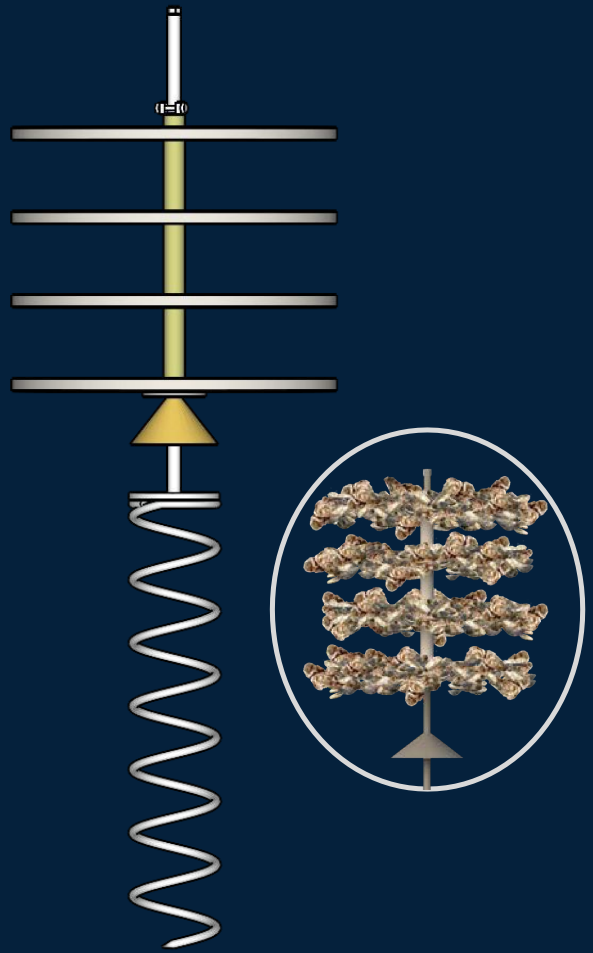
Problems:

- HABs
- Eutrophication
- Fish Kills
- Human Waste Pathogen Laden CSO Waters



Solution: Oyster Stacks

- **Bioremediation filtering of excess nutrients & contaminated waters**
- ***Easily Scalable Shellfish Reef***
- **Spat quickly settles on slate plates**
- ***Design prevents mortalities*, which plague standard methods**
- **Heterogenic reef habitat**
- **Ends cultch bottlenecks & failed projects**
- **Ribbed Mussel & Scallops versions**



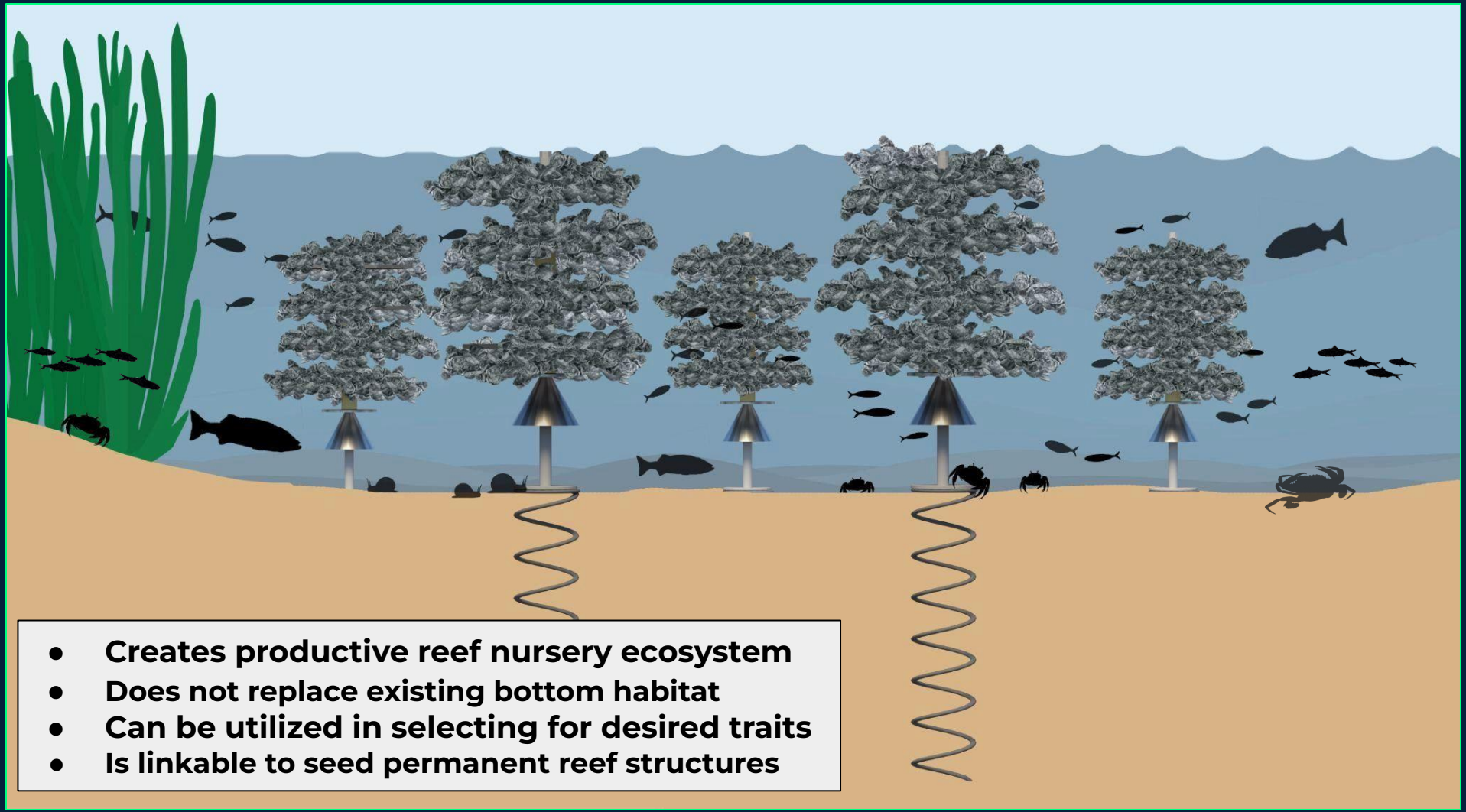
- *Cornell:* Natural recruitment & growth at 120 days, in larvae poor waters
- 100% survival

- *Brant Point Hatchery Nantucket:* tank-set at 85 days
- 40% higher recruit than cultch
- No biofouling

- *Oyster Stacks* were deployed into bay to study resistance to mortalities which plague bagged shell cultch

NYC DEP **deployed** ***Stacks*** **at the Bergen Basin Water Treatment Outflow to recruit ribbed mussels to bioremediate human pathogens**

Nantucket Brant Point Shellfish Hatchery **used** ***Stacks*** **to recruit scallop spat**


• Creates productive reef nursery ecosystem
• Does not replace existing bottom habitat
• Can be utilized in selecting for desired traits
• Is linkable to seed permanent reef structures

Coastal Resilience Bill H.R.5735

- CTC has worked with a bi-partnership Congressional group to draft legislation reducing over-regulation & mandating the testing & use of new coastal technologies.
- Bill H.R.5735 was introduced on Oct 9, 2025
  - It directs the Secretary of the Army to identify, test & recommend innovative resilience solutions.


(D) Congresswoman Gillen


(R) Congressman J. V. Drew


(D) Congresswoman Elfreth

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Thank you for your interest in Coastal Technologies Corp & our work.

We're happy to supply additional information & data.