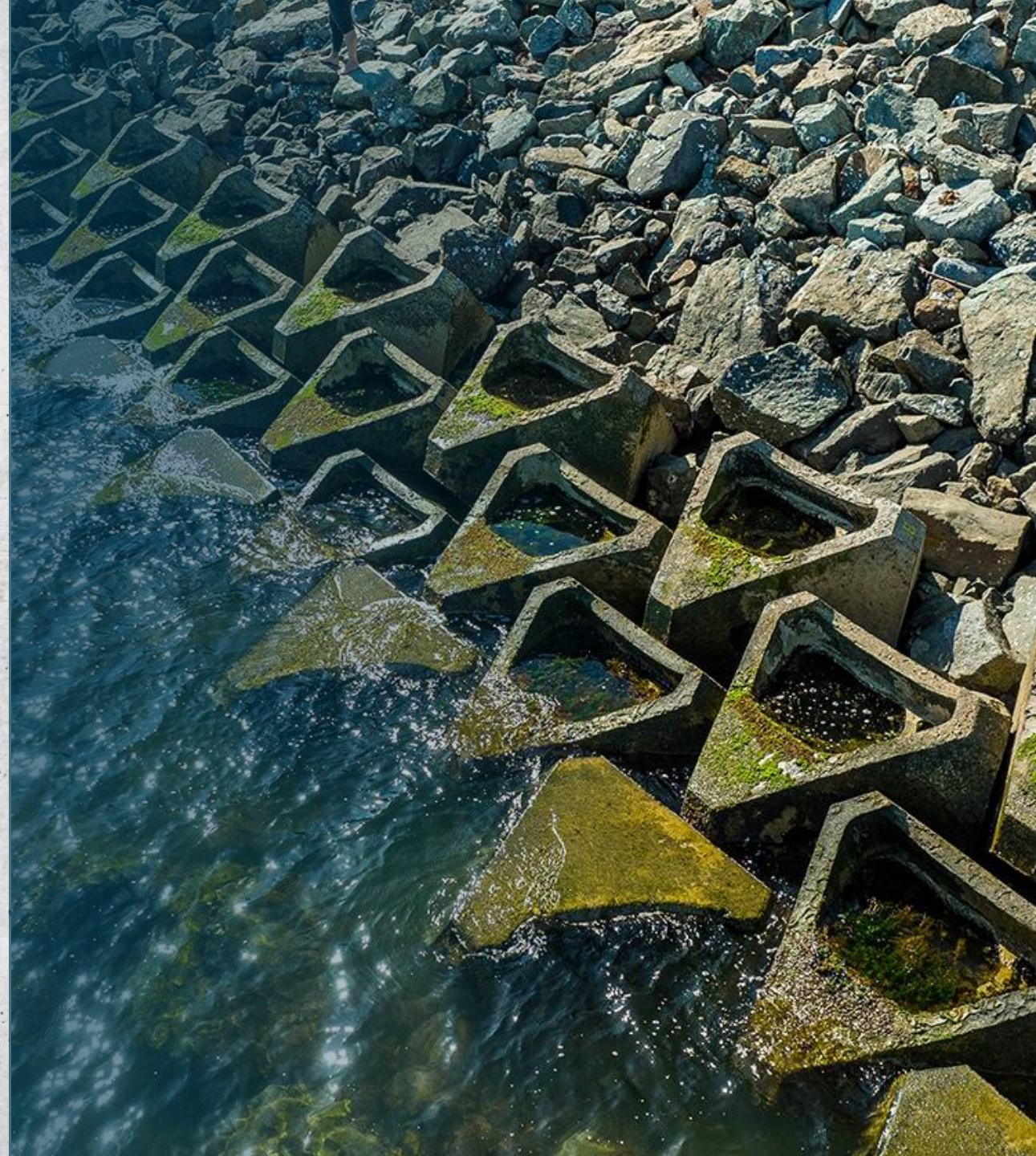
ECONCRETE

CMANC Fall 2025

Building with Sediment: Innovative Approaches to Reuse and Stabilization

DIRECTOR OF BUSINESS DEVELOPMENT
danielle@econcrete.us



ECONCRETE

NATURE-INCLUSIVE CONCRETE TECHNOLOGY

FULLY COMPLIES WITH MARINE **CONSTRUCTION STANDARDS**

REDUCES MITIGATION

PROVIDES **BIODIVERSITY AT SCALE**

COASTAL PROTECTION

PORTS & MARINAS

OFFSHORE WIND

SUBSEA CABLE

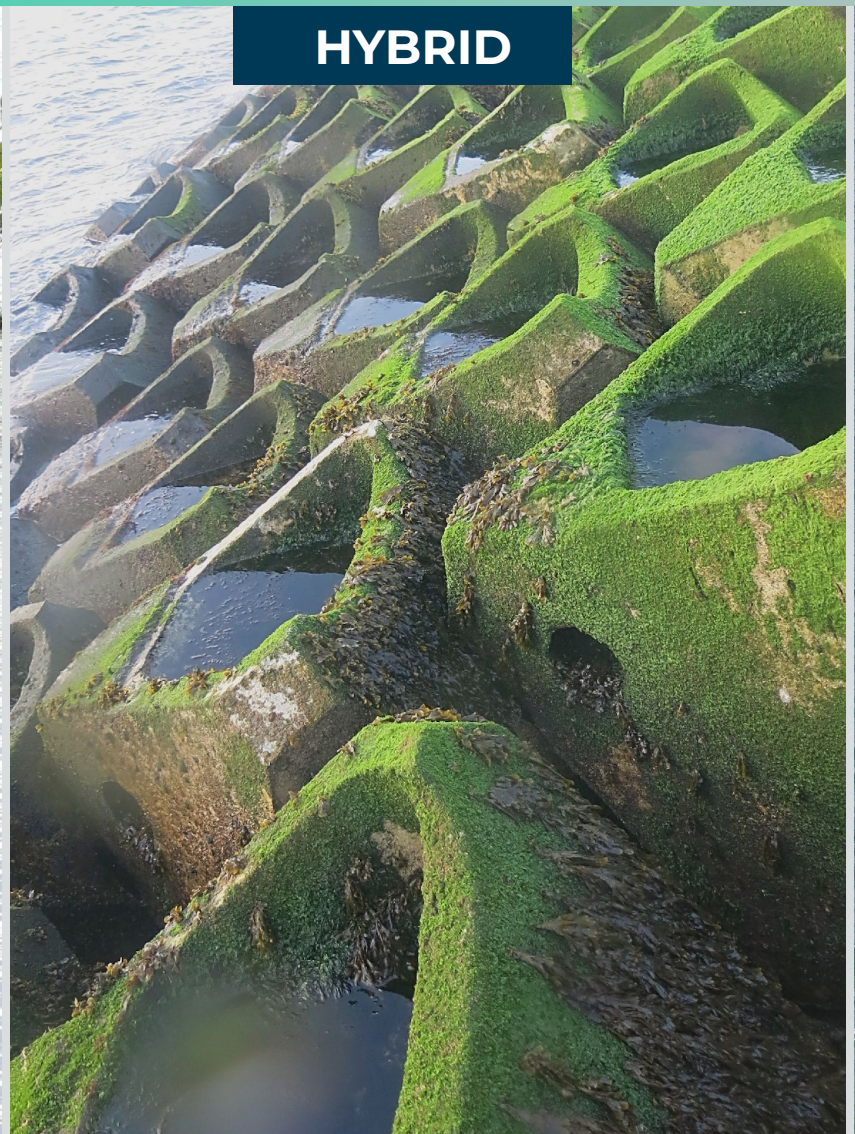
LIVING SHORELINES

ECONCRETE

GREY INFRASTRUCTURE

SOFT

HYBRID



HARD

BIO-ENHANCING CONCRETE TECHNOLOGY

CONCRETE ADMIX

Enhances biological recruitment

SURFACE AGENTS

Supports marine life settlement

NATURE-INCLUSIVE DESIGN

Facilitates growth and survival

*Compatible with low carbon cement concrete mix design

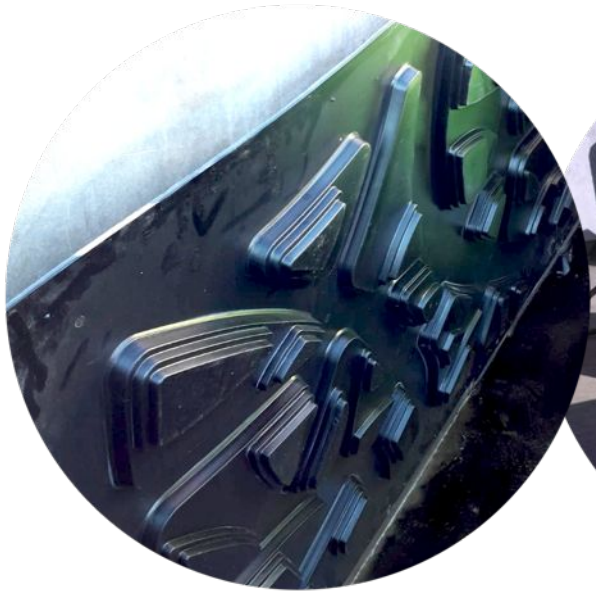
PATENTED SOLUTION AND TECHNOLOGY LICENSE

The License of use of ECOncrete Technology to produce ECOncrete units and 3rd party design concrete elements includes:

ADMIXTURE + **LINERS FORMWORKS** / **MOLD SYSTEMS** + **Q/C & TECHNICAL SUPPORT**

= 10% cont. cement.

Compatible with any type of cement



3rd Party design

/

ECOncrete's propriety design

Design and execution phases

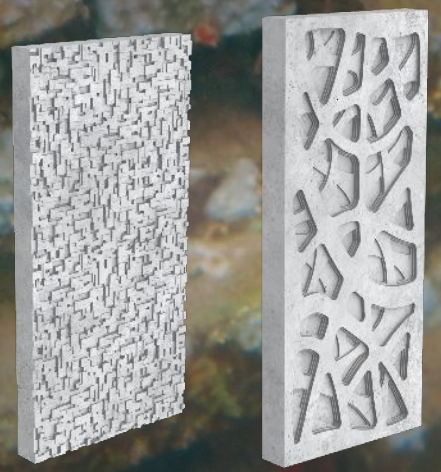
ECONCRETE DESIGNS

Examples of eco-engineered units for diverse applications

COASTALOCK ARMOR UNIT

ECO MARINE MATTRESS

SEAWALL



STRUCTURAL PERFORMANCE

10% ECOncrete's admixture increases the concrete's compressive strength by **up to 10%**

Reduce sensitivity to corrosion and erosion

Prevent chloride penetration and carbonation

The **bio-protection** provides an extra layer that reduces erosion and increases durability (augmented lifespan)

Mediterranean Sea 4 Years Post Deployment

ENVIRONMENTAL BENEFITS

- Increase biodiversity while reducing invasive to native species ratio
- Recruit more inorganic biomass
- CO_2 Increase Carbon Sequestration
- Significantly increase water quality

ECONCRETE

CASE STUDIES

Sediment to Structure: Harnessing Port Dredge for Coastal Protection

Restoring Nature, Reusing Sediment: Living Shoreline Innovation in New Jersey

Nature Meets Infrastructure: A Living Seawall to Combat Sea Level Rise in San Francisco.

Port of Esbjerg – Circular use of port-dredged clays for bio-enhancing ECOncrete Coastalock™ units

Port of Esbjerg

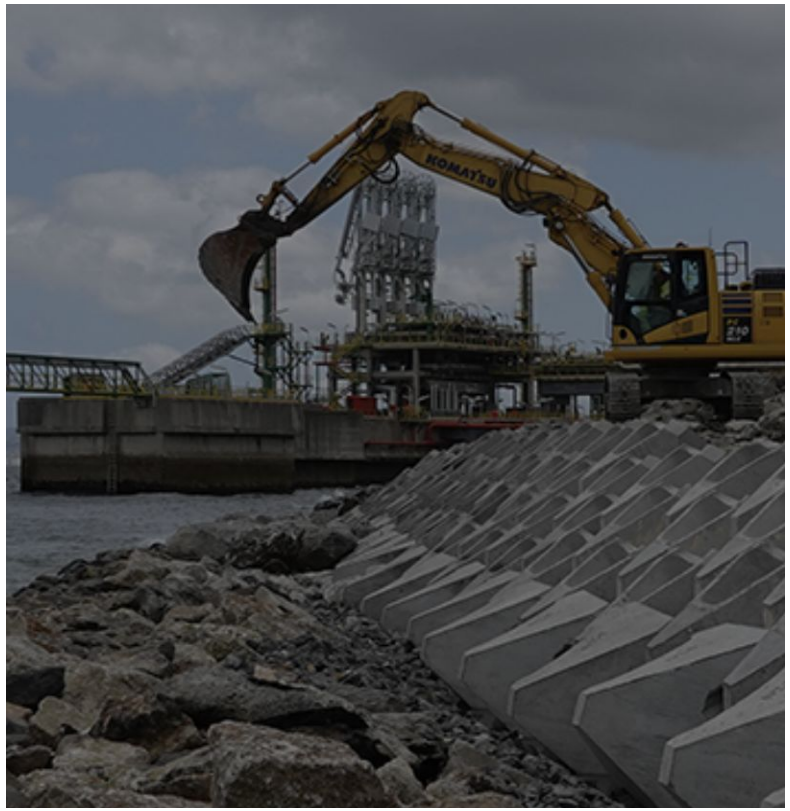
- **Established in 1868.**
- **Competitor of the Port of Hamburg for freight.**
- **Now the leading Offshore Wind Port in Europe.**
- **Port of Esbjerg covers a land area of 1.35 sq miles and has 6.2 mi of waterfront.**

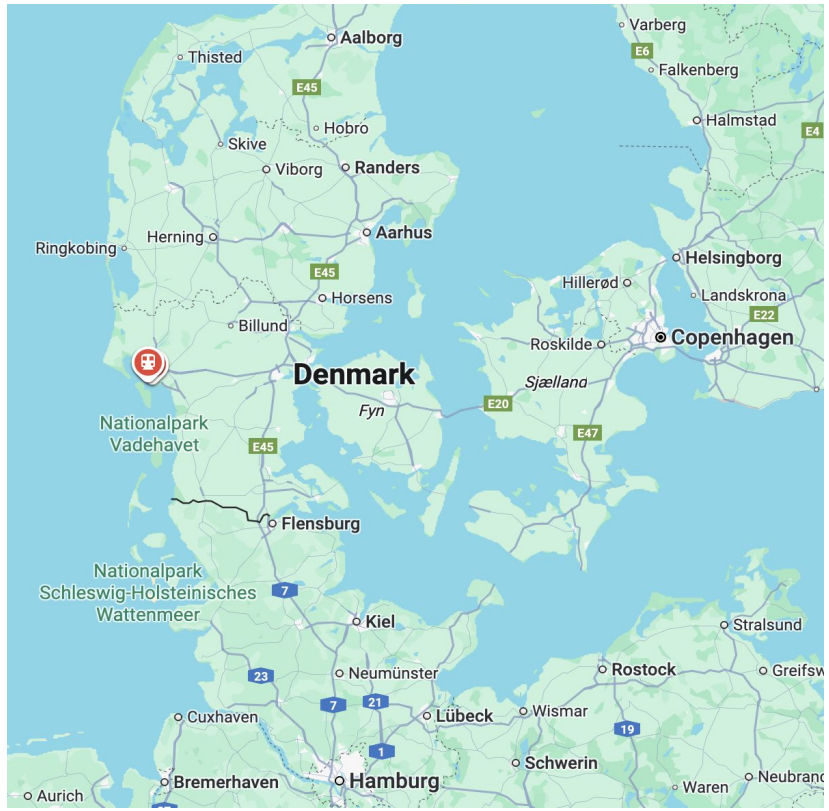
Sediment to Structure

Port of Esbjerg has a **need for robust coastal protection**, a commitment to **enhancing marine biodiversity** and a **surplus of dredge material.** The port and ECOcrete partnered to test a Beneficial Reuse solution by incorporating clay, from the ports dredge into ECOncrete's COASTALOCK Units.

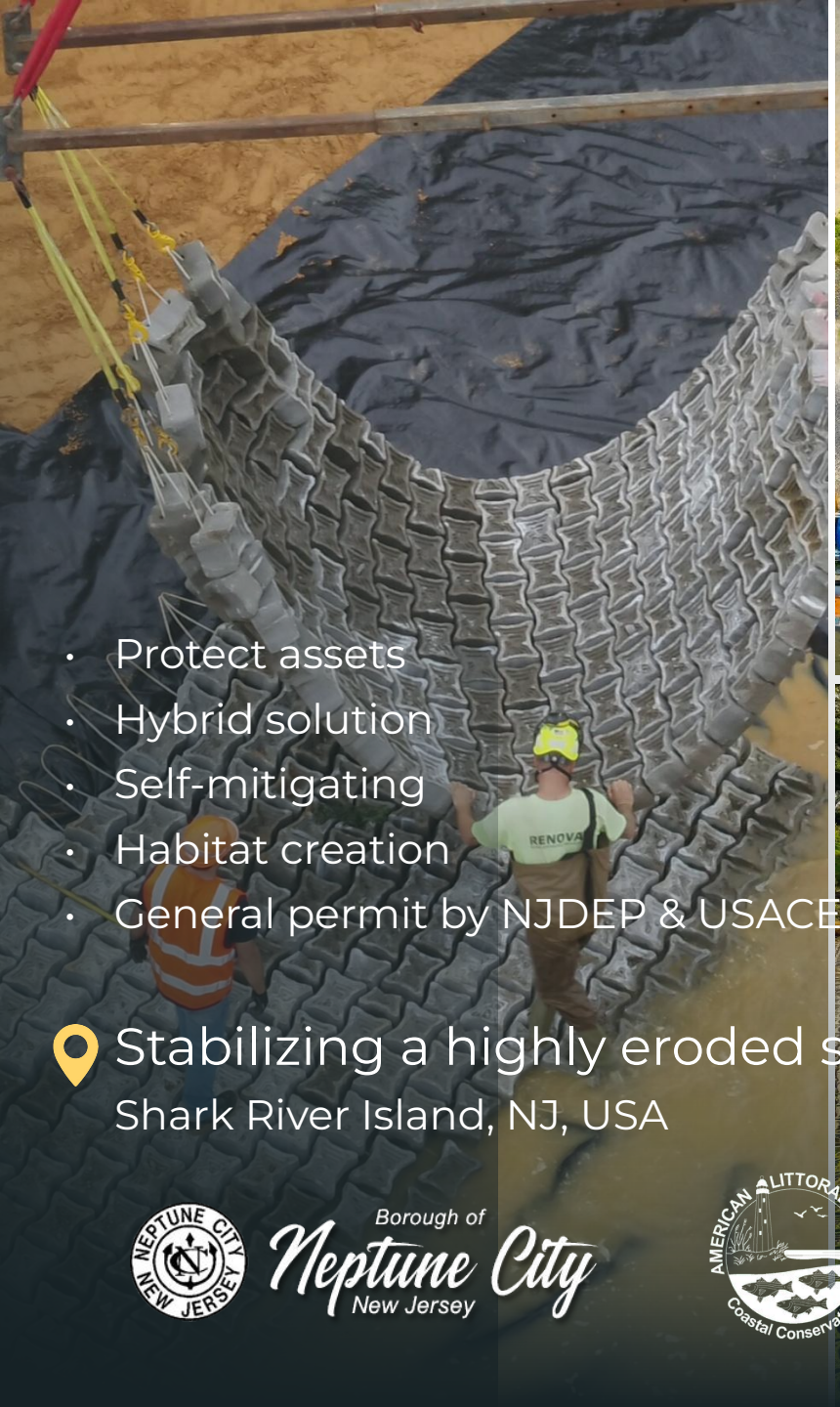
Testing various mix concrete mix designs, we in incorporated 15-30% of Clay Material from their dredge

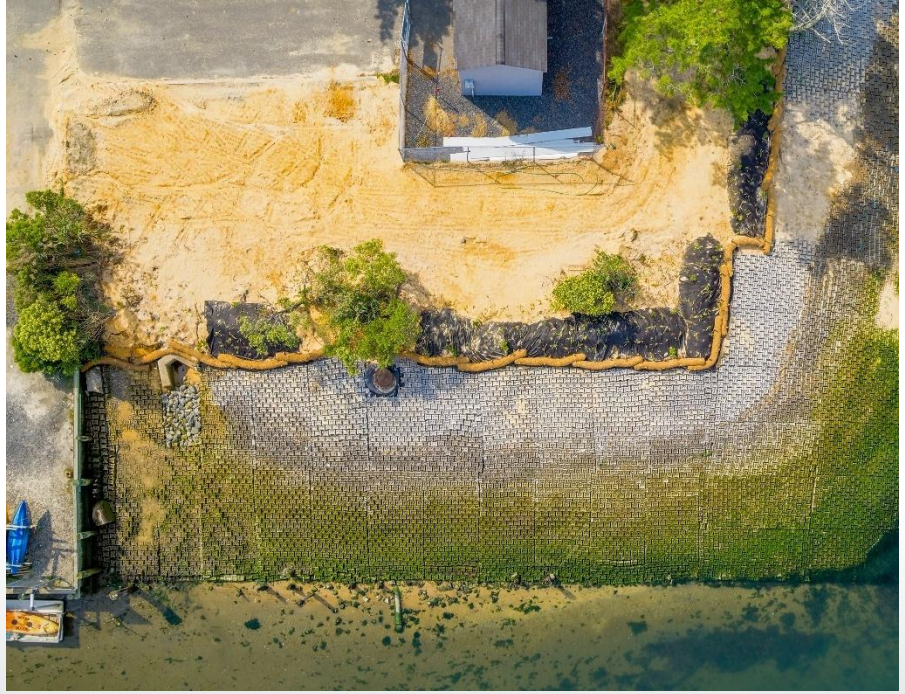
and and saw 4500 psi at 28 days, good freeze thaw performance and low permeability

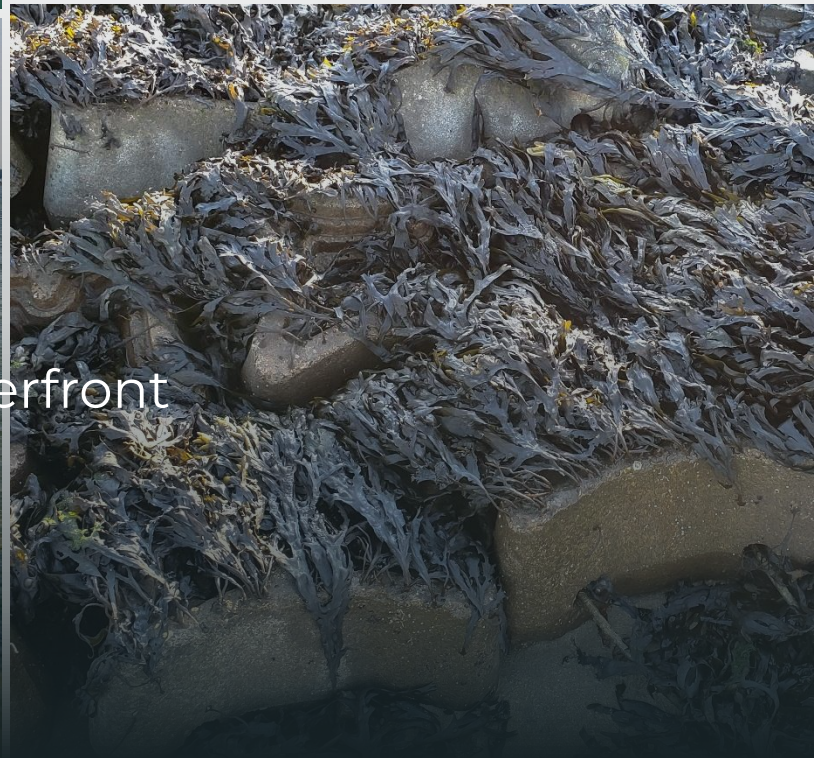




ECONCRETE







- Protect assets
- Hybrid solution
- Self-mitigating
- Habitat creation
- General permit by NJDEP & USACE

Stabilizing a highly eroded shoreline along a community waterfront

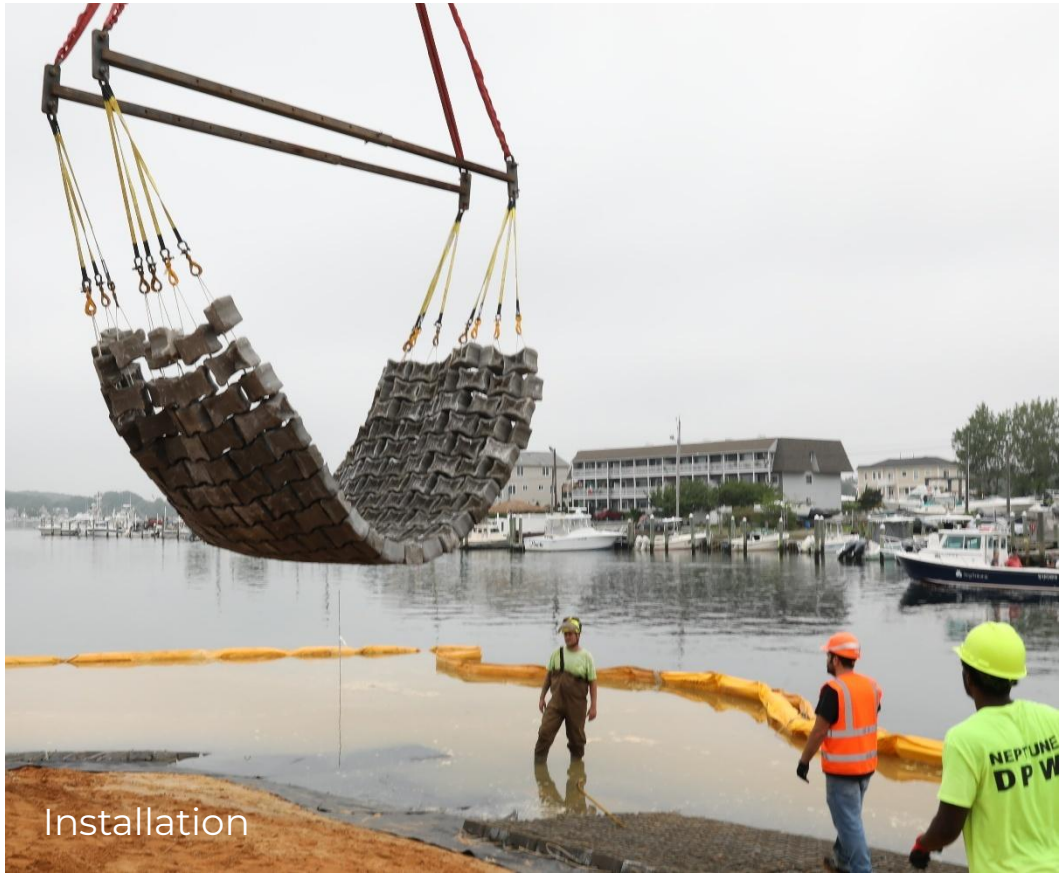
Shark River Island, NJ, USA

Borough of Neptune City New Jersey

American Littoral Society Coastal Conservation

STABILIZING A HIGHLY ERODED SHORELINE ALONG A COMMUNITY WATERFRONT

2021 Shark River Island, Neptune City, NJ, USA



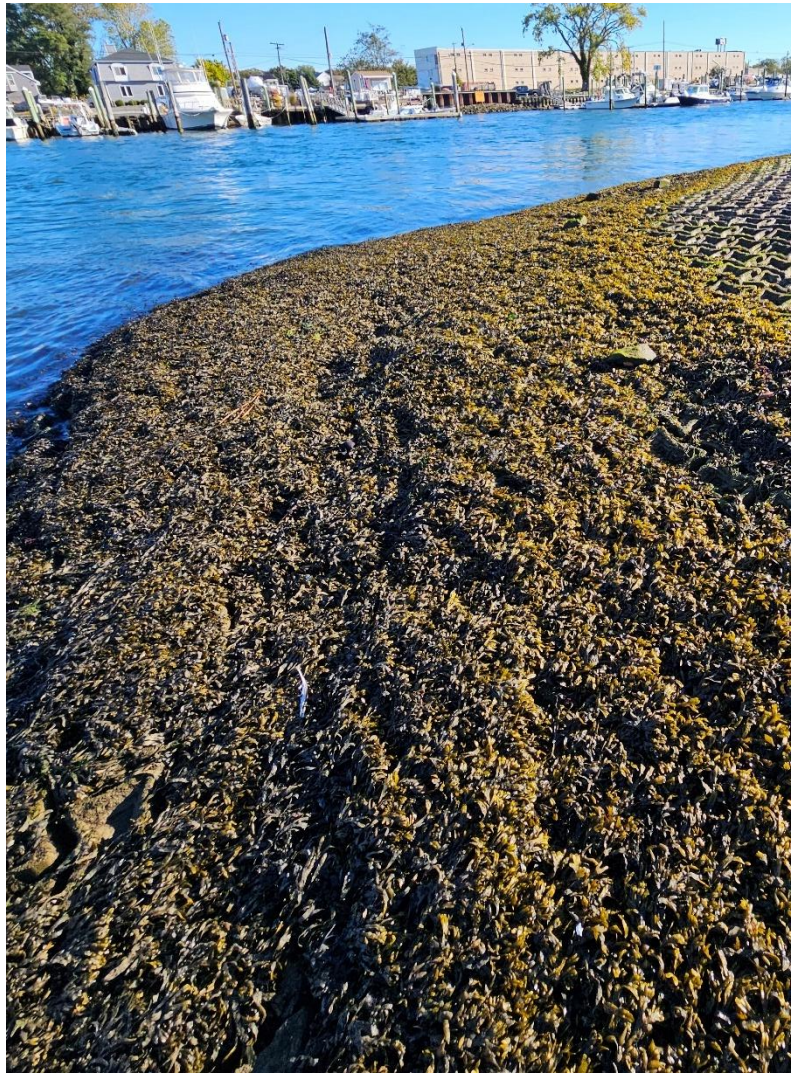
ECONCRETE

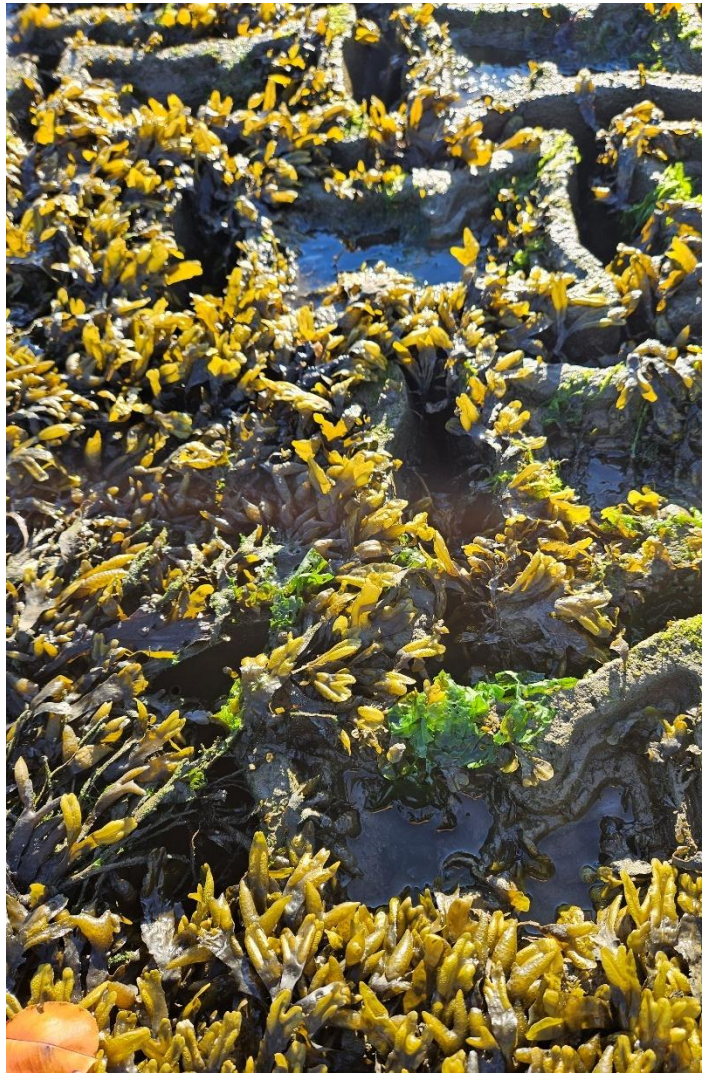
STABILIZING A HIGHLY ERODED SHORELINE ALONG A COMMUNITY WATERFRONT

2021 Shark River Island, Neptune City, NJ, USA

ECONCRETE

Monitoring 20 months





Monitoring 3 years

NATURE MEETS INFRASTRUCTURE:
A LIVING SEAWALL TO COMBAT SEA LEVEL RISE

Smithsonian Environmental Research Center

2022 Port of San Francisco, CA, USA

- Asset Protection
- Habitat creation
- Ecosystem Services

NATURE MEETS INFRASTRUCTURE: A LIVING SEAWALL TO COMBAT SEA LEVEL RISE

ECONCRETE

ELEVATE ANY MARINE INFRASTRUCTURE