



GROW Oyster Reefs llc.

Executive Summary prepared 09/13/2021

Our vision is that ALL underwater infrastructure supports human and aquatic life symbiotically.

GROW reef-building products boost nature's systems to provide extensive shoreline protection against storm surge and sea level rise, confront coastal water pollution and the need for increased biodiversity, encouraging the development of self-healing infrastructure.

PROBLEM & OPPORTUNITY: Our coastlines are threatened by the impact of climate change. The oyster, a keystone species, in decline by 85% since the 1850's, has been protecting coastlines around the world for thousands of years. **GROW** products **work with the oyster** to build self-healing coastal defense infrastructures, attenuating wave energy and sequestering carbon.

***GROW's market is large scale, coastal infrastructure projects such as the 10 mile by 50-meter-wide Portsmouth, UK city funded shoreline project where GROW is piloting GROW_Reef Tile – Wedges. This is a \$2-10M opportunity.**

SOLUTION: a range of scalable, concrete, biomimetic reef building substrate products, **designed to enhance long-term oyster reef growth**, fabricated using our proprietary CaCO₃ concrete mix, formulated to **match the mature oyster shell**, sending chemical cues to attract embryonic oysters, providing early-stage nutrition.

BIOMIMICRY IN PRACTICE: **learning from oyster, GROW Oyster Reefs substrates provide a porous infrastructure with interstitial spaces at many scales, facilitating the long-term growth, recruitment and survival of embryonic and mature oysters, supporting the oysters' natural reef-building capability, encouraging the rapid recruitment of non-reef building organisms from crabs to young fish.**

REVENUE MODEL: **GROW** reefs cost less than 'rip-rap' per cubic meter, installed. Our goal is that **GROW biomimetic reef substrates** can compete successfully with 'business as usual' to become the preeminent bio-engineered reef building material in use world-wide, for large-scale municipal and governmental projects.

TRACTION: **GROW** has product in the water in the The Solent, Portsmouth UK; Chesapeake Bay; Atlantic Ocean and the Gulf of Mexico. Our partners include the Nature Conservancy, MIT, U.S. Fish and Wildlife, and Biohabitats. **GROW** operates out of GROW_East in Charlottesville, VA and GROW-West in Marina del Ray, CA.

***Tested by the Virginia Institute of Marine Sciences (VIMS), GROW Reef Tiles attract 50 oysters avg. / sq ft within a year from deployment – equivalent to the highest yields of mature natural reefs.**

TEAM: CEO, **Evelyn Tickle** FAAR, MIT Solver (2019), and RISE Innovation Fellow (2020), Biomimicry Institute Finalist and is supported by an amazing team of design technologists and specialist fabricators, scientific, technical and financial advisors.

NEXT STEPS: **Leverage - GROW** CaCO₃ Concrete via licensing agreements to support product development and manufacturing capacity. **Fundraising** – further commercialization, equip manufacturing space and hire key employees such as a sales.

UN SDGs

11-Sustainable Communities
13-Climate Action
14-Life below water

INDUSTRY

Coastal resilience
Carbon capture
Sustainable Aquaculture

FINANCING to date:

- \$315,000 awards, grant, donors

FOUNDER

- Evelyn Tickle FAAR,
- CEO / Inventor

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