



A scalable reef habitat solution

ReefStarter is a hybrid coastal infrastructure and coral-restoration platform designed to protect shorelines while restoring marine ecosystems and driving local economic opportunity. Our modular concrete reef units are engineered to reduce wave energy, prevent beach erosion, and create ideal substrate for coral growth and biodiversity recovery. Unlike traditional hard armoring, ReefStarter installations are designed to enhance rather than displace marine habitats, supporting fisheries, tourism, and long-term ecosystem services.

For regulators and resource managers in the USVI, ReefStarter offers a scalable, science-based solution that aligns with coastal resilience mandates, coral restoration goals, and marine conservation policies. The structures can be paired with active coral outplanting, monitoring, and data collection, creating new opportunities for research partnerships and adaptive management.

Local communities stand to benefit through jobs in fabrication, deployment, monitoring, tourism services, and reef stewardship. ReefStarter projects can be locally manufactured and maintained, leveraging existing marine construction capacity while building new skills in restoration, fabrication, and blue-economy technologies. By protecting beaches, enhancing fisheries habitat, and attracting eco-tourism, ReefStarter installations help sustain the economic engines of the USVI while reducing future storm-related losses.

The result is a permitting-friendly, nature-positive alternative to breakwaters and seawalls that delivers ecological restoration, stakeholder value, and durable economic development across the territory.

Our Solution

ReefStarter mimics the structure and complex habitat of mature natural reefs across multiple scales to promote ecosystem recovery.

Inspired by nature

The size, shape, and surface properties of ReefStarter units are designed to replicate mature reefs (such as spur-and-groove formations.) This can accelerate reef recovery from decades or centuries to a matter of years.

Easy-to-install

To hasten the succession and recovery to a functional reef ecosystem, ReefStarter units can immediately be used for coral outplanting, as well as grazer crabs and urchins restocking projects.

Shore-protecting

The surface of ReefStarter is designed to reinforce the barrier function of reef ecosystems, protecting coastal infrastructure from damaging waves and coastal flooding.

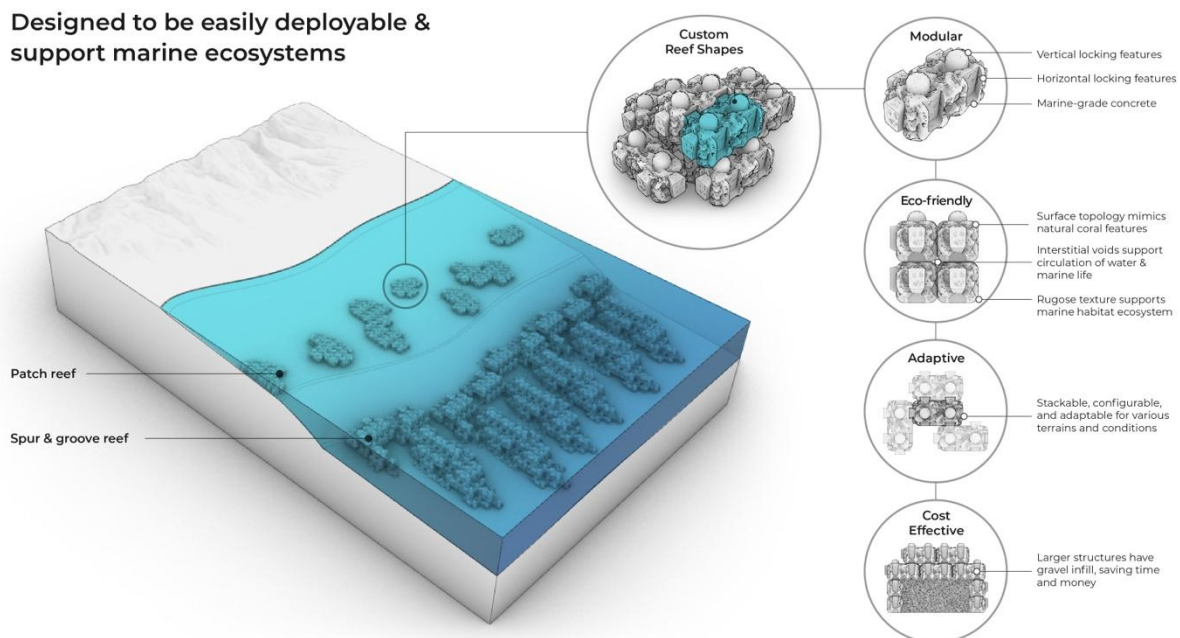
Customizable

ReefStarter habitats use modular building blocks that can be arranged in custom patterns. It's simple to mix and match our modules to suit the installation site and/or the desired reef community.

Self-sustaining

ReefStarter structures are built to encourage natural recruitment of fish, sponges, and a wide variety of fast- and slow-growing corals, paving the way for mature, self-sustaining reef ecosystems to self-organize and mature.

Designed to be easily deployable & support marine ecosystems



Recovery on multiple scales

Macro: The size and shape of ReefStarter structures are designed to support organisms like corals, oysters, sponges, and grazing organisms. The structure also interacts with local wave conditions, leading to wave attenuation and the formation of microenvironments. This can influence conditions like temperature gradients and sediment distribution, further encouraging biodiversity to thrive.

Meso: Reefstarter structures provide cavities and solution holes to support the developmental stages of reef organisms, including juvenile fish and crustaceans.

Micro: ReefStarter structures have a microstructure that supports a healthy microbiome community and larval settlement of marine organisms.

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Who We Are

ReefStarter is a collaboration between The Keys Marine Laboratory (KML), the University of South Florida, Florida Institute of Technology.

Bridget Baumgartner, co-founder & CEO

Bridget's career has spanned academic biomedical research, government-led biotechnology development, and nonprofit work at the intersection of biotechnology and conservation. As the CEO, Bridget approaches the field of ecosystem restoration with a commitment to advancing innovative solutions that serve humans as well as wildlife. She is responsible for overseeing the development of the ReefStarter vision from the lab to a viable commercial product.

Robert Weaver, co-founder & CTO

Robert is an Associate Professor in the Department of Ocean Engineering and Marine Sciences at Florida Institute of Technology. His research includes real-time coastal modeling of waves and water levels, coastal flooding and transport, living shoreline/living dock design, and coastal eco-engineering. He is the inventor of the ReefStarter breakwater structure and leads all prototype design and testing for specific ReefStarter installations.

Pete Miraglia, co-founder & COO

Prior to joining ReefStarter, Pete served as Deputy Director at Revive & Restore, where he led initiatives to advance cutting-edge biotechnologies for conservation and ecosystem restoration. Pete's specialty is program management and business development for first-of-its-kind advanced technologies, particularly those aimed at addressing national and global energy challenges.

Cindy Lewis, Restoration Advisor

Cindy Lewis is the Director of FIO's Keys Marine Lab and has been a lead Staff Scientist since 2008. She has a Ph.D. from Florida International University, where she studied coral stress, bleaching, and disease. Cindy is an active member of the marine science community, serving on various advisory councils and committees. She is also a certified dive master and a dedicated community leader. Cindy advises all ecological studies on ReefStarter structures and leads associated ecosystem restoration activities.

Stephen Wood, Engineering Advisor

Stephen is a Professor in the Department of Ocean Engineer and Marine Sciences at Florida Institute of Technology, and is a licensed mechanical engineer specializing in design. He has worked in physical oceanography conducting deep-sea mooring deployments and data analysis. He advises on offshore construction planning and execution for ReefStarter installation projects.

Tom Frazer, Science Advisor

Tom is a Professor and Dean of the College of Marine Science at the University of South Florida. Prior to his arrival at USF, he was Director of the School of Natural Resources and Environment at the University of Florida and served also as Chief Science Officer for the State of Florida. Tom helps design and supervises all ecology research related to the development of ReefStarter as a replacement reef habitat.