



THE OCEAN FOUNDATION

An update from our **Blue Resilience Initiative**



The Future of the Bioluminescent Bay

On the island of Vieques, Puerto Rico, Mosquito Bay serves as a key environmental, economic, and cultural resource for its surrounding communities. It is considered the "brightest bioluminescent bay in the world" due to its ideal environmental conditions.

During Hurricane Maria in 2017, an extensive amount of protective mangroves and seagrasses were destroyed leaving large areas prone to ongoing erosion. Experts believe the resiliency of this unique ecosystem will be increasingly challenged by climate change bringing more frequent and powerful storm events. In particular, resource managers have raised serious concerns about extensive habitat destruction and potentially the permanent loss of bioluminescence.

Even though the bay is vulnerable to strong storms, restoring this natural system is the most beneficial way to protect the local area. Unlike concrete and other gray infrastructure, healthy coastal habitats do not amplify wave energy, and they are necessary for critical biodiversity. The bay has served its job well as a storm barrier, and now we must restore it, so it may continue to benefit Vieques for years to come.

Through this new project, we intend to conduct large-scale restoration work of approximately 47 acres that builds on initial assessments and site prioritization conducted by our partner, the Vieques Conservation and Historical Trust.

In addition to supporting the bay's biodiversity and its ability to defend the local area from storms, increasing the climate resilience of Mosquito Bay will also protect it as one of the most important drivers of sustainable economic development on Vieques. We look forward to sharing more as this project progresses.



Ongoing Restoration in Jobos Bay, PR

This summer, our partners successfully completed important work at our restoration site in Jobos Bay, Puerto Rico. Sediment tubes and bird stakes have been placed for the seagrass planting site. Before we continue with transplanting, the sediment tubes at the site need to decompose for a few months so they are ready to accept planting units, in addition to helping restore the soil biome. One acre of mangroves have also been restored and planted. Ahead, we are looking forward to a large-scale mangrove restoration project, and that feasibility assessment is currently underway.





Have a look underwater at our SeaGrass Grow site!

Blue Carbon and Biodiversity

Our team has been developing a four-part scorecard for habitat restoration as part of a consultancy with the United Nation's Caribbean Environment Programme. We assessed mangrove restoration potential, coasts at risk, and pollution indexes, among other indicators for this study. Through this process, we produced a total of 19 scorecards for 16 countries, for a total of 48 unique high-priority large-scale identified habitat restoration sites. This larger list will serve as a key resource moving forward in pairing restoration opportunities with large-scale prioritized sites throughout the Wider Caribbean Region.

Coastal ecosystems are one of our best solutions to directly confronting climate change by serving as a sink for "blue carbon" – the carbon from the atmosphere that is sequestered through coastal vegetation and stored for very long periods of time in the sediments below. It is estimated that healthy coastal blue carbon ecosystems can store up to 10 times the amount of carbon per hectare relative to terrestrial forest ecosystems – and the degradation of these systems can release large amounts of stored carbon back to the atmosphere. Healthy coastal ecosystems are also critical in filtering water to remove excess nutrients and sediment, thereby significantly improving water quality and mitigating stressors to the environment, like ocean acidification, that threaten our livelihoods and biodiversity.



Photo taken by Ben Scheelk, Program Officer at The Ocean Foundation, in Vieques, Puerto Rico

Learn More About the [Blue Resilience Initiative](#)

The Ocean Foundation's Blue Resilience Initiative is dedicated to restoring, conserving, and financing natural coastal infrastructure by equipping stakeholders with the tools, technical expertise, and policy frameworks to achieve large scale climate risk reduction. We build local capacity by connecting experts with local practitioners to provide support at all stages of a natural infrastructure project.



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