

The Nature Conservancy's Coral Strategy in the Caribbean
La Estrategia de Corales en el Caribe de The Nature Conservancy
La Stratégie Corallienne de The Nature Conservancy

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EXTENDED ABSTRACT

The Nature Conservancy (TNC) and partners aim to conserve, restore and monitor coral reefs throughout the Insular Caribbean and to mobilize regional and global action by proactively sharing science and expertise. To accomplish rapid coordination and deployment of TNC's comprehensive coral strategy, Coral Innovation Hubs are being established in The Bahamas, the Dominican Republic and the U.S. Virgin Islands. TNC's Caribbean coral strategy, focuses on pioneering emerging technologies, while promoting collaboration and knowledge sharing, ensuring local partners can scale up restoration initiatives to levels relevant to today's rate of coral degradation. With a three-pronged approach that includes coral *conservation*, *restoration* and *monitoring*, TNC and partners are joining forces to ensure that coral reefs survive and thrive for generations to come.

With nearly 8,000 square miles of coral reefs, over 1,400 species of fish and marine mammals, and over 40 million people dependent upon these natural resources, the Caribbean is a global priority for conservation. The Nature Conservancy (TNC) and partners aim to conserve, restore and monitor coral reefs throughout the Insular Caribbean and to mobilize regional and global action by proactively sharing science and expertise. Connectivity studies suggest approximately 77% of coral reefs identified to have high regional connectivity values in the Gulf of Mexico and the Caribbean are not included in existing protected areas in the region (Schill et al. 2015).

Overfishing, land-based pollution, sediment runoff, ocean warming, and acidification have created conditions whereby degraded reefs are unable to rebound on their own. As these unique ecosystems degrade, we lose recreational sites that support millions of tourism jobs, critical habitat for 25% of all fish species, and natural coastal protection against storms and hurricanes for some of the world's most vulnerable communities. To accomplish rapid coordination and deployment of TNC's comprehensive coral strategy, Coral Innovation Hubs are being established in The Bahamas, the Dominican Republic and the U.S. Virgin Islands.

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These Coral Innovation Hubs will serve as centers for collaboration and knowledge sharing to promote coral conservation on a global scale. Designed to host interdisciplinary networks of coral scientists and conservationists, marine conservation organizations, local stakeholders, students and educators, the hubs will serve as incubators for ideas on scalable coral conservation and play a vital role in disseminating today's science and technology throughout the Caribbean and globally.

As centers of innovation, the hubs will advance the development, implementation and dissemination of technologies like microfragmentation and facilitated sexual reproduction to promote reef restoration at scale. As vehicles for education and training, they will create learning and advocacy pathways for stakeholders (such as fishers or dive operators) and students who want to learn how they can help protect reefs. The hubs will offer opportunities for experiential learning to engage partners, stakeholders and the next generation as agents of change in the global fight to save coral reefs.

Each of the three Coral Innovation Hubs is a partnership between TNC and trusted local partners. The Nature Conservancy, Mote Marine Laboratory, SECORE International, California Academy of Sciences and the National Oceanic and Atmospheric Association form the international nexus of the three hubs. Together, we will trial the latest in cutting-edge coral restoration technologies and conduct coordinated field tests across geographies. To date, much of the work and testing that has gone into these technologies has been on small scales in solitary locations, which limits the ability to learn what consistently works, where it works and why. By gathering comprehensive results through the interconnected Coral Innovation Hubs, the Conservancy and partners can advance these technologies forward and into the global locations where they are needed most urgently.

Together, these Coral Innovation Hubs will accelerate a new paradigm for the pursuit of large-scale reef restoration while integrating advanced conservation and monitoring measures for the most comprehensive approach possible. By working on the ground in key areas for Caribbean coral conservation, The Nature Conservancy is engaging diverse audienc-

es, spreading awareness, sharing science and starting a movement that can spark change around the globe. At no other time in history has the need been greater to protect and restore coral reefs in the Caribbean and around the world. And, now more than ever, we have the opportunity and the power to perfect the science, inspire the solutions and create the momentum — among scientists, conservationists, educators and the next generation — to interrupt the coral reef crisis and prevent the extinction of these life-giving ecosystems before it's too late.

KEYWORDS: Aerial mapping, micro-fragmentation, coral sexual reproduction

LITERATURE CITED

Schill, S., G. Raber, J. Roberts, E. Treml, J. Brenner, and P. Halpin. 2015 *No Reef is an Island: Integrating Coral Reef Connectivity Data into the Design of Regional-Scale Marine Protected Area Networks*. <https://doi.org/10.1371/journal.pone.0144199>