

Coral Reef Restoration for Environmental and Economic Enhancement of the Florida Keys

Photo credit: Mote Marine Laboratory



Coral reefs are a vital component of the Florida Keys economy and way of life. Reefs provide habitat for fish, protect our beaches and shoreline, and provide us with recreational opportunities. However, the corals that make up our reefs have been in decline throughout the Caribbean since the 1980's and significant rebounds have not been observed naturally. Both staghorn coral and the boulder corals in the genera *Montastrea* and *Orbicella* are reef-building corals that were once found in abundance across the reef tract. However, due to a variety of human and natural threats, they have declined precipitously.

Using techniques that have been in development in Florida for the past 20 years, restoration practitioners and scientists are now able to grow and propagate corals in land- and ocean-based nurseries to be returned to degraded sites. The ultimate goal of this work is to create breeding populations of a variety of reef-building species to help jump-start natural recovery through reproduction.

Funding Source: RESTORE Act Direct Component, passed through Monroe County, FL and administered by U.S. Treasury

Partner Organizations: Mote Marine Laboratory, Fish and Wildlife Research Institute, and Coral Restoration Foundation

Goal: To outplant 20,000 staghorn and 4,850 boulder corals to degraded reef sites

By the numbers:

- In Florida, the on-reef (snorkeling and diving) tourism value is \$306.2M, and the reef-adjacent (sandy beaches, sheltered water) tourism value is \$850.6M annually (Spalding et al., 2017)
- In the Florida Keys, over \$32M worth of buildings and just under \$43M worth of economic activity is protected by reefs from flooding impacts (Storlazzi et al., 2019)
- About 70,000 full- and part-time jobs in Southeast Florida are supported by reef-related industries (NOAA)



Photo credit: Mote Marine Laboratory

In 2019, TNC and partners received funding through Monroe County from the Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act (RESTORE Act) to grow and outplant just under 25,000 coral colonies to reefs in the Florida Keys.

Progress to date: Sites were selected by the restoration partners across the reef tract from Key West to the northern stretches of Key Largo. In total, 12,732 corals have been outplanted to these sites using best practices that have been developed over time by the partners on this project. These corals, once established on the reef, will help to reseed nearby reefs and restore the ecosystem functions that are so important. Additionally, a portion of the outplanted staghorn corals are being used in targeted research to answer outstanding questions that will help to streamline and improve future restoration efforts, as we look to scale these efforts significantly to impact not just sites, but entire reefs.

Photo credit: Coral Restoration Foundation

