

Restoring the Reefs IN BONAIRE

BONAIRE IS KNOWN IN THE WORLD FOR THE WAY IT PRESERVES ITS NATURE. THAT'S WHY IN 2010, KEN NEDIMYER, FOUNDER AND PRESIDENT OF CORAL RESTORATION FOUNDATION (CRF) BASED IN FLORIDA, WAS INVITED BY BUDDY DIVE RESORT TO WORK WITH AND ASSIST BONAIRE WITH THEIR CONTINUED EFFORTS TO PRESERVE BONAIRE'S GREATEST ASSETS, ITS REEFS.







Acropora corals, such as staghorn and elkhorn corals, are fast growing, framework building corals that play a key role in reef building throughout the Caribbean and tropical western Atlantic. They provide protection and structure for many species of reef inhabitants and are visually stunning representatives of coral reef systems. Acropora corals have suffered up to 97% decline in areas of the Caribbean due to the combined effects of thermal stress, disease, hurricanes, and macro algae.

Since the 1980s, coral diseases, bleaching events, loss of sea urchins, deteriorating water quality, and overfishing have affected coral populations throughout the Caribbean. The Caribbean reefs have been overgrown by algae, which inhibits coral growth. Add to all this hurricanes Lenny in 1999 and Omar in 2008 whose large waves destroyed most of the remaining healthy patches of elkhorn and staghorn coral cover.

The Coral Restoration Foundation Bonaire, a not-for-profit organization, was founded in 2012 with the goal of restoring the shallow water populations of elkhorn and staghorn coral along the coast of Bonaire and Klein Bonaire.

An initial permit, granted by the Bonaire Island Council, allowed CRF Bonaire staff with the supervision of the Bonaire National Marine Park to collect few a fragments of different genetic strains of staghorn (*Acropora cervicornis*) and elkhorn (*Acropora palmata*) coral

and move them to offshore coral nurseries, which at the moment host almost 8500 corals.

A CORAL TREE NURSERY

In a nursery, the growing corals are hanging in what seems like underwater Christmas trees. The “trees” (PVC trunks with fiberglass rods running thru the trunk) are tethered to the bottom with anchors and buoyed with subsurface floats. This allows for free movement within the water column, dissipates wave energy, and prevents damage to the tree structure or corals. One of the primary benefits of coral nursery areas is the care (i.e., predator and algae removal) provided to growing corals, which are monitored and maintained by CRF Bonaire and its volunteers, with the support of Buddy Dive, Harbor Village, and Eden Beach Resort.

Each tree holds a unique genetic strain of coral, and a “full” tree can hold anywhere from 100 to 160 corals.

RESTORATION SITE

After approximately eight months spent in the nursery, healthy and mature corals are strategically transplanted to the restoration sites, promoting genetic diversity to degraded portions of the reef. Two corals transplanting methods are used to stabilize corals to the bottom in the restoration sites: “gluing” fragments to rocky substrate using marine epoxy or, on sand/rubble bottoms, tying fragments to horizontal fiberglass structures elevated 40-50 cm from the bottom until the corals are large and strong enough to touch



bottom and withstand predation. Corals grow on the epoxy or the fiberglass leaving a fully natural habitat and new healthy coral reefs.

To dive in a restoration site, swarming with colorful fish seeking shelter in the thriving branches of the growing corals is something that will make any diver feel happy instantly.

BECOME A CORAL RESTORATION DIVER

Certified scuba divers visiting the island are invited to give back to Bonaire's spectacular reefs by volunteering with Coral Restoration Foundation Bonaire during their stays on the island. It's a very hands-on experience. To date, nearly 150 divers have been trained in coral reef restoration; it's definitely an on-going project.

Anyone who is interested in participating in the reef restoration projects should get in contact with the foundation at info@crfbonaire.org. The two-day program includes classroom sessions and workshops to learn the correct restoration techniques, and three training dives to work in the nursery and transplant coral. Certified restoration divers can choose from day- and week-long opportunities to lend a much-needed hand.

Through these efforts, Bonaire is ensuring that its coral reefs will be alive and well for years to come, much to the delight of divers and water enthusiasts who return to the island year after year.