

# Volunteers reattach coral to a damaged, well-known reef off The Breakers hotel

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It was a Humpty Dumpty project of epic proportion.

Dive 60 feet to the ocean floor with a bucket of cement and reattach 103 corals sliced from a swath of reef larger than two football fields. Sacrifice your weekends for nearly three months and stay underwater as long as the human body will allow. Do it in 68-degree water and never let one hand touch the other. And do it with volunteers.

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**Nature on the mend**  
Diving in cold water and rough seas, volunteers and reef specialists from county and state agencies reattached 103 pieces of coral that were ripped from The Breakers Reef in November.

**Hard corals**  
Most of the corals reattached to the sea floor were hard corals. These corals grow just 1 or 2 centimeters a year but some of the damaged corals were more than 200 years old. Reattaching them means it's a very long journey.

**Soft corals**  
Corals reattached are soft coral with stony, but because they coral along with the cement, the mixture sets in less than 10 minutes. All of the damaged soft coral likely will die.

**Sponges**  
Sponges sprout the common sea urchin. They're hard, however, their sponges will die. The reason is because they grow much faster than their shells.

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"I knew these people would be into doing this," said Bill Fay, The Breakers Reef repair project coordinator who works as a marine engineer for Applied Technology & Management. "I called and said, 'Hey, let's do this,' and I didn't have a single refusal."

The team of nine volunteers from four local marine engineering and environmental firms knew if they did not repair The Breakers Reef, no one would. Federal, state and local agencies were busy with other projects and did not have the finances.

Tetra Tech Environmental Consultants provided two volunteers and a 25-foot Catamaran with a work platform for mixing the cement. The Pinnacle Group and Callaway Marine Technologies came



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the wake of The Breakers Reef project. Already the foundation has raised \$3,000, Fay said. "There are groups that support reef research, artificial reefs and reef cleanups, but nothing for reef repair."

Fay and Charles Callaway have been reattaching damaged corals for more than 20 years. They learned the skill from coral reef guru Ray "Doc" McCallister, the salty 85-year-old professor emeritus at Florida Atlantic University who started the school's ocean engineering program.

The process is not complex. The bottom of the broken coral and the spot it will attach to are both scrubbed with a wire brush. portland cement, the kind found at home improvement stores, is prepared on deck with a drill and mixing paddle, then poured into a 5-gallon bucket and dropped to the ocean floor.

Then comes the tricky part: Because the cement is so alkaline, it cannot come into contact with the outside skin of the coral, which is living tissue. So the hand that handles the cement cannot touch the coral or the hand that holds the broken coral, which ranges in diameter from 10 inches to 3 feet.

The Breakers Reef is among the best known, most popular and easiest to find, just a mile east of the historic hotel in Palm Beach.

Divers and snorkelers, often guests of the hotel, explore the near-shore reef. The deeper offshore reef, where the damage occurred, attracts scuba divers from across the country.

No one knows exactly what happened to the reef or who did it.

The most likely possibility is that sometime in November a tugboat pulling a large vessel came close to shore, probably to avoid rough seas. The heavy cable between the tugboat and the vessel went slack. The cable sank and dragged across the bottom like a huge scythe, slicing everything in its path.

The force of the cable was so great that one piece of hard coral is scarred with a perfectly straight and round deep groove, about 18 inches long and 3 inches in diameter, as if a slack cable ran across its surface.

Whatever happened, no one saw it.

The DEP launched an investigation. They asked beach residents and The Breakers hotel for security tape. Palm Beach County Reef Rescue offered a \$2,500 reward. The culprit hasn't been found.

In a few years, when the repaired corals begin growing, divers and snorkelers won't be able to find the damaged coral.

forward with equipment, fuel and divers. The Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission and Palm Beach County Department of Environmental Resources assessed the damage, expedited permits and loaned their coral experts.

"This did not cost taxpayers a dime," said Fay, who founded the West Palm Beach Fishing Club Reef Restoration Foundation in

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