Scientists Working to Restore Puerto Rico's Coral Reefs Battered by 2017 Hurricanes

Release Date: April 17, 2018

CULEBRA, Puerto Rico – Federal, local and non-profit agencies are collaborating to restore hurricane damaged coral reefs, one of Puerto Rico's natural wonders.

With an average economic value of nearly $1.1 billion per year, the reefs support the island's vibrant tourism industry while protecting lives and valuable coastal infrastructure by reducing heavy swells during storms.

Hurricanes Irma and Maria, both Category 4 storms, caused extensive damage to the reefs around Puerto Rico when they made landfall in September. In a one-two punch, Irma pummeled the north coast, followed two weeks later by Maria, one of the strongest storms to hit the island in nearly a century.

The storms snapped hundreds of thousands of corals from reefs around the island. Assessment teams found structural damage to individual coral and the reefs as well as heavy sediment accumulation, which can prevent corals from getting enough sunlight.

Under a scorching sun one Friday in March, a team from FEMA joined a group of 14 scientists headed to Carlos Rosario reef aboard the Coral Queen II on a mission to stabilize and perform emergency restoration on damaged corals. About 150 feet from the shore in an area the size of three football fields, the scientists dropped anchor off the tiny island of Culebra on Puerto Rico's east coast.

Ten to 15 feet below the surface, the scientists dug up living coral fragments, cleaned the damaged pieces with wire brushes and stored them in a cache, an area free of sand and rocks, said Jennifer Moore, who leads the coral assessment team from the National Oceanic and Atmospheric Administration.

Aboard the dive boat, members of the restoration team were preparing a cement epoxy. Divers from the Sea Ventures Marine Response Unit then carried the cement mixture in buckets to the sea floor, where the living corals were extracted from the cache and reattached to the reefs.

The six-month restoration program, which began in January, is being conducted jointly by several Puerto Rico conservationists, FEMA and NOAA. The assessment team that visited the reefs off Culebra in March included Dr. Nilda Jimenez, a marine ecology director for Puerto Rico's Department of Natural and Environmental Resources; a NOAA restoration specialist; and a biology student from the University of Puerto Rico.

One quarter of all ocean species such as red snapper, lobster and octopus depend on coral reefs for food and shelter. Since they contain natural chemical compounds, corals also serve as treatment for different diseases including cancer. And perhaps most relevant to these extreme storm events, coral reefs can minimize wave energy up to 97 percent, reducing destruction from floodwaters.

"The ecological and economic value of coral reefs is (also) incalculable for the fishing industry," said Dr. Keenan Adams, a recovery field coordinator who works with FEMA's Natural and Cultural Resources sector.

The reefs provide shelter and a healthy environment for fish, and they produce thousands of healthy young corals, ready to grow and protect Puerto Rico's coastline.

For video of the coral restoration process, visit www.fema.gov/media-library/assets/videos/163002.

For more on Puerto Rico's recovery from Hurricane Maria, visit fema.gov/disaster/4339.

###

*Disaster recovery assistance is available without regard to race, color, religion, nationality, sex, age, disability, English proficiency or economic status. If you or someone you know has been discriminated against, call FEMA toll-free at **800-621-FEMA** (**3362**) **711/VRS** - Video Relay Service). Multilingual operators are available. (Press **2** for Spanish). TTY call **800-462-7585**.*

Follow us at:
www.fema.gov/hurricane-maria
www.facebook.com/femapuertorico
www.twitter.com/femaregion2