



# NEWS FROM NOAA

## NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION • US DEPARTMENT OF COMMERCE

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### **RESEARCHERS PLOT THE FUTURE OF REEFS DURING ANNUAL CORAL SPAWNING IN NOAA'S FLORIDA KEYS NATIONAL MARINE SANCTUARY**

Preserving the coral reefs of the Florida Keys National Marine Sanctuary will be much more than a nine to five job for a team of researchers studying this year's coral spawning. In a project funded by the sanctuary and NOAA's Coral Reef Conservation Program, the team will dive during the night and tend coral larvae during the day as they work on techniques to "seed" declining coral reefs with new larvae. The site where the freighter *M/V Wellwood* ran aground in 1984 at Molasses Reef near Key Largo provides an ideal location for the seeding experiment. Restored structurally in 2002, the new substrate has not yet been settled by reef-building hard corals.

"The annual coral spawning offers us a brief window to work on our techniques for growing larvae and helping them to settle," said Margaret Miller, an ecologist with NOAA's Southeast Fisheries Science Center and adjunct professor at the University of Miami's Rosenstiel School for Marine and Atmospheric Research. "We hope that the payoff for our intensive efforts will be the development of methods that we can use to help coral reefs recover."

Coral spawning is an annual event that occurs in the late evening several days after the full moons of the late summer, when corals reproduce by releasing eggs and sperm into the water column. Dr. Alina Szmant, a professor with the University of North Carolina at Wilmington who is leading a similar effort in Puerto Rico, has predicted that coral spawning will occur this year between August 10<sup>th</sup> and August 17<sup>th</sup>, with the peak for elkhorn and staghorn corals occurring August 12<sup>th</sup> and 13<sup>th</sup>, and for boulder corals August 14<sup>th</sup> and 15<sup>th</sup>.

During that week, researchers with Miller's team will keep a nightly vigil on Key Largo area reefs, waiting for corals to release their egg bundles into spawn collectors stationed overhead. The scientists will transport some of the spawn to a temporary field station at Carysfort reef light, where they carefully tend the coral embryos until they become free-swimming larvae.

Miller and her team will then release the larvae under tents stationed above the *Wellwood* restoration site, in hopes that the larvae will settle below and metamorphose into juvenile corals. After 24 hours, researchers will remove the tents, marking the sites so they may return about six months later, when the corals should be large enough to see, to determine whether any have survived.

This year, the team will also experiment with the use of the tents over "ecoreefs," snowflake-shaped ceramic structures that they hope will prove conducive to coral growth. They will also attempt to settle larvae on dead coral rubble in the lab, later placing these pieces out at the reef. While the last two hurricane seasons have cut short the group's work, one small elkhorn recruit has survived the last few years.

“With the addition this year of elkhorn and staghorn corals to the list of threatened species under the Endangered Species Act, exploring the possibility of growing corals from spawn takes on new significance as a way to aid in their recovery,” said CDR Dave Score, acting sanctuary superintendent. Sanctuary staff will provide vessel support for the research team.

The Florida Keys National Marine Sanctuary protects 2,896 square nautical miles of critical marine habitat, including coral reef, hard bottom, seagrass meadows, mangrove communities and sand flats. The NOAA National Marine Sanctuary program and the state of Florida manage the sanctuary.

The NOAA National Marine Sanctuary Program seeks to increase the public awareness of America’s marine resources and maritime heritage by conducting scientific research, monitoring, exploration and educational programs. Today, the sanctuary program manages 13 national marine sanctuaries and one marine national monument that together encompass more than 150,000 square miles of America’s ocean and Great Lakes natural and cultural resources.

In 2007 NOAA, an agency of the U.S. Commerce Department, celebrates 200 years of science and service to the nation. Starting with the establishment of the U.S. Coast and Geodetic Survey in 1807 by Thomas Jefferson much of America's scientific heritage is rooted in NOAA. The agency is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners and more than 60 countries to develop a global monitoring network that is as integrated as the planet it observes.

- 30 -

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