

# Coral Sex

Late on the evening of August 6th, 2001 a team of researchers from the National Coral Reef Institute [NCRI] at Nova Southeastern University witnessed a spawning event of staghorn coral, *Acropora cervicornis*, located on Southeast Florida coral reefs off Ft. Lauderdale. Masses of orange egg-sperm bundles were released into the water column between 11:15 and 11:30 p.m. Sea conditions were a moderate chop and the gametes were carried south by a strong northerly current. The coral thicket was located in 3.3 meters of water approximately one-half mile offshore.

This event is noteworthy for several reasons. This is the first time such a spawning event has been witnessed and documented for corals in Broward County waters. In addition, the accumulations of staghorn coral demonstrate that there are healthy reefs existing in some unexpected areas.

The research team, operating out of Nova Southeastern University's Oceanographic Center in Dania Beach, was comprised of four people: Dr. Bernardo Vargas, a postdoctoral researcher at NCRI; Dr. James Thomas, Research Director at NCRI; Brian Ettinger, a research technician at NCRI; and Abby Renegar a graduate student at the Oceanographic Center.

The scientists left the dock at 7 p.m. and anchored near a reef (one of a number off the Ft. Lauderdale area) that has been a research focus for Dr. Vargas. A collection net was placed over one colony to trap gametes. Observations were made from 8 to 11 p.m. by the SCUBA diving scientists who waited for the spawning to occur.

Coral spawning events, while the subject of much study recently, are difficult to predict but are generally linked to phases of the moon. Dr. Vargas's calculations and results from other researchers indicated that spawning was expected on August 11, the 6th night after the full moon (and has been known to occur 7 to 8 days after the full moon). Prior underwater observations by Dr. Vargas indicated gamete bundles were increasing in size and consequently, plans were made to observe the most likely spawning date of 11 August. Preliminary observation trips to "bracket" the most likely night were planned, beginning on August 6th. As happens many times in science, the organisms were not aware of the timetable set for them by scientists. Hence, on the first preliminary dive, the team was rewarded by a spectacular display of nature, a pulse of reproductive activity lasting approximately 15 minutes. This is yet another example of how preparation and luck come together in scientific research. The team plans to continue diving through the week to document any more reproductive activity.

Many corals spawn synchronously, an adaptation thought to overwhelm egg predators (fish and other marine invertebrates) to which the gametes represent a high-energy food source.

Documentation of this event is good news for the coral reef research and management community. With a steady stream of reports of reef degradation and death, it is a positive point to note that some reefs continue to exhibit robust health and growth, even in the most unlikely places. Located between two major inlets, Hillsboro and Port Everglades, and adjacent to a densely populated coastal setting, it is reassuring that reefs are occurring in the shallow waters off Broward County. Subject to possible runoff and effects of pollution, and extensive coastal development including modification by high-rise complexes, reefs might not normally be expected to occur in this setting. Nevertheless, the reefs appear to be thriving. The irony and highly significant finding is that this staghorn coral species is persisting, growing, and spawning in a supposed marginal habitat when most of its brethren species has disappeared or are highly impacted elsewhere throughout the Florida Keys and Caribbean.

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## **Staghorn coral lovefest recorded off Broward**

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A team of four researchers from Nova Southeastern University's National Coral Reef Institute are the first to observe spawning staghorn coral off Fort Lauderdale.

The scientists, led by Bernardo Vargas-Angel, were diving at night on Aug. 6 in 12 to 18 feet of water about one-half mile offshore when they witnessed the bumpy, branching coral reproducing.

According to Vargas-Angel, the coral polyps released clouds of tiny pink bundles that looked like BBs into the water. The bundles contain both eggs and sperm, which are released near the surface. Then they float along with the currents until they mix and settle to create new coral reefs.

Vargas-Angel said it was an impressive sight lasting about 15 minutes. "Probably 70 percent of the coral spawned. At one point, the water was filled with egg and sperm bundles," he said.

The discovery is important, Vargas-Angel said, because Fort Lauderdale may have the largest population of staghorn coral in South Florida. The coral here could help to colonize reefs throughout the region, including the Keys, where not much staghorn coral is left.

Coral spawning is typically linked to the full moon. The staghorn event occurred on the second night after the full moon.

Vargas-Angel said that may be the only time this year the staghorn coral reproduces off Broward, but his team of researchers will be checking the area during the full moon next month in case there's a recurrence.