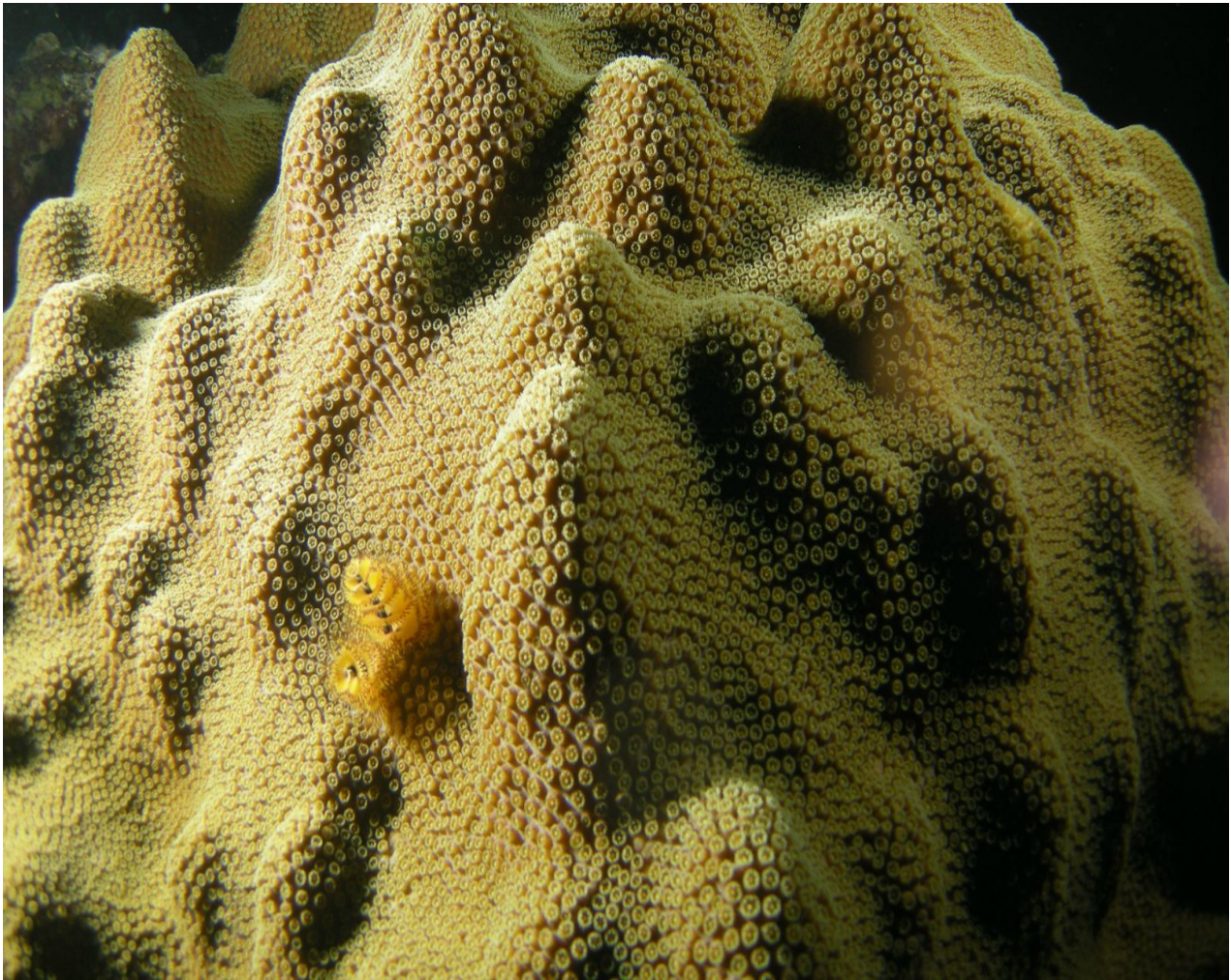


The Virgin Islands Consortium

UVI And University Of Miami Coral Reef Discovery Offers 'Glimmer Of Hope' For Territory, Caribbean

VIC News / **Published On July 21, 2015 08:05 PM /**

Staff **July 21, 2015**



In a joint study, University of the Virgin Islands (UVI) and University of Miami (UM) Rosenstiel School of Marine and Atmospheric Science researchers have discovered that a threatened coral species living in deeper waters off the U.S. Virgin Islands is more fertile than its shallow-water counterparts.

The findings of the study titled “Fertile Fathoms: Deep Reproductive Refugia for Threatened Shallow Corals,” and revealed via a press release UVI issued today, has important implications for the future of coral reefs worldwide.

The new study showed that mountainous star corals (*Orbicella faveolata*) located at nearly 140 feet (43 meters) deep may produce one trillion more eggs per square kilometer (247 acres) than those on shallow reefs. Caribbean coral reefs have declined 50 percent in the past 50 years, according to the 2014 “Status and Trends of Caribbean Coral Reefs” report. In 2005, coral reefs in the U.S. Virgin Islands were severely impacted by high temperatures and disease.

“Coastal pollution, storms, and warm water can stress a coral out, which is why we’re looking at what’s going on in deeper offshore habitats,” Daniel Holstein, UVI post-doctorate researcher and a UM Rosenstiel School alumnus. “These deeper habitats tend to be cooler and less strenuous for corals – and thus, coral spawning may be more spectacular.”

Mountainous star corals reproduce by broadcast spawning, where corals release their eggs and sperm in the water during a highly synchronized event. The researchers used remote cameras at a field site off the island of St. Thomas and laboratory observations during broadcast spawning events to show that the mesophotic corals, which live in deeper reef waters typically between 30 -150 meters (98 - 492 feet), released their eggs in near synchrony with shallow-water corals.

“The reefs that produce more larvae are more likely to be successful in seeding the reefs with their offspring,” said Claire Paris, associate professor of ocean sciences at the UM Rosenstiel School and co-author of the study. “Protecting these potent reproductive deep refuges could represent the key to the survival of coral reefs for future generations.”

Mesophotic coral ecosystems are buffered from environmental disturbances due to their depth and distance from shore. These deeper coral reef ecosystems may offer reproductive refuge to neighboring shallow-water coral reefs that are in decline, according to the research team.

“These deep reefs offer a glimmer of hope,” said Tyler Smith, UVI associate research professor of Marine Science. “They may be an incredible resource for the U.S. Virgin Islands, and for the entire Caribbean, if they can supply consistent sources of coral larvae.”

The study was published in the July 21, 2015 issue of Nature Publishing Group’s journal *Scientific Reports*. The study may be accessed on this website: www.nature.com/articles/srep12407.