Multi-species coral rescue in response to the Stony Coral Tissue Loss Disease on the Florida Reef Tract

Rescate de coral de especies múltiples en respuesta a la enfermedad de pérdida de tejido de coral pedregoso en el tracto de arrecife de Florida

Sauvetage de coraux multi-espèces en résponse à la maladie de perte de tissu corallien pierreux sur le tractus de récif de Floride

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EXTENDED ABSTRACT

The Florida Reef Tract (FRT) is experiencing an unprecedented disease outbreak described as Stony Coral Tissue Loss Disease (SCTLD). First reported near Miami in 2014, SCTLD is an infectious, waterborne disease that has high rates of disease transmission and mortality and has since spread to the northernmost extent of the FRT in Martin County and southwestward through the lower Florida Keys, currently occurring west of the Marquesas. The spread of this disease has resulted in the mortality of thousands of colonies from >20 coral species, including primary reef builders and species listed under the Endangered Species Act. Efforts to identify the pathogen(s) of SCTLD, determine the mode(s) of transmission, and develop potential intervention techniques are currently underway, but our limited understanding of SCTLD greatly impedes management efforts to control the spread of this virulent disease. A multi-agency, multi-disciplinary Coral Rescue Team (CRT) was developed to: 1) design and implement a reef-tract wide coral collection plan for SCTLD-susceptible species, 2) preserve representative portions of the remaining genetic diversity of FRT corals in holding, and 3) plan for future propagation, restoration and reintroduction of such corals to the wild.

The CRT has determined priority target species for rescue, based off how susceptible a species is to SCTLD and how rare that species is within the FRT. This has resulted in seven successful coral rescue collection cruises, ahead of the disease margin that resulted in 2,212 corals collected from the reef. The 88 ft research vessel is equipped with the top-side space necessary to process, sample and mount collected corals. Coral care plans have been developed and rescue corals have been delivered to Florida-based non-governmental organizations and universities as well as long-term housing facilities from the Association of Zoos and Aquariums outside Florida. These facilities have started focusing on propagation, rearing, and induced spawning efforts. Lastly, the CRT has started genetic sampling to develop genetic markers from multiple species. The genotypes will help the broader restoration community, while the spawn from rescue corals will be used in more specific restoration efforts along the FRT and will help to understand SCTLD-resilience between species.

KEYWORDS: *Sargassum*, citizen science, community science, monitoring, macroalgae