



**The Southeast Coral Reef Evaluation and Monitoring Project (SECREMP) provides local, state, and federal resource managers with an annual coral reef status report for the Southeast Florida Coral Reef Ecosystem Conservation Area (Coral ECA).**

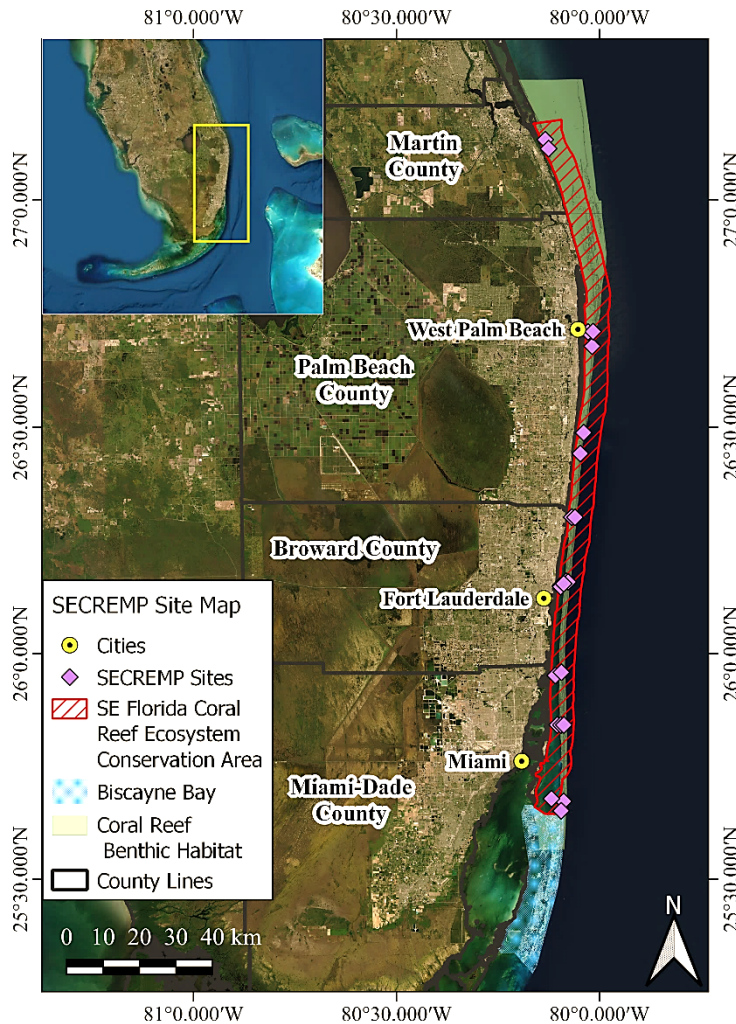


Figure 1. Map of the 22 SECREMP sites

The Southeast Florida Coral Reef Evaluation and Monitoring Project (SECREMP) was established as an expansion of the FWC managed Coral Reef Evaluation and Monitoring Project (CREMP) in the Florida Keys. SECREMP provides local, state, and federal resource managers annual reports on the status and condition within the Southeast Florida Coral Reef Ecosystem Conservation Area (Coral ECA) (Miami-Dade, Broward, Palm Beach, and Martin counties) coral reef system as well as information on temporal changes in resource condition. Survey methods of the 22 sites (Figure 1) include photographic transects to quantify percent cover of major benthic taxa (stony corals, sponges, octocorals, macroalgae, etc.) and demographic surveys to quantify abundance, size distribution, and overall condition of stony corals, octocorals, and the giant barrel sponge. SECREMP is a partnership between DEP, FWC, and NSU that facilitates collaboration and knowledge sharing benefiting coral reef ecosystems nationwide. The Coral ECA

experienced significant stony coral assemblage declines across the study period, with significant losses observed across all stony coral metrics examined (cover, live tissue area (LTA) and density). These losses were predominately driven by a significant increase in Stony Coral Tissue Loss Disease (SCTLD), which peaked in 2016 but has subsequently decreased in prevalence every year since. As regional disease prevalence across the 22 sites has dropped to < 1% in 2018, 2019, and 2020, total loss from this event can begin to be quantified, and recovery can start to be addressed. No significant decline in stony coral LTA or density was identified from 2018 through 2020, and density in 2020 was significantly higher than all previous years. However, from 2015-2018, those

species susceptible to SCTLD lost >50% of regional LTA, while low susceptible species did not experience any significant change in LTA. This shift in species contribution to the stony coral assemblage could have a lasting impact as recovery beings to occur. Although the majority of SCTLD susceptible species had juvenile colonies (<4 cm) in the sample sites, these juveniles were dominated by generalist, low relief species.

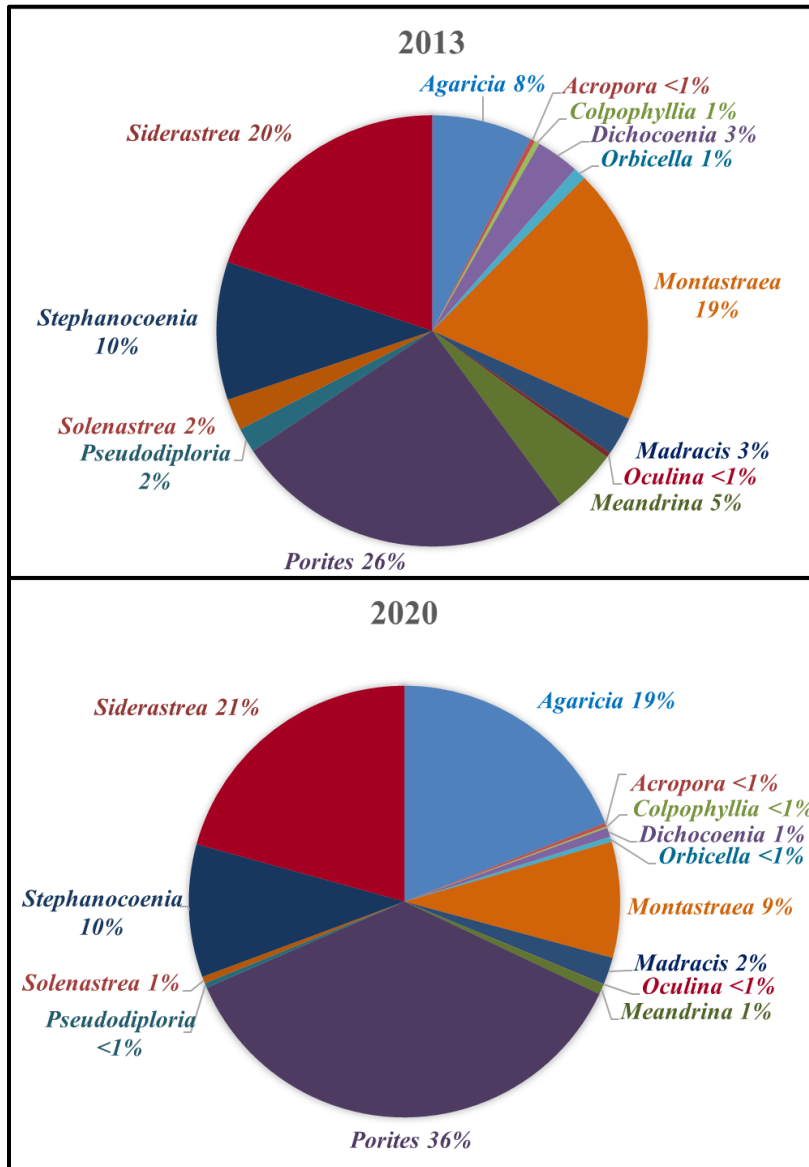


Figure 2. Stony coral genera by raw abundance for years 2013 and 2020. All genera with > 5 colonies/year were included.

Figure 2 illustrates how the species composition has changed across the SECREMP sites from 2013 to 2020. There was a large increase in the abundance of *Agaricia* and *Porites* species, with a concurrent loss of those species affected by SCTLD including *Montastraea*, *Meandrina*, *Orbicella*, and *Dichocoenia*. The loss of *Montastraea cavernosa* is of particular concern because the species contributes greatly to stony coral benthic cover and LTA, and this species is present in all four Southeast Florida counties and reef habitats. *M. cavernosa* is also one of the more common large (>50 cm diameter) colony-forming species and has commonly been described as a ‘robust’ species capable of surviving in variable habitats and conditions. This contrasts with the small, weedier species such as *Porites astreoides*, *P. porites* and *Agaricia agaricites*, which are now contributing greater to the remaining tissue within the Coral ECA. As disease prevalence has dropped to <1% regionally, and with no further significant loss of stony

coral LTA observed over the last three years, there is hope that natural recovery could begin. However, the composition and diversity of stony coral species at individual sites has been significantly impacted and will affect what species are able to successfully sexually reproduce. Mitigation and intervention may be necessary to assist those species with the greatest losses from SCTLD in order to see any significant recovery. The chronic nature of disturbances to and the significant economic value of the coral reefs within the Southeast Florida Coral Reef Ecosystem Conservation Area requires comprehensive, long-term monitoring to define and quantify change and to help identify threats to the ecosystem. The value for a long-term region-wide monitoring program is highlighted by the information in this report, which will be vital in planning and monitoring the potential future recovery of this resource.