Southeast Florida Coral Reef Initiative

Acting above to protect what's below.

Winter 2018 Newsletter

Florida Reef Tract Water Quality Monitoring Program

David Cox, Land Based Sources of Pollution Coordinator

For the 2017-18 Fiscal Year, the Florida Legislature has provided X in funding to monitor water quality on the coral reefs of Miami-Dade, Broward and Palm Beach counties, marking the first time such extensive water quality monitoring has taken place in the Southeast Florida region. This funding has allowed the Coral Reef Conservation Program to add 88 sites to the already existing nutrient water quality monitoring pilot project being conducted at St. Lucie Inlet and Government Cut. Thus, a total of 115 inlet, outfall and randomized reef sites are now being monitored monthly in and around the nine inlets stretching from the Port of Miami to the St. Lucie Inlet.

Figure 1 - Coral Reef Conservation Program employees gather initial data for the water quality monitoring project. Photo: DEP Coral Reef Conservation Program

Sampling at the St. Lucie Inlet and Government Cut began in September 2016 by DEP's Coral Reef Conservation Program and Florida State Parks staff, and is funded as part of a partnership with the National Oceanic and Atmospheric Administration's National Ocean Service. In September 2017, the first month of the expansion project, approximately 1,070 samples were collected, generating over 11,100 data points. All samples are now being collected by Nova Southeastern University and analyzed by Broward County's Environmental Lab and the TDI Brooks lab at Texas A&M University (NOAA partner).

Our objective is to establish a long-term water quality monitoring program for the northern portion of the Florida Reef Tract not encompassed by Biscayne National Park or the Florida Keys National Marine Sanctuary. Samples are collected on the outgoing tide and analyzed for a suite of nutrients in order to assess the impacts of land-based sources of pollution on the health of nearshore reefs.

The project has benefited from the technical assistance and participation of many local and state partners, including:

- DEP Aquatic Ecology and Quality Assurance Section DEP Water Quality Standards and the Beaches, Inlets & Ports Programs
- Nova Southeastern University;
- Broward County;
- Miami-Dade, Broward and Martin Counties;
- Florida State Parks in particular St. Lucie Inlet Preserve State Park
- NOAA's National Ocean Service
- NOAA's Loxahatchee River District
- Riley's Reef and Fintastic Aquariums
- The SEFCRI Technical Advisory Committee

Southeast Florida Coral Disease Outbreak Update

Kristi Kerrigan, Reef Resilience Coordinator

Florida's coral reefs are continuing to fight off a significant coral disease outbreak that first plagued the corals in Miami-Dade in 2014. The disease has since spread north through St. Lucie Reef in Martin County and south between Tennessee Reef and Coffins Patch in the Middle Keys. Baseline information from existing coral monitoring programs suggest that the current prevalence is drastically higher than "background" levels of disease, with some sites ranging from 65-100 percent prevalence among certain species.

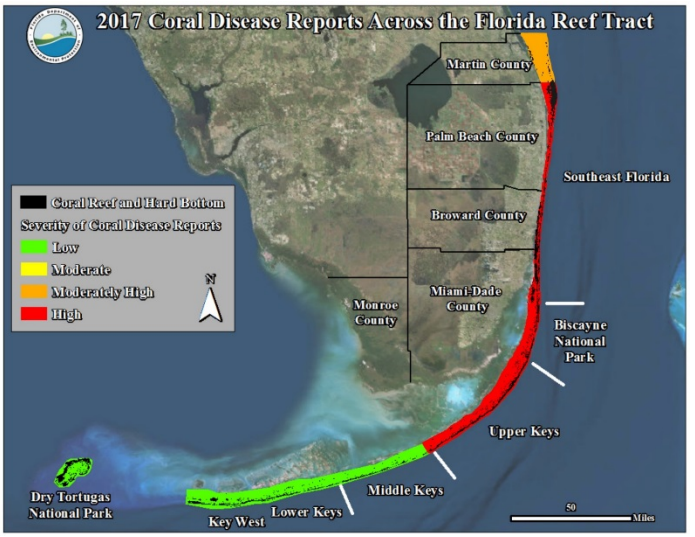

Figure 2 - Map showing the current disease progression across the Florida Reef Tract.

Until recently, coral disease response activities have largely been a piecemeal operation as funding was identified. On July 1, 2017, DEP's Florida Coastal Office Southeast Region received $500,000 from the Florida Legislature and Governor Scott for disease response, as well as a $400,000 grant from the Environmental Protection Agency. With these additional funds, DEP has been working with partners across the state to better understand this outbreak through continued monitoring and research. In particular, disease projects have been developed with the intent of answering specific management questions.

In order to answer those questions, it's important to know proper disease terminology and field identification techniques. On July 24 and 25, DEP partnered with disease experts from the University of Hawaii and Oregon State University to deliver a two-day coral disease investigation training. Approximately 125 participants representing a variety of agencies, organizations and universities

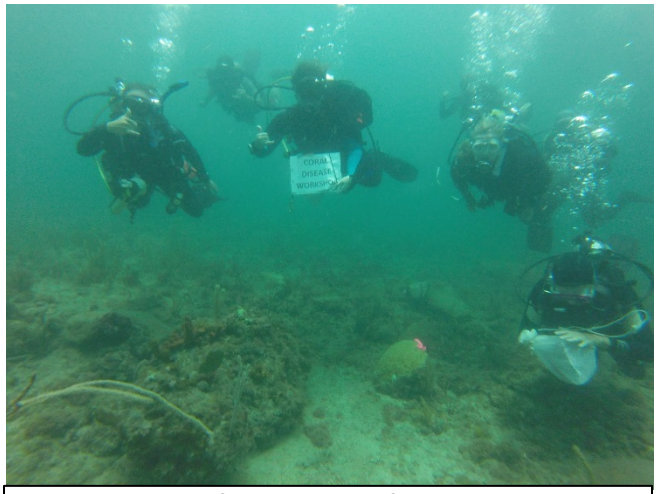

Figure 3 - Photo of our partners from Coral Disease Investigation Training. Photo: DEP Coral Reef Conservation Program.

attended to learn about coral disease identification, ecology and investigation techniques. A smaller subset of partners who frequently conduct field monitoring were also invited to an in-water practical component the next day to practice the skills learned during the classroom session. Not long after this training, Southeast Florida was hit by Hurricane Irma. Unknown impacts from the storm led managers to initiate surveys at high value reef sites across the Florida Reef Tract, assessing hurricane damage and the status of disease on the reef. For sites in Southeast Florida, DEP contracted a researcher from Nova Southeastern University to lead this effort. Findings from this study will help managers understand where the disease is occurring, what species are being affected and how common it is as a snapshot in time. A final report will be available March 2018.

Additionally, to further understand what is causing the disease, DEP collaborated with staff from the Florida Fish and Wildlife Conservation Commission to lead a three-day coral disease workshop to strategize the next phase of coral disease response efforts. The workshop was attended by approximately 40 participants, including leading coral disease scientists and animal health experts. The objectives included identifying a range of coral disease intervention and treatment methodologies, as well as developing a strategic sampling plan which will provide critical data about the disease outbreak considering the various environmental factors such as sedimentation, temperature, water quality and human pressure.

DEP's Florida Coastal Office continues to work with partners from federal, state, local government, universities, NGOs and the south Florida community on a multi-faceted response effort. For more information on current projects, please email Kristi.Kerrigan@dep.state.fl.us. You are encouraged to help by submitting reports of coral disease to the Southeast Florida Action Network (www.SEAFAN.net).

Port of Miami Anchorage Has Been Modified

Aubree Zenone, Assistant Manager

The Florida Department of Environmental Protection, in partnership with the United States Coast Guard (USCG) and Nova Southeastern University (NSU), has modified the Port of Miami Anchorage Area in Miami Beach. Changes in design and configuration will help protect over 600 acres of coral reef from future impacts by avoiding protected reef areas and reducing the current anchorage area by close to three square nautical miles. The anchorage area will now be divided into two separate areas, including an inner western anchorage for smaller vessels and an outer eastern anchorage for larger vessels, totaling 1.5 square nautical miles.

Ranging from the northern boundary of Biscayne National Park to the St. Lucie Inlet in Martin County, the Southeast Florida reef tract provides over 70,000 jobs and $6.4 billion annually to Florida's economy. It is also home to approximately 45 coral species and over 305 fish species, some of which are listed on the Endangered Species Act. These corals and fish communities attract tourists both regionally and globally

"This outstanding conservation management achievement is a testament to how local stakeholders can effectively work together to protect Florida's ecologically and economically important coral reefs," said Joanna Walczak, Southeast regional administrator for the Florida Coastal Office.

The new anchorages are the result of extensive collaboration between numerous stakeholder groups, agencies, universities and private citizens at federal, state and local levels. Studies conducted by DEP and NSU showed that anchorage modification was necessary to reduce reef damage to the northern portion of the Florida Reef Tract. This study led to the formation of a working group coordinated by USCG, DEP and NSU, where a group of varied stakeholders, including federal and state agencies, port pilots, Port Miami administration, university scientists and other shipping interests worked together to design the new configuration.

"In an era of tight budgeting, competing priorities and different organizational cultures, we were able to accomplish this project by remaining flexible and not losing sight of our common goals," said Paul D. Lehmann, U.S. Coast Guard Seventh District Prevention Waterways Management Division.

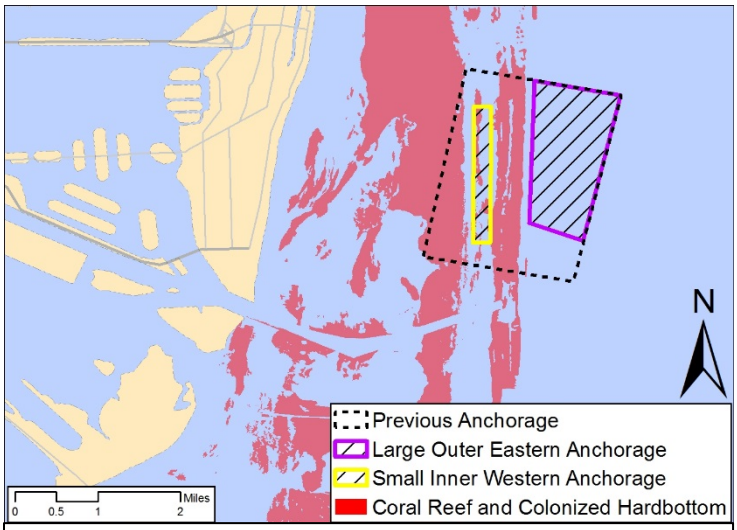

Figure 4 - Old and new configuration of the Port of Miami anchorage. Map by Dr. Brian Walker, NSU.

SEFCRI Vice Chair Corner

Ron Coddington, Principal Engineer at Callaway Marine Technologies

What are the goals and priorities of Callaway Marine?

- Callaway Marine is dedicated to providing environmentally sensitive coastal construction projects with unique preservation and protection of the environment. Our specialties include Ocean and Coastal Construction and environmental mitigation. Our history of mitigation projects include coral reef restoration and enhancement, seagrass mitigation and ship grounding site restoration.

What is your role in Callaway Marine?

- As Principal Engineer to Callaway Marine Technologies, my work focuses on the engineering and planning of restoration and marine projects. I also provide business development expertise to Callaway Marine to service a variety of clients, from governmental agencies to other consulting firms, with focus in our area of expertise.

How did you hear about the SEFCRI team?

- I have served for over 15 years on National Marine Fisheries Services' advisory panels and for the last nine years as an International Commission for the Conservation of Atlantic Tunas Advisory Committee member, providing expertise on the negotiation of our international fishing treaties in the Atlantic and Mediterranean, as an adviser to NMFS and the US State Department. In keeping with the philosophy of "Think globally, Act Locally", I have directed my environmental focus to local issues critical to the health of the South Florida Environment.

What areas of expertise do you offer to the SEFCRI

- My experience in over 35 years of coastal construction projects allows me to understand the roles of environmentalists, engineers, fishermen, divers and others in the uses and protection of our unique marine resources. My experience ranges from coral reef restoration to coastal projects, such as jetty repair and construction, mangrove and seagrass mitigation, land- based sources of pollution and the control of such, wetland reconstruction, large scale stormwater treatment system construction and design, artificial reef construction and protection of marine resources during coastal and ocean construction projects. I have closely followed and worked with the evolution of environmental protection during construction and dredging projects, especially turbidity issues and how they affect our offshore resources.

What do you enjoy using our reef resources for?

- My family and friends regularly use our reef resources as a source of recreation by diving and fishing in our beautiful coastal environment. I am, and always have been, a South Florida resident using our resources throughout my life.

What is one thing you would tell everyone on the SEFCRI mailing list that they can do to help our local reefs?

- The most important thing we can do is spread the word on our coastal and reef environments. The one-time use of plastics, the over fertilization of our lawns and landscape are two of the most critical sources of pollution and damage to our coastal and reef environments. We all can do little things to make our environment better for future users.