# MEMORANDUM

**To:** Florida Fish and Wildlife Conservation Commissioners

**From:** Gil McRae, Director, Fish and Wildlife Research Institute

Jessica McCawley, Director, Marine Fisheries Management

**Date:** May 2, 2019

**Subject:** Coral Reef Update and Discussion

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**Purpose:**
Provide an update on current multi-agency response to the disease event impacting corals on the Florida Reef Tract.

**Summary:**
The review will include information on the status of coral reefs, current knowledge relative to the cause of the disease, reconnaissance and intervention efforts, coral rescue and restoration activities and long-term strategies associated with each of these response components. Management of coral reefs in Florida is delegated to multiple State and federal agencies.

Florida has extensive and widespread coral habitats, which range from the Dry Tortugas National Park, approximately 60 miles west of Key West, to Martin County, approximately 100 miles north of Miami and up the gulf coast of Florida. These extremely diverse habitats provide shelter, food, and breeding sites for a wide variety of commercially and recreationally important organisms. These habitats are also important in protecting shoreline property from storm surge.

FWC has monitored the conditions of coral reef and hardbottom habitats annually throughout the Florida Keys since 1996, southeast Florida since 2003, and the Dry Tortugas since 2004. Data during this period shows a continued loss of stony coral and an increase in soft corals in the Florida Keys. Stony corals are critically important because they are the reef building species that maintain the integrity of the reef. Coral reefs north of Biscayne Bay have been monitored by DEP and Nova Southeastern University since 2002. Stony coral densities on these northern reefs remained low at around 3% but have declined recently due to the disease event. Major events, including bleaching, hurricanes, cold spells, and the current disease outbreak, have contributed these decreases in density and size of corals, and a shift from stony to soft corals.

A yet unidentified disease event began in 2014 in Miami-Dade County, initially spread north through Broward (2015), Palm Beach (2016) and Martin (2017) counties and then moved south of Miami into the Upper (2016), Middle Keys (2017) and Lower Keys (2018). While the progression of the disease has slowed in the northern counties, the leading edge of the disease is

currently just south of Key West. The disease has been confirmed to affect more than 20 species of stony corals (there are ~45 coral species in Florida) and inflicts varying levels of loss, with the most susceptible coral species suffering complete mortality. FWC and a multidisciplinary team of experts have been responding to this event, including Florida Keys Community College, Florida Institute of Oceanography Keys Marine Lab, Florida Atlantic University, Nova Southeastern University, FWC, Florida Department of Environmental Protection, and Florida Keys National Marine Sanctuary.

Given the highly stressed condition of Florida's coral reefs, coral rescue and coral reef restoration has become a focal point for management. Coral rescue, which has never been done before in Florida, involved taking segments of live coral colonies out of the wild in non-diseased areas and holding them in aquaria to preserve genetic diversity and serve as broodstock for coral propagation. The central goal of restoration is to restore the structure and function of this degraded ecosystem. In addition to the FWC, many partners, including Nova University, University of Miami, Coral Restoration Foundation, Mote Marine Laboratory, Florida Keys Community College, and The Nature Conservancy have been rearing and then outplanting several species of corals onto reefs for nearly a decade. This effort is continuously being improved through refinement of rearing and outplanting techniques, research, and monitoring. In parallel, similar restoration efforts to enhance the recovery of long-spined sea urchins, a critical reef animal, are ongoing. Ultimately, the vision is to integrate these restoration efforts into a comprehensive coral reef restoration strategy for Florida.

FWC staff will provide an overview presentation which will be followed by a panel consisting of partners in the disease response effort. Representatives from DEP, FKNMS, Florida Aquarium, Mote Marine Laboratory, the Coral Restoration Foundation and the Smithsonian Marine Station in Fort Pierce will each make short statements summarizing their role and perspectives followed by a Question and Answer session with Commissioners.

**Staff Recommendation:**
This presentation is informational in nature. Input from the Commissioners is welcomed.

**Staff Contact and/or Presenter:**
Gil McRae, Director, Fish and Wildlife Research Institute
Jessica McCawley, Director, Division of Marine Fisheries Management

**Panel Discussion Members:**

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| Joanna Walczak | Florida Department of Environmental Protection |
| Sarah Fangman | National Oceanic and Atmospheric Administration/ Florida Keys National Marine Sanctuary |
| Roger Germann | The Florida Aquarium |
| Michael Crosby | Mote Marine Laboratory |
| Scott Graves | Coral Restoration Foundation |
| Blake Ushijima | Smithsonian Marine Station, Fort Pierce |