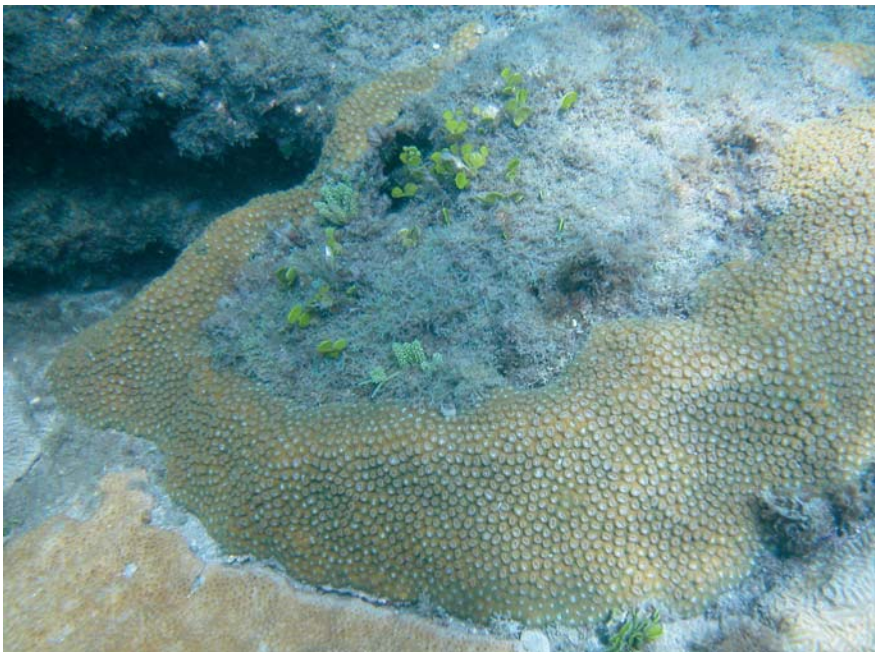

Photos by FWC

Coral reef, left, and mountain coral, right.

Assessment of coral stressors on St. Lucie Reef: Florida's northernmost coral reef

Introduction:
Coral reefs are among the most productive and beautiful habitats on the planet, but are declining at an alarming rate. Numerous stressors on corals, such as pollution, have been identified on reefs worldwide, and new techniques have been developed to understand their role. Understanding stressors is critical to the protection and restoration of these declining habitats.

Objectives:
1. Assess the effects of acute blackwater discharge events from the St. Lucie River on coral health at the St. Lucie Reef during low and high flows.

2. Determine the relative health of corals on St. Lucie Reef versus those around the Caribbean.

3. Provide data for adaptive management of regional management and restoration efforts, such as Everglades Restoration.

Approach:
Histological and molecular techniques, including gene profiling and expression, are used to quantify coral health. Data loggers are placed on the reef to collect light levels. Coral stress can be assessed by examining reproductive condition and the expression of genes of the corals and their associated bacteria and zooxanthellae, which are coral tissue inhabitants that capture light energy and provide nutrients to the coral.

Benefits:
It is anticipated the project will develop a greater understanding of the stressors associated with blackwater on corals and the findings will be used to influence the adaptive management process – watershed management, restoration. This study will support the ongoing efforts of the Southeast Florida Coral Reef Initiative to influence the adaptive management process and to understand the role of land-based sources of pollution.

Location:
St. Lucie Reef Preserve State Park, Martin County

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Below left: Scientists take a measurement of brain coral wound recovery.

Below: Close up – mountain coral.