Florida Department of Environmental Protection
Coral Reef Conservation Program

SEAFAN BleachWatch Program

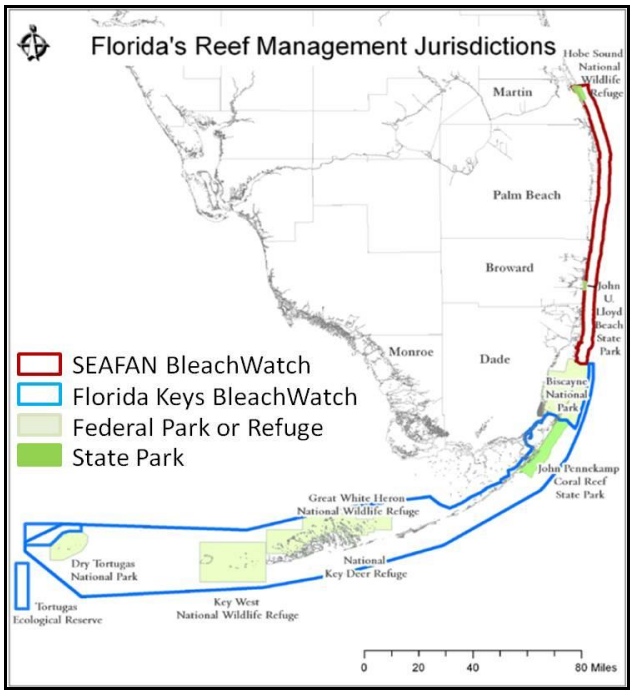
Program Overview

SEAFAN BleachWatch is an early warning system for coral bleaching in southeast Florida.

Coral bleaching has increased in frequency and severity along the Florida Reef Tract (FRT) since the 1980s. Immediate and long-term impacts to coral reef ecosystems from bleaching events include mortality, loss of coral cover and diversity, and economic impacts associated with losses to fisheries and tourism. The implications of these events for future coral reef condition have given rise to public, media, and scientific concern for the reef, and highlight the need for improved scientific understanding of coral bleaching.

A bleached colony of lesser starlet coral (*Siderastrea radians)*. Photo credit: Jenny Wuenschel (submitted to BleachWatch on 6/21/2015).

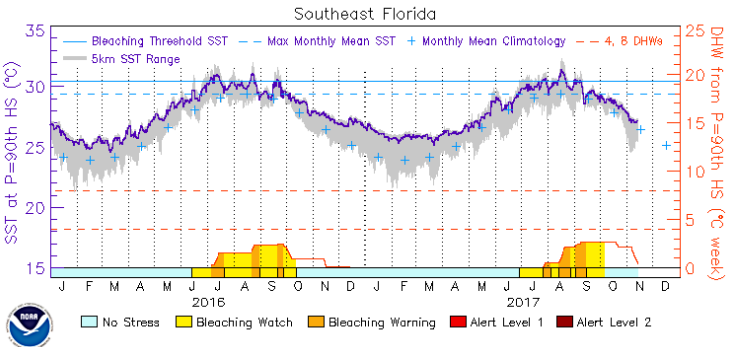
SEAFAN BleachWatch addresses the need for a program to detect and monitor coral bleaching events in southeast Florida, and improves scientific understanding about the timing, distribution and severity of bleaching in the region. The SEAFAN BleachWatch program combines meteorological and oceanographic data with field observations recorded by trained observers. The data collected are used to identify conditions favorable for coral bleaching, and to monitor coral reefs before, during and after bleaching events. "Current Conditions" reports containing SEAFAN BleachWatch results are made available to the public on the BleachWatch website, www.SEAFAN.net/BleachWatch.



Management jurisdictions along the Florida Reef Tract. FDEP Coral Reef Conservation Program manages the SEAFAN BleachWatch region (red), while the Florida Keys BleachWatch operates within FKNMS (blue).

As a program, BleachWatch originated in the Great Barrier Reef Marine Park, and has since been established in several other locations around the world. SEAFAN BleachWatch was established in 2013 to mimic the Florida Keys BleachWatch program, which is managed by Mote Marine Laboratory in the Florida Keys National Marine Sanctuary (FKNMS). The Florida Department of Environmental Protection (FDEP) manages the SEAFAN BleachWatch program for the northern third of the Florida Reef Tract to provide an early warning system for coral bleaching (*see image left).* In 2017, SEAFAN BleachWatch was expanded to include reports of coral disease in response to a multi-year coral disease outbreak that began in 2014. Please reference the Coral Disease Fact Sheet in your kit for more information on this outbreak or visit FDEP's coral disease page: https://floridadep.gov/fco/coral/content/florida-reef-tract-coral-disease-outbreak

Weather and Sea Temperature Monitoring



NOAA's Coral Reef Watch Virtual Station Data: January 1, 2017 – November 13, 2018.
http://coralreefwatch.noaa.gov/vs/gauges/southeast_florida.php

Certain environmental conditions, such as calm winds and clear sunny days, can lead to an increase in sea temperatures and are generally associated with mass bleaching events. SEAFAN BleachWatch monitors seasonal climate predictions and local weather forecasts for periods of light winds and decreased cloud cover, which may intensify coral stress during summer months when sea surface temperature is elevated.

Sea surface temperature is monitored by NOAA's "Coral Reef Watch" program (http://coralreefwatch.noaa.gov), which provides a variety of internet-based satellite imagery products that summarize temperature data and can be used to predict if conditions are conducive to coral bleaching. Small increases in sea temperatures over several weeks or large increases over a few days stress coral. If these conditions persist long enough, it could lead to mass bleaching. SEAFAN BleachWatch uses the Coral Reef Watch products to assess thermal stress and determine if there is a significant risk of coral bleaching in southeast Florida. If available data indicates that environmental conditions are favorable for bleaching, an alert is sent out to the BleachWatch observer network as well as scientists and managers to encourage reports on the condition of coral reefs throughout the region.

BleachWatch Observer Network

The onset and severity of mass coral bleaching can vary by species, geographic location, and type of reef zone, which makes it very difficult to predict where or when it will occur. SEAFAN BleachWatch relies on an observer network of trained recreational, commercial, and scientific divers to help identify when and where bleaching is taking place by monitoring and reporting on the condition of the reefs in southeast Florida. Members of the observer network are alerted when conditions favorable for bleaching are present, so that field data can be gathered before, as well as during and after a bleaching event. After each visit to the reef, participating divers are encouraged complete and submit a data sheet, whether bleaching was observed at the dive site or not. Divers are also encouraged to send pictures of their observations. To help ensure consistency in reported data, all participants attend a training class and are provided with bleaching and coral ID keys to use as a reference above and below the water.

A fully bleached symmetrical brain coral (*Psuedodiploria strigosa)*. Photo credit: FDEP CRCP

Current Conditions Reports

"Current Conditions Reports" will be generated throughout the summer to provide a summary of all collected data. These will be available online and produced monthly, biweekly, or weekly depending on the severity of the climate conditions and extent of coral bleaching/disease observations. Please visit www.SEAFAN.net/BleachWatch for copies of all historical current conditions reports.