

Summary: Based on climate predictions and field observations, the threat for mass coral bleaching in southeast Florida between Miami-Dade and Martin counties is **MODERATE** as of August 1, 2016.

Environmental Monitoring

Climate predictions for this current conditions report are based on NOAA's Coral Reef Watch (CRW) satellite imagery products, which summarize sea surface temperature (SST) data and provide an indication as to when conditions are favorable for coral bleaching. The current CRW 5-kilometer (km) Coral Bleaching Alert Area indicates that the southeast Florida region is presently experiencing moderate thermal stress, the entire region is under a bleaching watch (Figure 1):

- NOAA's experimental 5-km Bleaching Hotspot Map (Figure 2) compares current SST to the maximum monthly mean, which is the average temperature during the warmest month of the year. Corals start to become stressed when SST is 1°C greater than the highest monthly average. Currently, SST is slightly elevated and has reached the 1°C Hotspot bleaching threshold across all four counties.
- Coral bleaching risk increases if the temperature stays elevated for an extended period of time. NOAA's experimental 5-km Degree Heating Weeks (DHW) Map (Figure 3) shows the accumulation of temperature stress over the previous 12 weeks, with 1 DHW equal to one week at 1°C greater than the maximum monthly mean. Currently, this map indicates that temperature stress has begun accumulating in Miami-Dade and Broward Counties.
- Near real-time data from CRW's new 5-km Satellite Regional Virtual Station for southeast Florida indicates that SST in the region is currently above the monthly average, and is hovering around the bleaching threshold (Figure 4).

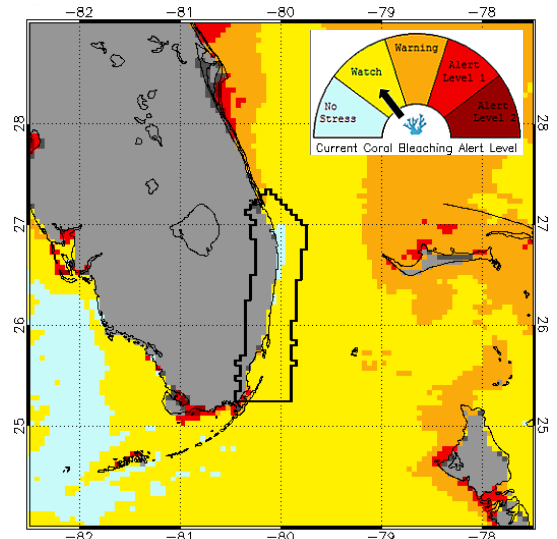


Figure 1. NOAA Coral Reef Watch Bleaching Alert Area for July 30, 2016.

<http://coralreefwatch.noaa.gov/satellite/bleaching5km/index.php>

The Florida Department of Environmental Protection's Coral Reef Conservation Program staff will continue to monitor NOAA's Hotspot, DHW and Alert Area maps, as well as Virtual Station data for the remainder of the summer bleaching season.

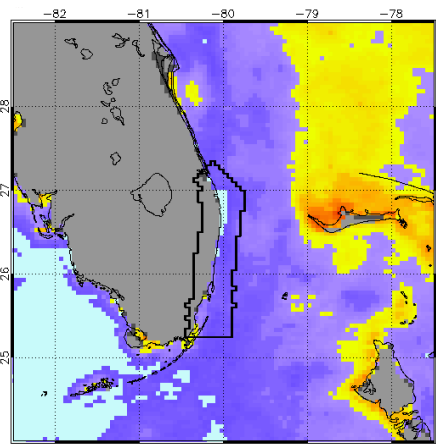


Figure 2 (left). NOAA CRW Hotspots for July 30, 2016.
<http://coralreefwatch.noaa.gov/satellite/bleaching5km/index.php>

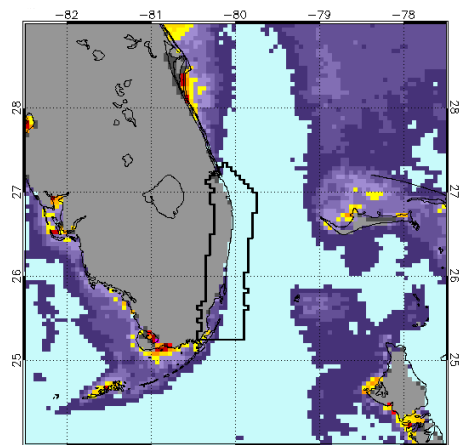
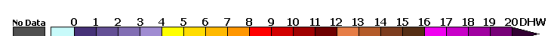


Figure 3 (right). NOAA CRW Degree Heating Weeks for July 30, 2016.
<http://coralreefwatch.noaa.gov/satellite/bleaching5km/index.php>



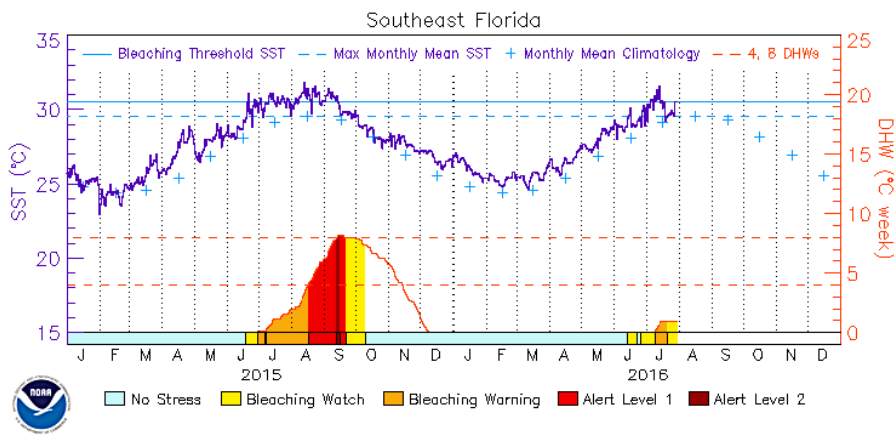


Figure 4. NOAA CRW Virtual Station Data; January 1, 2015 – July 30, 2016.
http://coralreefwatch.noaa.gov/vs/gauges/southeast_florida.php

Observer Network

A total of 10 BleachWatch Observer network reports were received during the month of July, including 4 from Miami-Dade County, 3 from Broward County, and 3 from Palm Beach County. Of these, 8 indicated observations of bleaching, while 2 reports from Broward indicated no bleaching. From the bleaching reports, 3 included observations of paling and 3 of partially bleached. Majority of the reports indicated 11-30% of the coral cover being

affected. Two reports also noted signs of mortality, which may have been in association with coral disease.

Corals exhibiting signs of thermal stress were observed in a broad depth range (14-43 ft) in Miami-Dade, between 45 and 65 feet in Palm Beach County, and in shallow waters in Broward (10-20 ft). Water temperatures were recorded from 82⁰F at the deepest site and 84-86⁰F at the shallow sites. Bleaching reports indicated two main coral groups as being affected including Encrusting/Mound/Boulder corals and Brain corals (Figure 5). Additional observations of bleached *Palythoa* spp. and Fire Coral were also noted in Broward and Miami-Dade counties. Several observers noted that the Encrusting/Mound/Boulder corals (i.e. *Montastrea cavernosa* and *Siderastrea siderea*) seems to be affected the most by both bleaching and disease.

These isolated reports from July combined with NOAA’s CRW SST projections may indicate the presence of another coral bleaching event in southeast Florida. Water temperatures are warm enough for corals to undergo stress. If conditions continue to worsen throughout the region, a widespread bleaching event could develop.

The BleachWatch Observer Network is encouraged to continue submitting observations on coral condition after every visit to the reef throughout the bleaching season. **Remember, reports of ‘No Bleaching’ are just as important as bleaching reports!** Please also note any coral diseases that you observe! To submit a report on coral condition in southeast Florida, or for more information on the SEAFAN BleachWatch program, please visit www.SEAFAN.net and click “BleachWatch”.



Figure 5. A partially bleached colony of *Montastrea cavernosa* observed on 7/4/2016 in Palm Beach County. Photo credit: Marie Dugan.

For more information about SEAFAN BleachWatch or to organize a training session for your group to become a part of the Observer Network, please contact the Program Coordinator below.

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Program Partners

