

Current Conditions Report #20170906

September 6, 2017

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 September 6, 2017.

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 (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 has exceeded the 1°C threshold in Miami-Dade County.
- 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 one week at 1°C greater than the maximum monthly mean. Currently, this map indicates that there is moderate accumulated temperature stress, particularly in Miami-Dade County.
- Near real-time data from CRW’s new 5-km Satellite Regional Virtual Station for southeast Florida indicates that SST in the region is hovering around the bleaching threshold (Figure 4).

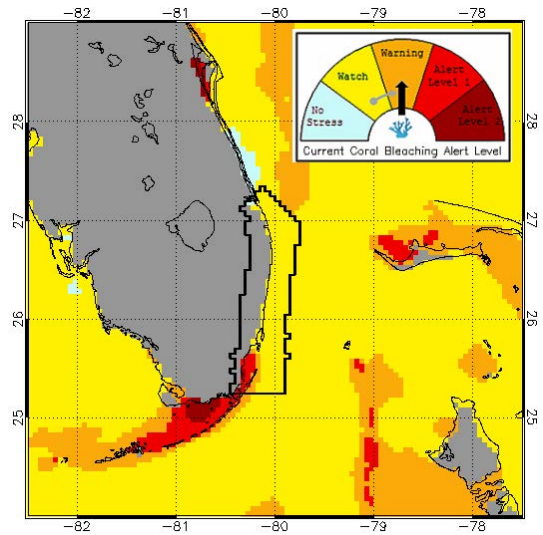


Figure 1. NOAA Coral Reef Watch Bleaching Alert Area for September 4, 2017.
https://coralreefwatch.noaa.gov/vs/gauges/southeast_florida.php

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 bleaching season.

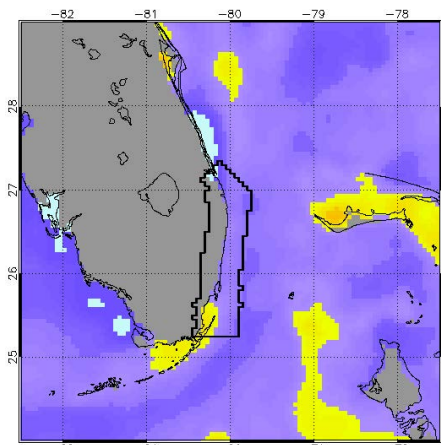


Figure 2 (left). NOAA CRW Hotspots for September 4, 2017.
<http://coralreefwatch.noaa.gov/satellite/bleaching5km/index.php>

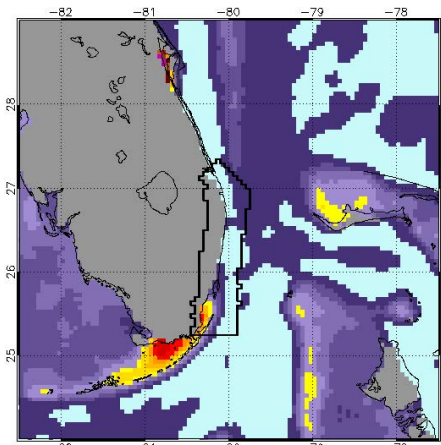
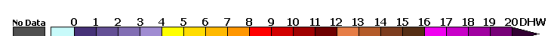


Figure 3 (right). NOAA CRW Degree Heating Weeks for September 4, 2017.
<http://coralreefwatch.noaa.gov/satellite/bleaching5km/index.php>



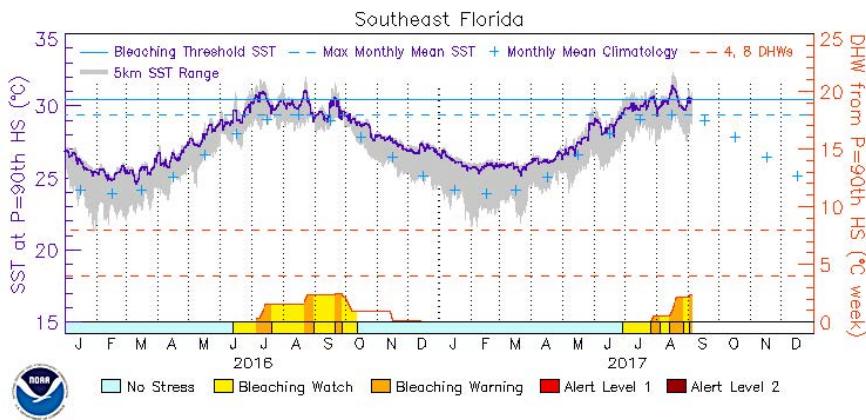


Figure 4. NOAA CRW Virtual Station Data; January 1, 2016 – September 4 2017.
http://coralreefwatch.noaa.gov/vs/gauges/southeast_florida.php

Observer Network

A total of 22 BleachWatch reports were received since July including 9 from Broward County, 10 from Palm Beach County, and 3 from Martin County. Of these, 67% reported bleaching observations with 5 indicating paling and 7 indicating partially bleaching. Majority reported either 1-10% or 11-30% of corals showing bleaching signs with one report as high as 51-75% of corals bleached. Four reports also noted signs of coral disease and two indicated recent mortality, which was likely in association with the disease outbreak (Figure 5).

Corals exhibiting signs of thermal stress were observed in a broad depth range (10-62 ft) in Broward County and Palm Beach County. Water temperatures at the bottom were reported as low as 78°F and as high as 86°F with frequent calm, clear days. Bleaching was reported from five out of the six groups of coral, primarily Mound/Boulder, Brain, and Branching corals. Reports of bleaching were also noted in leaf/plate/sheet corals and fleshy corals. From report photos, common species exhibit bleaching stress include: *Siderastrea siderea* (Figure 6), *Montastraea cavernosa*, *Oculina diffusa*, and *Orbicella faveolata*.

These isolated reports from July and August combined with NOAA's CRW SST projections indicate the presence of a moderate bleaching event in southeast Florida. Water temperatures have been reported exceeding the thermal threshold across the region. With the possibility of hurricanes bringing in cooler waters, it's important to continue monitoring over the next couple months.

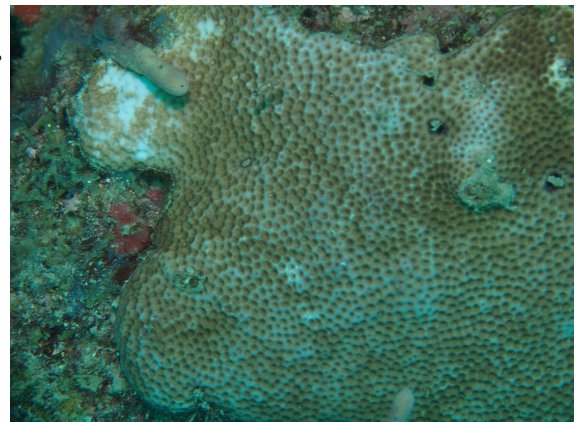


Figure 6. A paling colony of *Siderastrea siderea*, which is known to bleach in fluorescent pinks, blues, or purples. Photo: Marie Dugan, Palm Beach County on 7/15/17.



Figure 5. Coral disease on *Diploria labyrinthiformis*. Photo: Marie Dugan, Palm Beach County on 7/16/2017.

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 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".

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

