

Updated October 4, 2017

Summary: Based on climate predictions, current conditions, and field observations, the threat for mass coral bleaching within the FKNMS is currently **LOW**.

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook October 2, 2017 (experimental)

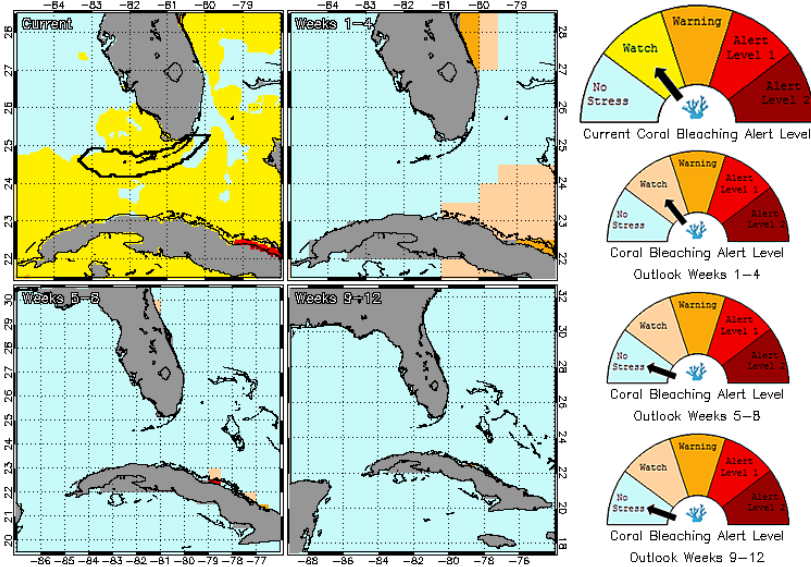


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through December, 2017. Updated October 2, 2017. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

Weather and Sea Temperatures

According to the newly released NOAA Coral Reef Watch (CRW) experimental 5 kilometer (km) Satellite Current and 60% Probability Coral Bleaching Alert Area, there is a bleaching watch for parts of the Florida Keys National Marine Sanctuary, however, the coral bleaching outlook conditions are currently not favorable for a mass bleaching event (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that most of the Florida Keys region is currently experiencing minimal thermal stress. NOAA's new experimental 5 km Coral Bleaching HotSpot Map (Fig. 2), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows only slightly elevated temperatures for the Florida Keys. Similarly, NOAA's experimental 5 km Degree Heating Weeks (DHW) map, which illustrates how much heat stress has built up over the past 12 weeks (Fig.3), indicates limited temperature stress currently evident in the Florida Keys region.

NOAA's Integrated Coral Observing Network (ICON) monitoring stations, which provide near real time in-situ sea temperature data along the outer reef tract throughout the Florida Keys, confirms that temperatures have been slightly below 30°C over the past few weeks (Fig. 4), likely due in part to elevated wind conditions due to Hurricane Irma (Fig. 5). In-situ sea temperature data is currently only available at Fowey Rocks and intermittently at Molasses Reef. Sombrero is not recording data at this time. Mote Marine Laboratory will continue to monitor the NOAA HotSpot maps, DHW maps, and ICON sea temperature data from NOAA monitoring stations on a weekly basis for the remainder of the bleaching season.

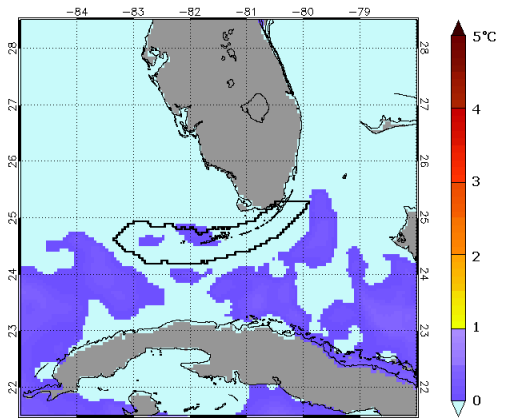


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida October 2, 2017. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

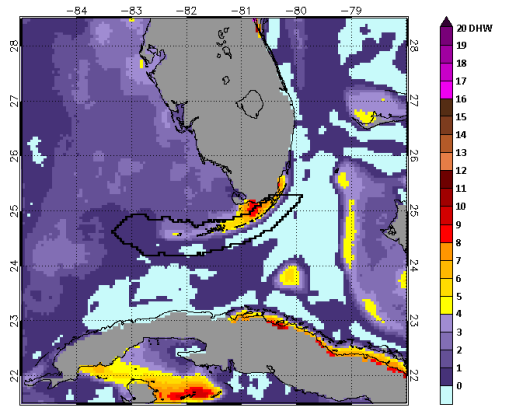


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida October 2, 2017. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

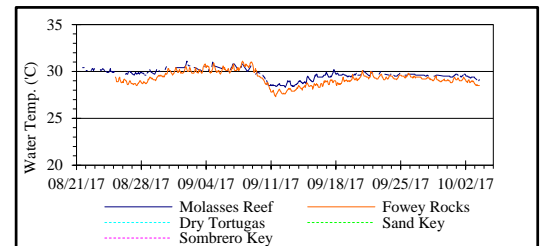


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (August 21- October 3, 2017).

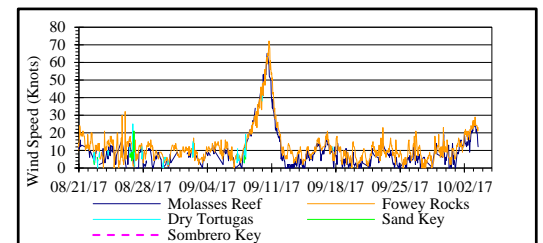


Figure 5. Wind speed data from NOAA/ICON monitoring stations (August 21-October 3, 2017).



Coral Bleaching Early Warning Network

Current Conditions Report #20171004



Current Coral Conditions



Figure 7. *Acropora palmata* breakage at Horseshoe Reef on 9/21/17.

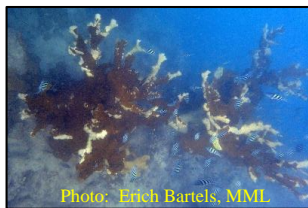


Figure 9. *A. palmata* mortality at Looe Key Reef on 9/26/17.

A total of 33 BleachWatch Observer reports were received during the past 6 weeks (Fig. 6), with 28 reports indicating isolated colonies exhibiting signs of paling or partial bleaching and the remaining 4 reports indicated no significant signs of coral bleaching or paling observed. The overall percentage of corals exhibiting signs of thermal stress was mostly 1-10%, however a few reef sites noted up to 30% of corals affected. The majority of reported paling observations consisted of isolated colonies of Encrusting/Mound/Boulder corals, Brain corals, Branching corals, and Flower Corals. Other observations included paling of *Palythoa spp.*, Fire Coral, and Gorgonians as well as numerous reports of coral disease. Due to Hurricane Irma, the FKNMS and the BleachWatch program would also like your reports of reef damage and marine debris. Initial reports from Upper Keys, Middle Keys, Key West and Dry Tortugas are noting a few of each of the following: overturned corals, sand abrasions, branching coral breakage and mortality (Fig. 7), sand buried corals, exposed hard-bottom, and uprooted gorgonians and sponges (Fig. 8). Initial assessment of several reefs throughout the Lower Keys (off Summerland and Cudjoe) on Tues, Sept. 26 showed significant partial mortality of larger coral colonies at Looe Key (Fig. 9), with several nearby shallow patch reefs severely denuded with only limited amounts of soft corals and *Palythoa* remaining.

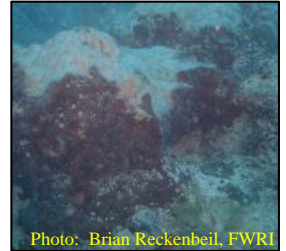


Figure 8. Torn *Xestospongia sp.* at a Marathon deep reef 9/30/17.

At this time, even though conditions are not favorable for a mass bleaching event, the FKNMS asks that you please continue to report on the condition of the reefs by submitting a detailed BleachWatch report at mote.org/bleachwatch or a quick Community-based Observations of Coastal Ecosystems and Assessment Network (COCEAN) at mote.org/cocean.

BleachWatch Reports for August 21-October 3, 2017

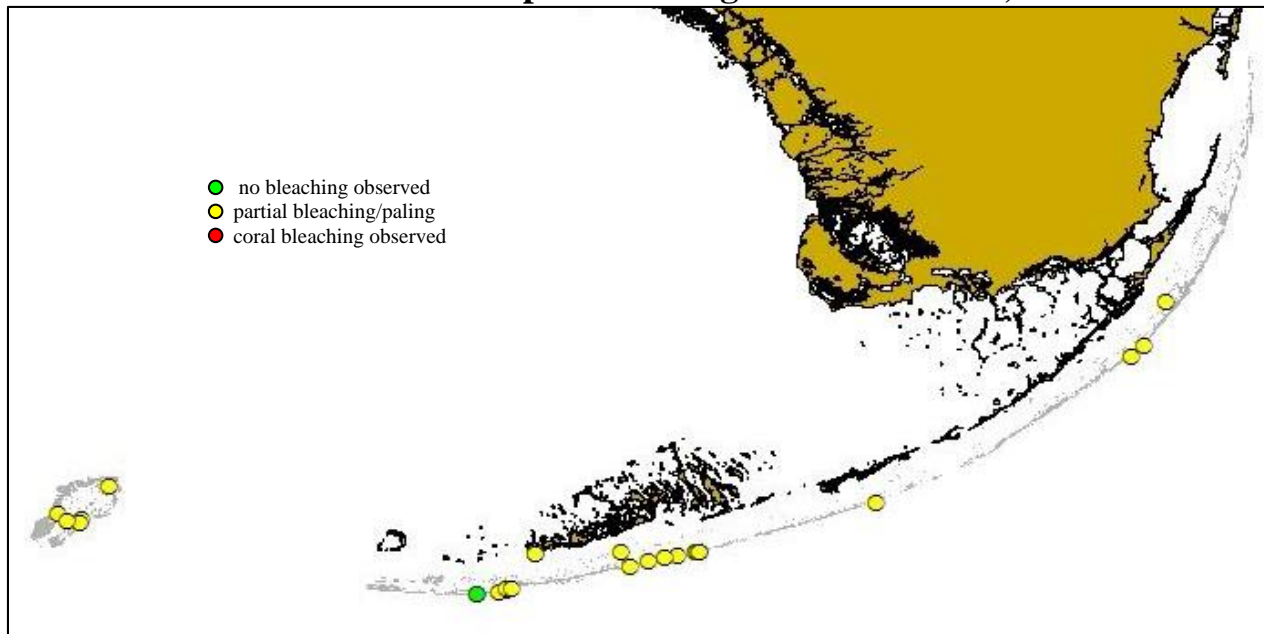


Figure 6. Overview of BleachWatch observer reports submitted from August 21-October 3, 2017

For more information about the BleachWatch program, or to submit a bleaching observation, contact:



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<http://www.mote.org/bleachwatch>

FUNDING THANKS TO....

