



Coral Bleaching Early Warning Network

Current Conditions Report #20140911

Updated September 11, 2014



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

Current Environmental Conditions

Remote sensing analysis by NOAA's Coral Reef Watch (CRW) program indicates that most of the Florida Keys region is experiencing thermal stress. NOAA's recent experimental 5 km Coral Bleaching HotSpot Map (Fig.1), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows only slightly elevated temperatures for the Florida Keys over the last 2 weeks. Similarly, NOAA's latest experimental 5 km Degree Heating Weeks (DHW) map (Fig.2), indicates accumulated temperature stress in the Florida Keys region. However, NOAA's Integrated Coral Observing Network (ICON) monitoring stations confirms that sea temperatures throughout the Florida Keys, at least along the outer reef tract, suggest that temperatures have decreased to 30°C or below (Fig.3), likely due in part to windy conditions observed during most of the past 2 weeks (Fig 4). *In-situ* sea temperature data is currently not available for Dry Tortugas, Sand Key or Sombrero Reef.

According to the latest NOAA CRW experimental 5 kilometer (km) Satellite Coral Bleaching Alert Area, most of the Florida Keys National Sanctuary is under a Bleaching Warning or Alert Level 1, indicating that bleaching is likely with the potential for more bleaching alerts if sea temperatures increase (Fig. 5). 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.

NOAA Coral Reef Watch Coral Bleaching Alert Area September 10, 2014 (experimental)

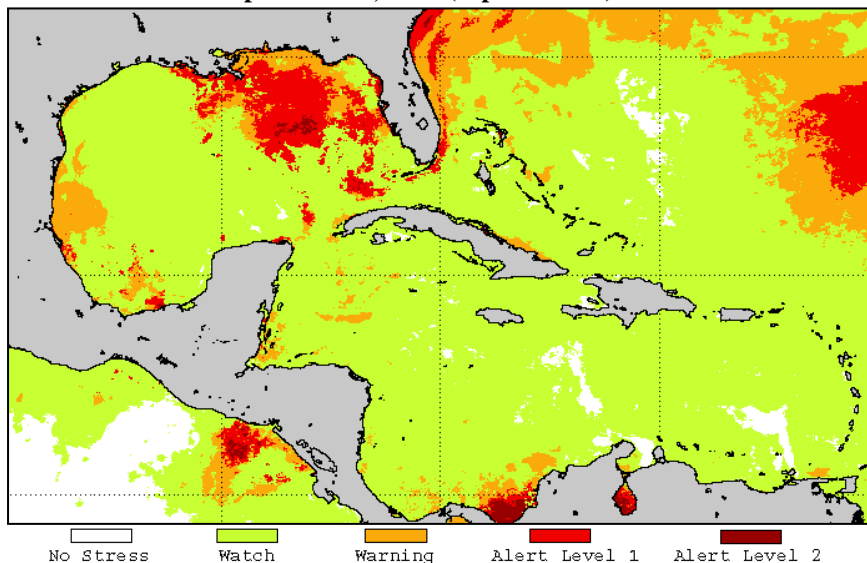


Figure 5. NOAA's 5 km Experimental Coral Bleaching Alert Areas for September 10, 2014. <http://coralreefwatch.noaa.gov/satellite/bleaching5km>

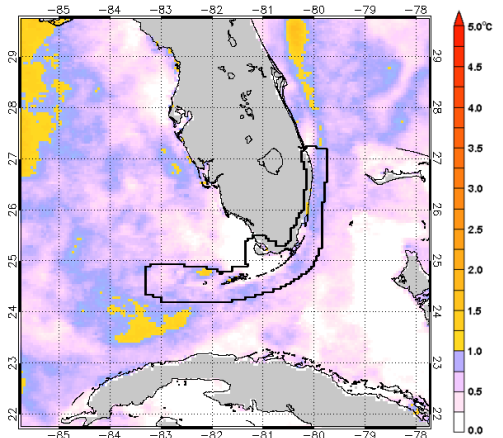


Figure 1. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida Sept. 10, 2014. <http://coralreefwatch.noaa.gov/regions/florida.php>

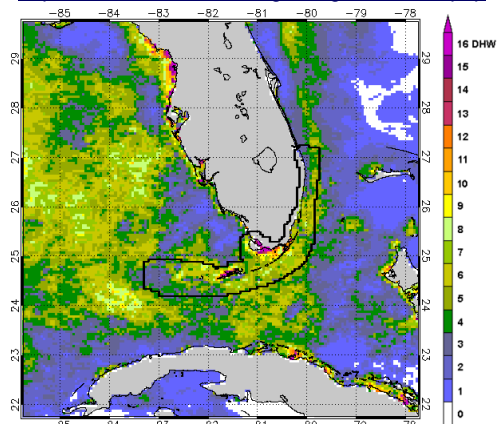


Figure 2. NOAA's Experimental 5km Degree Heating Weeks Map for Florida Sept. 10, 2014. <http://coralreefwatch.noaa.gov/regions/florida.php>

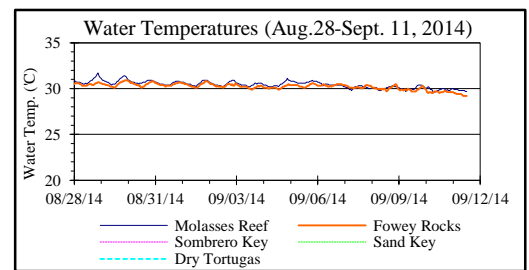


Figure 3. *in-situ* sea temperature from NOAA/ICON monitoring stations (Aug. 28-Sept. 11, 2014).

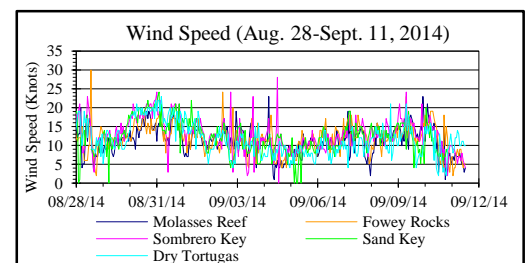


Figure 4. Wind speed data from NOAA/ICON monitoring stations (Aug. 28-Sept. 11, 2014).



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Current Coral Conditions

A total of 41 BleachWatch Observer reports were received during the last two weeks (Fig. 6), with 28 reports describing paling or partial bleaching and an additional 13 reports indicating significant bleaching (Fig. 7). At those sites where paling or bleached corals were observed, the overall percentage of corals affected ranged from 31- 75%, with some sites as high as 76-100%.



Figure 7. Partial bleaching and bleached corals at an offshore patch reef off of the Lower Keys (9/5/14).

Paling and bleaching observations consisted of nearly all species, including Encrusting/Mound/Boulder corals, Brain corals, Branching corals, Flowering corals, Fleshy corals, and Leaf/Plate/Sheet corals. Other observations included bleached *Palythoa spp.*, Fire Coral, and Gorgonians as well as reports of coral disease (Fig. 8) and recent Gorgonian mortality at several sites in the Lower Keys.

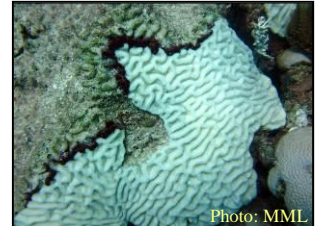


Figure 8. Black-Band disease on bleached *Colpohyllia natans* on 9/5/14 at a Lower Keys offshore patch reef.

Despite these widespread visual observations of coral bleaching, recent changes in environmental conditions make the onset of a significant and sustained mass bleaching event unlikely at this time. However, additional field observations are needed to determine the range, duration, and severity of coral bleaching impacts throughout the remainder of the summer.

BleachWatch Reports for August 28 – September 11, 2014

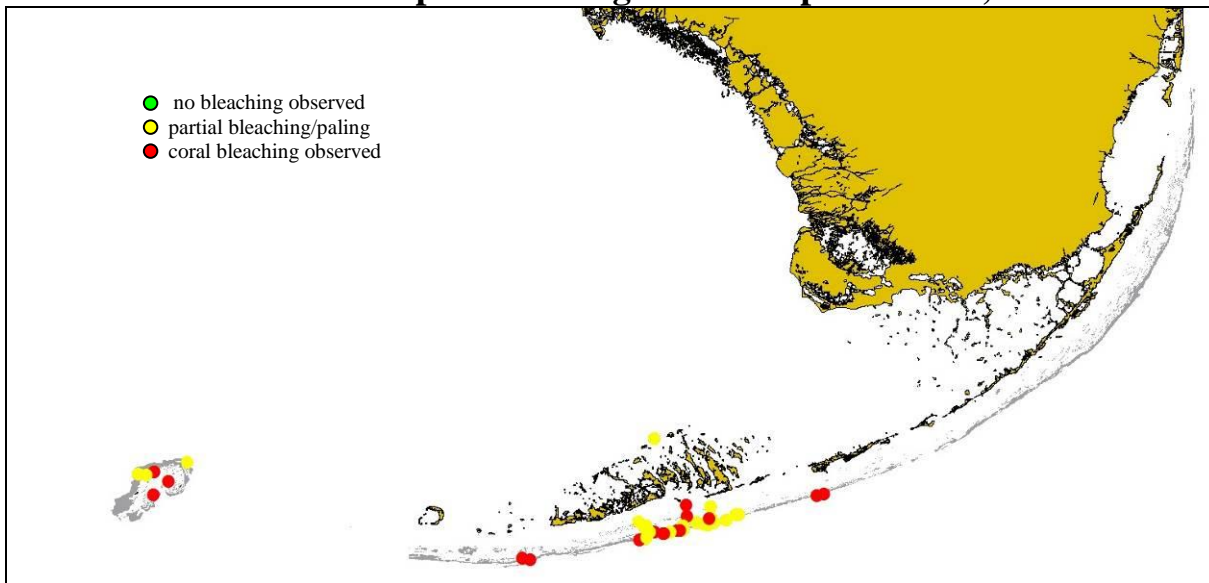


Figure 6. Overview of BleachWatch observer reports submitted from August 28 – September 11, 2014

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

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FUNDING THANKS TO....

