



Coral Bleaching Early Warning Network

Current Conditions Report #20141009

Updated October 9, 2014



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

Current Environmental Conditions

Remote sensing analysis by NOAA's Coral Reef Watch (CRW) program indicates that previous elevated thermal stress in the Florida Keys region is decreasing. 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 that current temperatures are not significantly elevated for the Florida Keys. Similarly, NOAA's latest experimental 5 km Degree Heating Weeks (DHW) map, which indicates how much heat stress has built up over the past 12 weeks (Fig.2), confirms that the level of accumulated temperature stress has decreased for the Florida Keys region. Furthermore, NOAA's Integrated Coral Observing Network (ICON) monitoring stations verify that sea temperatures, at least along the outer Florida Keys reef tract, remain mostly below 30°C (Fig.3), likely due in part to breezy conditions observed during the same period (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 has been reduced to a Bleaching Watch, indicating that although the previous thermal stress exposure may still be adversely impacting corals, recovery may be underway (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
October 8, 2014 (experimental)

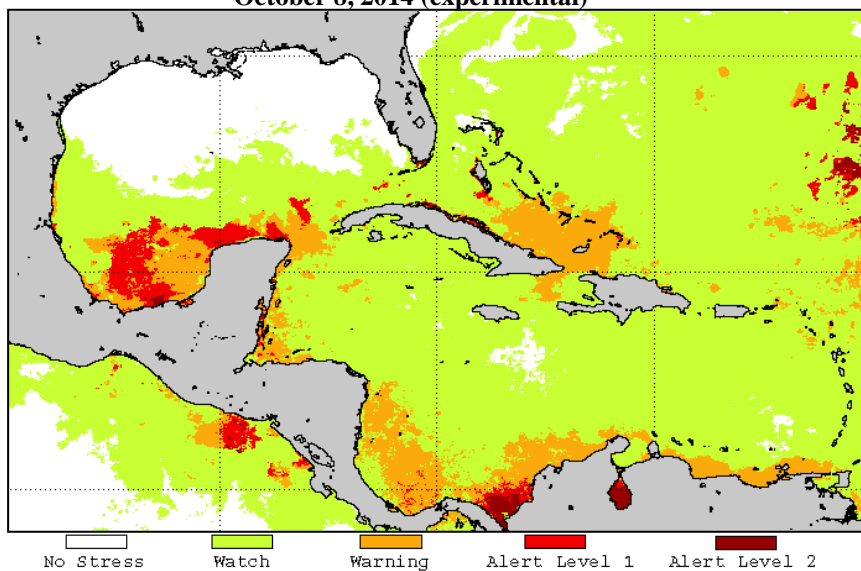


Figure 5. NOAA's 5 km Experimental Coral Bleaching Alert Areas for October 8, 2014.
<http://coralreefwatch.noaa.gov/satellite/bleaching5km>

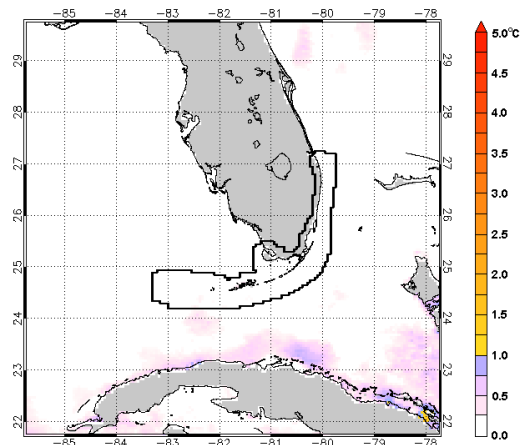


Figure 1. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida Oct. 8, 2014.
<http://coralreefwatch.noaa.gov/regions/florida.php>

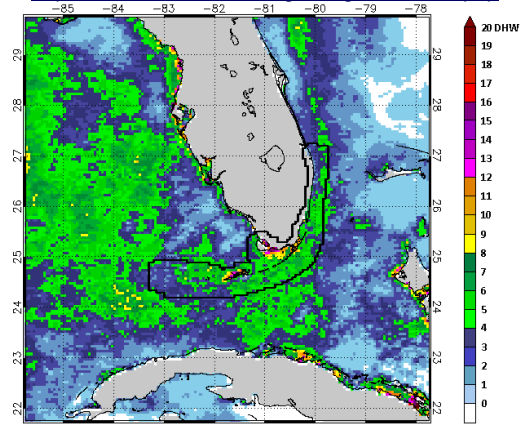


Figure 2. NOAA's Experimental 5km Degree Heating Weeks Map for Florida Oct. 8, 2014.
<http://coralreefwatch.noaa.gov/regions/florida.php>

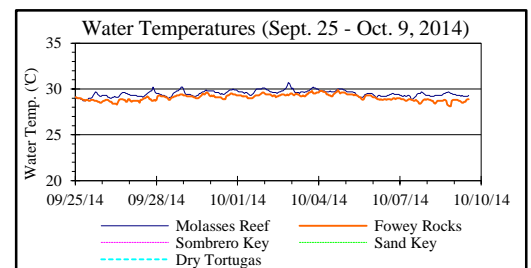


Figure 3. *in-situ* sea temperature from NOAA/ICON monitoring stations (Sept. 25- Oct. 9, 2014).

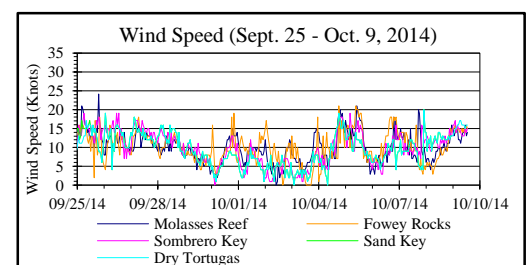


Figure 4. Wind speed data from NOAA/ICON monitoring stations (Sept. 25 - Oct. 9, 2014).



Mote Marine Laboratory / Florida Keys National Marine Sanctuary
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Current Coral Conditions

A total of 25 BleachWatch Observer reports were received during the last two weeks (Fig. 6), with 13 reports describing paling or partial bleaching (Fig. 7 & 8) and an additional 12 reports indicated continued observations of significant bleaching. At those sites throughout the Florida Keys where paling or bleached corals were observed, the percentage of corals affected overall ranged from 31-75%, with a few sites still as high as 76-100%.



Photo: Gabby Renchen, FWRF

Figure 7. Partial bleached on bleached *Acropora palmata* at Carysfort SPA off Key Largo on 9/29/14.

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. Several reports noted observations of zooxanthellae recovery in *Siderastrea spp* and *Porities spp*.

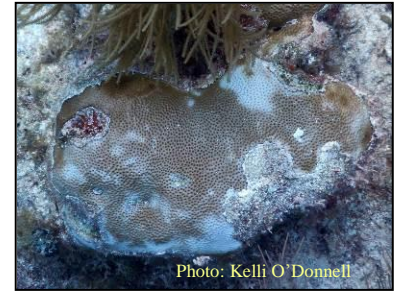


Photo: Kelli O'Donnell

Figure 8. Partial bleached *Siderastrea siderea* at Western Sambo on 10/3/14.

In addition, observations of coral disease, recent Gorgonian mortality, and bleached *Palythoa spp.*, Fire Coral, and Gorgonians were common.

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 season.

BleachWatch Reports for September 25 – October 9, 2014

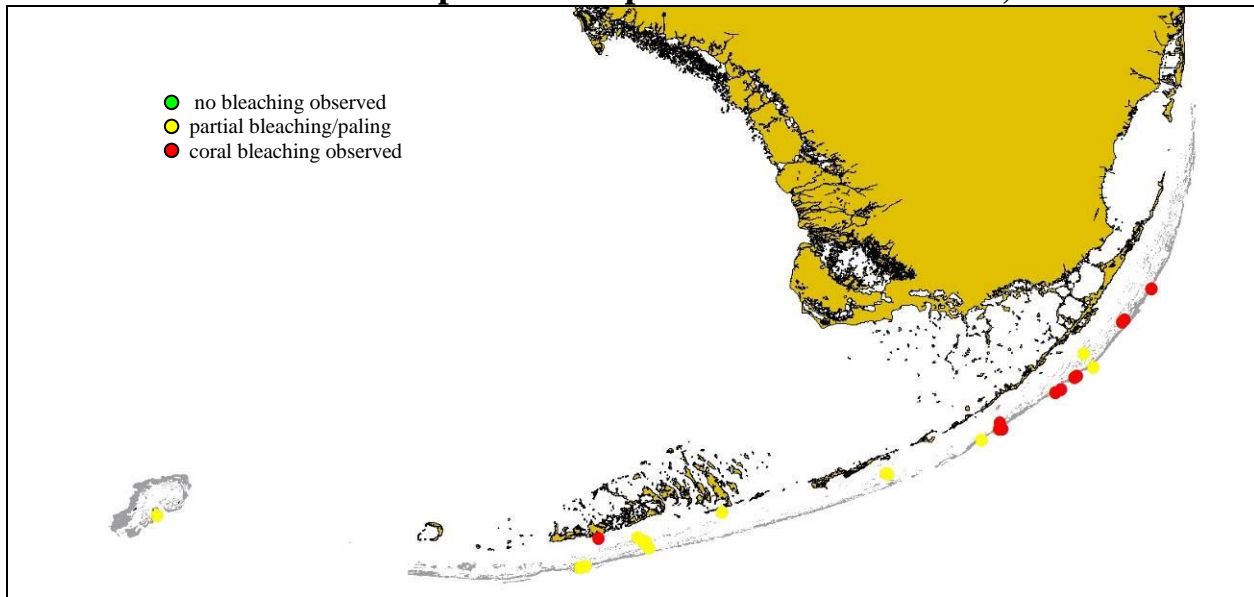


Figure 6. Overview of BleachWatch observer reports submitted from September 25 – October 9, 2014

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

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