



Coral Bleaching Early Warning Network

Current Conditions Report #20140925

Updated September 25, 2014



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

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 has not increased significantly, and may be 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 not increased 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, have decreased to 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
September 24, 2014 (experimental)

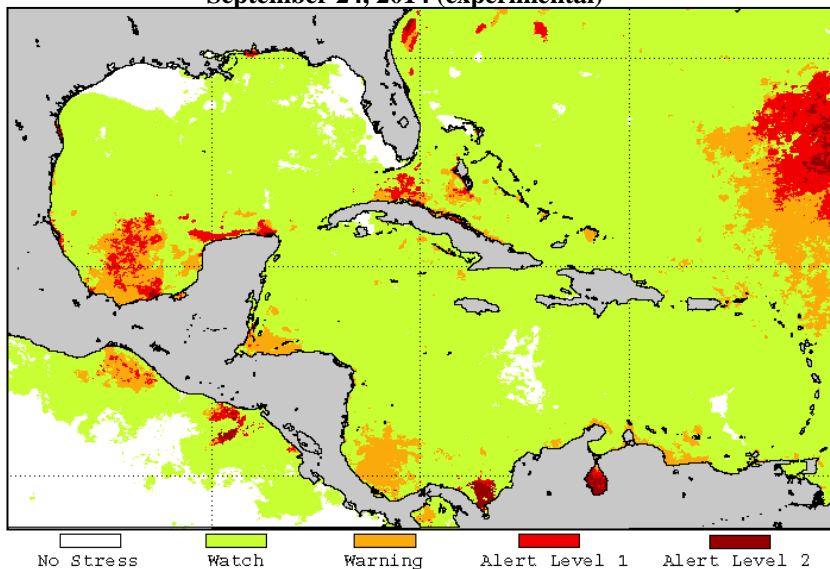


Figure 5. NOAA's 5 km Experimental Coral Bleaching Alert Areas for September 24, 2014.
<http://coralreefwatch.noaa.gov/satellite/bleaching5km>

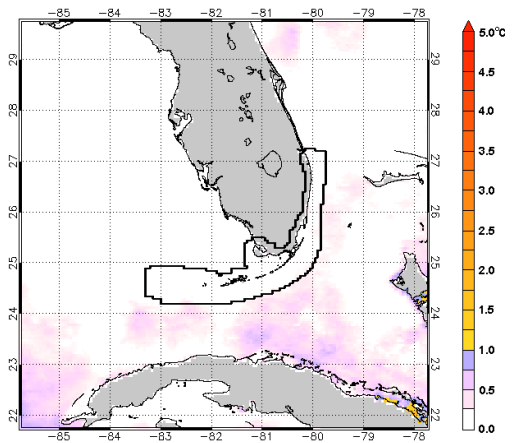


Figure 1. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida Sept. 24, 2014.
<http://coralreefwatch.noaa.gov/regions/florida.php>

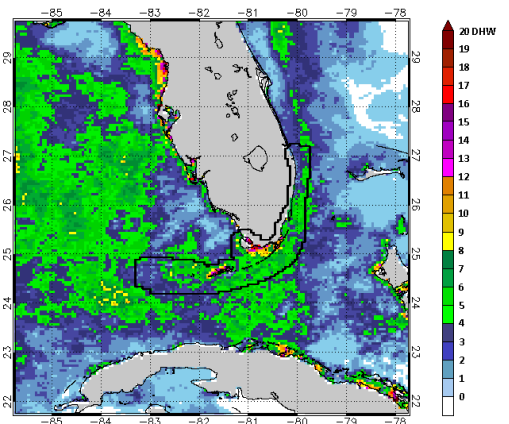


Figure 2. NOAA's Experimental 5km Degree Heating Weeks Map for Florida Sept. 24, 2014.
<http://coralreefwatch.noaa.gov/regions/florida.php>

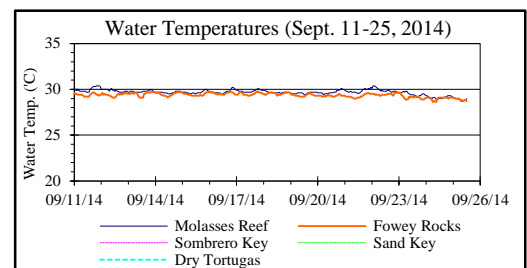


Figure 3. *in-situ* sea temperature from NOAA/ICON monitoring stations (Sept. 11-25, 2014).

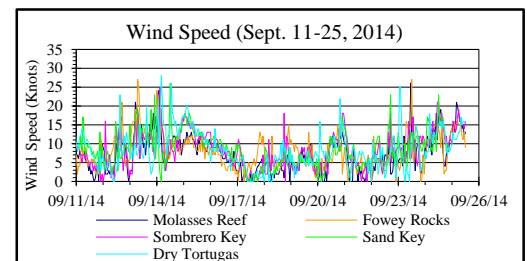


Figure 4. Wind speed data from NOAA/ICON monitoring stations (Sept. 11-25, 2014).



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Current Coral Conditions

A total of 32 BleachWatch Observer reports were received during the last two weeks (Fig. 6), with 17 reports describing paling or partial bleaching. An additional 15 reports indicated continued observations of significant bleaching. At those sites where paling or bleached corals were observed, the percentage of corals affected throughout the Florida Keys overall ranged from 31-75%, with a few sites as high as 76-100%; however, percentages in the Dry Tortugas only ranged from 1-50%.



Photo: Cindy Lewis, KML

Figure 7. White Plague disease on bleached *Dendrogyra cylindrus* at Marker 32 off Key West on 9/19/14.

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. Recent mortality of *Porites astreoides*, potentially due to bleaching, was noted at several reef sites. In addition, observations of coral disease (Fig. 7&8), recent Gorgonian mortality, and bleached *Palythoa spp.*, Fire Coral, and Gorgonians were common.



Photo: MML

Figure 8. Black-Band disease on bleached *Colpohyllia natans* on 9/18/14 at Munson 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 September 11-25, 2014

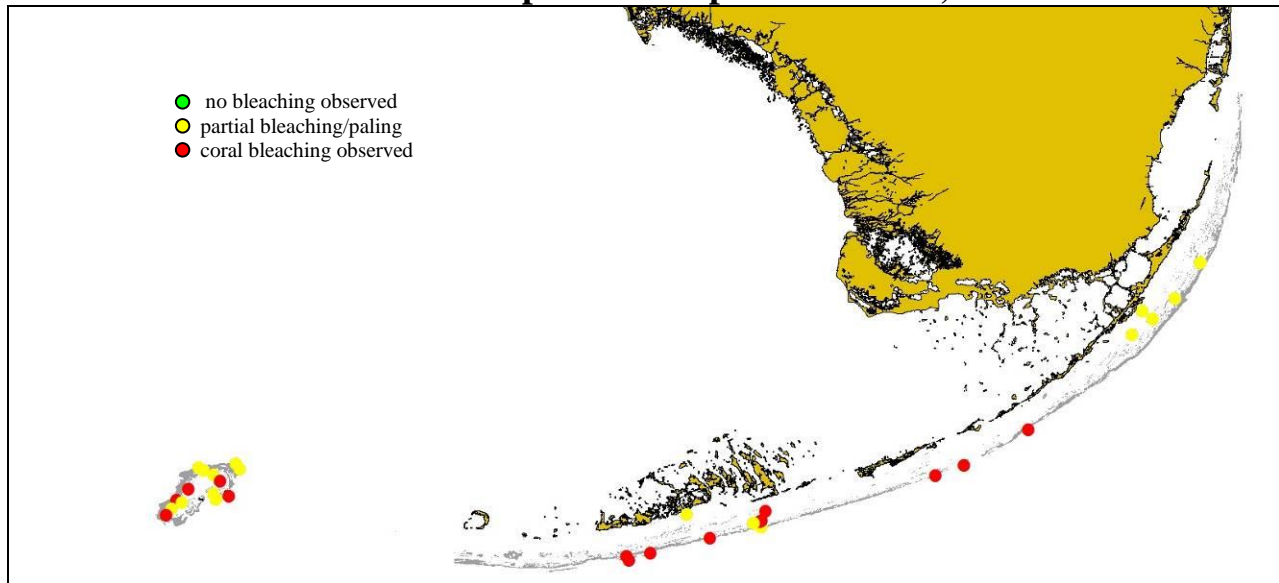


Figure 6. Overview of BleachWatch observer reports submitted from September 11-25, 2014

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

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