



Coral Bleaching Early Warning Network

Current Conditions Report #20110822



Updated August 22, 2011

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

NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area August 22, 2011 (experimental)

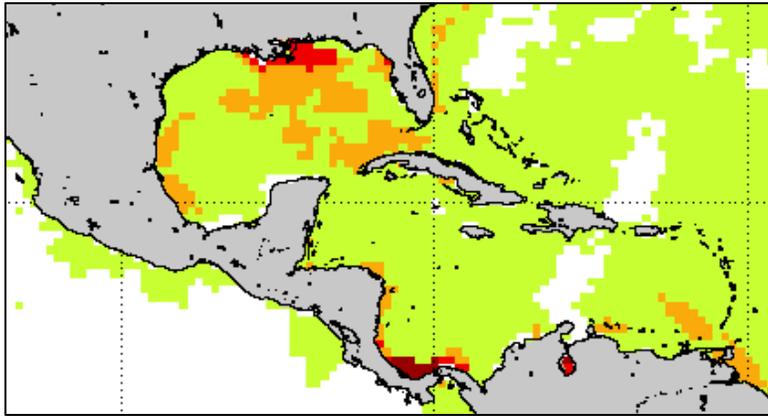


Figure 1. NOAA's Experimental Coral Bleaching Alert Areas for August 22, 2011.

<http://coralreefwatch.noaa.gov/satellite/e50/baa.html>

Weather and Sea Temperatures

According to the latest NOAA Coral Reef Watch (CRW) experimental Satellite Coral Bleaching Alert Area, there is a moderate level of thermal stress throughout the Florida Keys and there is potential for coral bleaching if current conditions continue (Fig. 1).

Current remote sensing analysis by NOAA's CRW program indicates that most of the Florida Keys region is presently experiencing thermal stress. NOAA's recent experimental Coral Bleaching HotSpot Map (Fig.2), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows that sea surface temperatures are elevated for this time of year in the Florida Keys. Similarly, NOAA's latest experimental Degree Heating Weeks (DHW) map, which shows how much heat stress has built up over the past 12 weeks (Fig.3), shows that a low level of temperature stress has accumulated 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, confirm that temperatures been near or exceeding 30°C (Fig.4) for the past month. Winds have increased slightly over the last week (Fig. 5) and according to NOAA's National Weather Service there is potential for increased winds by the end of the week due to passing Hurricane Irene. *In-situ* sea temperature data is currently not available for Sand Key, Sombrero, or Dry Tortugas regions.

Mote Marine Laboratory will continue to monitor the NOAA HotSpot maps, DHW maps, and ICON sea temperature data from monitoring stations on a weekly basis for the remainder of the bleaching season.

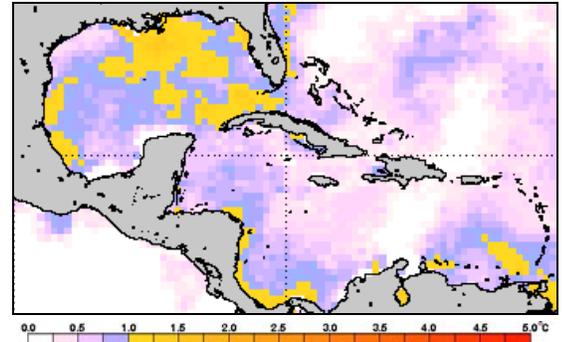


Figure 2. NOAA's Experimental Coral Bleaching HotSpot Map for August 22, 2011.

<http://coralreefwatch.noaa.gov/satellite/e50/>

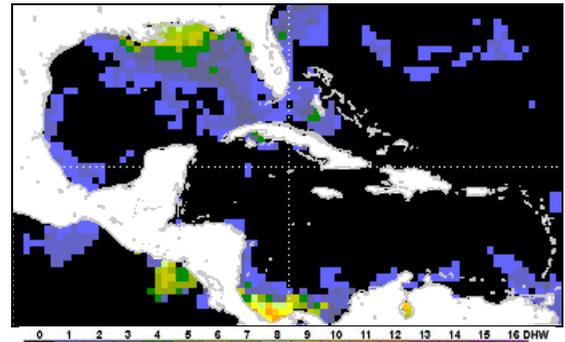


Figure 3. NOAA's Experimental Degree Heating Weeks Map for August 22, 2011.

<http://coralreefwatch.noaa.gov/satellite/e50/>

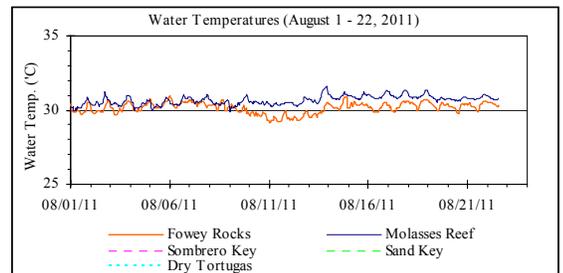


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (August 1-22, 2011).

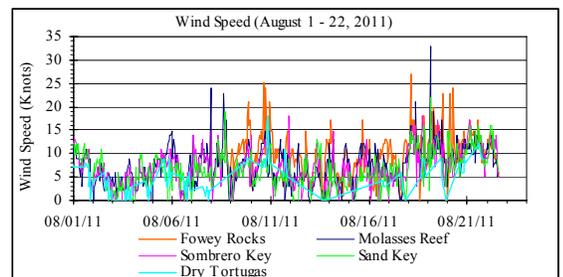


Figure 5. Wind speed data from NOAA/ICON monitoring stations (August 1-22, 2011).



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Conditions of Corals

A total of 36 BleachWatch Observer reports were received during the past two weeks, with 4 reports of significant bleaching (Fig. 6) and 27 reports indicating only isolated colonies exhibiting signs of paling or partial bleaching (Fig. 7). The remaining reports indicated that no significant signs of coral bleaching were observed. At those sites where partial bleaching, paling, or bleaching was noted (Fig. 8), the overall percentage of corals exhibiting signs of thermal stress typically ranged from 11-30% of corals at each site.



Figure 6. *Montastraea faveolata* bleached at Looe Key SPA on August 19, 2011.
 Photo: Jeff Kelly



Figure 7. *Siderastrea siderea* partial bleaching south of Marathon at the Donut on Aug. 21, 2011.
 Photo: Carmen Powers

The majority of isolated paling/partial bleaching observations consisted of Mound and Boulder corals (*Montastraea spp.*, *Porites ssp.*, *Stephanocoenia intersepta*, *Solenastrea spp.* and *Siderastrea spp.*),

Branching corals (*Acropora cervicornis*, *Porites ssp.*) Brain corals (*Diploria spp.*, *Colpophyllia natans*, and *Meandrina meandrites*) Plate corals (*Agaricia spp.*), and Flower corals (*Eusmilia fastigiana*). Other observations included paling and bleaching of *Palythoa spp.*, Fire Coral, Gorgonians, as well as several reports of Black Band Disease throughout the Keys.

These isolated observations of paling and partial bleaching do not necessarily indicate the onset of a mass bleaching event; however, continued field observations are needed as more widespread coral bleaching could develop if environmental conditions continue to be favorable.

BleachWatch Reports for August 8-22, 2011

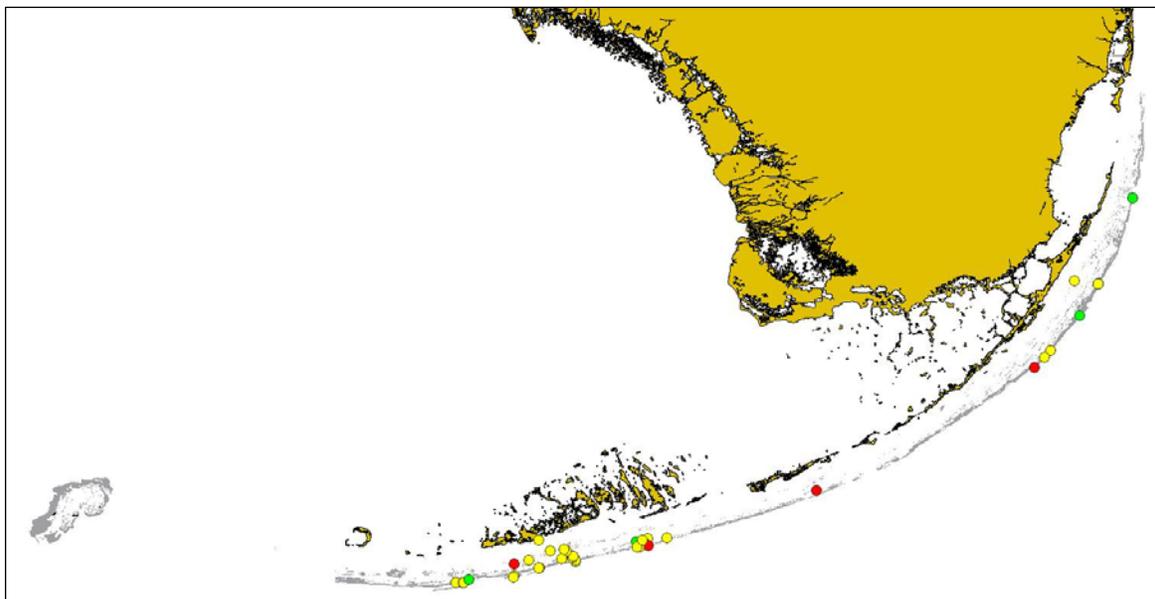


Figure 8. Overview of BleachWatch observer reports submitted from August 8 - 22, 2011.

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

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<http://www.mote.org/Keys/research/bleaching.phtml>

Funding Provided By:

