Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20100701

Updated July 1, 2010

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

NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook
June – September 2010 (experimental)

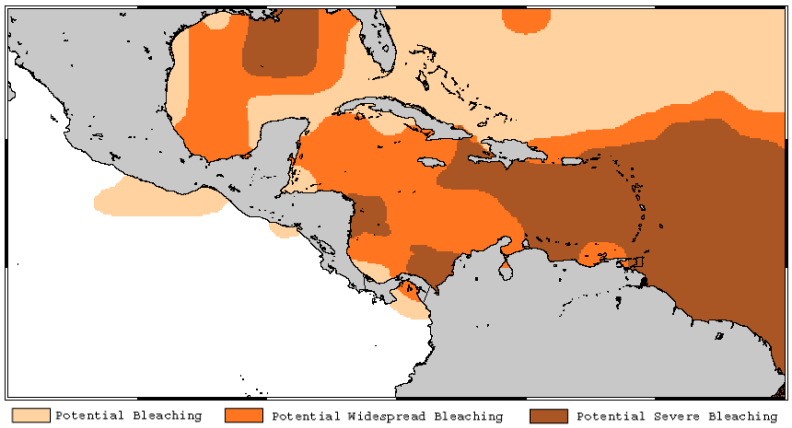

Figure 1. NOAA's Experimental Coral Bleaching Thermal Stress Outlook for June – September, 2010.
http://coralreefwatch.noaa.gov/satellite/bleachingoutlook/index.html

Weather and Sea Temperatures

According to the latest NOAA Coral Reef Watch (CRW) experimental Coral Bleaching Thermal Stress Outlook, there continues to be the potential for coral bleaching throughout the Florida Keys region in the coming months, as well as widespread and potentially severe bleaching for some parts of the Caribbean for the remainder of the summer of 2010. (Fig. 1).

Current remote sensing analysis by NOAA's CRW program indicates that the Florida Keys region is presently experiencing limited 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 although sea surface temperatures continue to be above average, they are not currently stressful for corals around 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 minimal accumulated temperature stress 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 while temperatures appeared to be rapidly increasing and exceeded 30°C by mid-June (Fig.4), temperatures have decreased slightly and are presently at or below 30°C, likely due in part to elevated wind speeds observed over the past two weeks (Fig. 5). *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.

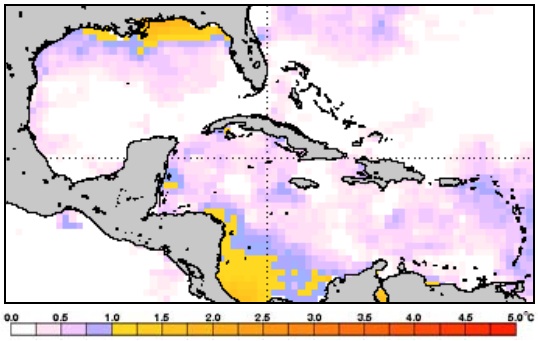

Figure 2. NOAA's Experimental Coral Bleaching HotSpot Map for July 1, 2010.
http://coralreefwatch.noaa.gov/satellite/e50/Figure 2.

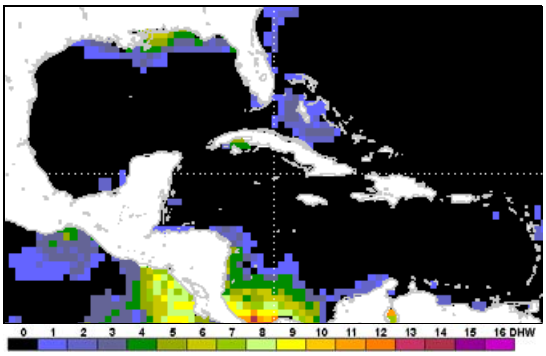

Figure 3. NOAA's Experimental Degree Heating Weeks Map for July 1, 2010.
http://coralreefwatch.noaa.gov/satellite/e50/

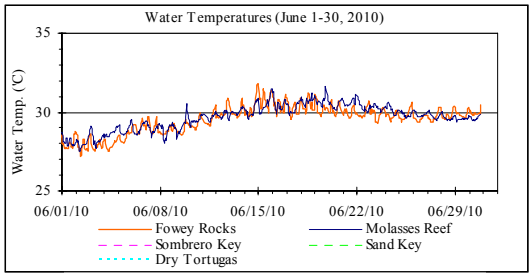

Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (June 1-30, 2010).

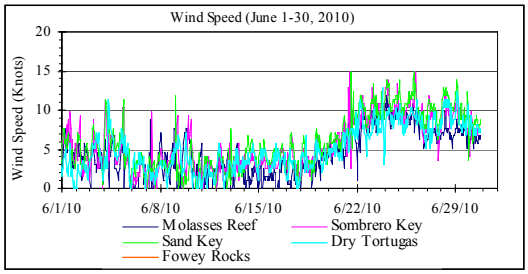

Figure 5. Wind speed data from NOAA/ICON monitoring stations (June 1-30, 2010).

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Conditions of Corals

A total of 48 BleachWatch Observer reports were received during the month of June, with 16 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 6). The remaining 32 reports indicated that no significant signs of coral bleaching were observed. At those sites where partial bleaching or paling was noted (Fig.7), the overall percentage of corals exhibiting signs of thermal stress was typically only 1-10% of corals at each site.

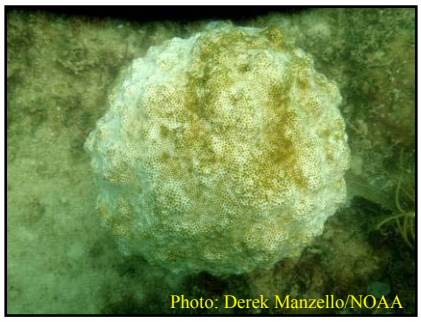

Figure 6. *Solenastrea bournoni* partially bleached at a patch reef south of Summerland Key on June 14, 2010

Figure 8. *Palythoa sp.* paling at a patch reef south of Marathon on June 16, 2010.

The majority of isolated paling/partial bleaching observations consisted of Mound and Boulder corals (*Montastraea spp., Solenastrea spp. and Siderastrea spp.*), and Brain corals, (*Diploria spp., Colpophyllia natans, and Meandrina meandrites)*. Other observations included paling of *Palythoa spp.* (Fig. 8) and, Fire Coral, as well as several reports of coral disease, including active White Plague Disease noted at one reef site in the Upper 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 June 1-30, 2010

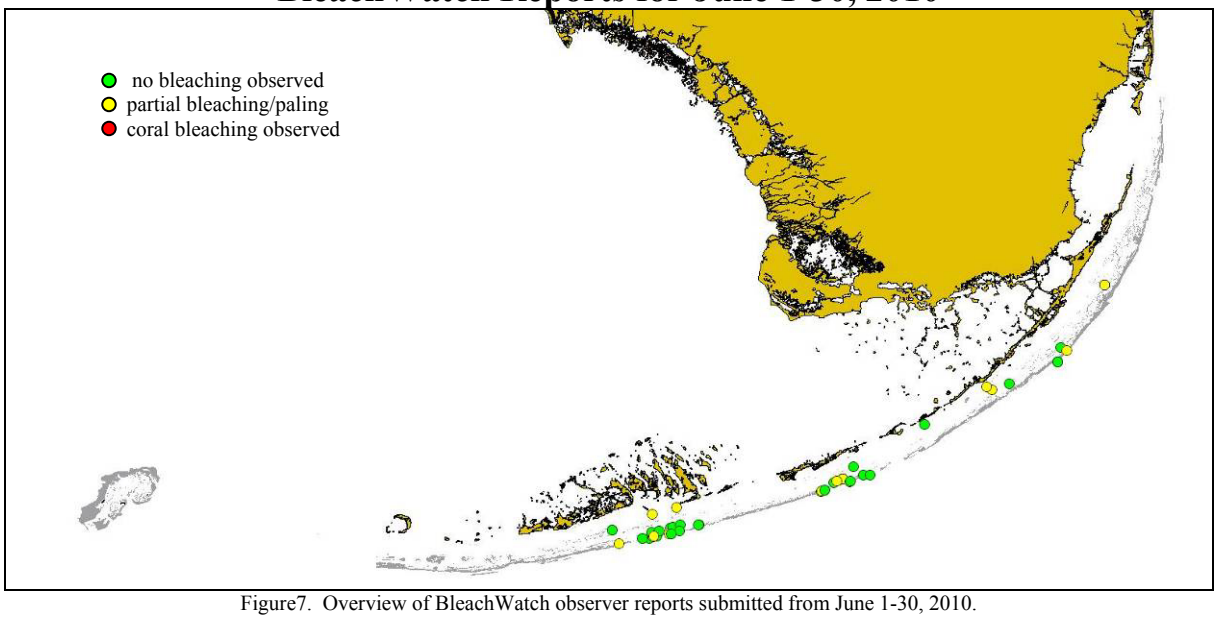

Figure7. Overview of BleachWatch observer reports submitted from June 1-30, 2010.

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

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NOAA CORAL REEF CONSERVATION PROGRAM