Mote Marine Laboratory / Florida Keys National Marine Sanctuary

# Coral Bleaching Early Warning Network

## Current Conditions Report #20100723

**Updated July 23, 2010**

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

**NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook**
**July –October 2010 (experimental)**

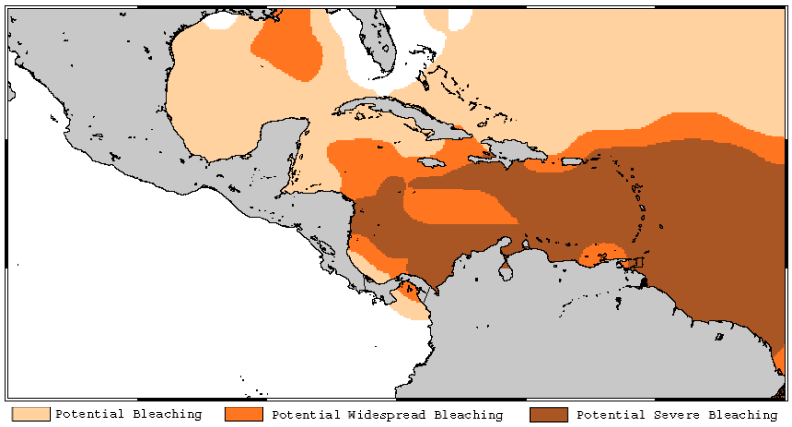


Figure 1. NOAA's Experimental Coral Bleaching Thermal Stress Outlook for July-October, 2010.
http://coralreefwatch.noaa.gov/satellite/bleachingoutlook/index.html

## 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 widespread and severe coral bleaching throughout the Caribbean during the coming months, however, the waters surrounding the Florida Keys might avoid this stress 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 elevated, they are not significantly higher than expected 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 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 temperatures have decreased slightly during the past three weeks and are presently at or below 30°C (Fig.4), likely due in part to elevated wind speeds observed over the past two week (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.

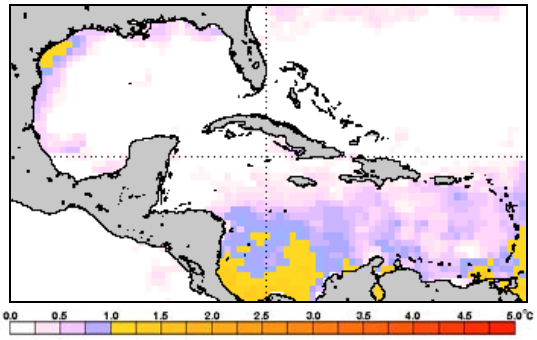


Figure 2. NOAA's Experimental Coral Bleaching HotSpot Map for July 22, 2010.
http://coralreefwatch.noaa.gov/satellite/e50/

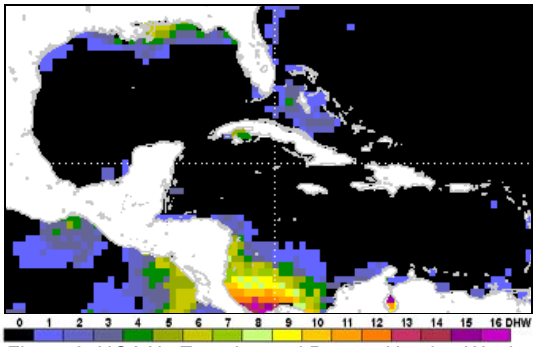


Figure 3. NOAA's Experimental Degree Heating Weeks Map for July 22, 2010.
http://coralreefwatch.noaa.gov/satellite/e50/

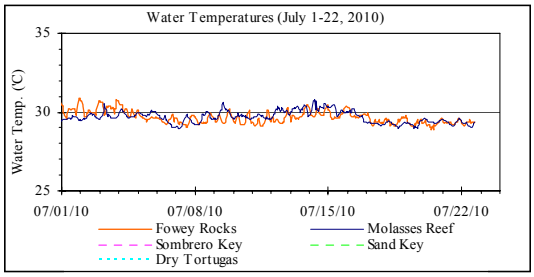


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (July 1-22, 2010).

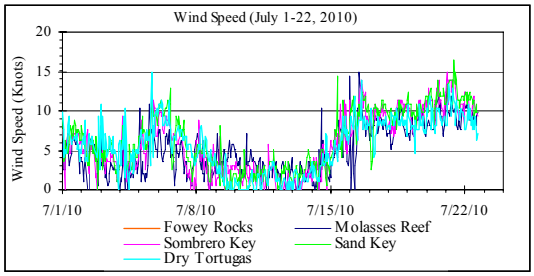


Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 1-22, 2010).

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## Conditions of Corals

A total of 20 BleachWatch Observer reports were received during the past three weeks in July, with 17 reports indicating only isolated colonies exhibiting signs of paling or partial bleaching (Fig. 6 & 7). Only one report indicated some corals completely bleached and the remaining reports indicated that no significant signs of coral bleaching were observed. At those sites where partial bleaching, paling, or limited bleaching was noted (Fig.8), the overall percentage of corals exhibiting signs of thermal stress was typically only 1-10% of corals at each site.


Figure 6. *Diploria labyrinthiformis* paling at Delta Shoals on July 9, 2010.


Figure 7. *Acropora palmata* partially bleached at Molasses Reef July 7, 2010

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 *(Porites ssp. and Acropora ssp.)* and Brain corals (*Diploria spp., Colpophyllia natans, and Meandrina meandrites)*. Other observations included paling of *Palythoa spp.* and, Fire Coral, as well as several reports of coral disease.

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 July 1-22, 2010

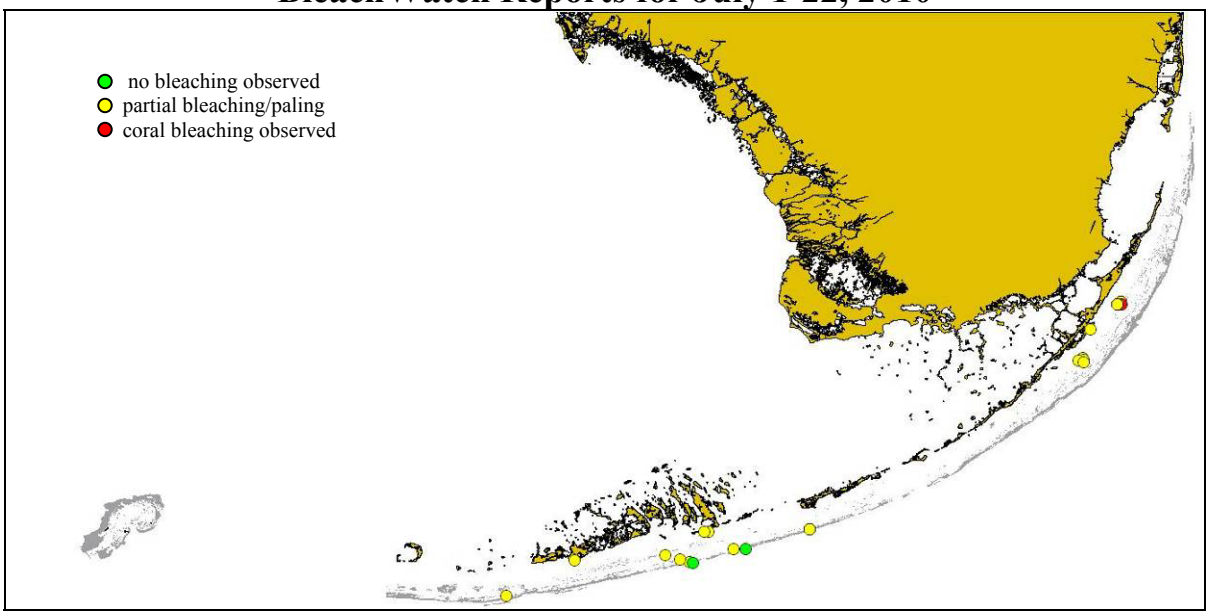


Figure 8. Overview of BleachWatch observer reports submitted from July 1-22, 2010.

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

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