Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20101001

Updated October 1, 2010

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

NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area
September 30, 2010 (Experimental)

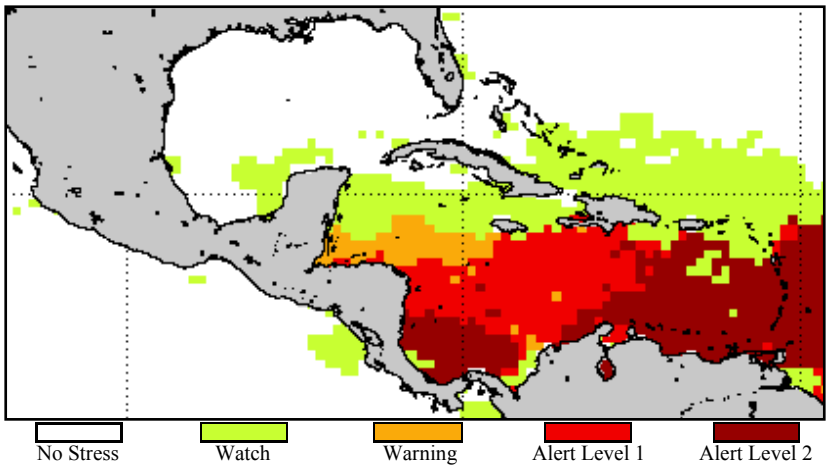

Figure 1. NOAA's Experimental Coral Bleaching Alert Areas for September 30, 2010
http://coralreefwatch.noaa.gov/satellite/e50/e50_baa.html

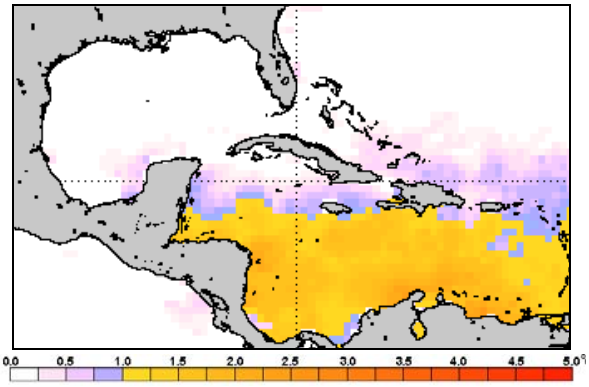

Figure 2. NOAA's Experimental Coral Bleaching HotSpot Map for September 30, 2010.
http://coralreefwatch.noaa.gov/satellite/e50/

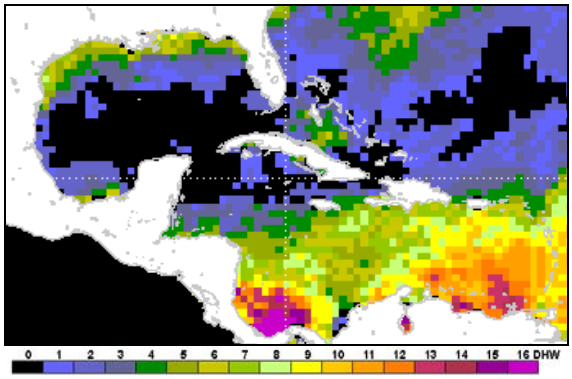

Figure 3. NOAA's Experimental Degree Heating Weeks Map for September 30, 2010.
http://coralreefwatch.noaa.gov/satellite/e50/

Weather and Sea Temperatures

According to the latest NOAA Coral Reef Watch (CRW) experimental Satellite Coral Bleaching Alert Area, the Florida Keys region continues to experience lower levels of thermal stress and reduced potential for mass coral bleaching compared to other parts of the Caribbean (Fig. 1).

Current remote sensing analysis by NOAA's CRW program indicates that the Florida Keys region is presently experiencing low 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 temperature are not 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 minimal accumulated temperature stress in the Florida Keys. Furthermore, 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, indicate that temperatures have decreased during the past week to near or below 29°C (Fig.4), likely due in part to increased 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.

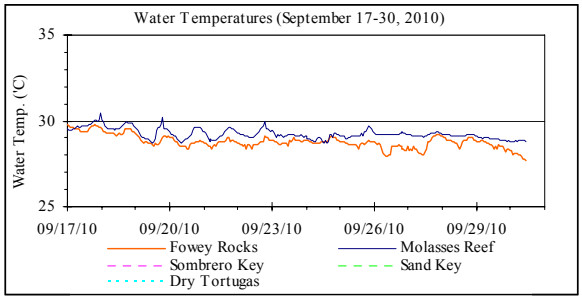

Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (September 17-30, 2010).

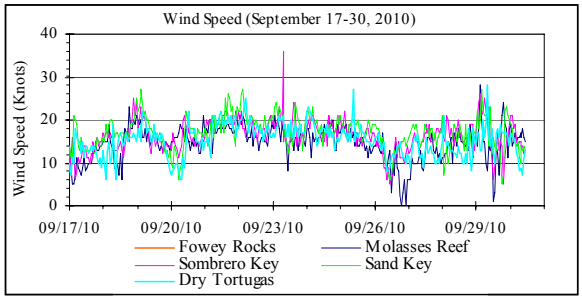

Figure 5. Wind speed data from NOAA/ICON monitoring stations (September 17-30, 2010).

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Conditions of Corals

A total of 12 BleachWatch Observer reports were received during the past two weeks, with five reports indicating only isolated colonies exhibiting signs of paling (Fig. 6). The remaining reports indicated that no significant signs of coral bleaching were observed. At those sites where paling was noted (Fig.7), the overall percentage of corals exhibiting signs of thermal stress typically ranged from only 1-10% of corals at each site.

Figure 6. Two *Diploria ssp*., one slightly pale, on the moat wall of Fort Jefferson, Dry Tortugas on September 24, 2010

The majority of isolated paling observations consisted of Mound and Boulder corals (*Montastraea spp., Stephanocoenia intersepta, and Siderastrea spp.*), Branching corals *(Porites ssp.)*, Brain corals (*Diploria spp., Colpophyllia natans, and Meandrina meandrites)* and Plate corals (*Agaricia spp*.). Other observations included paling of *Palythoa spp,* Fire Coral and Gorgonians, 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 change.

BleachWatch Reports for September 17-30, 2010

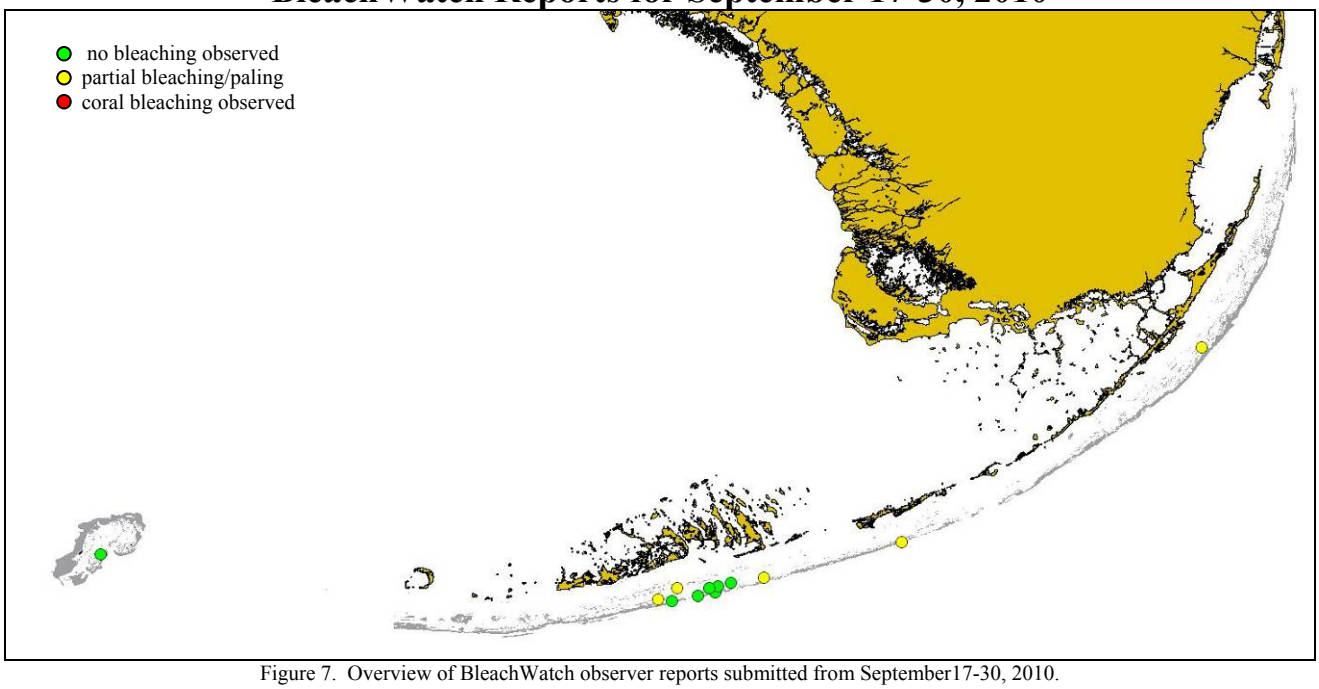

Figure 7. Overview of BleachWatch observer reports submitted from September17-30, 2010.

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