



Updated July 16, 2009

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

Weather and Sea Temperatures

NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook July -October, 2009 (Updated July 16th)

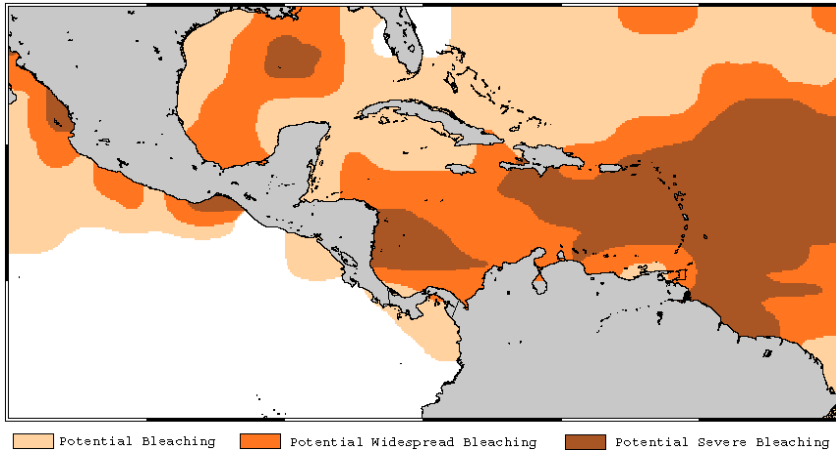


Figure 1. NOAA's Coral Bleaching Thermal Stress Outlook for July-October 2009.

According to the latest NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook there is a significant potential for coral bleaching throughout the Caribbean in 2009 especially in the Lesser Antilles, with higher than normal thermal stress, reminiscent of that seen in July 2005. (Fig. 1).

Current remote sensing analysis by NOAA's Coral Reef Watch program indicates that the Florida Keys region is continuing to show signs of building thermal stress. NOAA's recent Coral Bleaching HotSpot Map (Fig. 2), which provides current SST's compared to the historically expected SST's for the region, reveals elevated temperature anomalies for some of the Florida Keys National Marine Sanctuary and surrounding waters. Similarly, NOAA's latest Degree Heating Weeks (DHW) map, which illustrates the accumulation of elevated temperature in an area based on the previous 12 weeks, indicates increasing temperature stress in the Florida Keys region (Fig. 3). NOAA's Coral Reef Watch program has increased their Coral Bleaching Alert from a "Bleaching Watch" to a "Bleaching Warning", indicating that the potential for coral bleaching is increasing based on the current trend of accumulating thermal stress in the Florida Keys region. Sea temperature readings at NOAA's Integrated Coral Observing Network (ICON) monitoring stations confirms that sea temperatures throughout the Florida Keys remain near or have exceeded 30°C for the past several weeks (Fig. 4).

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.

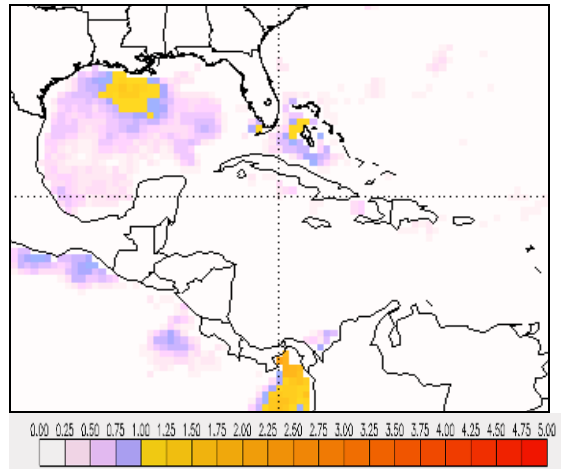


Figure 2. NOAA's Coral Bleaching HotSpot Map For July 16, 2009.
www.osdpd.noaa.gov/PSB/EPS/SST/climohot.html

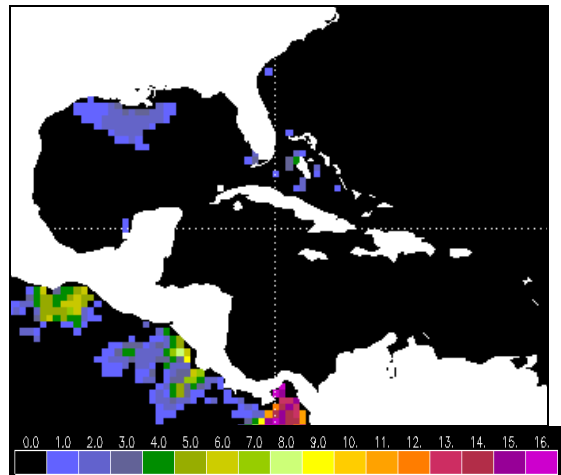


Figure 3. NOAA's Degree Heating Weeks Map For July 16, 2009.
www.osdpd.noaa.gov/PSB/EPS/SST/dhw_retro.html

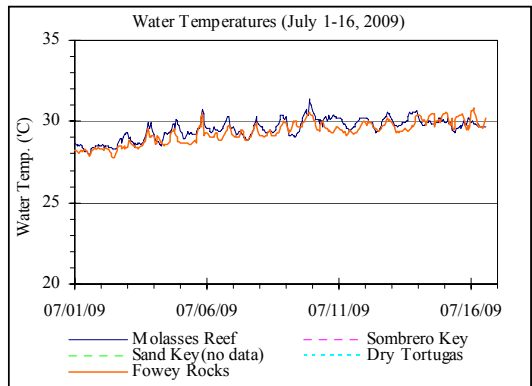


Figure 4. Summary of *in-situ* sea temperature data from NOAA/ICON monitoring stations (July 1-16, 2009).



Coral Bleaching Early Warning Network

Current Conditions Report #20090716



Conditions of Corals

A total of 22 BleachWatch Observer reports were received during the last two weeks, with 12 reports indicating isolated



Photo: Cindy Lewis, Keys Marine Lab

Figure 5. *Colpophyllia natans* paling next to a healthy *Siderastrea siderea* at Cheeca Rocks on July 6, 2009.

colonies exhibiting signs of paling or partial bleaching (Fig. 5). The remaining reports indicated no significant signs of coral bleaching (Fig. 6). In addition, while one site reportedly had up to 25% of corals present exhibiting signs of thermal stress, the overall severity at those sites where partial bleaching or paling was observed was typically only 1-10% of corals present (Fig.7). The isolated paling/partial bleaching observations consisted of Mound and Boulder corals (*Montastraea spp.*, *Porites astreoides*, and *Siderastrea spp.*), Brain corals, (*Diploria spp.*, *Colpophyllia natans*, and *Meandrina meandrites*) and Branching Corals (*Acropora cervicornis*). Other



Photo: MML

Figure 6. Healthy *Acropora palmata* July 13, 2009 at Looe Key Reef.

observations included paling of *Palythoa spp.*, Fire Coral and Gorgonians, as well as several reports of coral diseases and discolored low visibility water.

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 1-16, 2009

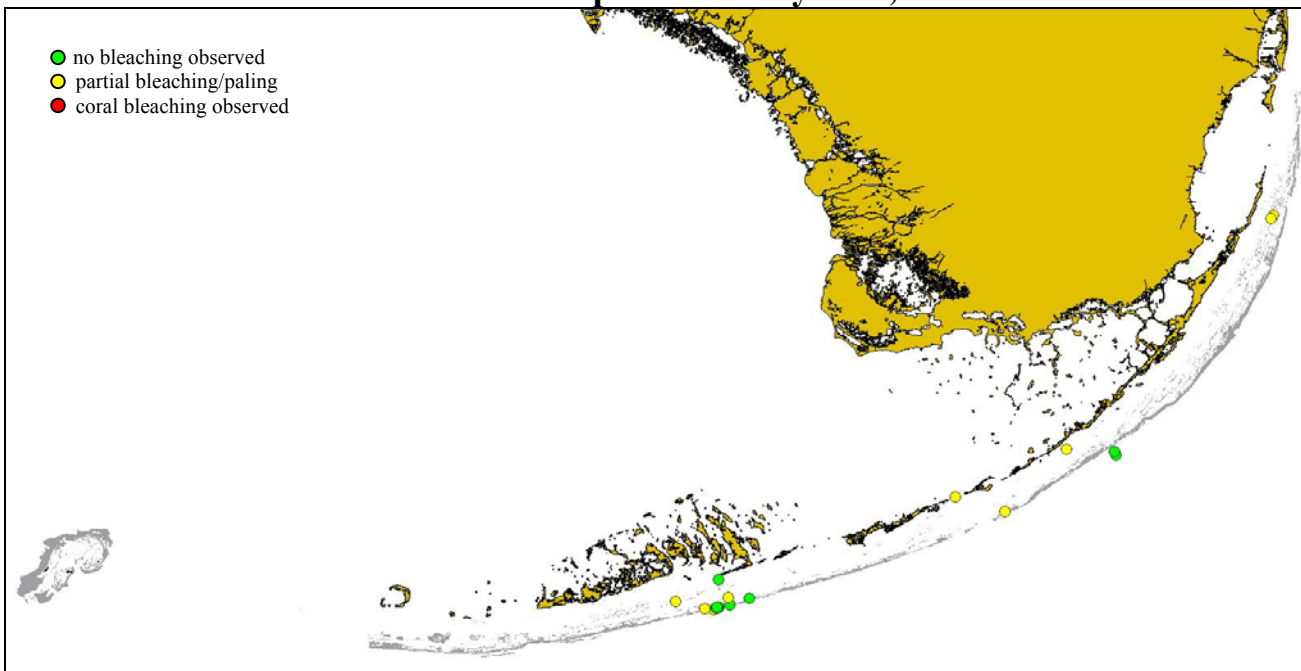


Figure7. Overview of BleachWatch observer reports submitted from July 1-16, 2009

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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