



Updated August 27, 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 August -November, 2009 (Updated Aug. 25th)

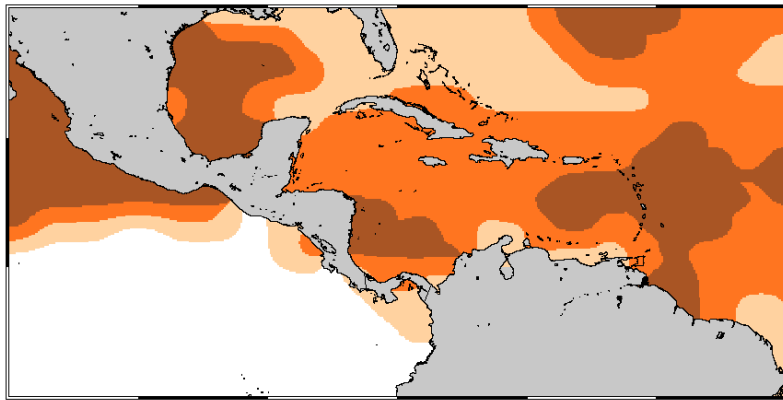


Figure 1. NOAA's Coral Bleaching Thermal Stress Outlook for Aug. – Nov. 2009.

According to the latest NOAA Coral Reef Watch Coral Bleaching Thermal Stress Outlook there continues to be 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 2005. (Fig. 1).

Current remote sensing analysis by NOAA's Coral Reef Watch program indicates that while the Florida Keys region continues to experience elevated levels of thermal stress, there has been no significant increase in those levels over the past two weeks. NOAA's recent Coral Bleaching HotSpot Map (Fig. 2), which provides current SST's compared to the historically expected SST's for the region, shows that temperature anomalies for the Florida Keys National Marine Sanctuary and surrounding waters continue to remain above-average but have decreased slightly since mid-August. 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 that cumulative temperature stress in the Florida Keys region remains elevated but has not increased significantly over the past two weeks (Fig. 3). Furthermore, NOAA's Coral Reef Watch program recently decreased their Coral Bleaching Alert from a "Bleaching Alert II" to a "Bleaching Watch", indicating that although thermal stress in the Florida Keys region remains elevated, the immediate threat for mass coral bleaching has decreased. Sea temperature readings at NOAA's Integrated Coral Observing Network (ICON) monitoring stations confirm that while sea temperatures throughout the Florida Keys remain near 30°C over the past several weeks, a slight decrease was seen in mid-August and temperatures have not increased significantly over the past two weeks (Fig. 4).

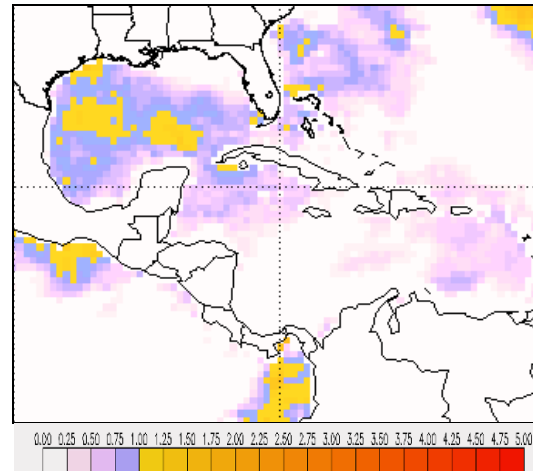


Figure 2. NOAA's Coral Bleaching HotSpot Map for August 27, 2009.
www.osdpd.noaa.gov/PSB/EPS/SST/climohot.html

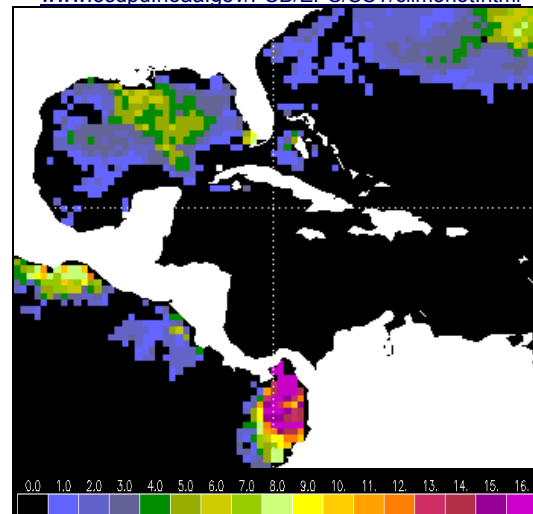


Figure 3. NOAA's Degree Heating Weeks Map for August 27, 2009.
www.osdpd.noaa.gov/PSB/EPS/SST/dhw_retro.html

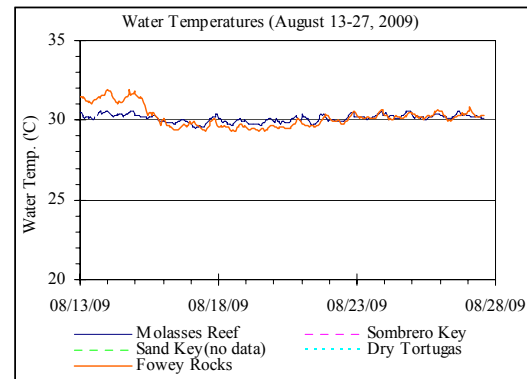


Figure 4. Summary of *in-situ* sea temperature data from NOAA/ICON monitoring stations (August 13-27, 2009).



Coral Bleaching Early Warning Network

Current Conditions Report #20090827



Conditions of Corals

A total of 38 BleachWatch Observer reports were received during the last two weeks, with 24 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 5 & 6) and 1 report of severely bleached Elkhorn coral.

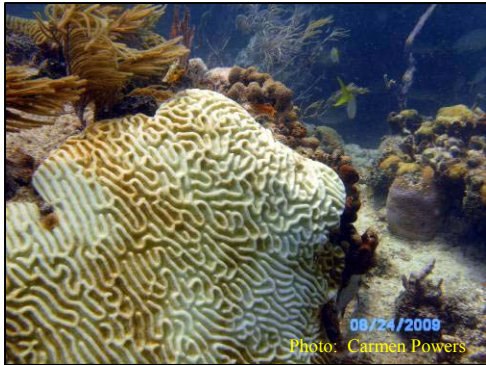


Figure 5. *Colpophyllia natans* paling at the Donut off Marathon on Aug. 24, 2009.

The remaining reports indicated no significant signs of coral bleaching. At those sites where partial bleaching or paling was observed (Fig. 7), the overall severity of corals showing thermal stress was typically 1-10% of corals present.



Figure 6. *Diploria clivosa* paling at Coral Gardens on Aug. 27, 2009.

The majority of isolated paling/partial bleaching observations consisted of Mound and Boulder corals (*Montastraea spp.*, *Solenastrea spp.*

Porites astreoides, and *Siderastrea spp.*), Brain corals, (*Diploria spp.*, *Colpophyllia natans*, and *Meandrina meandrites*), Branching Corals (*Acropora spp.*, *Porites spp.*) and Plate Corals (*Agaricia spp.*). Other observations included paling of *Palythoa spp.*, Fire Coral and Gorgonians, as well as several reports of coral diseases, including very active Black Band Disease noted at one reef site in the Middle 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 13-27, 2009

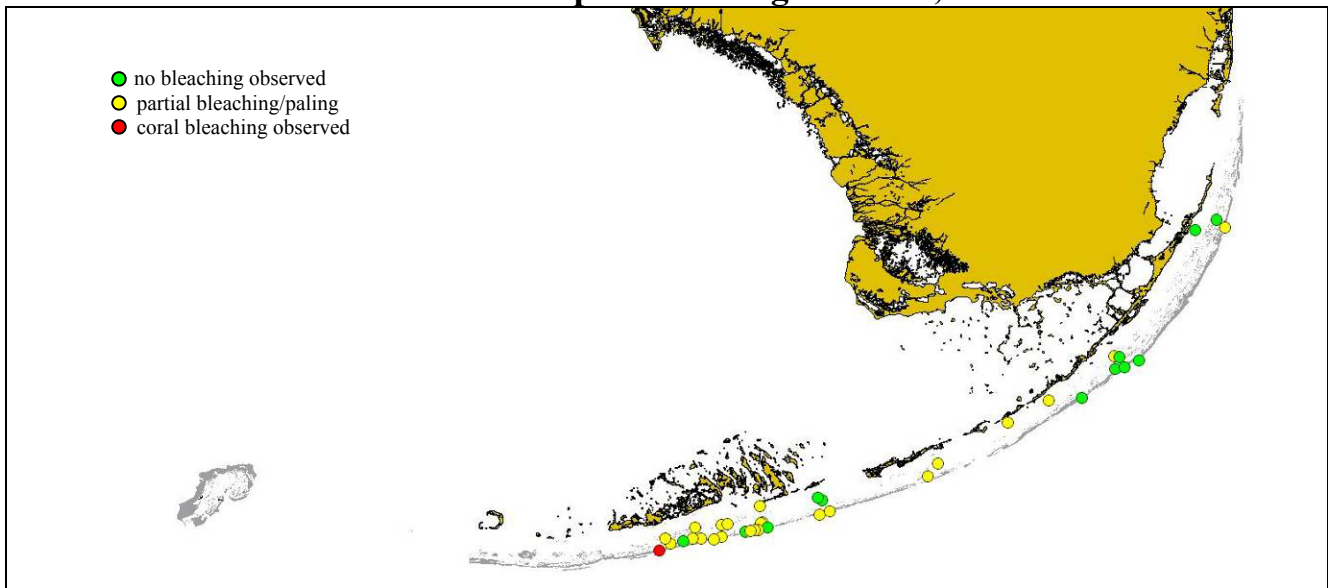


Figure7. Overview of BleachWatch observer reports submitted from Aug 13-27, 2009

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>

Additional Funding Provided By:



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