



Mote Marine Laboratory / Florida Keys National Marine Sanctuary  
**Coral Bleaching Early Warning Network**  
**Current Conditions Report #20091008**



Updated October 8, 2009

**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 Coral Bleaching Alert Areas**

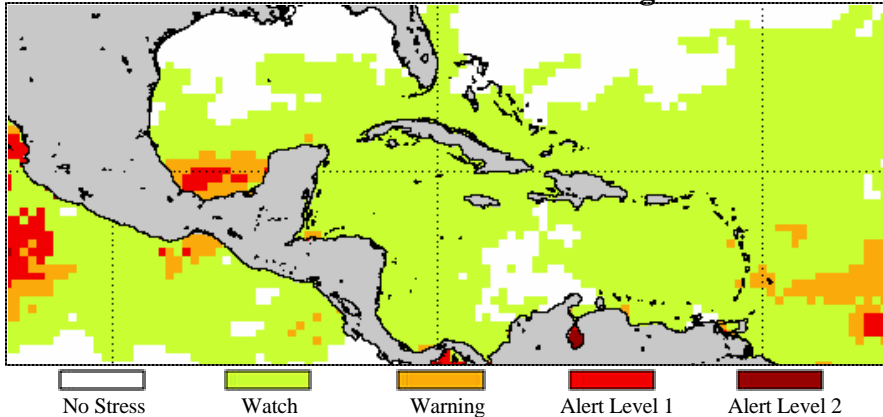


Figure 1. NOAA's New Experimental Enhanced 50km Satellite Coral Bleaching Alert for October 8, 2009. <http://coralreefwatch.noaa.gov/satellite/e50/>

**Weather and Sea Temperatures**

NOAA's Coral Reef Watch (CRW) recently introduced their new experimental enhanced 50km Satellite Coral Bleaching Monitoring Suite in September 2009, which provides improved coastal coverage and more accurate monitoring for coral bleaching compared to the current operational suite. According to the new NOAA CRW Coral Bleaching Alert Areas map, the Florida Keys National Marine Sanctuary (FKNMS) and surrounding waters are currently under only a Coral Bleaching Watch (Fig. 1).

Current enhanced remote sensing analysis by NOAA's CRW program indicates that 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. NOAA's recent Enhanced Coral Bleaching HotSpot Map (Fig. 2), which provides current sea surface temperature (SST) compared to the historically expected SST's for the region, shows that temperature anomalies for the Florida Keys National Marine Sanctuary and surrounding waters remain only slightly above-average. Furthermore, NOAA's latest Enhanced 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 is lower than previously indicated (Fig. 3). According to the CRW's new experimental enhanced satellite imagery, the Florida Keys are under a "Bleaching Watch" rather than the "Bleaching Alert II" indicated by the current operational suite. Sea temperature readings at NOAA's Integrated Coral Observing Network (ICON) monitoring stations confirm that sea temperatures at Fowey Rocks monitoring station in the Florida Keys has remained near or below 30°C over the past several weeks (Fig. 4). In addition, despite brief periods of calm winds over the past two weeks, there have been no prolonged doldrum-like conditions in the Florida Keys region (Fig. 5).

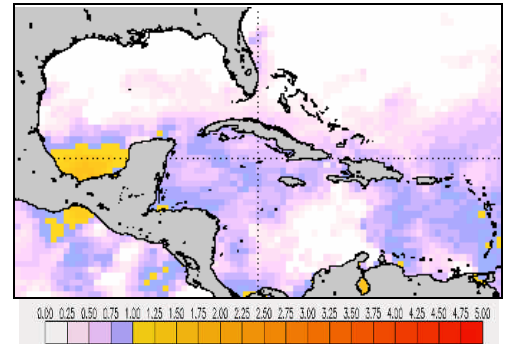


Figure 2. NOAA's Enhanced Coral Bleaching HotSpot Map for October 8, 2009. <http://coralreefwatch.noaa.gov/satellite/e50/>

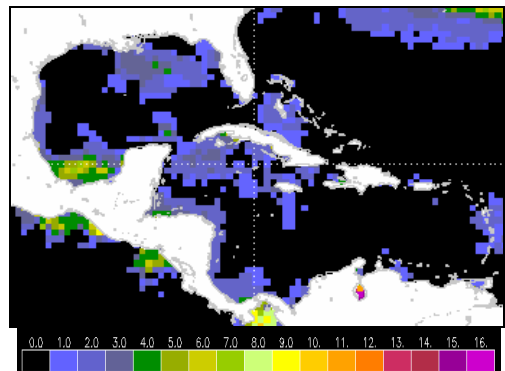


Figure 3. NOAA's Enhanced Degree Heating Weeks Map for October 8, 2009. <http://coralreefwatch.noaa.gov/satellite/e50/>

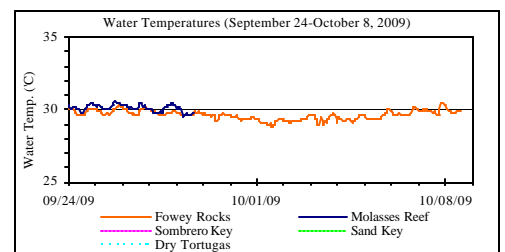


Figure 4. *In-situ* sea temperature from NOAA/ICON monitoring stations (Sept. 24 - Oct. 8, 2009).

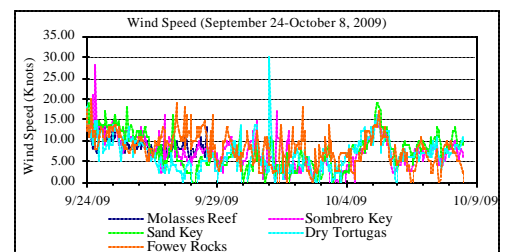


Figure 5. Wind speed data from NOAA/ICON monitoring stations (Sept. 24 - Oct. 8, 2009).



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**Conditions of Corals**

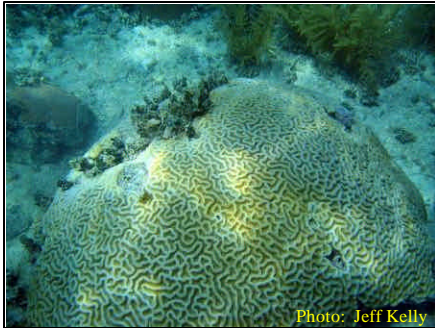


Figure 6. A paling *Colpophyllia natans* at a depth of 12 feet near Newfound Harbor SPA on Oct. 6, 2009.

A total of 14 BleachWatch Observer reports were received during the last two weeks, with 12 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 6 & 7) and 1 report of severely bleached coral colonies. The remaining report indicated no significant signs of coral bleaching (Fig. 8). At those sites where partial bleaching or paling was observed the overall severity of corals showing thermal stress was typically only 1-10%, and at the single site where significant bleaching was noted less than 5% of corals were impacted.



Figure 7. A paling/partially bleached *Montastraea faveolata* at a depth of 50 feet near Conch Reef on Sep.28, 2009.

The majority of isolated paling/partial bleaching observations consisted of Mound and Boulder corals (*Montastraea spp.*, *Solenastrea spp.*, *Stephanocoenia intersepta* and *Siderastrea spp.*), Brain corals, (*Colpophyllia natans*, and *Meandrina meandrites*), Branching Corals (*Porites spp.*) and Plate Corals (*Agaricia spp.*). Other observations included bleached *Erythropodium caribaeorum*, *Xestospongia muta*, Gorgonians, and Fire Coral, as well as several reports of coral diseases.

Although isolated observations of paling and partial bleaching are still being reported, they 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 become more favorable.

**BleachWatch Reports for September 24-October 8, 2009**

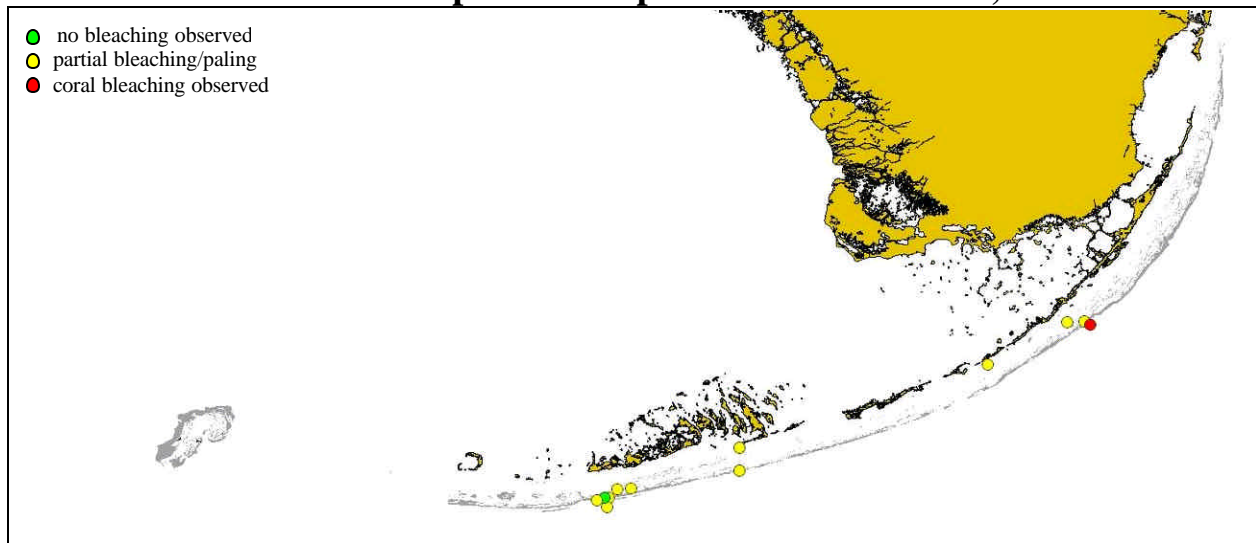


Figure 7. Overview of BleachWatch observer reports submitted from Sept. 24-Oct. 8, 2009

**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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