



Mote Marine Laboratory / Florida Keys National Marine Sanctuary
Coral Bleaching Early Warning Network
Current Conditions Report #20160922



Updated September 22, 2016

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 Current and 60% Probability Coral Bleaching Alert Outlook September 20, 2016 (experimental)

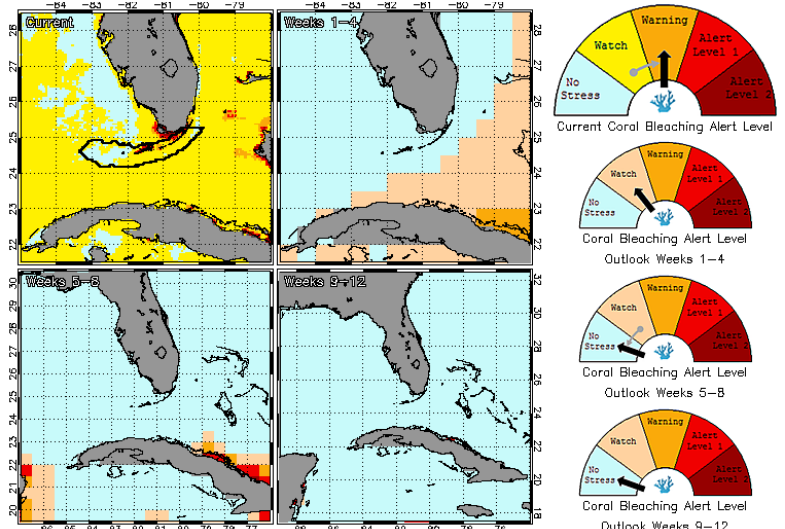


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through December 2016. Updated September 20, 2016.
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

Weather and Sea Temperatures

According to the newly released NOAA Coral Reef Watch (CRW) experimental 5 kilometer (km) Satellite Current and 60% Probability Coral Bleaching Alert Area, there is currently a bleaching watch and warning for parts of Florida Keys National Marine Sanctuary, however, the coral bleaching outlook conditions are currently not favorable for a mass bleaching event. (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that most of the Florida Keys region is currently experiencing minimal thermal stress. NOAA's new experimental 5 km Coral Bleaching HotSpot Map (Fig. 2), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows only slightly elevated temperatures for some areas of the Florida Keys. Similarly, NOAA's experimental 5 km Degree Heating Weeks (DHW) map, which illustrates how much heat stress has built up over the past 12 weeks (Fig.3), indicates limited temperature stress currently for 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, confirms that temperatures have remained at or slightly below 30°C over the past three weeks (Fig.4), except for a few days likely due in part to reduced wind conditions observed during that time period (Fig. 5). *In-situ* sea temperature data is currently only available at Fowey Rocks and intermittently at Molasses Reef. Sombrero is not recording data at this time. 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.

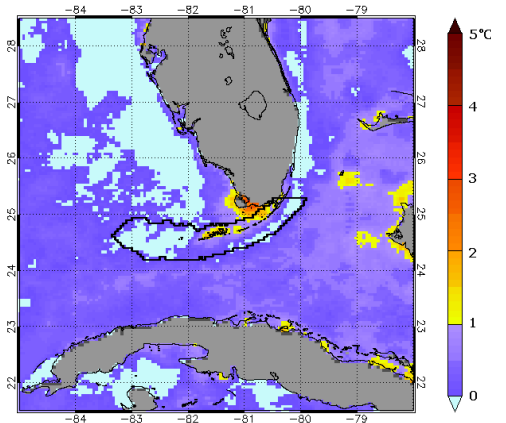


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida September 20, 2016.
<http://coralreefwatch.noaa.gov/regions/florida.php>

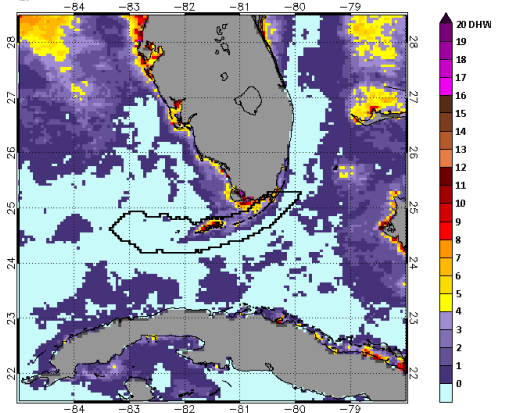


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida September 20, 2016.
<http://coralreefwatch.noaa.gov/regions/florida.php>

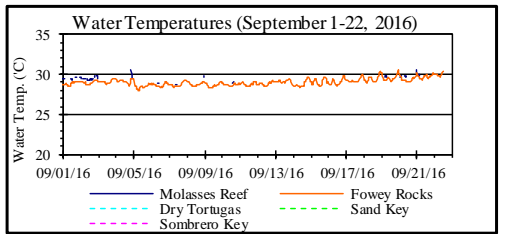


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (September 1-22, 2016).

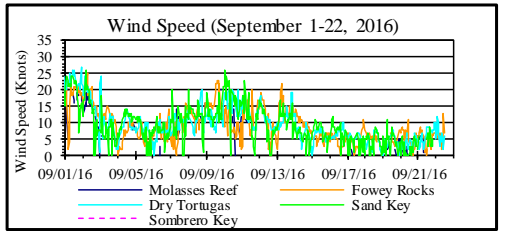


Figure 5. Wind speed data from NOAA/ICON monitoring stations (September 1-22, 2016).



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Current Coral Conditions

A total of 33 BleachWatch Observer reports were received during the past three weeks (Fig. 6), with 14 reports indicating isolated colonies exhibiting signs of paling. The remaining 16 reports indicated that



Figure 7. Paling *P. strigosa* at a patch reef offshore of Summerland Key on 9/14/16.

no significant signs of coral bleaching were observed. At those sites where paling was noted, the overall percentage of corals exhibiting signs of thermal stress was mostly 1-10%, however a few inshore sites noted up to 30% of corals affected. The majority of paling observations consisted of isolated colonies of Encrusting/Mound/Boulder corals; *Orbicella annularis*, *Orbicella faveolata*, *Siderastrea siderea*, *Stephanocoenia intersepta*, *Dichocoenia stokesii*, and *Siderastrea radians*, Brain corals; *Colpohyllia natans*, *Meandrina meandrites*, *Pseudodiploria clivosa* and *Pseudodiploria strigosa* (Fig. 7), Flower Corals; *Eusmilia fastigiata* and Branching Corals; *Oculina spp.* and *Porites porites*. Other observations included paling of *Palythoa spp.*, and Fire Coral as well as several reports of potential coral disease. Due to the past two years of elevated thermal stress on the corals throughout the region, observers are encouraged to continue to report observations of disease (Fig. 8) or no disease.



Figure 8. *S. siderea* with unknown "white" disease at Big Pine Ledges on 9/19/16.

and *Pseudodiploria strigosa* (Fig. 7), Flower Corals; *Eusmilia fastigiata* and Branching Corals; *Oculina spp.* and *Porites porites*. Other observations included paling of *Palythoa spp.*, and Fire Coral as well as several reports of potential coral disease. Due to the past two years of elevated thermal stress on the corals throughout the region, observers are encouraged to continue to report observations of disease (Fig. 8) or no disease.

These isolated observations of paling and partial bleaching indicate that the onset of a mass bleaching event is unlikely at this time; however, continued field observations are needed as more widespread coral bleaching could potentially develop if environmental conditions change.

BleachWatch Reports for September 1-22, 2016

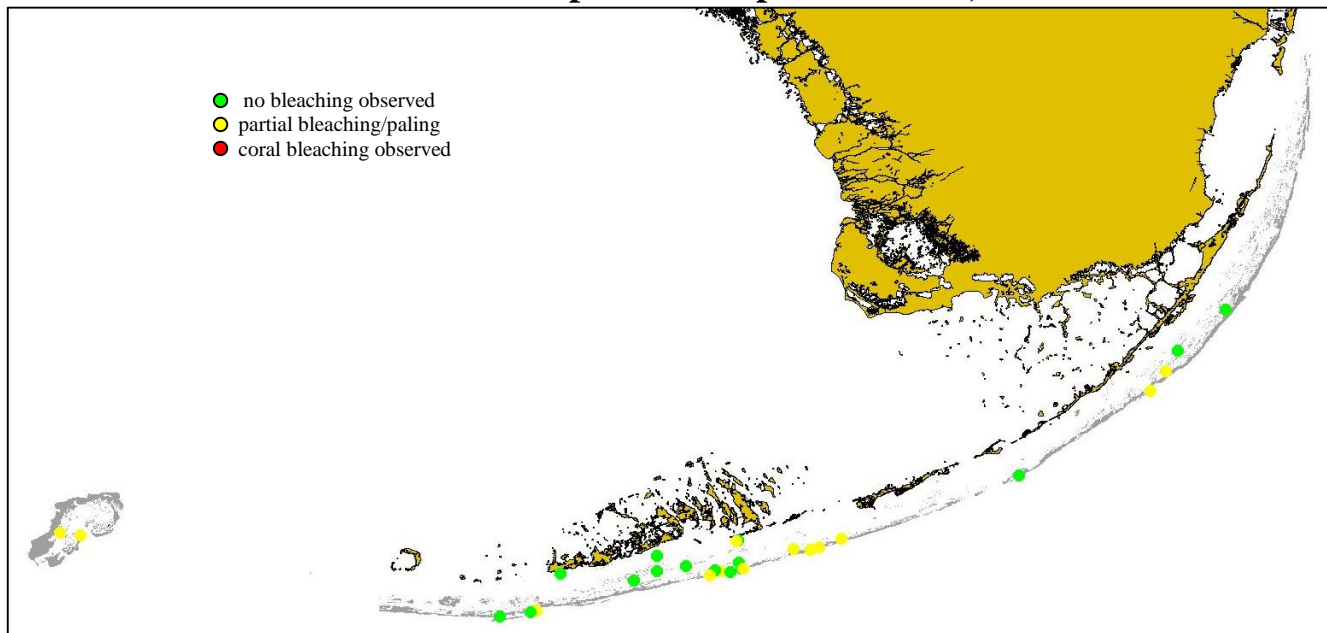


Figure 6. Overview of BleachWatch observer reports submitted from September 1-22, 2016

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

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FUNDING THANKS TO....

