Mote Marine Laboratory / Florida Keys National Marine Sanctuary

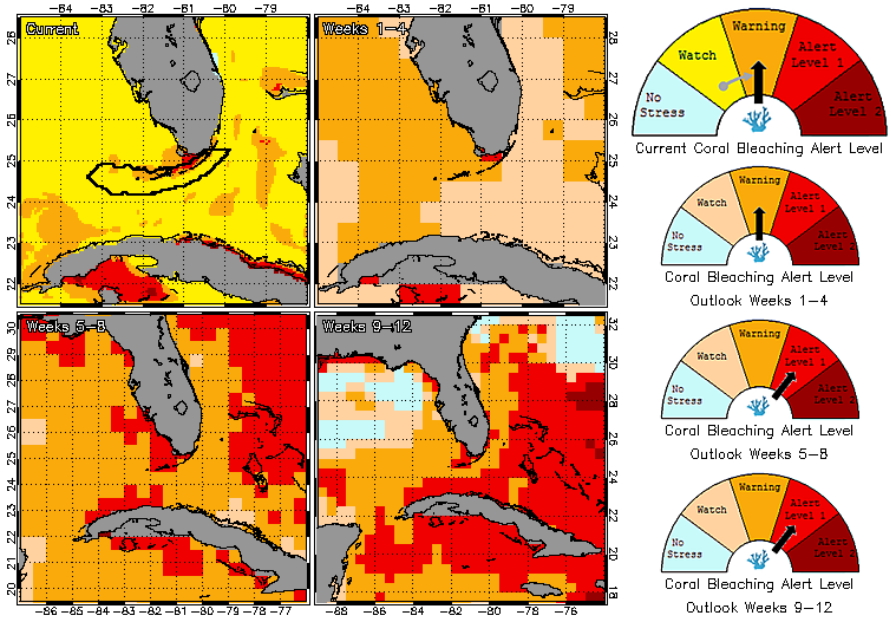
Coral Bleaching Early Warning Network

Current Conditions Report #20190802

Updated August 2, 2019

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook July 28, 2019 (experimental)



Areas through September 2019. Updated July 28, 2019.
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

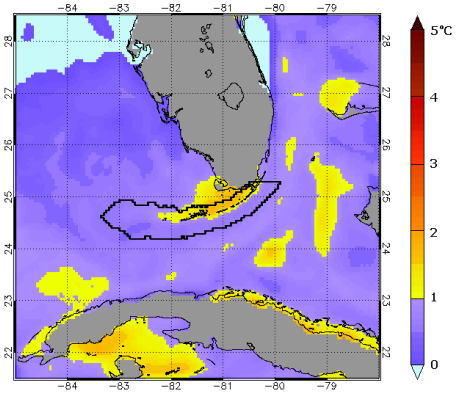


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida July 28, 2019.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

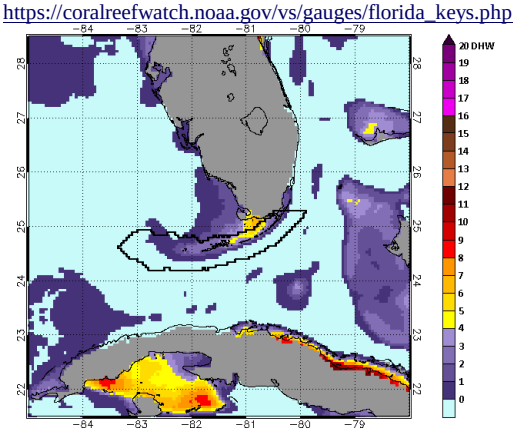


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida July 28, 2019.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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, most areas of the Florida Keys National Marine Sanctuary are under a bleaching Watch, with some areas under a Warning or Alert Level 1, which means bleaching is likely and the potential exists for more bleaching warnings and alerts if sea temperatures continue to increase in the next few weeks (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that all of the Florida Keys region is currently experiencing 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 elevated temperatures for 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 accumulating temperature stress is currently evident in the Florida Keys region. NOAA's Integrated Coral Observing Network (ICON) and Pacific Marine Environmental Laboratory (PMEL) monitoring stations, which provide near real time *in-situ* sea temperature and/or wind data throughout the Florida Keys reefs, as well as Mote Marine Laboratory (MML) *in-situ* temperature data confirm that temperatures have increased over the past two weeks to above 30°C (Fig.4), likely due in part to low wind conditions observed during the majority of this time (Fig. 5). 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.

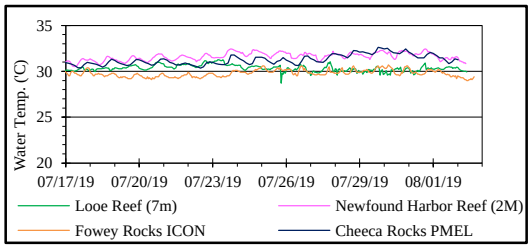


Figure 4. *in-situ* sea temperature from NOAA/ICON and MML monitoring stations (July 17- Aug. 2, 2019).

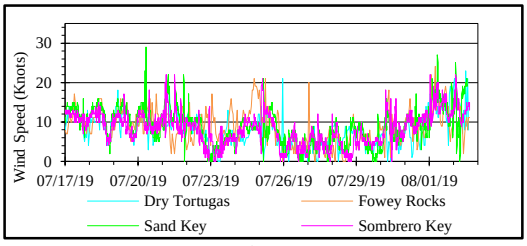


Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 17-Aug. 2, 2019).

Current Coral Conditions

A total of 29 BleachWatch Observer reports were received during the last 2 weeks of July (Fig. 6), with 17 reports indicating isolated colonies exhibiting signs of paling (Fig. 7) or partial bleaching. The remaining 12 reports indicated that no significant signs of coral bleaching were observed (Fig. 8). At those sites where paling/partial bleaching was noted, the overall percentage of corals exhibiting signs of thermal stress was mostly 1-10%, however several reef sites noted up to 50% of corals affected. The majority of paling/partial bleaching observations consisted of isolated colonies of Encrusting/Mound/Boulder corals (*Siderastrea siderea*, *Siderastrea radians*, *Montastraea cavernosa*, *Orbicella faveolata*, *Orbicella annularis* and *Dichocoenia stokesi)* and Brain corals (*Colpohyllia natans, Pseudodiploria stirgosa and Pseudodiploria clivosa).* Other observations included paling of *Palythoa spp.*, and Fire Coral as well as abundant reports of coral disease (Fig. 8 & 9).

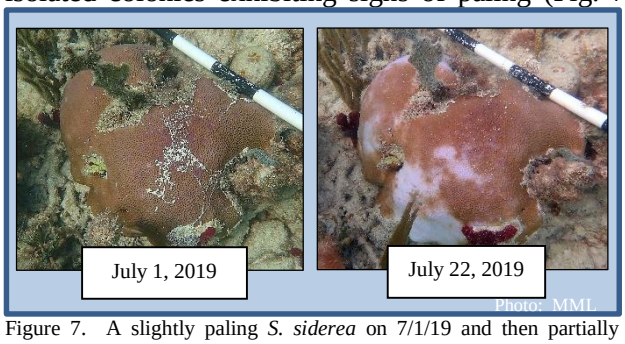


Figure 7. A slightly paling *S. siderea* on 7/1/19 and then partially bleached by 7/22/19 at a mid-channel reef off of Cudjoe Key.

Figure 8. Healthy *Acropora palmata* at Western Dry Rocks on 7/26/19.

These isolated observations of paling and partial bleaching do not necessarily indicate that the onset of a mass bleaching event is currently underway; however, continued field observations are needed as more widespread coral bleaching could potentially develop if environmental conditions continue to be favorable.

BleachWatch Reports for July 17-Aug 2, 2019

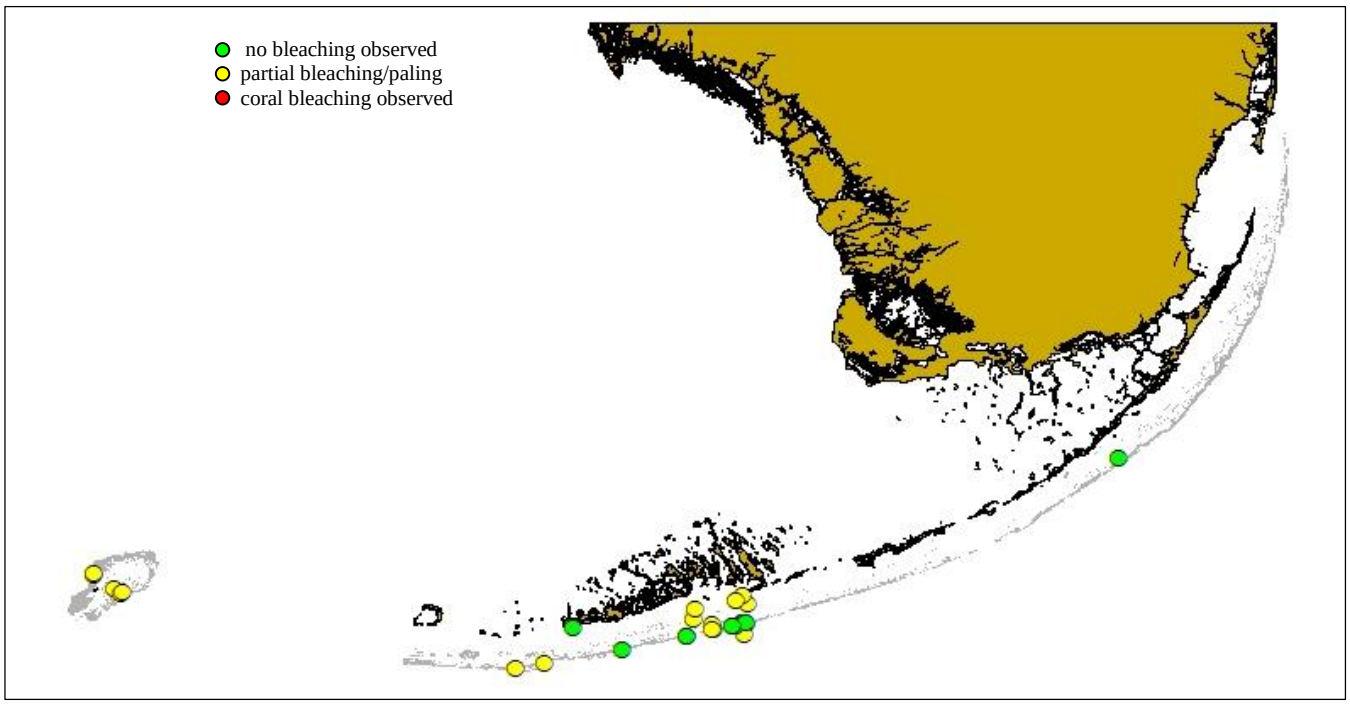


Figure 6. Overview of BleachWatch observer reports submitted from July 17-Aug. 2, 2019

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

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