



Coral Bleaching Early Warning Network

Current Conditions Report #20190701



Updated July 1, 2019

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook June 29, 2019 (experimental)

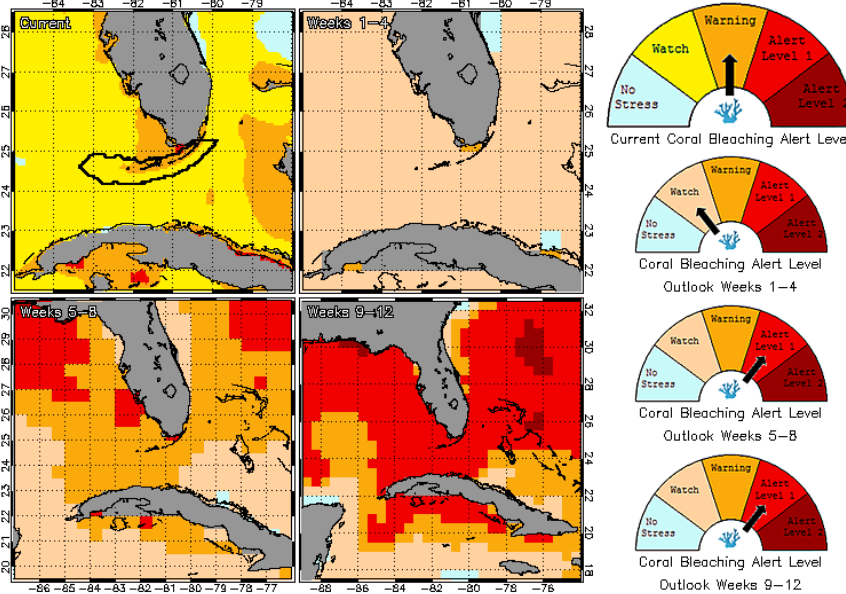


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through September 2019. Updated June 29, 2019. http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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, most areas of the Florida Keys National Marine Sanctuary are under a bleaching Watch or Warning, 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 most 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 currently evident in the Florida Keys region. NOAA's Integrated Coral Observing Network (ICON) monitoring stations, which provide near real time *in-situ* sea temperature and wind data along the outer reef tract throughout the Florida Keys as well as Mote Marine Laboratory (MML) *in-situ* temperature collected at Looe Reef SPA and Newfound Harbor SPA, confirm that temperatures have been steadily increasing over the past four weeks to 30°C or above (Fig.4), likely due in part to lighter wind conditions observed during the majority of this time (Fig. 5). *In-situ* sea temperature data is currently only available at Fowey Rocks. 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.

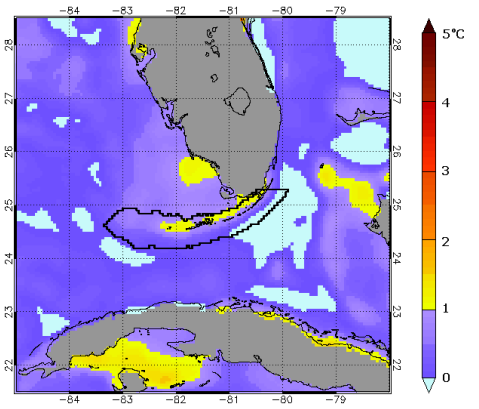


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida June 29, 2019. https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

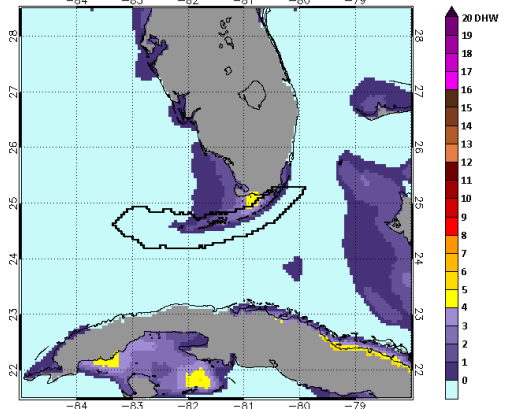


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida June 29, 2019. https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

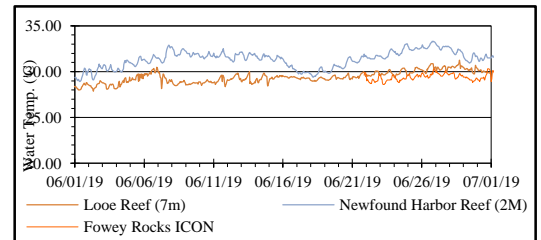


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (June 1-30, 2019).

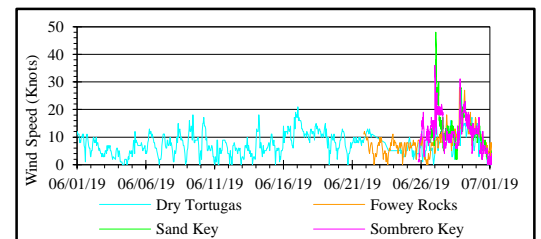


Figure 5. Wind speed data from NOAA/ICON monitoring stations (June 1-30, 2019).



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Current Coral Conditions

An overwhelming total of 139 BleachWatch Observer reports were received during the month of June (Fig. 6), with only 9 reports indicating isolated colonies exhibiting signs of paling (Fig. 7) or partial bleaching. The remaining 130 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 only 1-10%, and the majority of paling observations consisted of isolated colonies of Encrusting/Mound/Boulder corals; *Siderastrea siderea* and *Siderastrea radians*. Other observations included paling of *Palythoa spp.*, and Fire Coral as well as abundant reports of coral disease (Fig. 9).



Photo: Trudy Ferraro, Pennekamp SP
 Figure 7. Paling/stressed *Siderastrea radians* at Cannon Patch on 6/19/19.

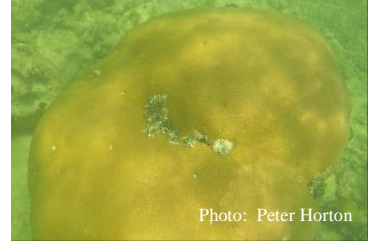


Photo: Peter Horton
 Figure 8. Healthy/slightly pale *Siderastrea siderea* at an inshore patch reef off Key West 6/15/19.

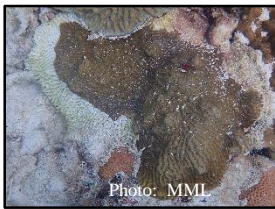


Photo: MML
 Figure 9. A *Pseudodiploria clivosa* with tissue loss disease off Summerland Key, 6/13/19

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 June 1-30, 2019

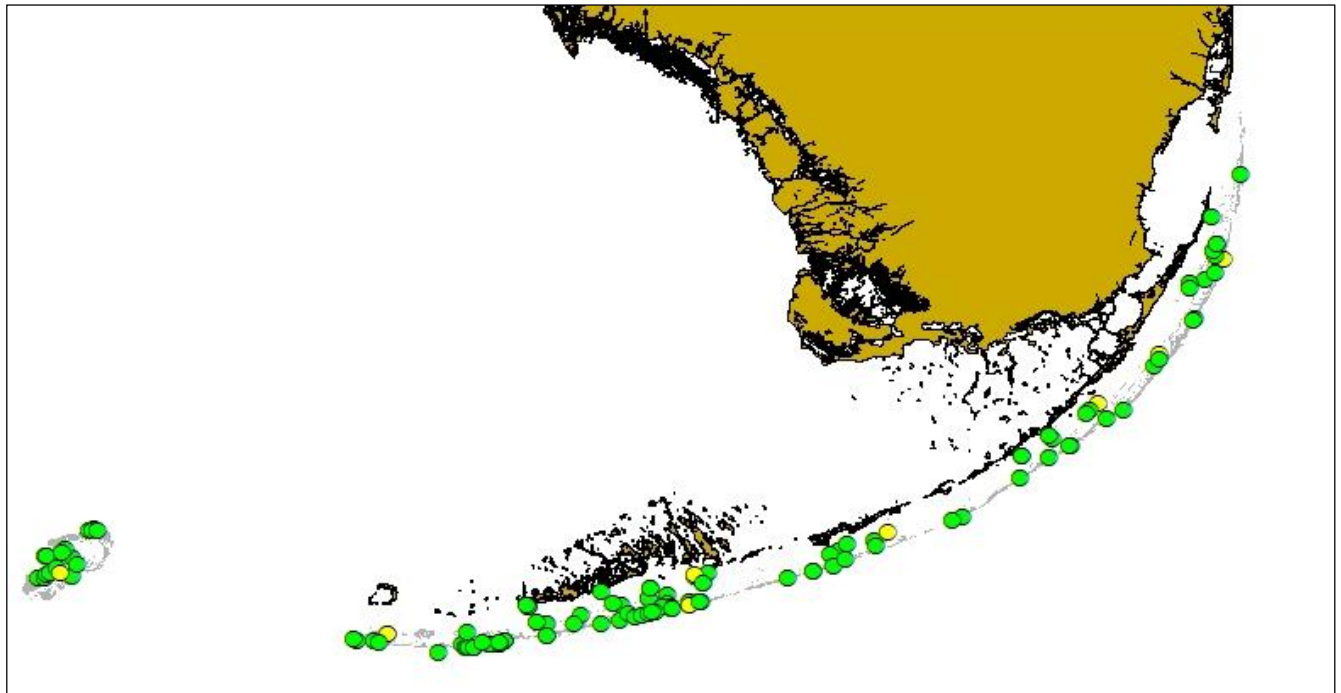


Figure 6. Overview of BleachWatch observer reports submitted from June 1-30, 2019

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

FUNDING THANKS TO....



Cory Walter
 Mote Marine Laboratory
 24244 Overseas Highway
 Summerland Key, FL 33042
 (305) 395-8730

<http://www.mote.org/bleachwatch>

