



Updated July 17, 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 15, 2019 (experimental)

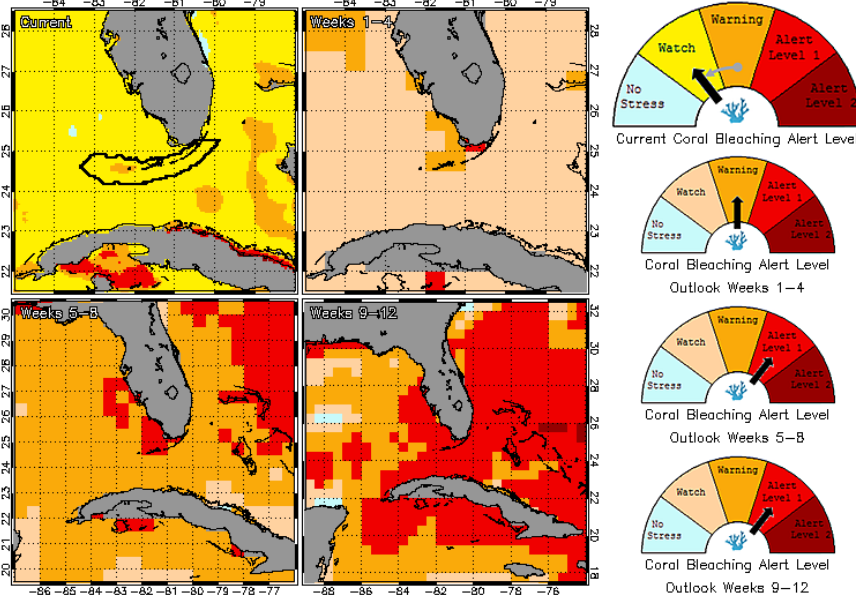


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through September 2019. Updated July 15, 2019. http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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 is 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 slightly decreased over the past two weeks to 29-31°C (Fig.4), likely due in part to high 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.

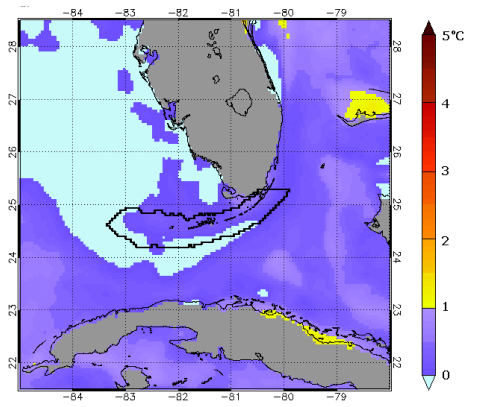


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida July 15, 2019. https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

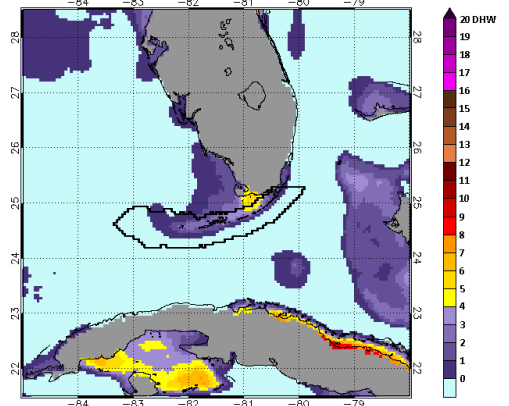


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida July 15, 2019. https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

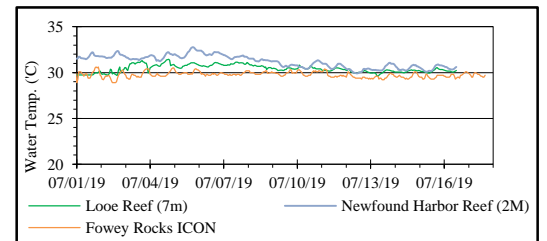


Figure 4. *in-situ* sea temperature from NOAA/ICON and MML monitoring stations (July 1-17, 2019).

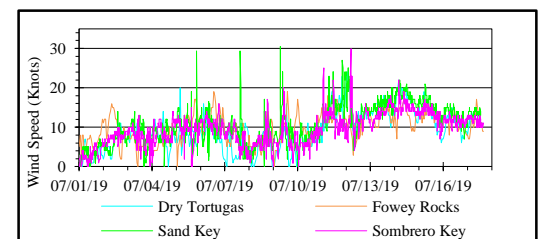


Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 1-17, 2019).



Coral Bleaching Early Warning Network

Current Conditions Report #20190717



Current Coral Conditions

A total of 52 BleachWatch Observer reports were received during the first 2 weeks of July (Fig. 6), with 23 reports indicating



Figure 7. Paling/stressed *Siderastrea siderea* at Rock Key on 7/12/19



Figure 9. *Orbicella faveolata* with tissue loss disease at Sand Key, 7/12/19

isolated colonies exhibiting signs of paling (Fig. 7) or partial bleaching. The remaining 29 reports indicated that no significant signs of coral bleaching were observed. 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 30% 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 stokes*) and Brain corals (*Colpohyllia natans*). Other observations included paling of *Palythoa spp.*, and Fire Coral as well as abundant reports of coral disease (Fig. 8 & 9).

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.



Figure 8. *S. siderea* with disease at Looe Key on 7/12/19. Report tagged corals to seafan.net/tags.

BleachWatch Reports for July 1-17, 2019

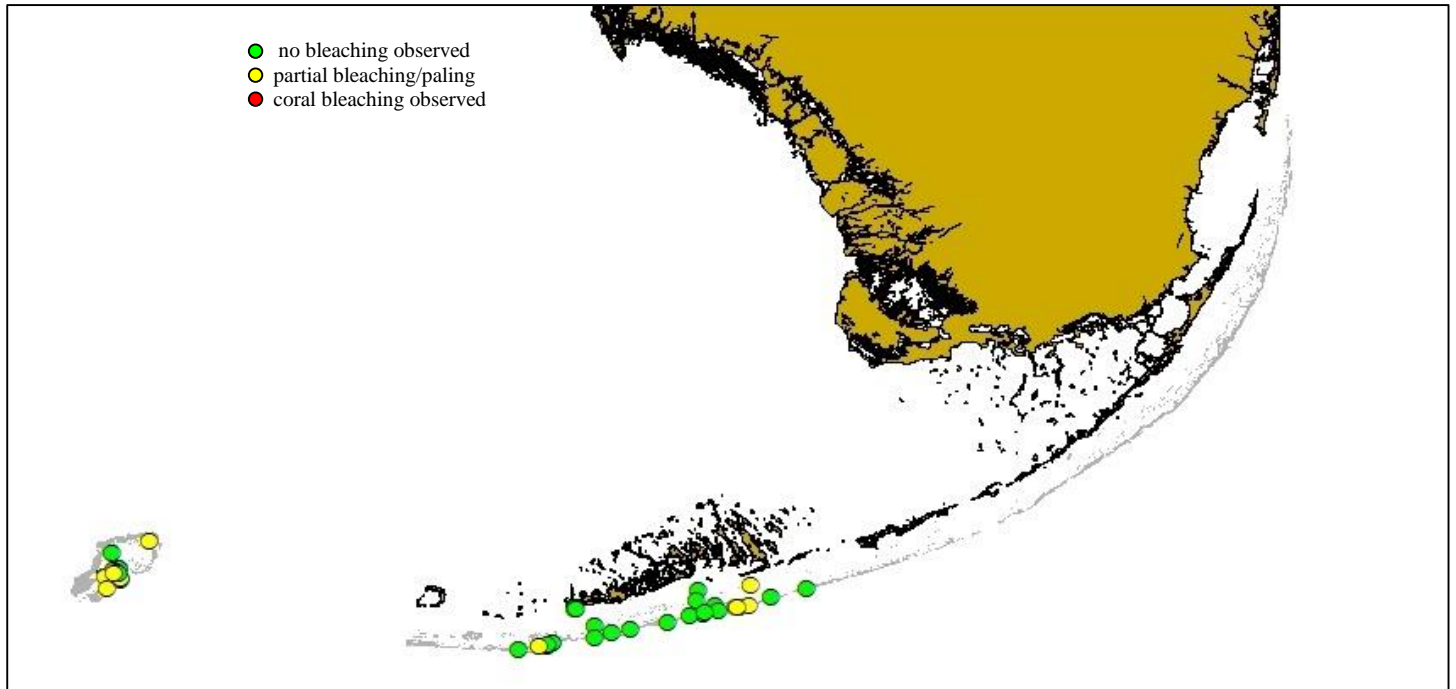


Figure 6. Overview of BleachWatch observer reports submitted from July 1-17, 2019

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

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