



Updated September 10, 2018

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 Current and 60% Probability Coral Bleaching Alert Outlook September 8, 2018 (experimental)

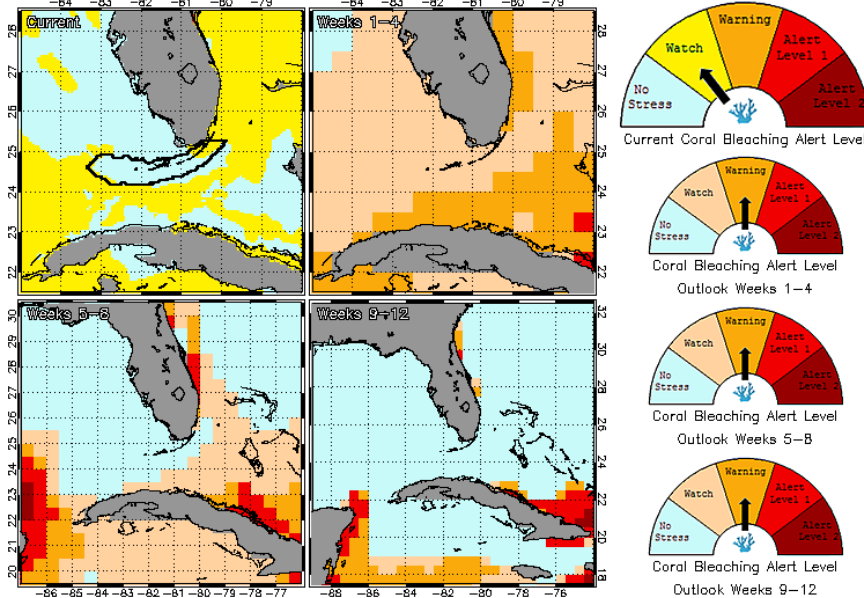


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through December, 2018. Updated September 8, 2018. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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 no stress for coral bleaching, with some areas in the Upper Keys with only a watch, 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 no 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 limited 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 data along the outer reef tract throughout the Florida Keys, confirms that temperatures have been at or slightly below 30°C over the past few weeks (Fig. 4), likely due in part to moderate to high wind conditions (Fig. 5). In-situ sea temperature data is currently only available at Fowey Rocks and intermittently at Molasses Reef. Sand Key is not recording wind 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.

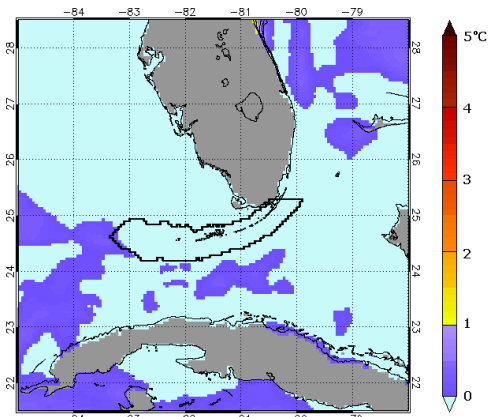


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida September 8, 2018. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

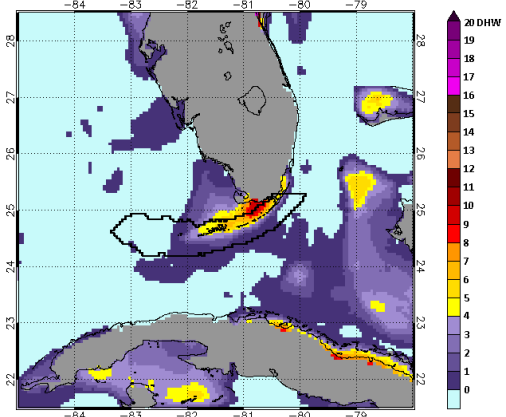


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida September 8, 2018. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

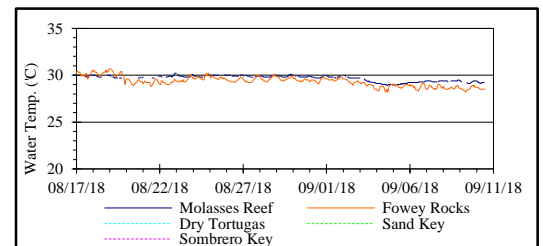


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (August 17-September 10, 2018).

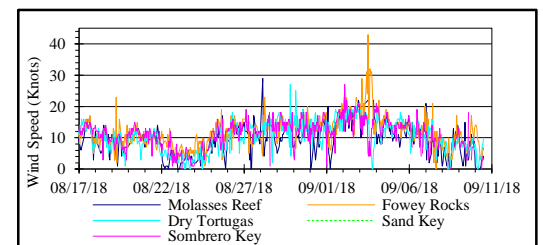


Figure 5. Wind speed data from NOAA/ICON monitoring stations (August 17-September 10, 2018).



Current Coral Conditions

A total of 48 BleachWatch Observer reports were received during the past 3 weeks (Fig. 6), with 36 reports indicating isolated colonies exhibiting signs of paling or partial bleaching, and the remaining 12 reports indicated no significant signs of coral bleaching or paling observed (Fig. 7).



Figure 7. Healthy *O. faveolata* in the Dry Tortugas NP on 9/7/18.

At those sites where paling was noted, the overall percentage of corals exhibiting signs of thermal stress was mostly 1-10%, however a few 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*, *Stephanocoenia intersepta*, *Montastraea cavernosa*, *Orbicella faveolata*, *Orbicella annularis*, *Porites astreoides*, *Dichocoenia stokesii*, *Undaria agaricites* and *Siderastrea radicans*, Brain corals; *Colpohyllia natans*, *Meandrina meandrites*, *Pseudodiploria clivosa* and *Pseudodiploria strigosa*. Branching Corals; *Porites porites* and *Oculina spp.*, and Flower Corals; *Eusmilia fastigiata*. Other observations included paling/bleaching of *Palythoa spp.*, Gorgonians and Fire Coral as well as numerous reports of coral disease (Fig. 8). Due to increase in coral disease observations in the Middle and Lower Keys area, observers are encouraged to report if disease is both present or absent at their sites.



Figure 8. Diseased *S. siderea* at Looe Key Reef SPA on 8/27/18

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

BleachWatch Reports for August 17-September 10, 2018

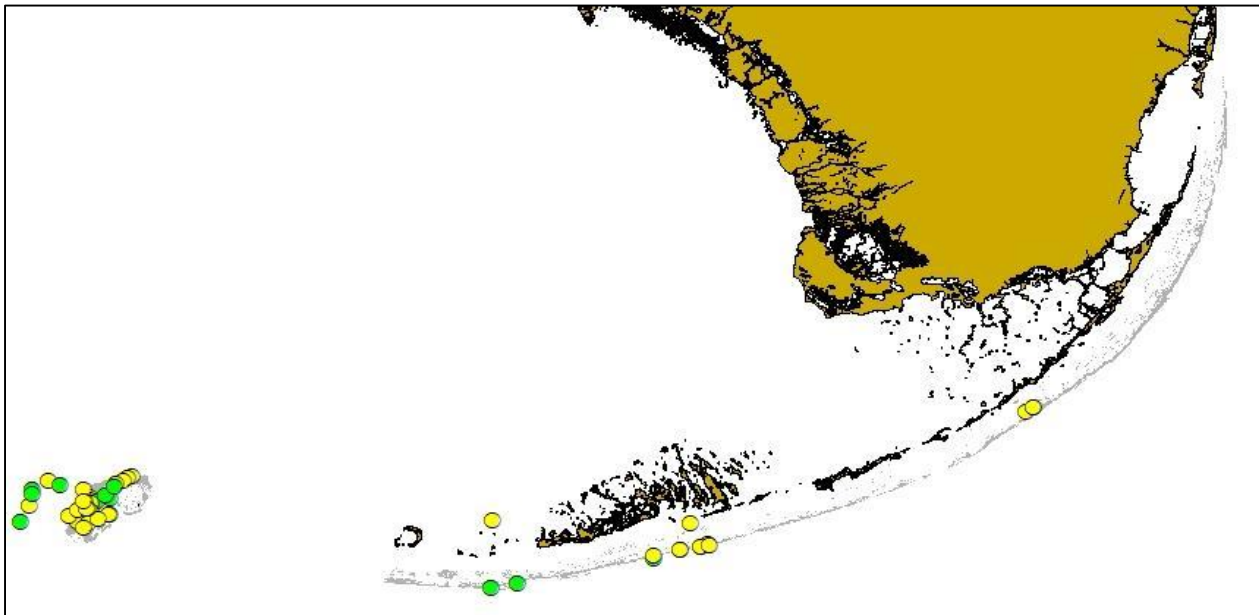


Figure 6. Overview of BleachWatch observer reports submitted from August 17-September 10, 2018



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

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