Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20200928

Updated September 28, 2020

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 27, 2020 (experimental)

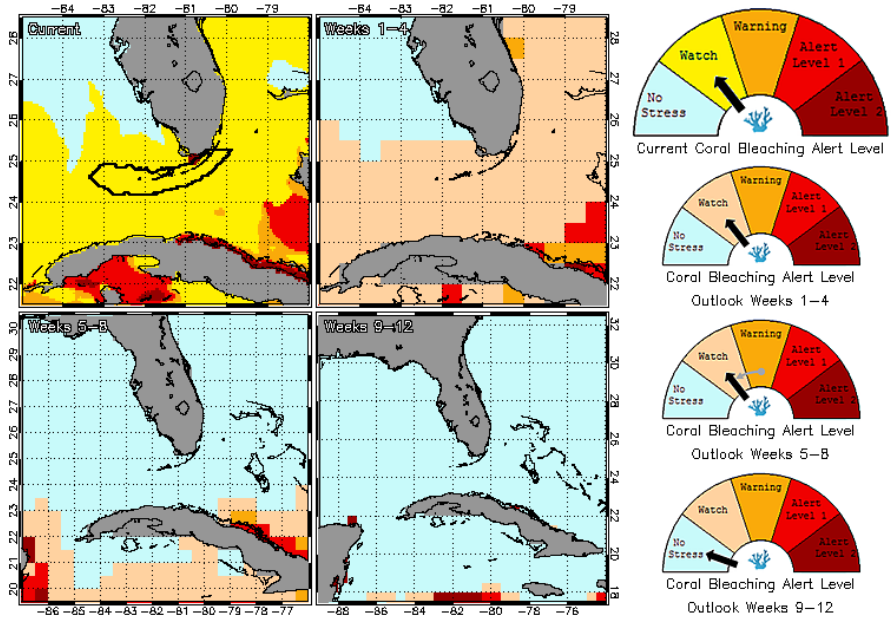

Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through December 2020. Updated September 27, 2020.
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

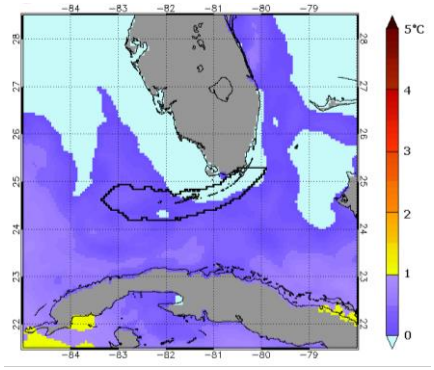

Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida September 27, 2020.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

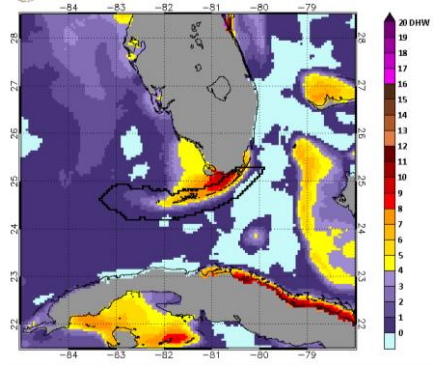

Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida September 27, 2020.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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 remains under a "Bleaching 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 all of the Florida Keys region is currently experiencing a decline in 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 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) and Pacific Marine Environmental Laboratory (PMEL) monitoring stations, which provide near real time *in-situ* sea temperature and wind data throughout the Florida Keys reefs as well as Mote Marine Laboratory (MML) *in-situ* temperature collected at Looe Key SPA, Newfound Harbor SPA, and Sand Key Nursery confirm that temperatures have been at or slightly below 30°C over the past week (Fig.4), likely due in part to elevated wind conditions observed during the same period (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.

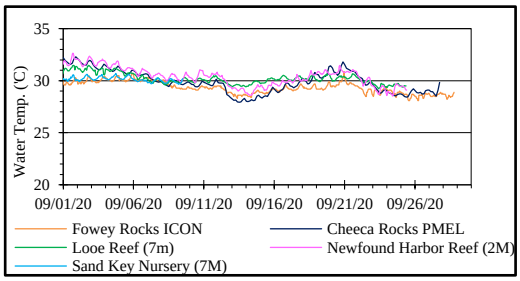

Figure 4. *in-situ* sea temperature from NOAA/ICON, MML, PMEL monitoring stations (Sept. 1-28, 2020).

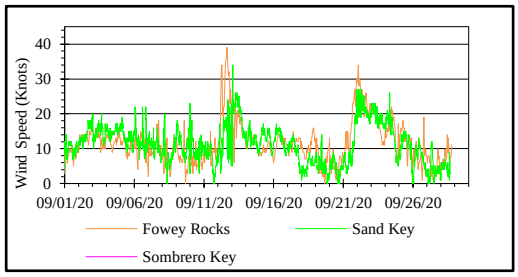

Figure 5. Wind speed data from NOAA/ICON monitoring stations (Sept. 1-28, 2020).

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Current Coral Conditions

A total of 22 BleachWatch Observer reports were received during the last 2 weeks of September (Fig. 6), with 12 reports indicating isolated colonies exhibiting signs of paling (Fig 7). The remaining 18 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 1-30%, however several inshore reefs noted over 75% of corals affected. The majority of paling/partial bleaching observations consisted of isolated colonies of Encrusting/Mound/Boulder corals (*Siderastrea spp.*, *Orbicella spp.* and *Dichocoenia stokesi)*, Leaf/Plate/Sheet (*Agaricia spp.)* and Brain corals. Other observations included paling of *Palythoa spp.*, and Fire Coral as well as abundant reports of coral disease.

Figure 7. Paling *Pseudodiploria strigosa* near Munson reef off Ramrod Key (9/15/2020).

Figure 8. Healthy *Orbicella faveolata* at an offshore reef near American Shoals (9/14/2020).

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 September 11-27, 2020

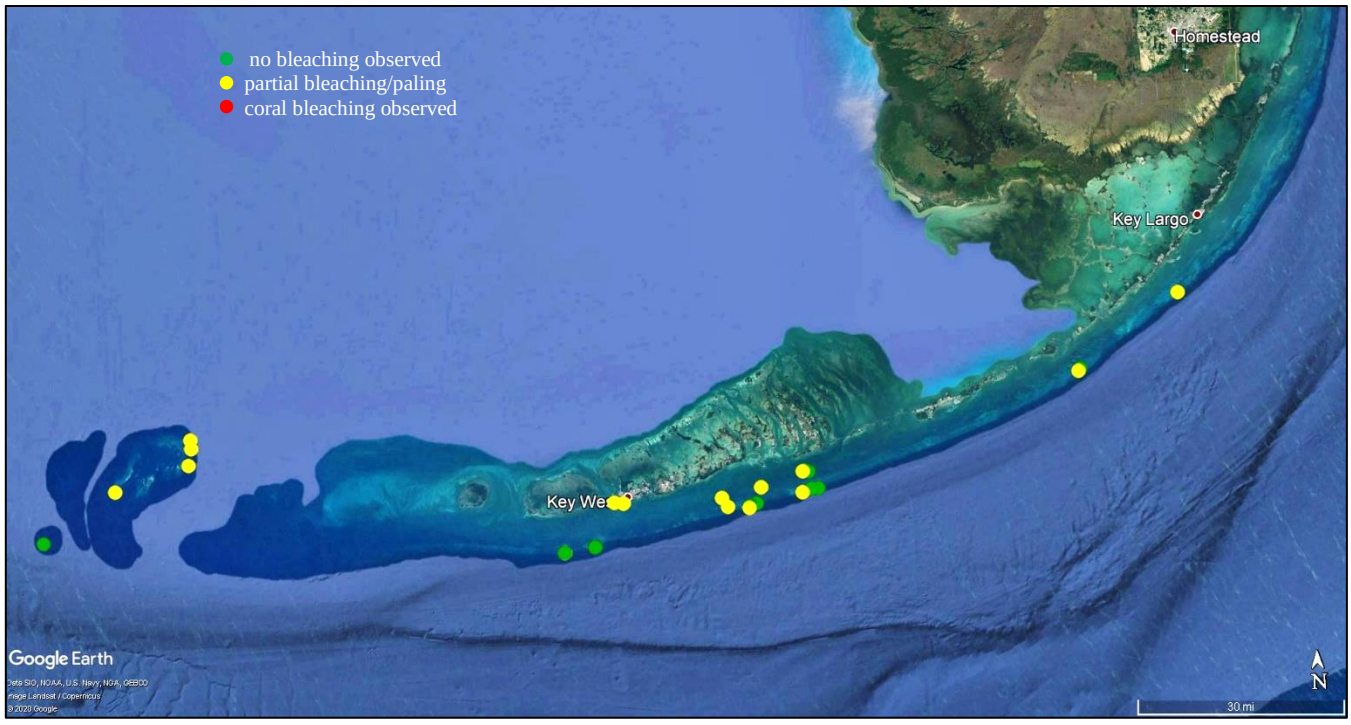

Figure 6. Overview of BleachWatch observer reports submitted from September 11-28, 2020

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

Cory Walter
Mote Marine Laboratory
24244 Overseas Highway
Summerland Key, FL 33042
(305) 395-8730
http://www.mote.org/bleachwatch

FUNDING THANKS TO….