Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20200731

Updated July 31, 2020

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 30, 2020 (experimental)

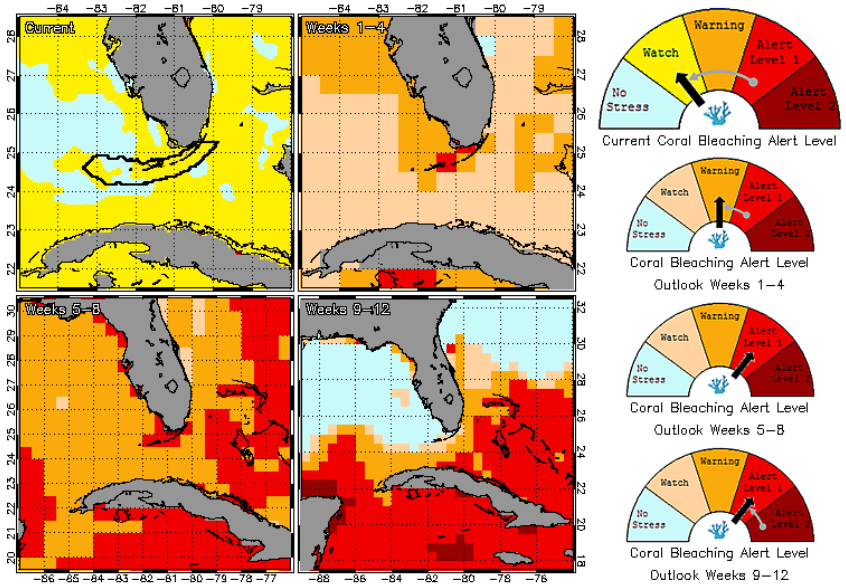

Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through November 2020. Updated July 29, 2020.
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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 reduced to a bleaching Watch; however, bleaching is still likely, and the potential exists for more bleaching warnings and alerts if sea temperatures 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 only slightly elevated temperatures currently for parts of the Florida Keys. However, 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 accumulated 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 along the outer reef tract throughout the Florida Keys 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 decreased over the past two weeks to at or below 30°C (Fig.4), likely due in part to increased 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.

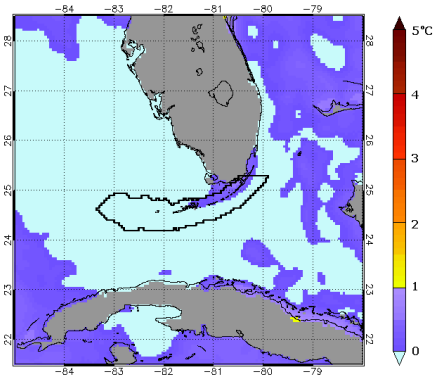

Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida July 29, 2020.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

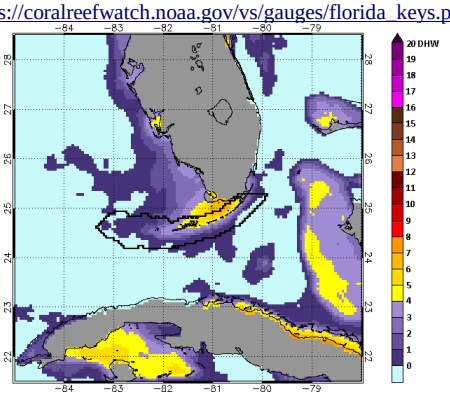

Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida July 29, 2020.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

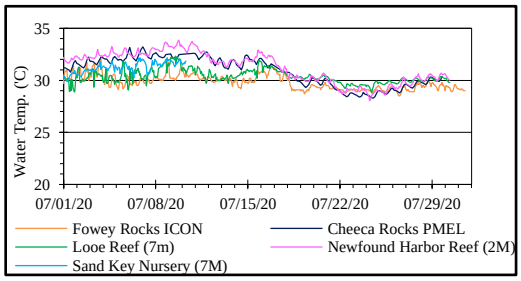

Figure 4. *in-situ* sea temperature from NOAA/ICON, MML, PMEL monitoring stations (July 1-31, 2020).

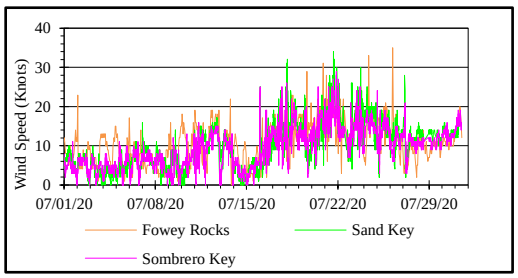

Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 1-31, 2020).

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Current Coral Conditions

A total of 18 BleachWatch Observer reports were received during the last 2 weeks of July (Fig. 6), with 7 reports indicating isolated colonies exhibiting signs of paling (Fig. 7) or partial bleaching. The remaining 11 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 inshore reefs noted up to 30% 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 (*Colpohyllia natans).* Other observations included paling of *Palythoa spp.*, and Fire Coral as well as abundant reports of coral disease (Fig. 8). If you see a yellow tag (Fig. 8), please take photos of tag and coral and upload at seafan.net/tags.

Figure 7. Healthy *Dichocoenia stokesi* and paling *Agaricia sp.* at a reef just east of Looe on 7/30/20.

Figure 8. *Pseudodiploria strigosa* with Stony Coral Tissue Loss Disease at Cheeca Rocks, 7/28/20.

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 17-30, 2020

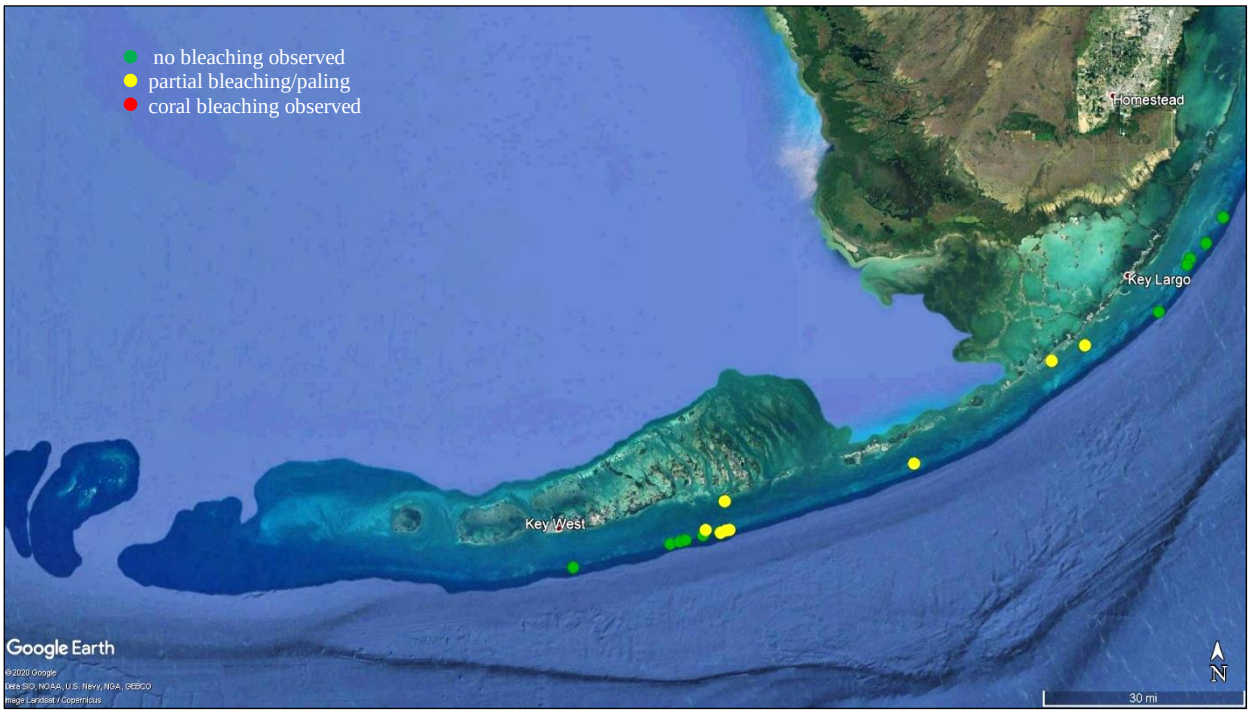

Figure 6. Overview of BleachWatch observer reports submitted from July 17-30, 2020

BLEACHWATCH
MOTE MARINE LABORATORY

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

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FUNDING THANKS TO….

National Marine Sanctuaries Florida Keys
Florida 4 Reef Protect Our Reefs
NOAA Coral Reef Conservation Program