Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20230825

Updated August 25, 2023

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook August 24, 2023 (experimental)

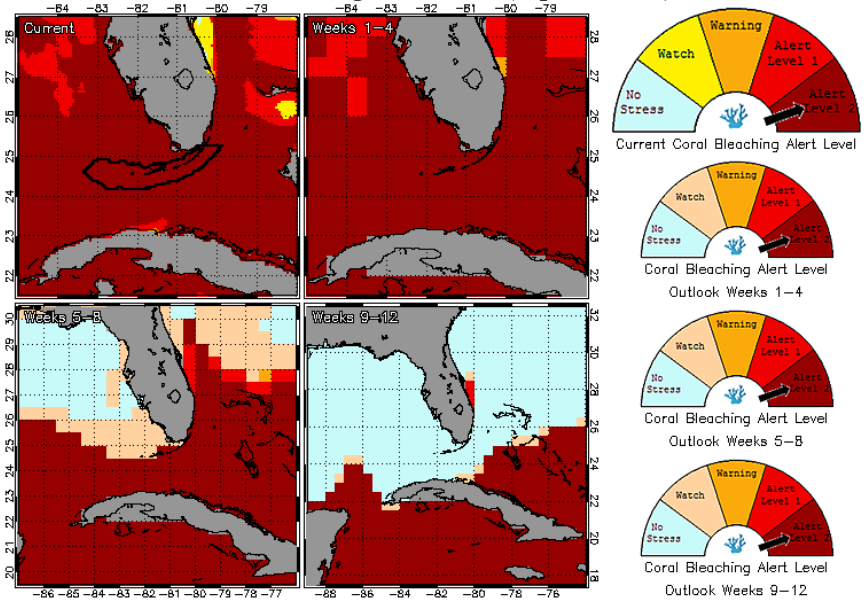

Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through mid-November 2023. Updated August 24, 2023.
https://coralreefwatch.noaa.gov/product/vs/gauges/florida_keys.php

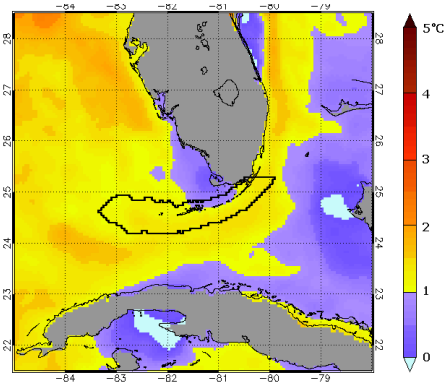

Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida August 24, 2023.
NOAA Coral Reef Watch Website

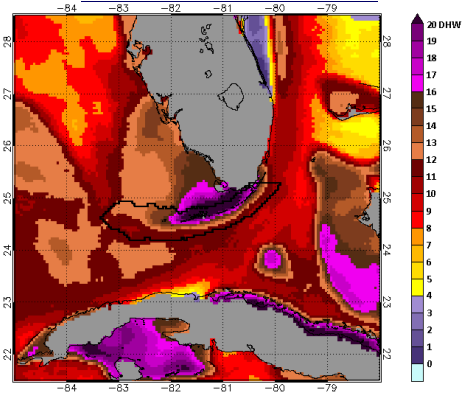

Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida August 24, 2023.
NOAA Coral Reef Watch Website

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 Alert Level 2, which means significant bleaching expected; mortality likely and the potential exists for continual bleaching alerts if sea temperatures remain elevated in the next few weeks and months (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that the Florida Keys region continues to experience elevating thermal stress. NOAA's 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 sea surface temperatures are elevated well above normal in 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 extreme accumulating temperature stress is evident in the Florida Keys region.

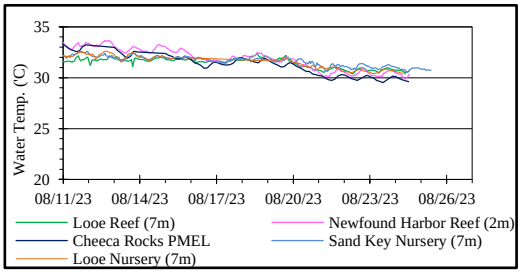

Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (August 11-25, 2023).

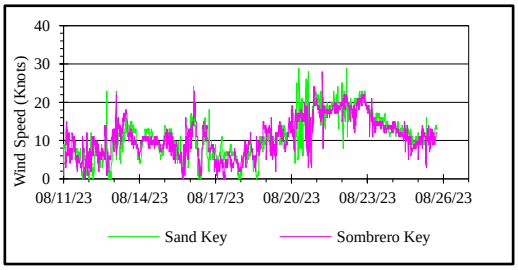

Figure 5. Wind speed data from NOAA/ICON monitoring stations (August 11-25, 2023).

NOAA's Integrated Coral Observing Network (ICON), which provides near real time *in-situ* wind data at Sombrero and Sand Key Reef, as well as Mote Marine Laboratory (MML) and Pacific Marine Environmental Laboratory (PMEL) *in-situ* temperature data confirm that temperatures have slightly decreased close to 30°C over the past two weeks (Fig.4), likely due in part to elevated wind conditions during this 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.

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Current Coral Conditions

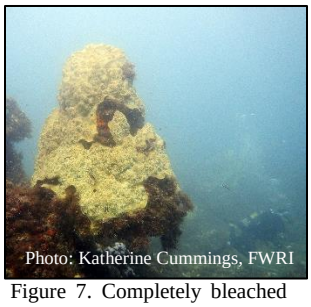

Figure 7. Completely bleached *Orbicella faveolata* at Davis Rock, DTNP on 8/12/2023.

Figure 9. Gorgonian and Seafan mortality at Cannon Patch, Pennekamp SP on 8/24/23

A total of 39 BleachWatch Observer reports were received during the past two weeks (Fig. 6), with 23 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 7 &8), and 16 reports of extensively bleached reefs. The majority overall percentage of corals exhibiting signs of thermal stress was 76-100% with a few sites offshore throughout the FKNMS of up to 50%. Nearly all species including Brain corals, Encrusting/Mound/Boulder corals, Flower corals, Branching/Pillar corals, Fleshy corals, and Leaf/Plate corals showed signs of thermal stress at all sites and recent mortality at a several inshore and mid-channel sites. Other observations included bleaching and mortality of *Palythoa spp.*, Fire coral, and Gorgonians (Fig. 9) as well as several reports of coral disease, mainly the Stony Coral Tissue Loss Disease (SCTLD) and Rapid Tissue Loss Disease (RTL).

Figure 8. Bleached *Eusmilia fastigiata* at an offshore reef off Islamorada on 8/15/23.

Continued field observations are needed as widespread coral bleaching could potentially develop if environmental conditions continue to be favorable. Please remember to report even if there is no bleaching at your site. Report at www.mote.org/bleachwatch.

BleachWatch Reports for August 11-25, 2023

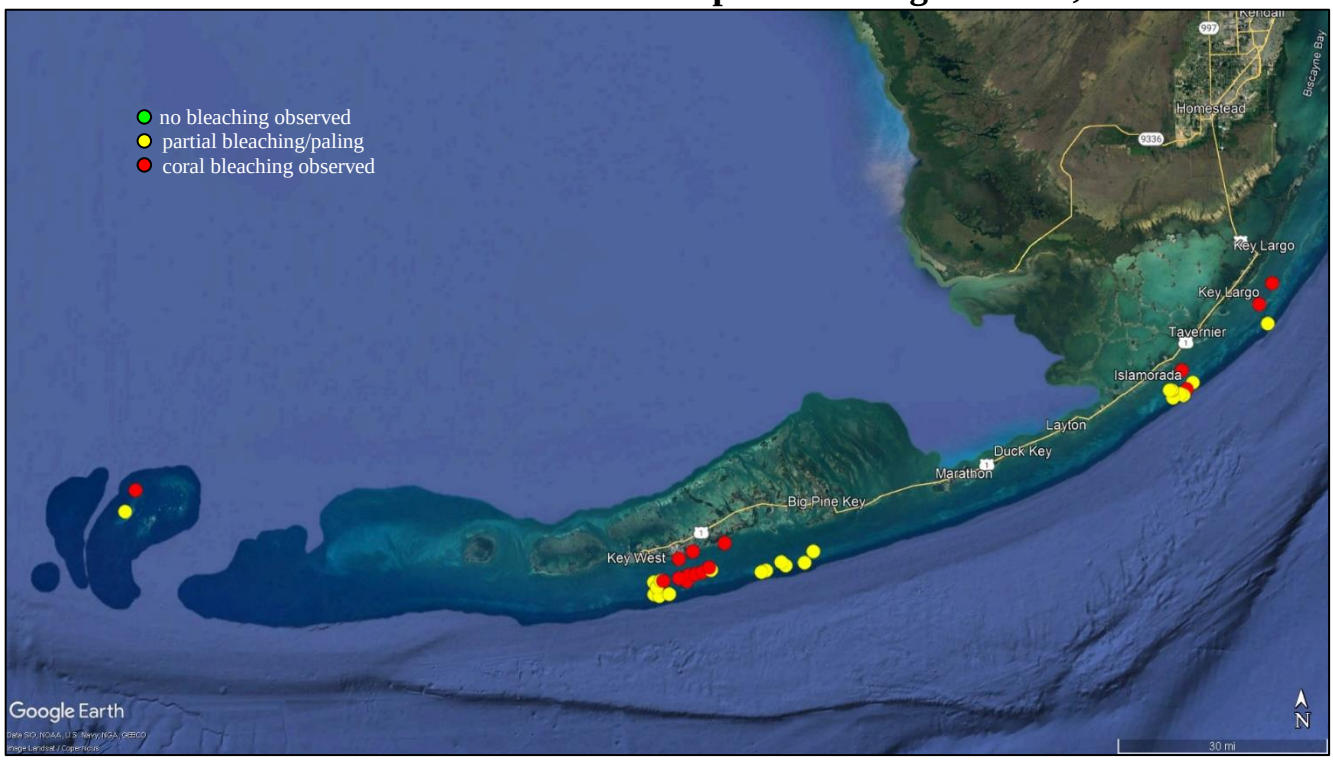

Figure 6. Overview of BleachWatch observer reports submitted from August 11-25, 2023

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

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FUNDING THANKS TO….