Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20230714

Updated July 14, 2023

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook July 12, 2023 (experimental)

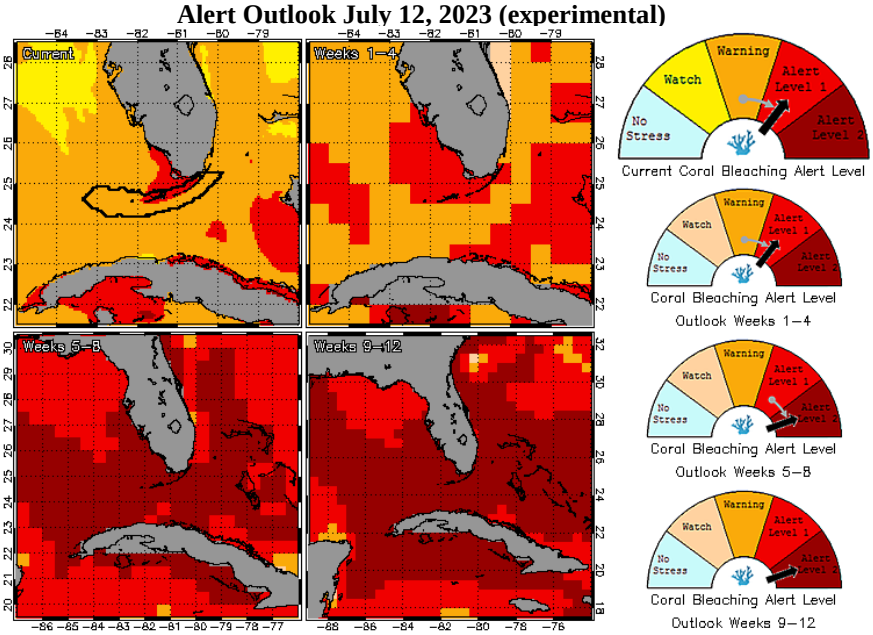

Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through September 2023. Updated July 12, 2023.
https://coralreefwatch.noaa.gov/product/vs/gauges/florida_keys.php

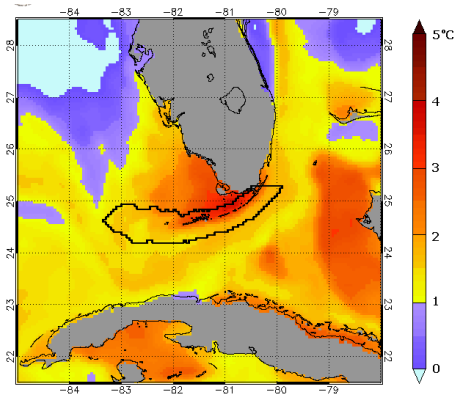

Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida July 12, 2023.
NOAA Coral Reef Watch Website

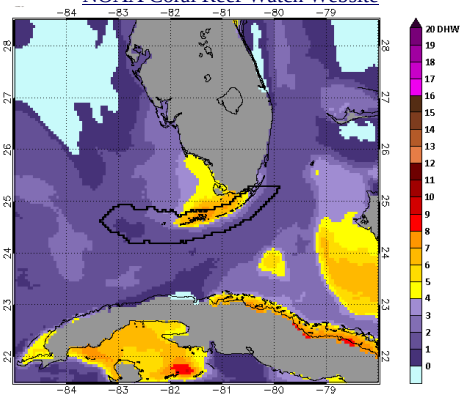

Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida July 12, 2023.
NOAA Coral Reef Watch Website

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, some areas of the Florida Keys National Marine Sanctuary are under a bleaching Alert Level 1, which means coral bleaching is expected 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 the Florida Keys region is currently experiencing elevated 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 sea surface temperatures are currently elevated 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 accumulating temperature stress is evident in the Florida Keys region.

NOAA's Integrated Coral Observing Network (ICON), which provides near real time *in-situ* wind data at Sombrero Reef, as well as Mote Marine Laboratory (MML) and Pacific Marine Environmental Laboratory (PMEL) *in-situ* temperature data confirm that temperatures have been steadily increasing over the past two weeks to well above 30°C (Fig.4), likely due in part to lighter 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.

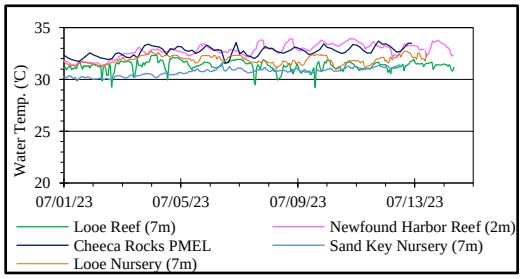

Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (July1-14, 2023).

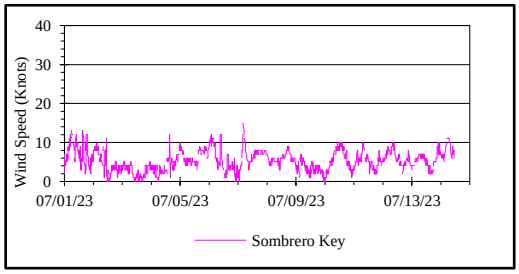

Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 1-14, 2023).

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Current Coral Conditions

A total of 25 BleachWatch Observer reports were received during the past two weeks (Fig. 6), with 13 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 7). The remaining 12 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% with a few sites up to 30%. The majority of paling/partial bleaching observations consisted of isolated colonies of Encrusting/Mound/Boulder corals (*Siderastrea spp.* and *Porites spp.*), Branching corals (*Acropor cervicornis*, *Porites spp.*) Flower corals (*Eusmilia fastigiana*) and Brain corals. Other observations included paling of *Palythoa spp.* and Fire coral, as well as several reports of coral disease, mainly the Stony Coral Tissue Loss Disease (SCTLD) and Rapid Tissue Loss Disease (RTL) (Fig. 8).

Figure 7. Partial bleaching of *Siderastrea sidera* at Looe Key SPA on 7/10/2023.

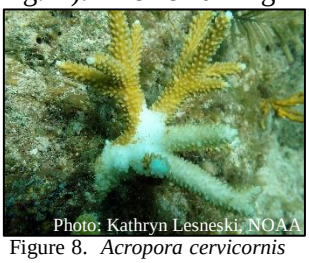

Figure 8. *Acropora cervicornis* with RTL at Alligator Reef SPA on 7/7/23.

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 July 1-14, 2023

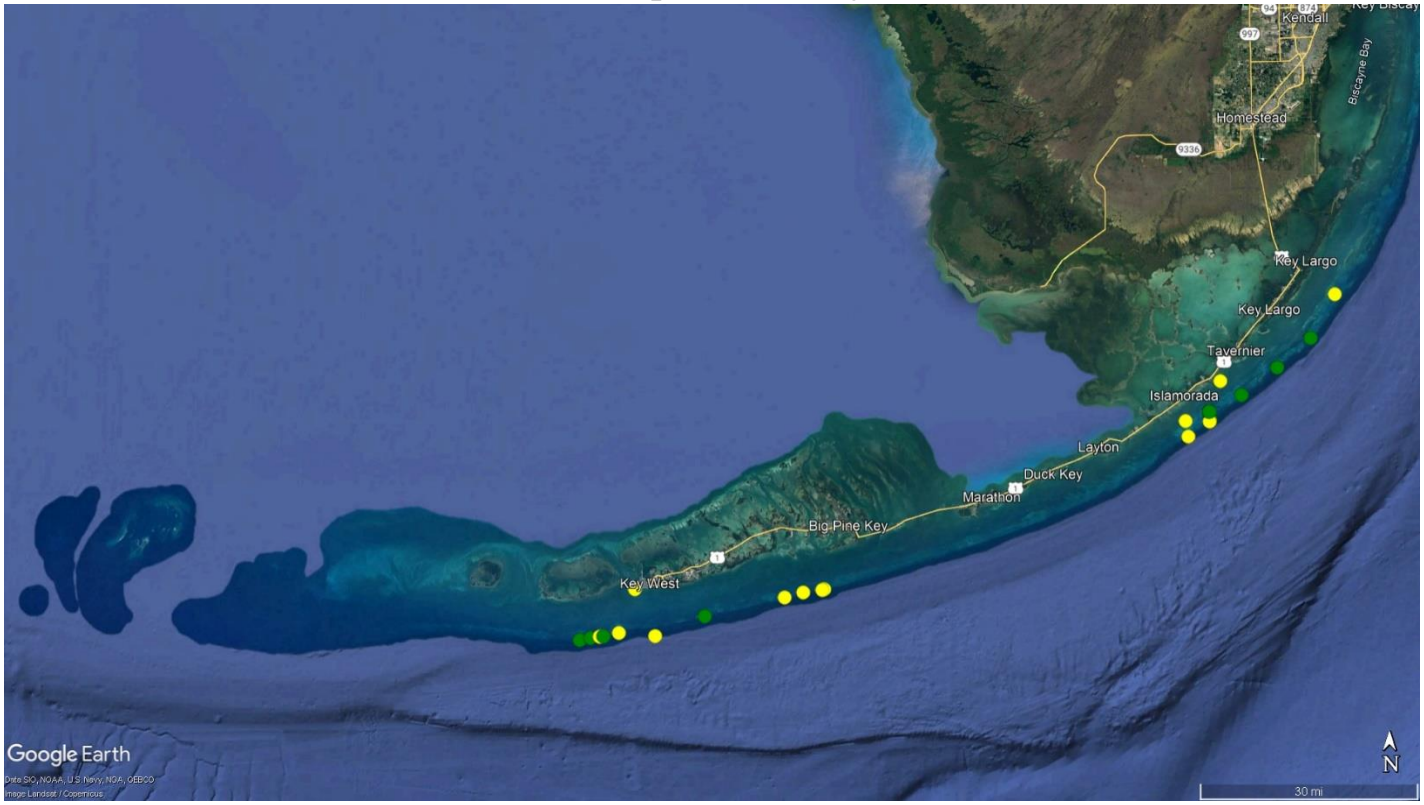

Figure 6. Overview of BleachWatch observer reports submitted from July 1-14, 2023

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

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