Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20231012

Updated October 12, 2023

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 October 10, 2023 (experimental)

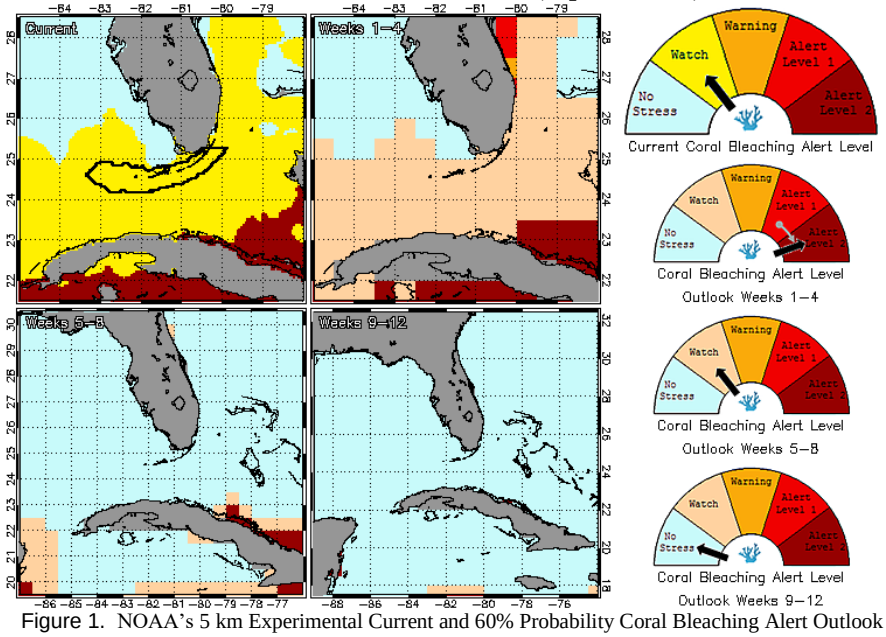

Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through mid-January, 2024. Updated October 10, 2023.
https://coralreefwatch.noaa.gov/product/vs/gauges/florida_keys.php

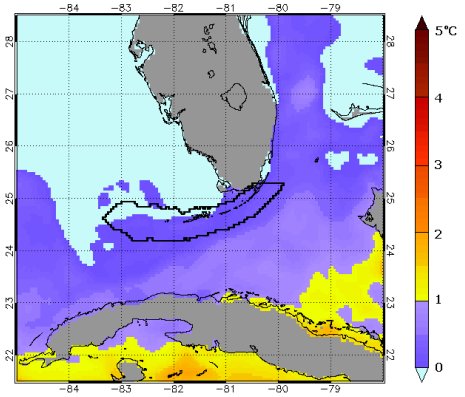

Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida October 10, 2023.
NOAA Coral Reef Watch Website

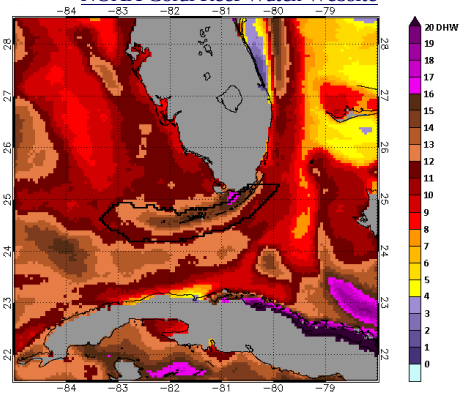

Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida October 10, 2023.
NOAA Coral Reef Watch Website

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 is currently under a "Bleaching Watch" which means low thermal stress and the coral bleaching outlook conditions are currently not favorable for a continuing mass bleaching event (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that the Florida Keys region continues to experience elevated 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 currently elevated only slightly above normal in the Florida Keys. 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 is still evident in the Florida Keys region.

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 been at or well below 30°C over the past two weeks (Fig.4), likely due in part to moderate winds during this period (Fig. 5) and an abundance of scattered rain and thunder storms. 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.

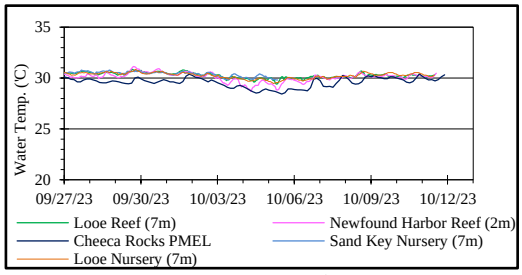

Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (September 27- October 12, 2023).

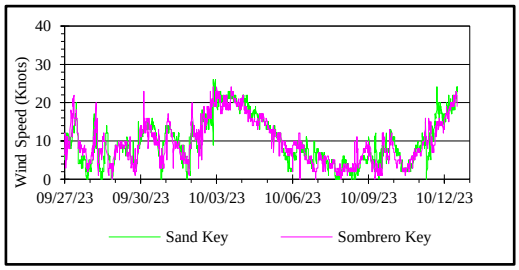

Figure 5. *in-situ* wind speed data from NOAA/ICON monitoring stations (September 27-October 12, 2023).

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Current Coral Conditions

A total of 33 BleachWatch Observer reports were received during the past two weeks (Fig. 6), with 32 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 7 & 8), and one report of an extensively bleached reef. The majority overall percentage of corals exhibiting signs of thermal stress was 30-51% with a few sites inshore throughout the FKNMS of up to 75%. 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. Minimal amount of recent mortality from bleaching noted and numerous observations of corals regaining some zooxanthellae (Fig. 7 & 8). Other observations included bleaching and mortality of *Palythoa spp.*, Fire coral, and Gorgonians as well as several reports of coral disease, mainly the Stony Coral Tissue Loss Disease (SCTLD), Rapid Tissue Loss Disease (RTL) and Black Band Disease (BBD).

Figure 7. Partially bleached *Diploria labyrinthiformis* regaining color at Rock Top off Islamorada on 9/29/23.

Figure 8. Partially bleached *Porites sp.* regaining color at Molasses Reef on 10/6/23

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 September 27-October 12, 2023

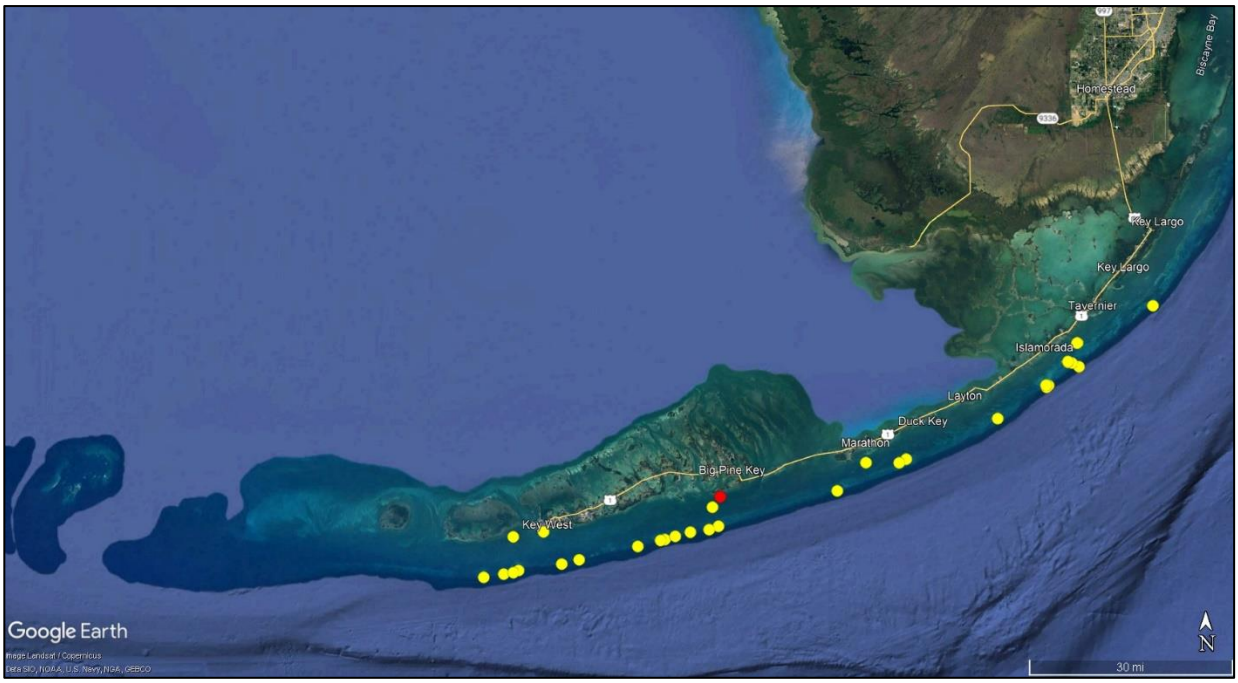

Figure 6. Overview of BleachWatch observer reports submitted from September 27-October 12, 2023

FUNDING THANKS TO….

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

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