

Mote Marine Laboratory / Florida Keys National Marine Sanctuary
Coral Bleaching Early Warning Network
Current Conditions Report #20230728



Updated July 28, 2023

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook July 26, 2023 (experimental)

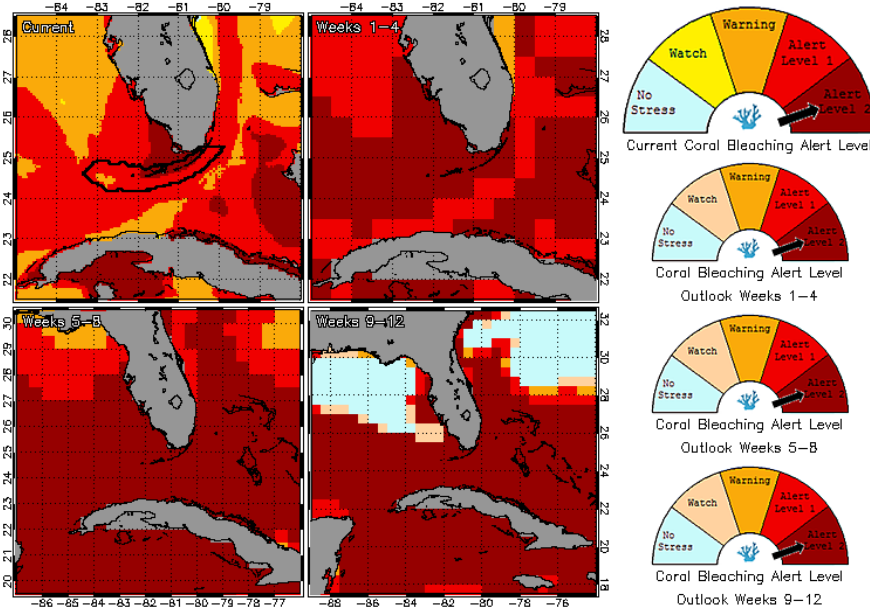


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through October 2023. Updated July 26, 2023.
https://coralreefwatch.noaa.gov/product/vs/gauges/florida_keys.php

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, some 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 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 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.

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 well above 30°C over the past two weeks (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.

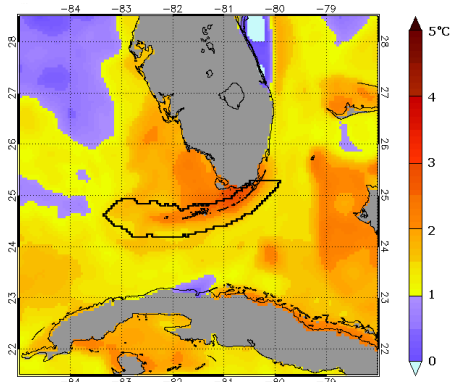


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida July 26, 2023.
[NOAA Coral Reef Watch Website](https://coralreefwatch.noaa.gov)

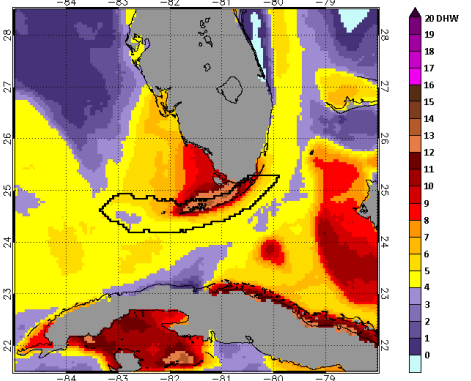


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida July 26, 2023.
[NOAA Coral Reef Watch Website](https://coralreefwatch.noaa.gov)

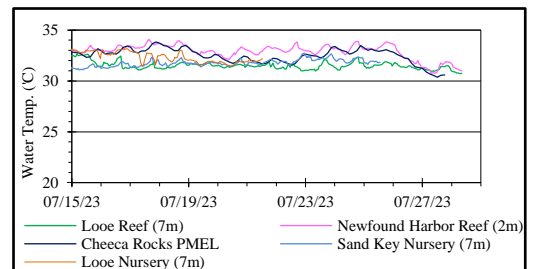


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (July 14-28, 2023).

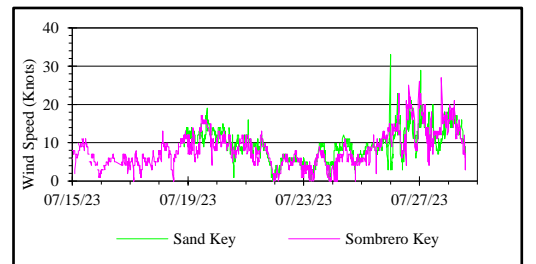


Figure 5. Wind speed data from NOAA/ICON monitoring stations (July 14-28, 2023).

data from NOAA monitoring stations on a weekly basis for the remainder of the bleaching season.



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Current Coral Conditions

A total of 44 BleachWatch Observer reports were received during the past two weeks (Fig. 6), with 21 reports indicating isolated colonies exhibiting signs of paling or partial bleaching, 18 reports with bleached



Photo: Katherine Cummings, FWRI
 Figure 7. Close-up of bleached *Diploria labyrinthiformis* at Hens and Chickens SPA on 7/17/2023.

isolated colonies exhibiting signs of paling or partial bleaching, 18 reports with bleached colonies (Fig. 7) and remaining 5 reports indicated that no significant signs of coral bleaching were observed. At those sites where bleaching was noted, the majority overall percentage of corals exhibiting signs of thermal stress was 76-100% (Fig. 8) with a few sites offshore in the Lower Keys with only up to 30%. Paling and bleaching observations consisted of nearly all species including Brain corals, Encrusting/Mound/Boulder corals, Flower corals, Branching/Pillar corals, Fleshy corals, and Leaf/Plate corals.

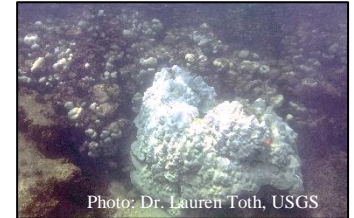


Photo: Dr. Lauren Toth, USGS
 Figure 8. Completely bleached nearshore reef off Saddlebunch Keys on 7/23/23.

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) and Rapid Tissue Loss Disease (RTL).

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 14-28, 2023

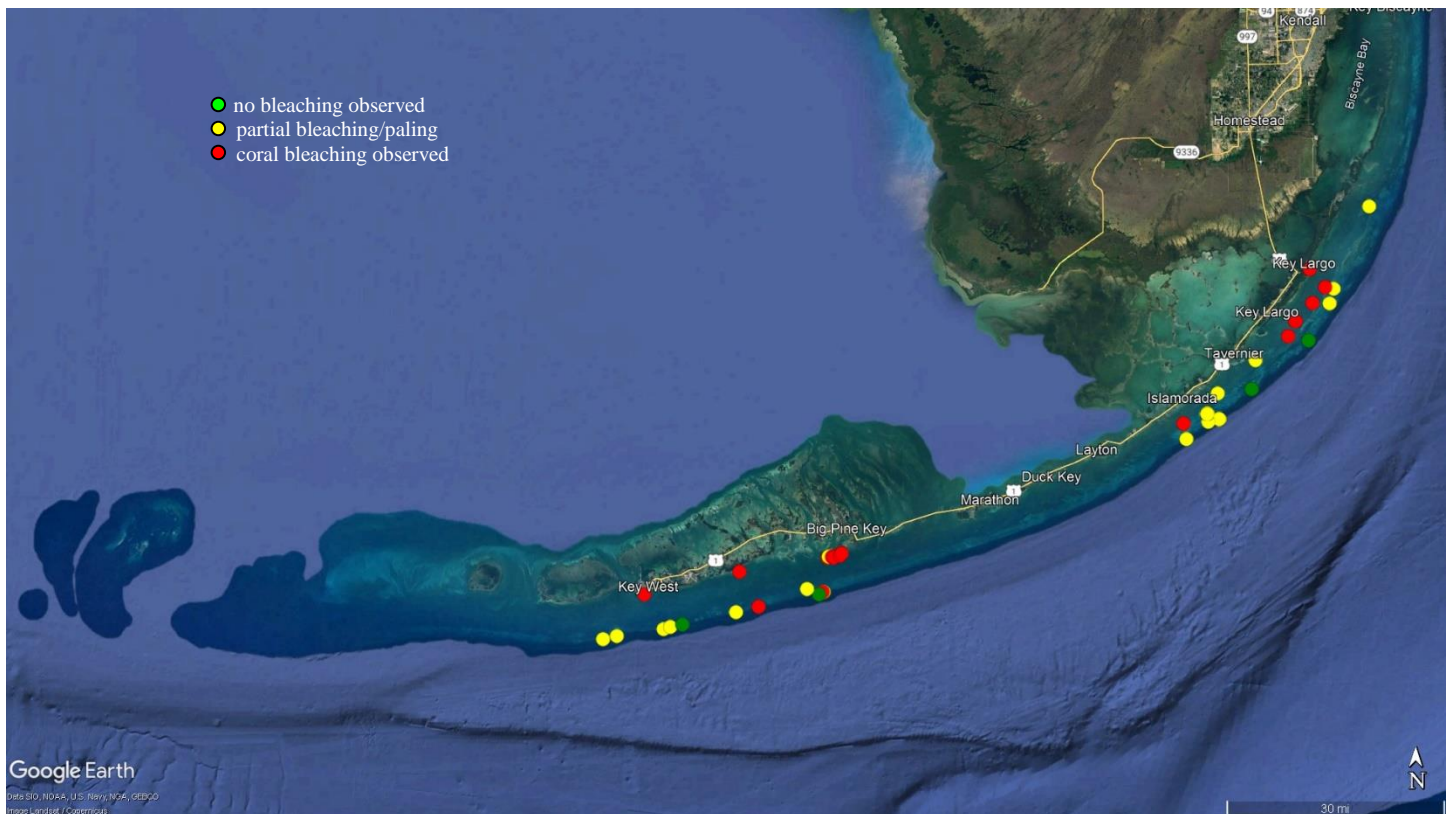


Figure 6. Overview of BleachWatch observer reports submitted from July 14-28, 2023

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



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<http://www.mote.org/bleachwatch>

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