



Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20220930



Updated September 30, 2022

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook September 29, 2022 (experimental)

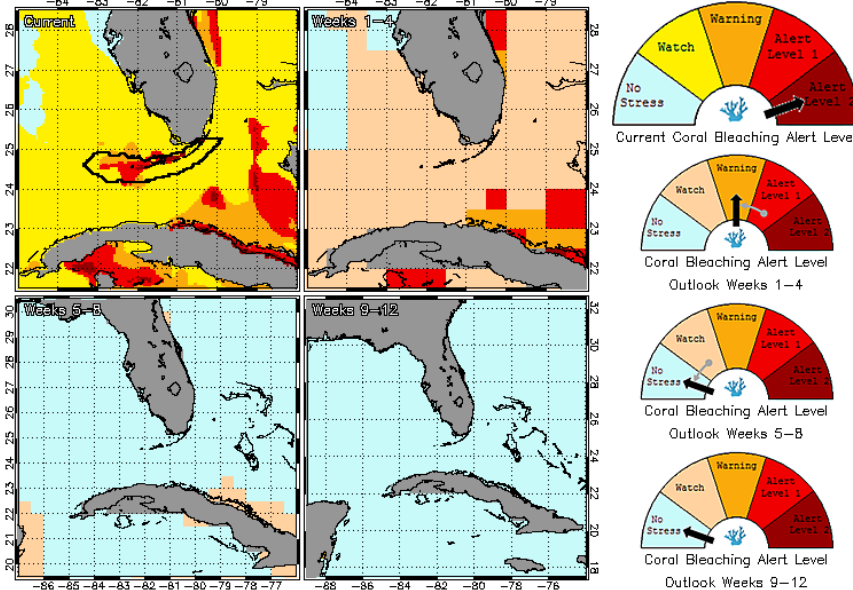


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through January 2023. Updated September 29, 2022.
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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 are under a bleaching Alert Level 1, with some areas under an Alert Level 2, which means significant bleaching expected; mortality likely and potential exists for more bleaching warnings and alerts if sea temperatures continue to be elevated 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 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 normal in 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 continues to be 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's (MML) *in-situ* temperature collected at Looe Key SPA confirm that temperatures have been at or slightly above 30°C over the past two weeks (Fig.4) until Hurricane Ian's arrival consisting of high winds and seas (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.

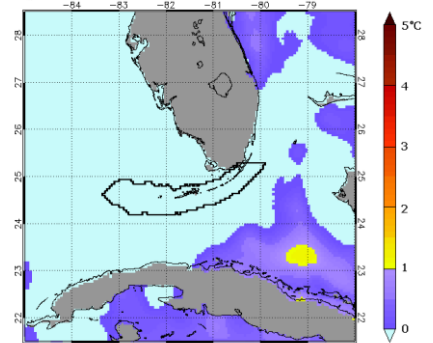


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida September 29, 2022.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

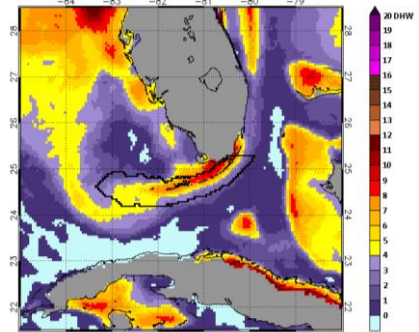


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida September 29, 2022.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

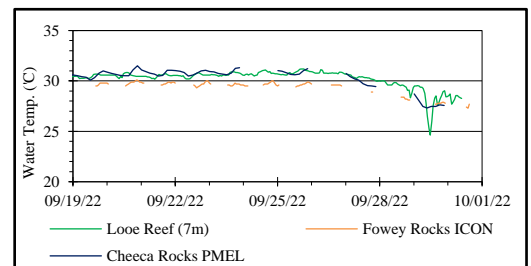


Figure 4. *in-situ* sea temperature from NOAA/ICON and Mote monitoring stations (September 1-30, 2022).

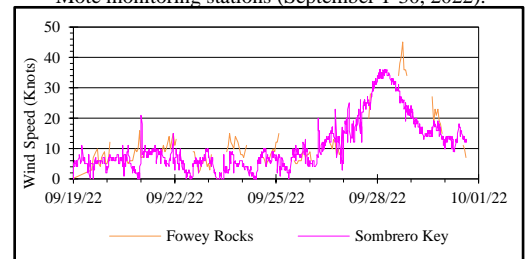


Figure 5. Wind speed data from NOAA/ICON monitoring stations (September 1-30, 2022).



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Current Coral Conditions



Figure 7. Paling *Orbicella faveolata* near Sombrero Reef on 9/25/2022.
 Photo: Dr. Kylie Smith, ICARE

A total of 35 BleachWatch Observer reports were received the past two weeks (Fig.6), with all reports indicating isolated colonies exhibiting signs of paling (Fig. 7), partial bleaching or fully bleached. At those sites where paling/partial bleaching was noted, the overall percentage of corals exhibiting signs of thermal stress was 1-50%. The majority of paling/partial bleaching observations consisted of isolated colonies of Encrusting/Mound/Boulder corals (*Siderastrea spp.*, *Stephanocoenia intersepta*, *Orbicella spp.* and *Porites astreoides*), Brain Corals (*Colpophyllia natans*, *Pseudodiploria spp.*), Branching Corals (*Porites spp.*) Flower/Cup (*Eusmilia fastigiata*) and Leaf/Plate/Sheet Corals (*Agaricia spp.*). Other observations included paling and



Figure 8. Bleaching Gorgonian near American Shoal on 9/21/2022.
 Photo: MML

bleaching of *Palythoa spp.* Fire Coral, and Gorgonians (Fig. 8) as well as several reports of coral disease.

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 19-30, 2022

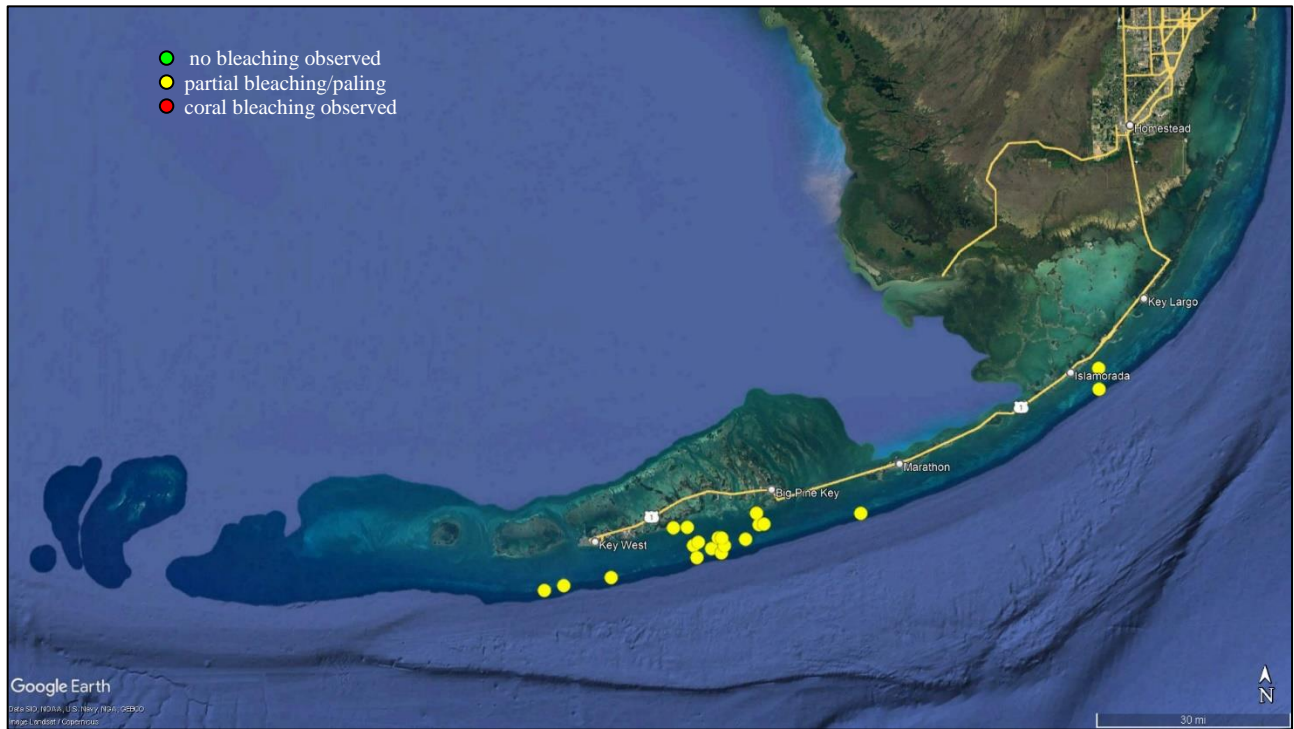


Figure 6. Overview of BleachWatch observer reports submitted from September 19-30, 2022

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



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