

Mote Marine Laboratory / Florida Keys National Marine Sanctuary
Coral Bleaching Early Warning Network
Current Conditions Report #20210923



Updated September 23, 2021

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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook September 22, 2021 (experimental)

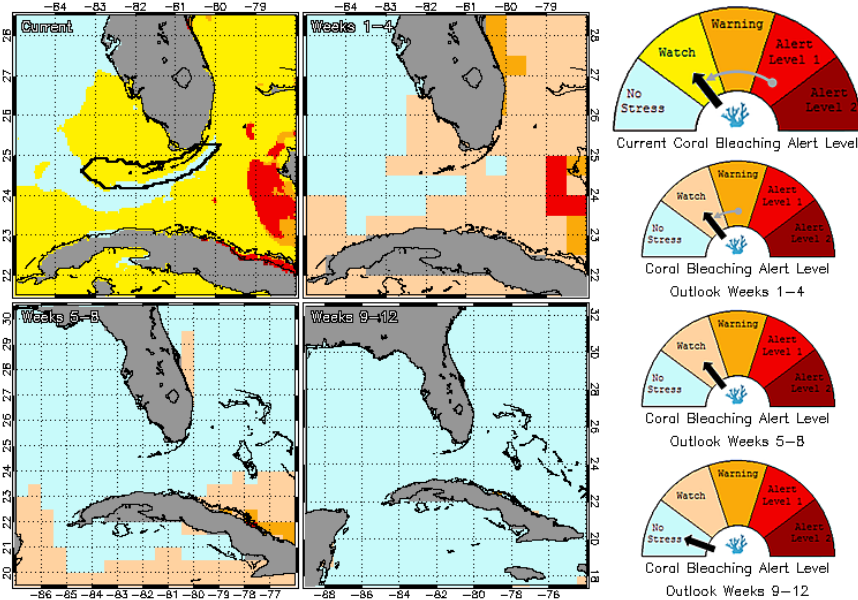


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through December 2021. Updated September 22, 2021.
http://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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 remains under a "Bleaching Watch" which means low thermal stress; however, the coral bleaching outlook conditions are currently not favorable for a mass bleaching event (Fig. 1).

Recent remote sensing analysis by NOAA's CRW program indicates that the Florida Keys region is currently experiencing minimal 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 slightly 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 accumulated temperature stress is currently 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 confirm that temperatures have been decreasing to near or slightly below 30°C over the past two weeks (Fig.4), likely due in part to moderate wind conditions (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.

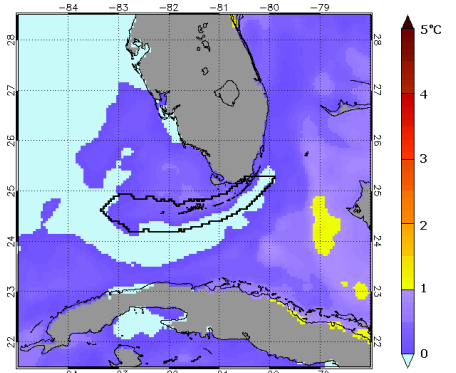


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida September 22, 2021.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

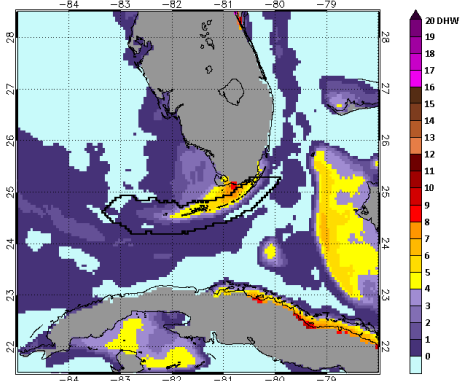


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida September 22, 2021.
https://coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

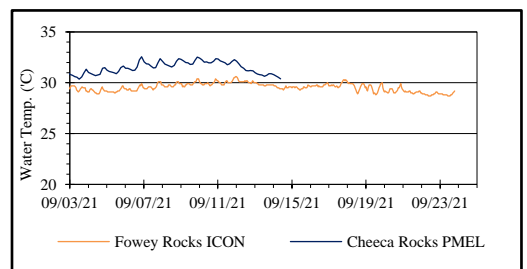


Figure 4. *in-situ* sea temperature from NOAA/ICON monitoring stations (Sept 3-23, 2021).

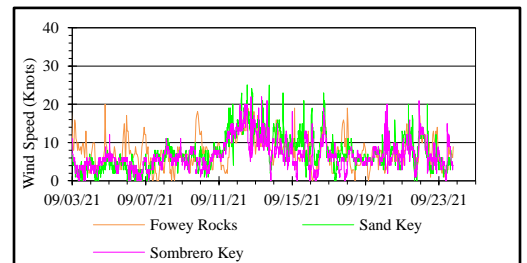


Figure 5. Wind speed data from NOAA/ICON monitoring stations (Sept. 3-23, 2021).



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Current Coral Conditions



Figure 7. Partially bleached *Siderastrea siderea* mid-channel reef off Sugarloaf 9/20/2021.

A total of 42 BleachWatch Observer reports were received the past three weeks (Fig.6), with 20 reports indicating isolated colonies exhibiting signs of paling or partial bleaching (Fig. 7). The remaining 22 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 1-10%, with a few sites noted 11-30%. The majority of paling/partial bleaching observations consisted of isolated colonies of Encrusting/Mound/Boulder corals (*Siderastrea spp.*, *Montastraea cavernosa* and *Stephanocoenia intersepta*), Leaf/Plate/Sheer (*Agaricia spp.*) and Brain corals (*Colpohyllia natans*). Other observations included paling of



Figure 8. Diseased *Stephanocoenia intersepta* mid-channel reef off Sugarloaf 9/20/2021.

Palythoa spp., and Fire Coral as well as several reports of coral disease (Fig. 8), mainly the Stony Coral Tissue Loss Disease (SCTLD).

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 3-23, 2021

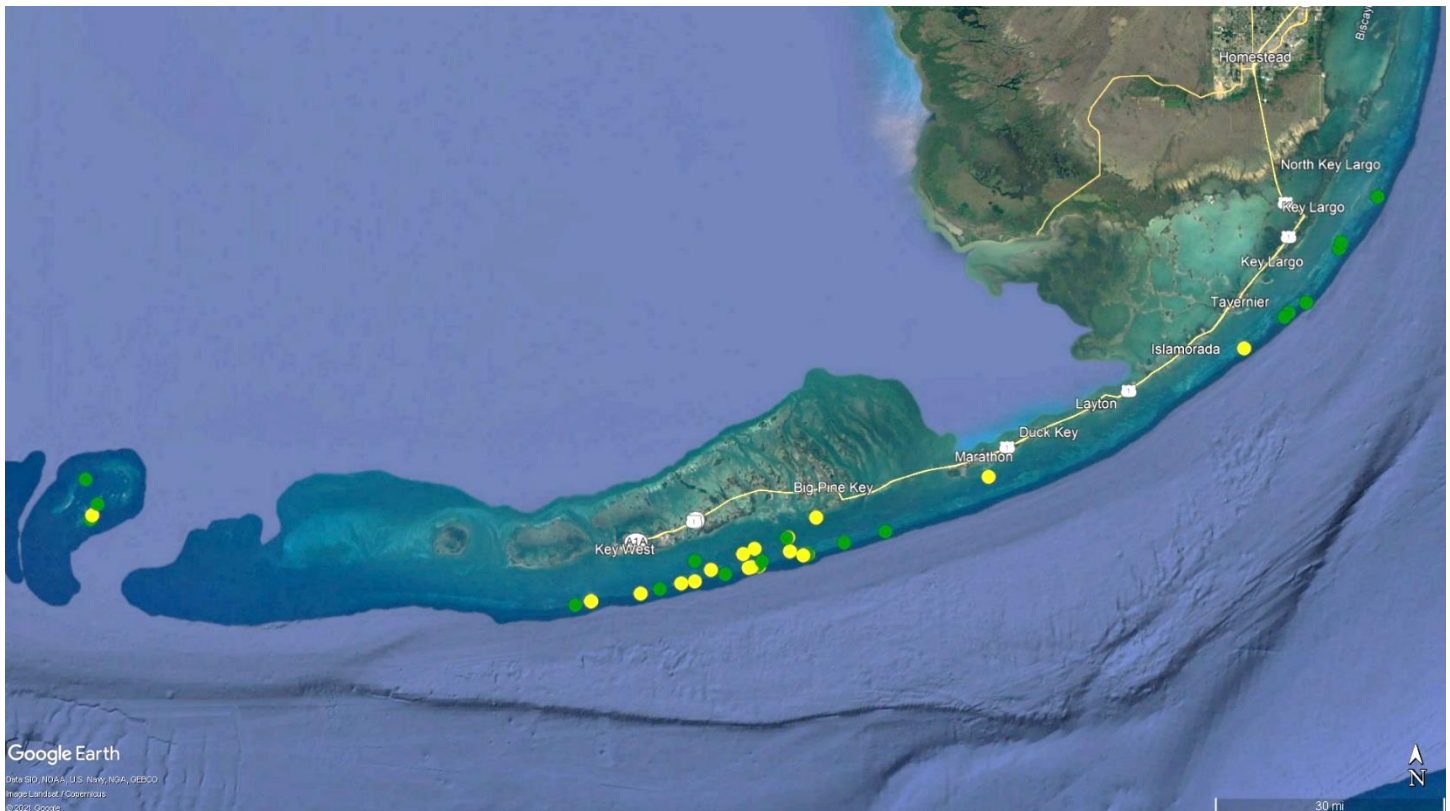


Figure 6. Overview of BleachWatch observer reports submitted from September 3-23, 2021

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



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

FUNDING THANKS TO....

