



Coral Bleaching Early Warning Network

Current Conditions Report #20211021

Updated October 21, 2021



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

NOAA Coral Reef Watch Current and 60% Probability Coral Bleaching Alert Outlook October 19, 2021 (experimental)

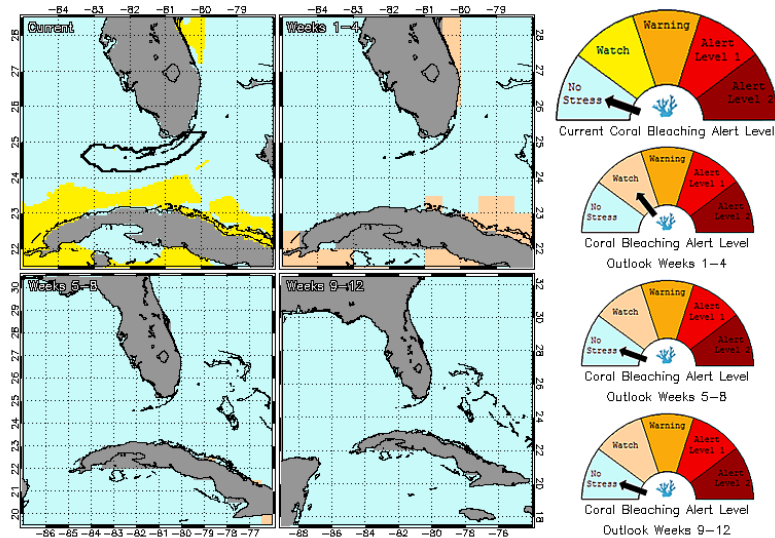


Figure 1. NOAA's 5 km Experimental Current and 60% Probability Coral Bleaching Alert Outlook Areas through January, 2021 (Updated October 19, 2021). coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

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, areas of the Florida Keys National Marine Sanctuary (FKNMS) has been reduced to "No Stress", indicating there is no longer a threat of mass bleaching this season for the Florida Keys.

Recent remote sensing analysis by NOAA's CRW program indicates that all the Florida Keys region continues to experience decreasing 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 that temperatures are currently not elevated for 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), confirms that the level of accumulated temperature stress is decreasing for the Florida Keys region. NOAA's Integrated Coral Observing Network (ICON), which provide near real time *in-situ* sea temperature and wind data throughout the Florida Keys reefs as well as Mote Marine Laboratory (MML) *in-situ* temperature collected at Looe Key SPA and Sand Key Nursery confirm that temperatures have been at or well below 30°C over the past month (Fig.4), likely due in part to elevated wind conditions observed during the same period (Fig. 5). Because the CRW's program continues to maintain a coral bleaching alert status of "No Stress" indicating that coral bleaching is not likely, and due to the current environmental conditions, this will be the final current conditions report for the 2021 Florida Keys BleachWatch season.

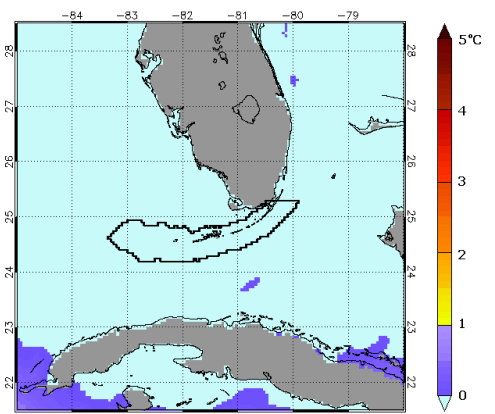


Figure 2. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida October 19, 2021. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

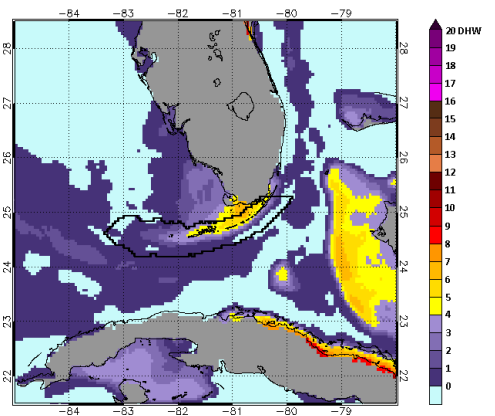


Figure 3. NOAA's Experimental 5km Degree Heating Weeks Map for Florida October 19, 2021. coralreefwatch.noaa.gov/vs/gauges/florida_keys.php

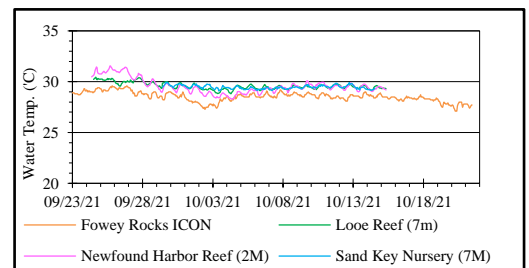


Figure 4. *in-situ* sea temperature from NOAA/ICON/Mote monitoring stations (Sept. 23-Oct. 21, 2021).

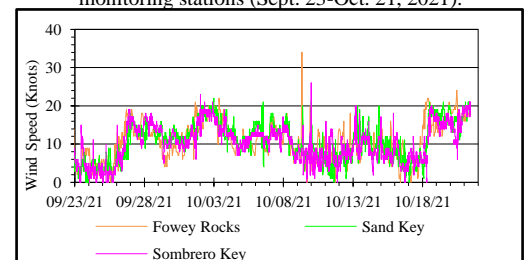


Figure 5. Wind speed data from NOAA/ICON monitoring stations (Sept. 23-Oct. 21, 2021).



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Current Coral Conditions

A total of 31 BleachWatch Observer reports were received during the last month (Fig. 6), with 12 reports indicating isolated colonies exhibiting signs of paling or partial bleaching. The few affected corals were limited to Mound/Boulder, Plate/Sheet and Brain corals. The remaining reports indicated that no significant signs of coral bleaching were observed and at the sites where paling was noted (Fig.6), the overall percentage of corals exhibiting signs of thermal stress was only 1-10%.

The 2021 Florida Keys BleachWatch season has officially come to an end with a total of 210 reports submitted by BleachWatch observers and researchers (Fig. 7). Observer reports verified that minor signs of coral bleaching were observed in the Florida Keys region in 2021, with most reports noting only paling or partial bleaching (Fig. 8) and with only 1-10% of corals affected at most of those sites. Based on current environmental conditions and the limited number of new observations of isolated paling or partially bleached corals, significant coral bleaching in the Florida Keys National Marine Sanctuary and surrounding waters seems highly unlikely at this time. As a result, this will be the final current conditions report for 2021.

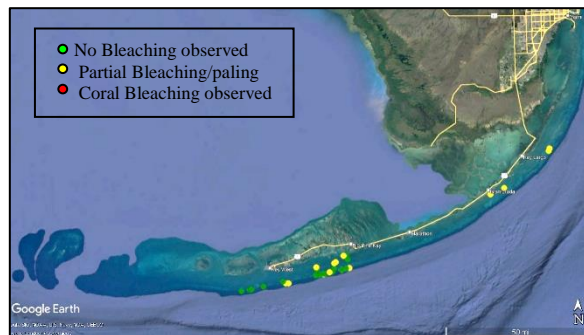


Figure 6. Overview of reports submitted Sept. 23-Oct. 21, 2021

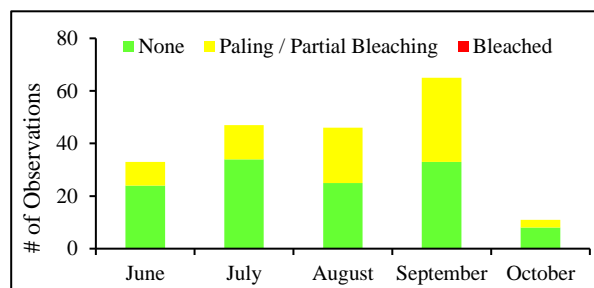


Figure 8. Bleaching severity by month for June-October 2021.

THANK YOU BLEACHWATCH OBSERVERS!!!

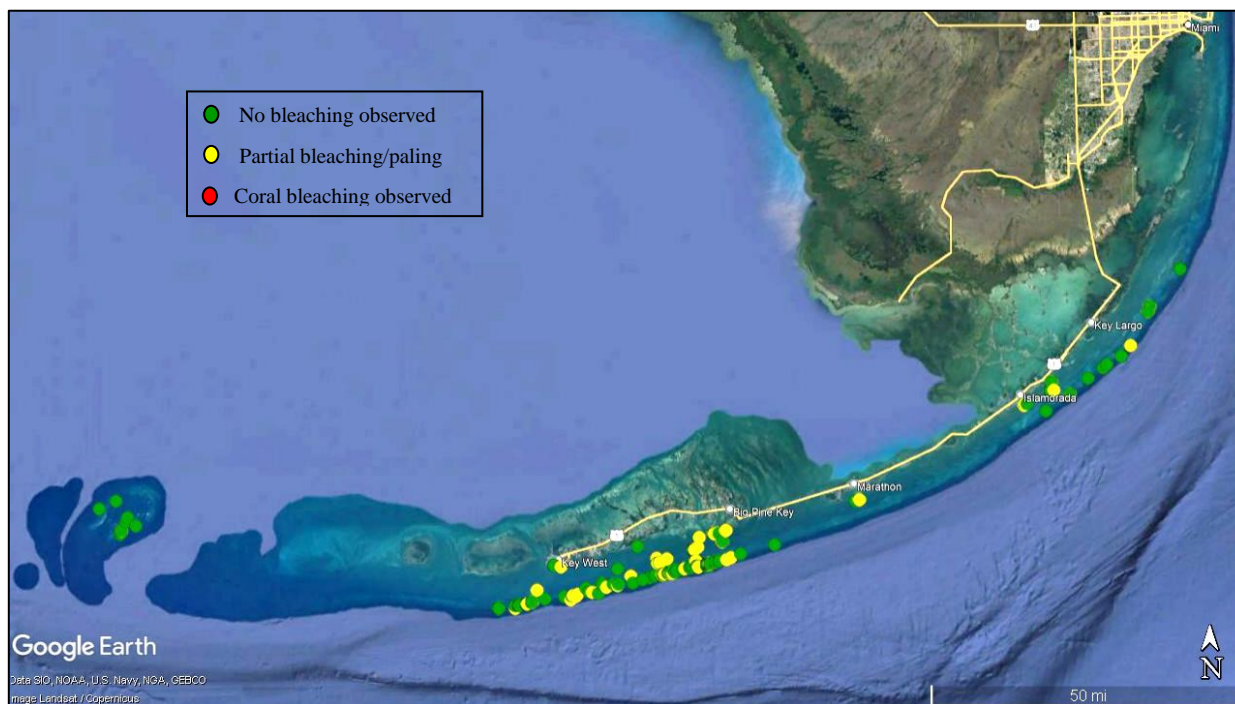


Figure 7. Summary map of all Florida Keys BleachWatch Observer reports submitted during the 2021 coral bleaching season.

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

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FUNDING THANKS TO....

