Mote Marine Laboratory / Florida Keys National Marine Sanctuary

Coral Bleaching Early Warning Network

Current Conditions Report #20141105

Updated November 5, 2014

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

Current Environmental Conditions

Remote sensing analysis by NOAA's Coral Reef Watch (CRW) program indicates that previous elevated thermal stress in the Florida Keys region is continues to decrease. NOAA's recent experimental 5 km Coral Bleaching HotSpot Map (Fig.1), which illustrates current sea surface temperatures compared to the average temperature for the warmest month, shows that current temperatures are not elevated for the Florida Keys and surrounding waters. Similarly, NOAA's latest experimental 5 km Degree Heating Weeks (DHW) map, which indicates how much heat stress has built up over the past 12 weeks (Fig.2), confirms that the level of accumulated temperature stress has decreased for the Florida Keys region. Furthermore, NOAA's Integrated Coral Observing Network (ICON) monitoring stations verify that sea temperatures, at least along the outer Florida Keys reef tract, have dropped significantly over the past 4 weeks from 29°C to 25°C (Fig.3), likely due in part to breezy conditions observed during the same period (Fig 4). *In-situ* sea temperature data is currently not available for Dry Tortugas, Sand Key or Sombrero Reef.

According to the latest NOAA CRW experimental Coral Bleaching Thermal Stress Outlook, the possibility of any additional increase in thermal stress capable of causing coral bleaching throughout the southern Caribbean including the Florida Keys region appears highly unlikely for the remainder of 2014 (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 2014 BleachWatch season.

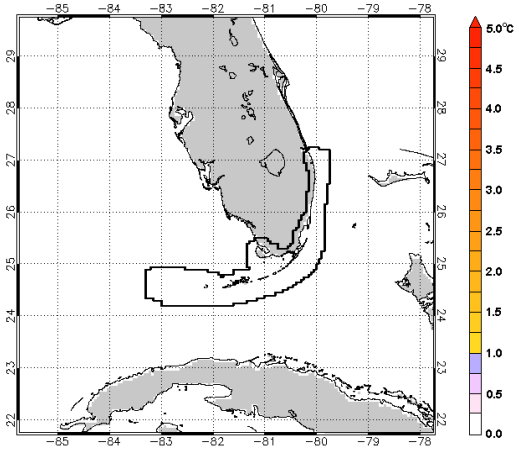

Figure 1. NOAA's Experimental 5km Coral Bleaching HotSpot Map for Florida Nov. 3, 2014.
http://coralreefwatch.noaa.gov/regions/florida.php

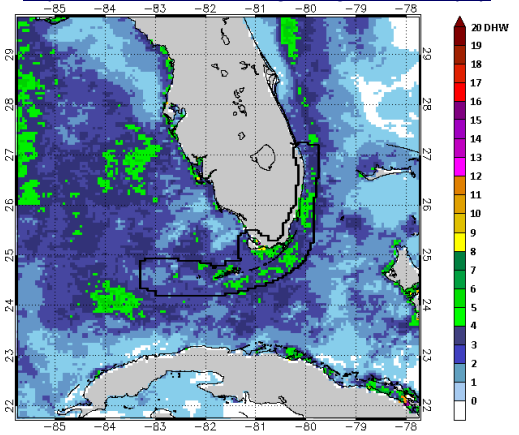

Figure 2. NOAA's Experimental 5km Degree Heating Weeks Map for Florida Nov. 3, 2014.
http://coralreefwatch.noaa.gov/regions/florida.php

NOAA Coral Reef Watch 60% Probability Coral Bleaching Thermal Stress Outlook Nov. 2014 – Feb. 2015 (experimental)

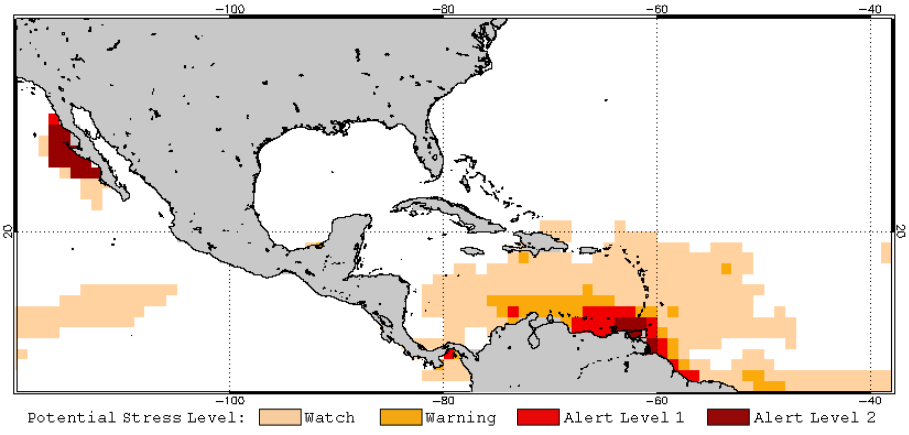

Figure 5. . NOAA's Experimental Coral Bleaching Thermal Stress Outlook for November 2014-February 2015.
http://coralreefwatch.noaa.gov/satellite/bleaching5km

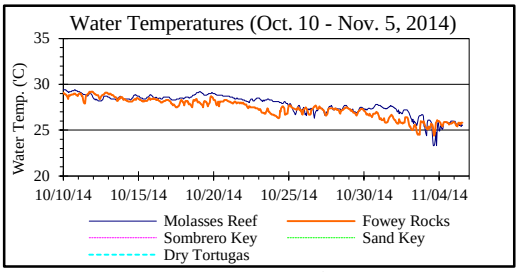

Figure 3. *in-situ* sea temperature from NOAA/ICON monitoring stations (Oct. 10 - Nov. 5, 2014).

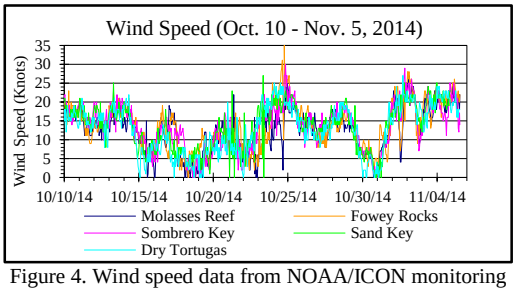

Figure 4. Wind speed data from NOAA/ICON monitoring stations (Oct. 10 – Nov. 5, 2014).

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Current Coral Conditions

A total of 10 BleachWatch Observer reports were received during the last four weeks (Fig. 6), with all reports still indicating paling or partial bleaching on most species, with 31-75% of the corals affected. Several reports noted observations of color returning in *Siderastrea spp.* and *Porities spp*. However, several reports indicate that bleached *Palythoa spp.*, Fire Coral, and Gorgonians are still being observed.

The 2014 BleachWatch season has officially come to an end with a total of 305 reports submitted by BleachWatch observers (Fig. 7). Observer reports verified that coral bleaching was widespread throughout the Florida Keys region in 2014, with all reefs showing significant signs of thermal stress in August, September, and October, 2014 (Fig. 8). However, based on current environmental conditions and the observations of coral recovery noted by BleachWatch observers, the threat of mass 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 2014.

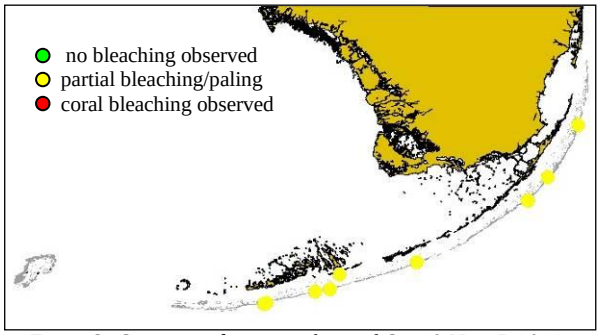

Figure 6. Overview of reports submitted Oct.10-Nov. 5, 2014

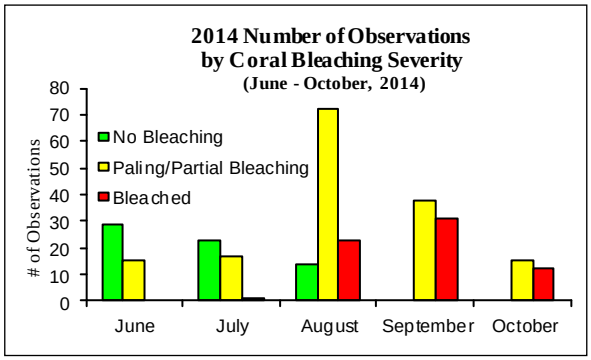

Figure 8. Bleaching severity by month for June-October 2014.

THANK YOU BLEACHWATCH OBSERVERS!!!!

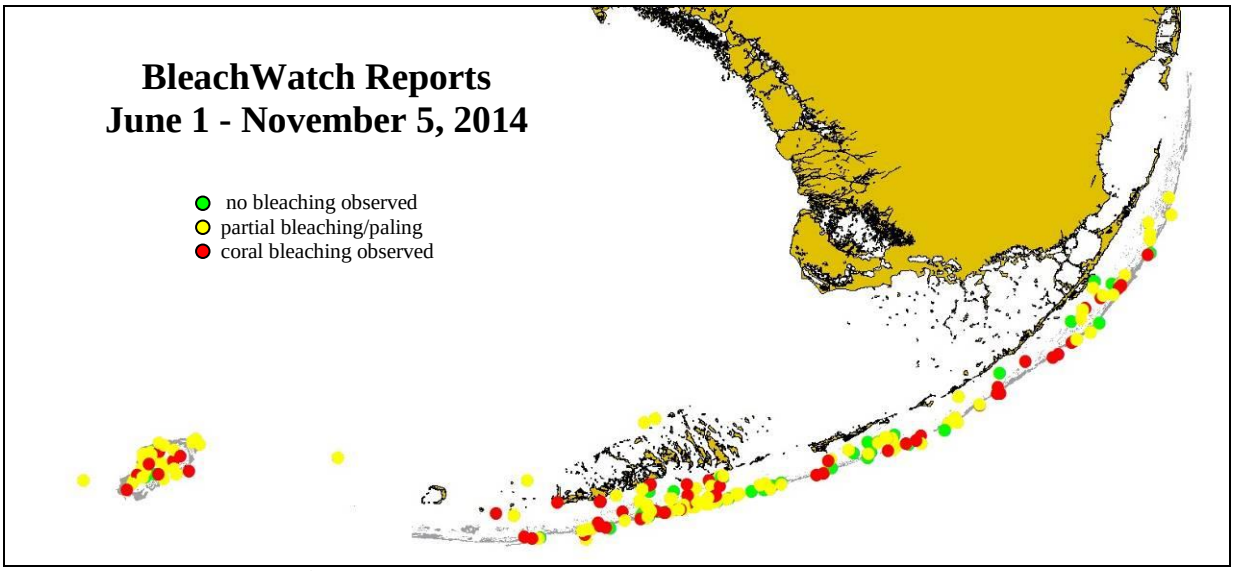

Figure 7. Summary map of all Florida Keys BleachWatch Observer reports submitted during the 2014 coral bleaching season.

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

Cory Walter
Mote Marine Laboratory
24244 Overseas Highway
Summerland Key, FL 33042
(305) 745-2729 x301
http://www.mote.org/bleachwatch

FUNDING THANKS TO….

NOAA CORAL REEF CONSERVATION PROGRAM

FLORIDA 4 REEF Protect Our Reefs