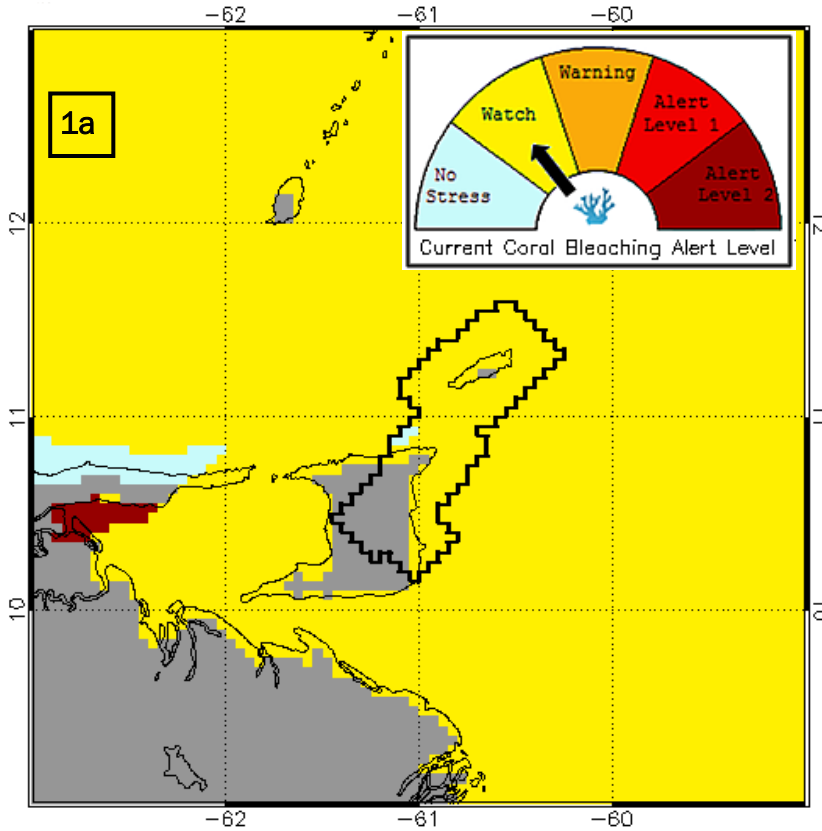


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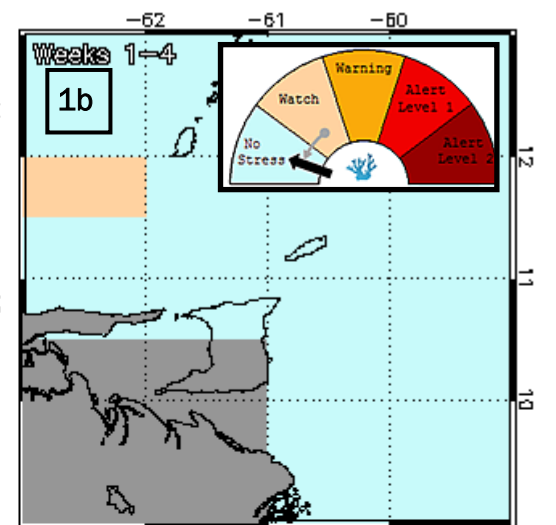
CURRENT STATUS: Reef Referee
24 NOV 2017: BLEACHING WATCH

TRINIDAD & TOBAGO BLEACHING STATUS: The peak of the bleaching season is over, and the sea surface temperature (SST) has dropped below the Bleaching Threshold so that Trinidad and Tobago’s status has been downgraded to **BLEACHING WATCH**. The SST trend is towards neutrality with patches of heating (+0.5 to +1.0 °C) and patches of cooling (-0.5 °C to -1.0 °C).



INDEX SUMMARY

- SST: 28.599 °C
- HS: 0.000
- SSTA: 0.945
- DHW: 6.456
- SST is above the November Mean SST Climatology
- SST is below the Bleaching Threshold of 29.4°



TRINIDAD & TOBAGO BLEACHING OUTLOOK:

December through March Sea Surface Temperatures are typically cooler than the rest of the year. Thus with SST already below the Bleaching Threshold, and expected to decrease, the Bleaching Alert is expected to be further downgraded to **NO STRESS**.

This **NO STRESS** Status is expected to persist throughout January, February and March.

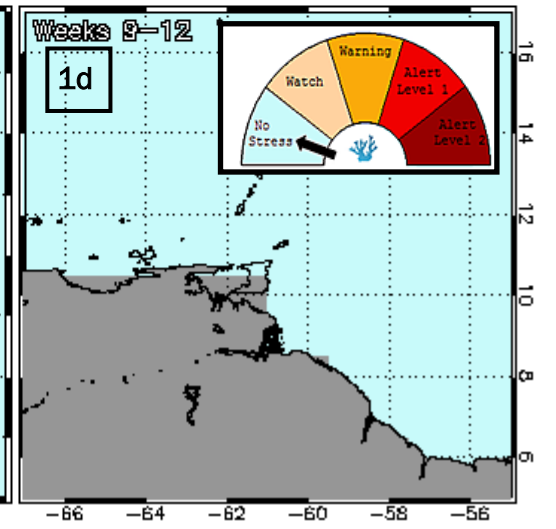
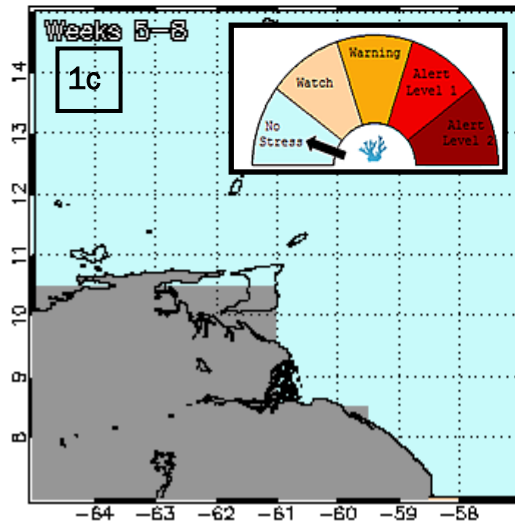


FIG 1: NOAA-CRW BLEACHING ALERT STATUS 9TH OCT 2017: 1A CURRENT STATUS; 1B 1-4WEEK OUTLOOK; 1C 5-8 WEEK OUTLOOK AND 1D 9-12 WEEK OUTLOOK

RECAP: LAST ISSUE

- Ocean temperature and coral bleaching can be monitored through: remote sensing via satellite OR in situ measurement via buoys.
- There are two Coral Reef Early Warning System (CREWS) buoy stations in Trinidad & Tobago:
 1. BUT01 or **Station 42087** at Buccoo Reef (11.176°N, 60.834°W) was installed on 21st November
 2. ART01 or **Station 42088** at Angel's Reef (11.301°N, 60.521°W) was installed on 22nd November
- The 2 stations in Tobago, are part of a Caribbean buoy network.
- Buccoo Reef, the largest coral reef in Tobago, was designated a marine park in 1973.
- The Buccoo Reef Marine Park is located on the southwest coast of Tobago.
- Despite being a protected area, the combination of climate change with land-based pollution from run-off and physical damage from reef walking and anchors has degraded much of the reef.

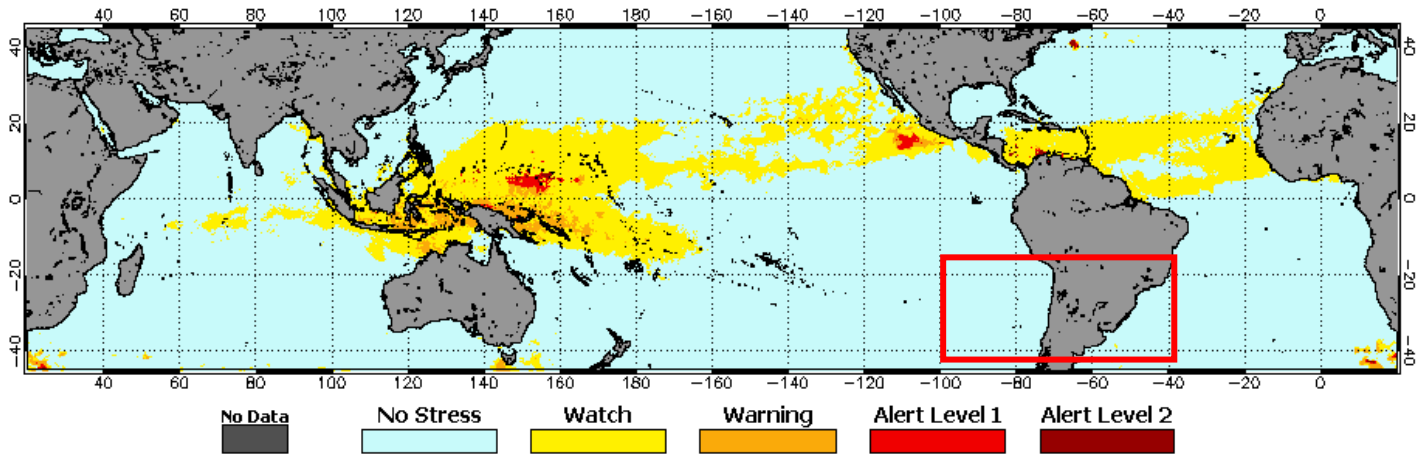


FIGURE 2: NOAA-CRW GLOBAL CORAL BLEACHING ALERT STATUS: 22 NOV 2017

GLOBAL STATUS: As seen in Figure 2, significant heat stress exists in a few areas at this time. There are 5 areas of **ALERT LEVEL (1 OR 2)** evident: 1. North of Papua New Guinea along with Mariana Islands and Micronesia; 2. Pacific Ocean (west of Mexico); 3. Caribbean Sea (north of Colombia and Venezuela); 4. South Africa and 5. a region east of the United States of America & north of Bermuda. However, there are larger regions of Bleaching Watch existing primarily in the southern Caribbean, in a band from the equator to 20°N latitude in the Atlantic Ocean and between 20°S to 20°N in the Pacific Ocean.

The 90% **GLOBAL OUTLOOK** (Figure 3) predicts a decrease in heat stress in the Northern Hemisphere over the next 3 months, with a corresponding increase in heat stress in the Southern Hemisphere. Notable is the persistence of heat stress surrounding Papua New Guinea and Micronesia.

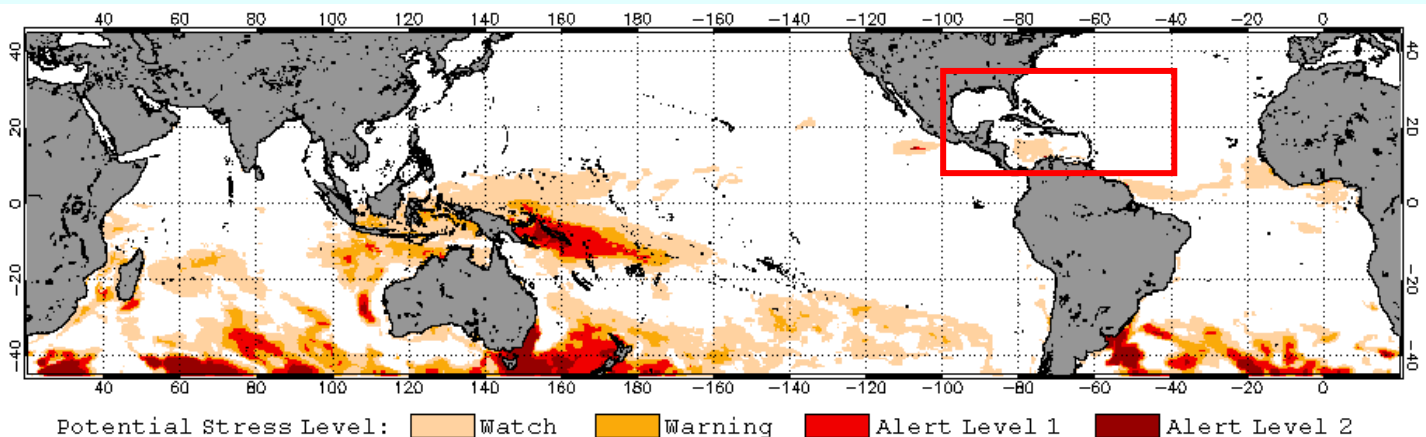


FIGURE 3: NOAA-CRW GLOBAL CORAL BLEACHING 90% OUTLOOK OCT-JAN (ISSUED: 21 NOV 2017)

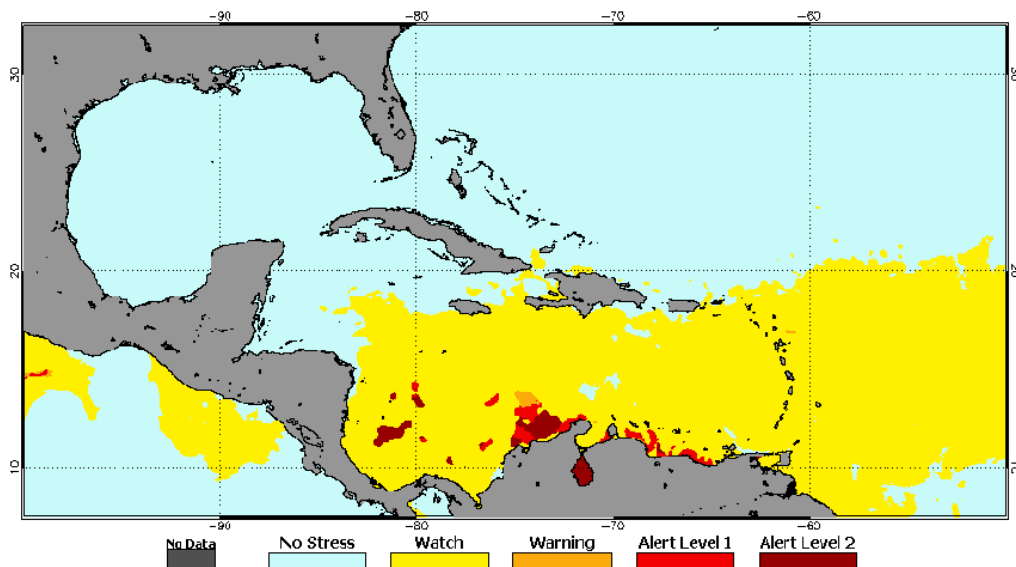


FIGURE 4: NOAA-CRW CARIBBEAN CORAL BLEACHING ALERT STATUS: 22 NOV 2017

REGIONAL STATUS:

All of the Caribbean Basin is under **CORAL BLEACHING WATCH** (as seen in Figure 4). However, north of Columbia and Venezuela are displaying Alert Level 1/2 Bleaching Status.

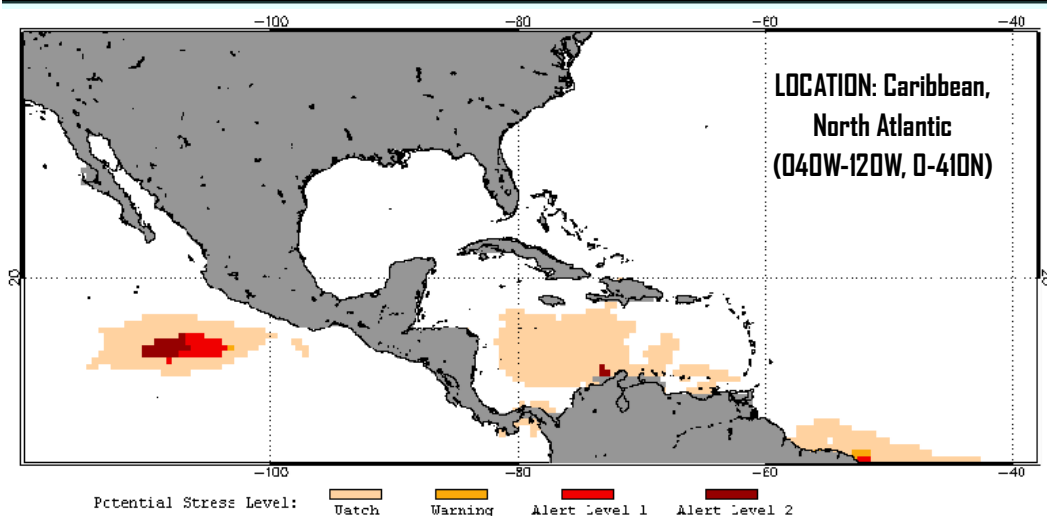


FIGURE 5: NOAA-CRW CARIBBEAN BLEACHING ALERT AREA OCT-JAN 2017 60% OUTLOOK 21 NOV 2017

REGIONAL OUTLOOK:

As seen in Figure 5, heat stress in the Caribbean is expected to decrease over the next 3 months. However, stress levels are expected to persist at the Warning level throughout a large portion of the southern Caribbean. With a region of elevated alert (Alert Level 2) near the Columbia-Venezuela border.

ACKNOWLEDGEMENTS: THE TRINIDAD AND TOBAGO METEOROLOGICAL SERVICE (TTMS) WOULD LIKE TO THANK THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) & THE CARIBBEAN INSTITUTE FOR METEOROLOGY AND HYDROLOGY (CIMH) FOR THEIR CONTINUED SUPPORT AND GUIDANCE TOWARDS THE ADVANCEMENT OF ATMOSPHERIC AND HYDROLOGICAL SCIENCES.

RESOURCES:

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2. NOAA-CRW. (2013, updated daily). *5-km Satellite Coral Bleaching Heat Stress Alert Area Product*. Retrieved 11 24, 2017, from NOAA Coral Reef Watch: https://coralreefwatch.noaa.gov/satellite/bleaching5km/index_5km_baa_max_r07d.php
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