

**Project: “Phase III Cayman Crown- Communicating the scientific findings of the
jewel of the MAR”**

**Evaluating the presence, absence and current state of
Stony Coral Tissue Loss Disease (SCTLD) in the Caribbean of Guatemala**



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Overview

About the disease

The Stony Coral Tissue Loss Disease (SCTLD) is a lethal disease first detected in Florida (USA) by the Florida Reef Tract in 2014. Since its first sighting to date, the disease has spread to more than 150 square miles (388.5 km²) and nearly half of the stony coral species found on the Florida reefs have been affected. That includes the major reef-building species, as well as five species that are on the threatened species list (*Dendrogyra cylindrus*, *Orbicella annularis*, *Orbicella faveolata*, *Orbicella franksi*, and *Mycetophyllia ferox*) (Dalhgren *et al.*, 2021). In the year 2018 it was sighted for the first time in the Mexican Caribbean and moved rapidly to the south; in 2019 it was detected north of Belize and in 2020 it was observed for the first time in the Bay Islands of Honduras.

This new disease is characterized by causing the rapid loss of living coral tissue, leaving the coral skeleton exposed and advancing aggressively. The disease affects more than 23 of the 65 species of corals that inhabit the Caribbean, with greater effects on meandering coral species and other large reef-building species (Dalhgren *et al.*, 2021). With its wide geographic range, extended duration, high rates of mortality, and the large number of coral species affected, this disease poses a significant threat to reefs ecosystems, impacting the large, iconic, slow growing corals that form a major part of the protective reef structures and reef building species.

The origin, more precisely, the pathogen responsible for the disease outbreak has not yet been isolated and identified but it is suspected to be caused by bacterial pathogens and/or virus. It is water-borne and can be transmitted to other corals through direct contact. The disease has particularly high rates of transmission and mortality; once a coral starts to lose living tissue, there is a high probability that the colony will die within weeks to months. Many efforts are under way to better understand the disease, to identify disease agents, relationships with environmental factors, strategies to treat diseased colonies, and to identify resistant genotypes.

A rapid spread

The disease is spreading rapidly throughout the Caribbean which strongly suggests that all countries should be prepared. Consequently, monitoring actions in the countries which have not yet sighted the disease is essential, also the development of strategic actions are needed by country to better address this threat.

A historical timeline shared by the UN Environment Programme¹ indicates that since 2014 the SCTLD has spread over 12 countries in what seems a north to south direction starting in the Florida Keys (US). The most current data collected and processes by AGRRA indicate already that 17 countries have identified the presence of the disease: the Florida Keys, the caribbean off Jamaica, Mexico, Sint Maarten, the US Virgin Islands, Dominican Republic, Turks & Caicos Islands, Saint-Martin,

¹ UN Environment Programme – Stony Coral Tissue Loss Disease: <https://www.unep.org/cep/news/blogpost/stony-coral-tissue-loss-disease>



Belize, Sint Eustatius, The Bahamas, Puerto Rico, British Virgin Islands, Cayman Islands, Guadeloupe, St. Lucia, Honduras and Martinique².



Figure 1. Map of Stony Coral Tissue Loss Disease recorded throughout the Caribbean as of January 2022: Red: SCTLD Present; Green: SCTLD Absent; Purple: new submission under review; Yellow: SCTLD may be present (AGRRA, 2022).

Findings for Guatemala

To be able to develop the following document describing the presence or absence and current state of SCTLD for the Caribbean of Guatemala, we conducted two coral reef monitoring expeditions. The first exploration took place during August 29th through September 2nd, 2021 during which a total of 8 sites were monitored: 3 sites in the Cayman Crown reef, 2 sites in Motaguilla and 3 sites in Cabo Tres Puntas coral reef patches. The second trip to the Cayman Crown reef was held during the 6th to the 8th of December 2021, during which a total of 4 sites were monitored. All of the monitoring was done using the AGRRA methodology to evaluate the health of the reef with a special focus on SCTLD, looking for the disease or any sign of disease on the reefs.

² AGRRA Coral Disease Outbreak Platform: <https://www.agrra.org/coral-disease-outbreak/>

During both of the field expeditions we were able to determine the great news that there is no presence of SCTLD on the reefs monitored in Guatemala.

The data collected in all of the sites monitored has been uploaded to the AGRRA SCTLD portal and dashboard: <https://www.agrra.org/coral-disease-outbreak/> . For each of the reef sites monitored we reported about the species seen, the presence or absence of SCTLD and also bleaching to be able to see how the disease is unfolding. The map showing the AGRRA sites monitored for Guatemala can be seen in Figure 2.

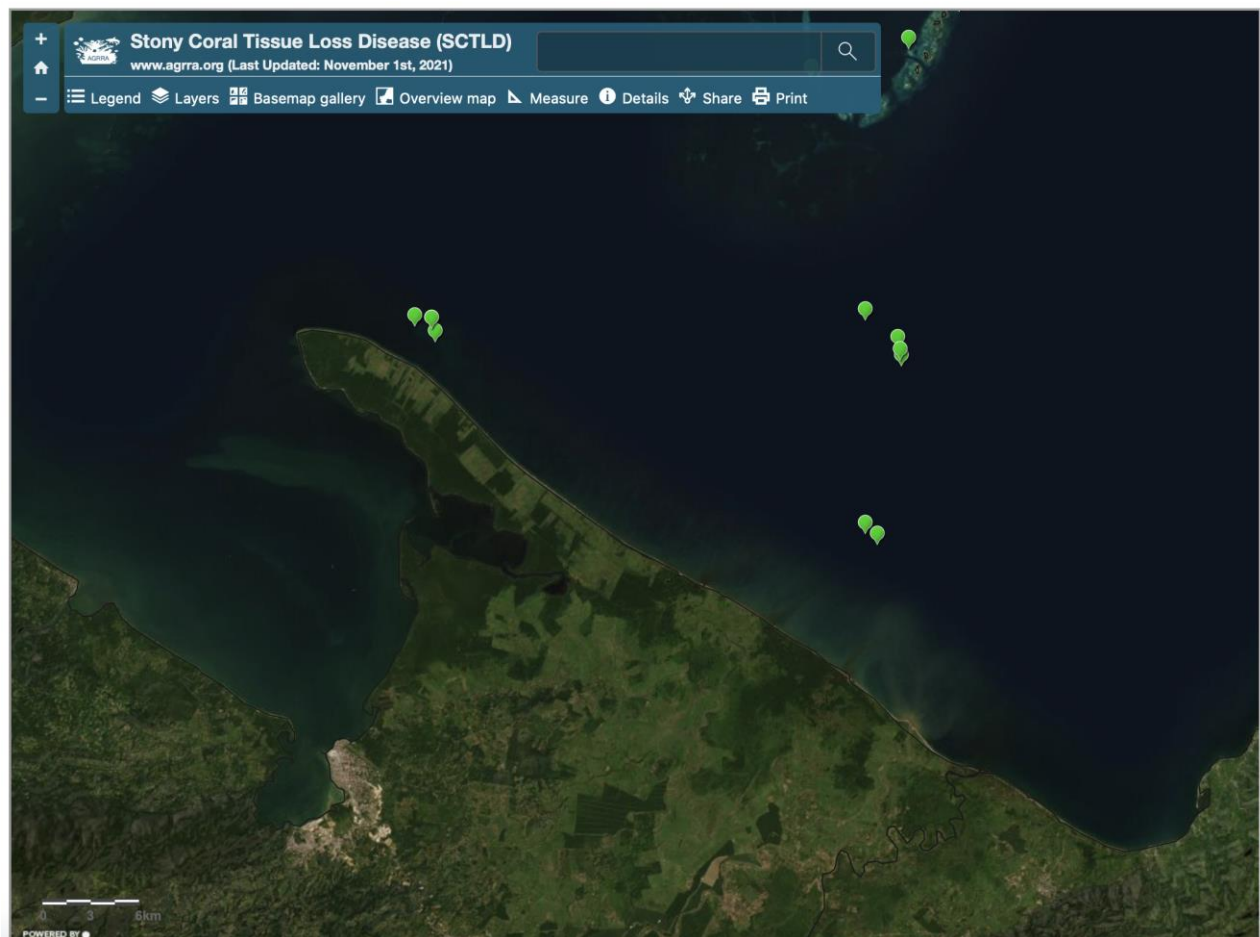


Figure 2. Map of the SCTLD for the monitored sites in Guatemala- AGRRA disease platform. The data and sites monitored are in green, suggesting that there is no presence of SCTLD for the sites monitored in Guatemala based on our most recent data (AGRRA, 2022).

Bibliography

AGRRA Coral Disease Outbreak Platform, 2022: <https://www.agrra.org/coral-disease-outbreak/>

Dahlgren Craig, Pizarro Valeria, Sherman Krista, Greene William, Oliver Joseph. 2021. Spatial and Temporal Patterns of Stony Coral Tissue Loss Disease Outbreaks in The Bahamas. *Frontiers in*



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UN Environment Programme – Stony Coral Tissue Loss Disease:

<https://www.unep.org/cep/news/blogpost/stony-coral-tissue-loss-disease>

Annex 1.

Photographs of the underwater expeditions to monitor the reefs in Guatemala



Photo of Cayman Crown



Photo of Cayman Crown



Photo of Motaguilla



Photo of Cabo Tres Puntas