

Spreading the word on how Stony Coral Loss Disease is threatening coral reefs in The Caribbean, what can we do about it?

Corriendo la voz sobre cómo la enfermedad de pérdida tejido de corales pétreos está amenazando los arrecifes de coral en el Caribe, ¿qué podemos hacer al respecto?

Faire passer le mot sur la façon dont la maladie de perte de tissu corallien pierreux menace les récifs coralliens des Caraïbes, que pouvons-nous faire à ce sujet ?

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EXTENDED ABSTRACT

After experiencing the coronavirus pandemic, we all learned how a disease can spread and completely change our daily life. At the same time, awareness was raised worldwide to prioritize our health and safety. However, human beings are not the only ones exposed to diseases, they can also affect animals and in a matter of years can devastate entire populations. As coral reefs around the world suffer from the worsening effects of climate change, corals in the Bahamas face yet another threat. Stony Coral Tissue Loss Disease (SCTLD) is a new disease that is quickly infecting and killing stony corals, this highly contagious disease affects over 20 different coral species throughout The Bahamas and Caribbean and 4 endangered species including the critically endangered pillar coral (Precht et al. 2019). SCTLD is highly lethal and progresses rapidly, spreading through basic water circulation. While the exact cause of the disease is still unknown, researchers believe it to be caused by bacteria that can be easily transmitted through the water column (Aeby et al. 2019). The disease was first reported in Miami in 2014 (Precht et al. 2019) and it is presumed that commercial ships coming from Florida introduced SCTLD to Bahamian waters.

Since first being sighted, SCTLD has made its way into Bahamian waters where it has been sighted on coral reefs around almost every major island, wreaking havoc and decimating already compromised reefs. The Bahamas Coral Innovation Hub (BCIH) in collaboration with The Perry Institute for Marine Science (PIMS) have deployed task forces around The Bahamas to help slow the spread of this devastating pandemic by applying treatments to infected colonies. While the treatment is effective once applied (Neely et al. 2020), successful efforts to treat this disease are limited by factors such as lack of manpower, in volunteer divers trained to apply the treatment and lack of reports of sightings of the disease on the reef. Stakeholders such as fishermen, divers and even snorkelers can prove to be a useful tool in the fight against SCTLD. Sightings of SCTLD can be reported to PIMS to help gain a better understanding of the extent of this disease and where best to concentrate treatments.

The BCIH team has created a series of informative infographics designed to aid in the identification of the disease. These visual resources provide essential guidance on what steps to take when in contact with waters where the disease is prevalent and how to promptly report it. Elevating awareness and disseminating this information play a crucial role in mitigating the spread of the disease, simultaneously empowering communities to recognize and respond to emerging areas where the infection is beginning to propagate.

Correct identification can help ensure accurate information is submitted when reporting sightings. SCTLD affects multiple species of Stony corals but it is more commonly found on brain coral, encrusting coral, boulder corals and pillar corals. SCTLD generally starts with live tissue dying and a band of diseased tissue advancing across the surface, lesions leave the coral white and can spread in circular, radial, or irregular patterns. After SCTLD has run its course, the coral will no longer have any color and will just be the bare white skeleton (Landsberg et al. 2019).

When engaging in activities such as snorkeling, diving, or spearfishing on the reefs with diseased corals, it is of utmost importance to disinfect all items that have been in contact with the water. This measure is crucial to halt the further spread of the disease. In December 2020, cases were observed and reported in Harbour Island, and by 2023, the disease has been noted in South Eleuthera. Detailed sightings are invaluable to help with tracking and responding to the spread of this destructive disease, taking notes of the location, date, and dive site, and if possible, providing GPS coordinates (Kramer et al. 2019).

Despite the challenges, there is hope for the affected corals. Antibiotics, such as amoxicillin, and a specialized paste called Base2B have been proven effective in treating the disease (Neely et al. 2020). This treatment, administered through syringes, not only arrests the spread of lesions but also prevents the death of the treated coral colonies. PIMS has undertaken

extensive training initiatives, collaborating with partner organizations, divers, government officials (including the Department of Marine Resources and the Department of Environmental Protection and Planning), NGOs, and others. These efforts aim to equip individuals with the skills to administer life-saving treatments to infected reefs across the Caribbean.

Comprehensive surveys have been conducted throughout The Bahamas, resulting in the treatment and monitoring of several hundred corals. Beyond treatment, our dedicated team based in South Eleuthera is actively raising awareness through local newspapers, such as *The Eleutheran*, and participating in events like Earth Day with local schools. Divers, boaters, fishers, tourists, or ocean enthusiasts are crucial in stemming the spread of this aggressive disease. By sharing knowledge, diligently disinfecting gear and boat as moving between reefs, and promptly reporting sightings, contributes significantly to the collective efforts to preserve Bahamian reefs.

Healthy coral reefs are needed in many small island developing nations like The Bahamas, where tourism is the number one source of income for the country and many residents make their livelihoods through commercial fishing (Weiler et al., 2019). With genetic diversity comes resistance and resilience to many common stressors such as ocean temperatures rising and coral diseases (Koch et al. 2022). Therefore, repopulating coral reefs with corals bred from larval propagation is an effective and efficient way to restore coral reefs.

KEYWORDS: Stony Coral Tissue Loss Disease, SCTLD, Awareness, Treatments, Sighting reports

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