

St. Maarten's coral reefs heavily hit by new disease

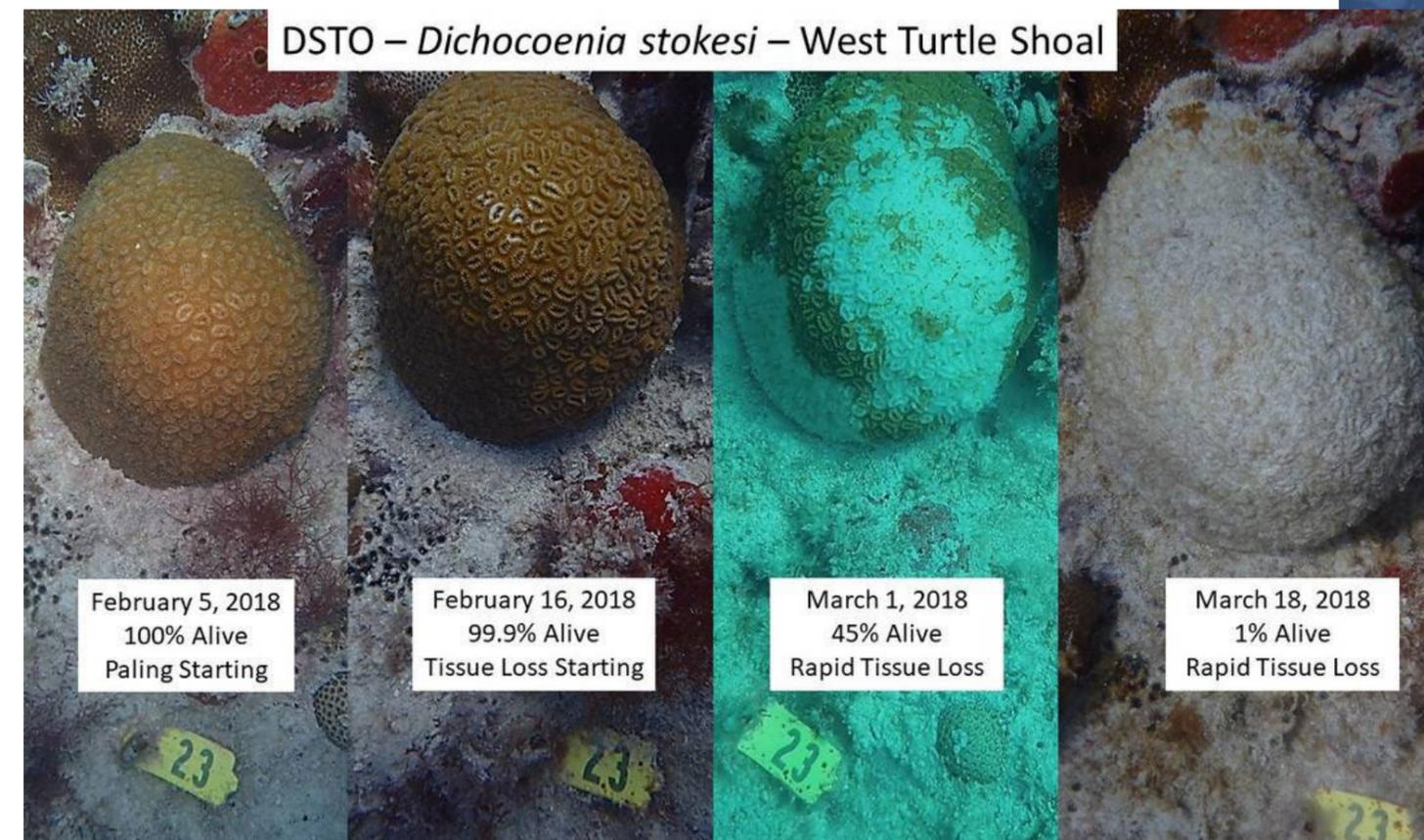
A new coral disease, Stony Coral Tissue Loss disease, is spreading throughout the Wider Caribbean region and causing high mortality amongst a number of stony coral species. Nature Foundation St. Maarten has established the presence of the disease on local reefs and is urging community members and decision-makers to take action to reduce the spread of the disease and increase the resilience of affected coral species.

A new coral disease is spreading throughout the Caribbean region and killing off a large number of stony coral species. Stony Coral Tissue Loss disease was first reported in Florida in 2014 and has since expanded its range to include Mexico, Jamaica and the US Virgin Island.

Following monitoring by the Nature Foundation St. Maarten in late October 2018, St. Maarten is the first Dutch Caribbean island to report the presence of the coral disease on a number of local coral reefs, including within the Man of War Shoal Marine Protected Area. This is especially crushing news for the island whose reefs suffered extensive damage after being hit by Hurricanes Irma and Maria in 2017. While the reefs in the region have suffered and recovered from coral diseases

in the past, Stony Coral Tissue Loss disease is proving to be "unprecedented in terms of its range, duration, and deadliness for corals" (NOAA Office of National Marine Sanctuaries). Nature Foundation follow-up surveys in early 2019 have found that anywhere between 50 to 90 percent of St. Maarten's stony coral has either been infected or has died.

While the exact cause of the new coral disease is still unknown, preliminary research points to bacteria as the main cause. Stony Coral Tissue Loss disease triggers the rapid loss of living tissue, with affected corals covered in white patches of exposed skeleton. Within weeks, the disease rapidly spreads outwards from the center of the colony until the entire colony is affected and eventually dead. The disease has a very high mortality rate of between 66 and 100 percent. For now we now that Stony Coral Tissue Loss disease affects approximately 20 species of stony coral, including reef-building star and brain coral species. Two species that are highly susceptible to Stony Coral Tissue Loss disease are the endangered elliptical star coral (*Dichocoenia stokesii*) and pillar coral (*Dendrogyra cylindrus*), although thankfully it does not affect the critically endangered reef-building elkhorn and staghorn corals.



Photos by: © Florida Fish and Wildlife Conservation Commission

Nature Foundation St. Maarten is now pleading for help from the entire community to reduce the spread of Stony Coral Tissue Loss disease. There is still a lot of uncertainty surrounding the disease, but it is believed to be spread via direct contact and water circulation. Divers are advised to carefully clean their gear after each dive, and all swimming on the reefs must pay extra attention not touch any coral so as to not transmit the disease. Evidence also suggests that contact with plastic increases the likelihood of infection. This means that plastic pollution on local reefs must be removed, and littering and the use of single-use plastics minimized as much as possible. *"The detected disease is an additional large threat to our coral reefs, and the Nature Foundation urgently needs the support of decision makers and the wider community to maintain what is left"* commented Nature Foundation Director Tadzio Bervoets. *"A sound wastewater infrastructure, holding those that dump wastewater in the ocean and wetlands accountable, increased monitoring, and a ban on single-use plastics and non-coral friendly sunscreen would go a long way"*. In the meantime, Nature Foundation is monitoring the spread

of the disease carefully and testing the application of epoxy mixed with antibiotic powder to see if it halts the spread of the disease on an infected coral colony. The Foundation is also creating extra reef habitat as part of the One Million Coral Initiative.

A [new guide](#) to help Caribbean marine natural resource managers detect and manage Stony Coral Tissue Loss Disease was released by MPA Connect in February 2019. Early detection is crucial to treat and restore affected reefs. The guide includes technical knowledge to help identify the presence of the disease and practical steps that managers can take to prevent the further spread of the disease. This includes monitoring of highly susceptible coral species, disinfecting survey tools, informing relevant stakeholders, applying best MPA management practices and properly managing ballast and waste water from ships. Networking with other marine resource managers in the Wider Caribbean region will also be key in managing the spread of the disease; a regional monitoring program has already been initiated by Mexico.

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MPAConnect guide to detect **Stony Coral Tissue Loss Disease** on Caribbean coral reefs

A partnership between:  

Total loss of affected tissue

 Bare skeleton with no tissue

 Sloughing away of tissue

Be Alert!

A new coral disease is causing high mortality of stony corals

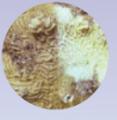
Cause is unknown but it is water-borne and may spread via direct contact

Take care not to confuse with other coral diseases, bleaching or fish bites

Correct field diagnosis depends on multiple factors

Highly susceptible species

1  *Meandrina meandrites*

2  *Pseudodiploria clivosa*  *Diploria labyrinthiformis*

3  *Orbicella* species  *Montastrea cavernosa*

 *Eusmilia fastigiata*  *Dendrogyra cylindrus*  *Dichocoenia stokesii*

 *Colpophyllia natans*  *Pseudodiploria strigosa*  *Siderastrea siderea*

Typical order of infection

Rapid spread
Within one week to two months

High prevalence and mortality
Among susceptible species

~2-3% Normal background disease prevalence

66-100% Species-specific Stony Coral Tissue Loss Disease prevalence

On coral colonies
Multiple lesions

On dive sites
Rapid spread among corals

Rapid mortality

What can managers do?

- 1 Monitor highly susceptible species via roving diver surveys
- 2 Monitor sentinel sites weekly – old, large, healthy, spawning colonies
- 3 Monitor suspected cases every three days to weekly, take photos, note date and location
- 4 Inform your agency about new threat, seek contingency support, investigate supplies for treatment
- 5 Inform relevant stakeholders, encourage reporting
- 6 Prevent spread – wash dive gear in lots of fresh water and sun dry, disinfect survey tools, dive on clean sites before infected sites
- 7 Promote ballast water management, exchange ballast offshore and not on coral reefs
- 8 Seek training in protocols for treatment of priority corals

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Coral photography: K. Neely, Nova Southeastern University.
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Contact MPAConnect for advice and training mpaconnect@gcfl.org
For more information, see <https://floridakeys.noaa.gov/coral-disease/>
and <https://www.gcfl.org/emerging-issues-florida-coral-disease-outbreak/>

MPA Connect guide to detect Stony Coral Tissue Loss Disease on Caribbean coral reefs. Infographic by: © Deviate Design

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