Caribbean Fishery Management Council
Outreach and Education Advisory Panel Meeting
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Presence of Stony Coral Tissue Loss Disease in Puerto Rico

Helena Antoun,
Puerto Rico Fishery Liaison
ERT Inc.
In support of
NOAA National Marine Fisheries Service





What is "Stony Coral Tissue Loss Disease" (SCTLD)

• A disease that is affecting over 20 species of hard corals (reef building) in the Caribbean.

• Unkown origin, suspected to be caused by a bacterial pathogen.

Characterized by multiple lesions



What is "Stony Coral Tissue Loss Disease" (SCTLD)

- Differs from other diseases in that
 - It persists throughout the seasons.
 - Attacks over 20 species, whereas other diseases attack specific species (i.e. white band attacks 2 species)
- Differs from bleaching in that a coral can recover from bleaching, but with SCTLD mortality is 100% without intervention.

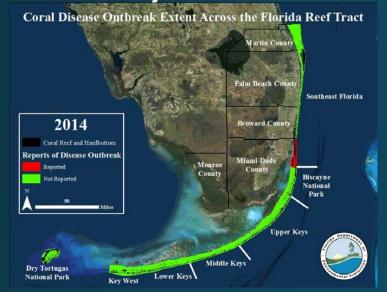


What is "Stony Coral Tissue Loss Disease" (SCTLD)

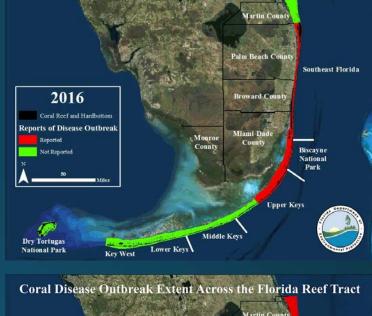
- High mortality rate.
 - Corals die between 1 week to 2 months, depending on species and size.



Stony Coral Tissue Loss Disease







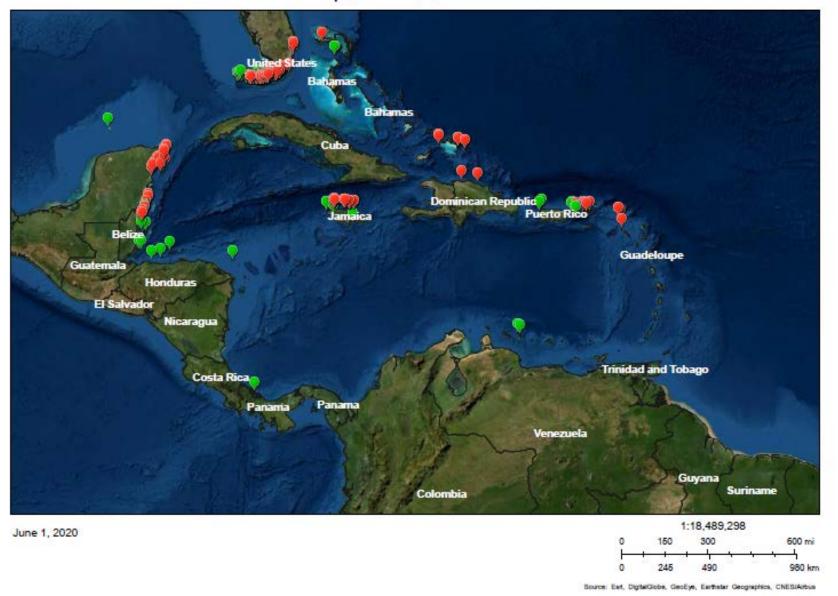
Coral Disease Outbreak Extent Across the Florida Reef Tract







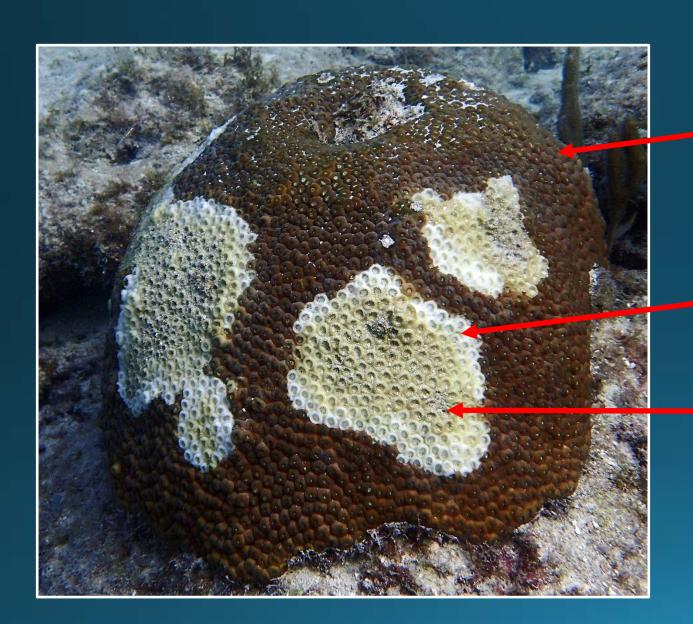
Map_SCTLD_Caribbean



Map_SCTLD_Puerto Rico



Source: Est, DigitalGlobe, Geoliye, Earthster Geographics, CNES/Althus



Brown= Live tissue

White margin= Infected area

Dead coral with algal colonization



Photo 1. Coral cerebro gigante (Colpophyllia natans) y Coral cerebro común (Pseudodiploria strigosa) (Foto por Edwin Hernández)



Photo 3. Coral pilar (Dendrogyra cylindrus) (Foto por el Edwin Hernández)

Highly Susceptible Species:

Colpophyllia natans (boulder brain coral)

Dendrogyra cylindrus (pillar coral)*

Dichocoenia stokesii (elliptical star coral)

Diploria labyrinthiformis (grooved brain coral)

Eusmilia fastigiata (smooth flower coral)

Meandrina meandrites (maze coral)

Pseudodiploria strigosa(symmetrical brain coral)











Intermediately Susceptible Species:

Orbicella annularis (lobed star coral)*

Orbicella faveolata (mountainous star coral)*

Orbicella franksi (boulder star coral)*

Montastraea cavernosa (large-cup star coral)

Solenastrea bournoni (smooth star coral)

Stephanocoenia intersepta (blushing star coral)

Siderastrea siderea (starlet coral.

Agaricia agaricites (lettuce coral)



https://reefdivers.io/caribbean

coral-diaries-orbicella-franksi/3627

https://reefquide.org/carib/pixhtml/gr

eatstarcoral3.html

Intermediately Susceptible Species:

Agaricia spp. (plate/saucer corals)

Mycetophyllia spp. (cactus coral)*

Madracis auretenra (pencil coral)

Favia fragum (g olfball coral)

Helioseris cucullata (s unray lettuce coral)

Mussa angulosa(s piny flower coral)

Scolymia spp. (disc coral)







Isophyllia spp. (sinuous cactus coral; rough star coral)

How does SCTLD affect the fisheries?

- No data on SCTLD and fisheries, however...
- An assessment on long-term impacts of the 1998 wide scale bleaching event in the Indian Ocean, where coral declined up to 90% in some areas, found that the bleaching event had little impact on fishery biomass, indicating no effect on fishery yields; however, size structure of the fish communities changed. There was an observed decline in smaller fish and an increase in larger fish.

Fish were being lost due to natural mortality and fishing, but were not being replaced by juveniles.

Graham, N.J., et. al., 2007. Lag effects in the impacts of mass coral bleaching on coral reef fish, fisheries, and ecosystems. https://conbio.onlinelibrary.wiley.com/doi/epdf/10.1111/j.1523-1739.2007.00754.x

What's being done

Surveys

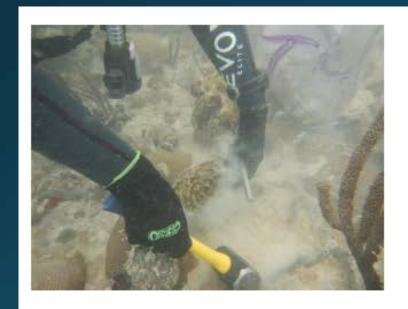


Intervention/Treatment

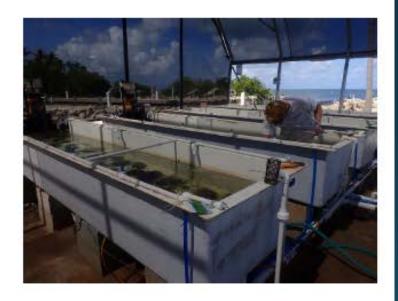


What's being done

Coral Rescue







Photos: Stephanie Schopmeyer, FWC

How you can help

- Decontaminate dive gear
- Avoid swimming from a contaminated area to an unaffected area.
- Avoid touching corals.
- Keep dive equipment or gear off of corals.

The white areas on the coral reef near Flat Cay. St. Thomas, are areas of disease.

Photo by Marilyn Brandt



How you can help

 Alert DNER's Coral Program of suspicious sightings.

Email:

programadearrecifesdecoral@gmail.com

Phone:

(939) 438-3123

The white areas on the coral reef near Flat Cay. St. Thomas, are areas of disease.

Photo by Marilyn Brandt





Guía para desinfectar equipo de buceo



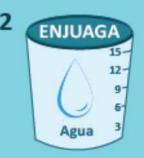
¡Mantén nuestras islas sanas!

10 min REMOJA Cloro de Casa

Remoja todos los equipos durante 10 minutos en una solución de cloro de casa al 1%

USE INMEDIATAMENTE DESPUÉS DE MEZCLAR CLORO (tazas) AGUA (galones) ~1.0 ~1.5 ~2.5 15

¡No olvides remojar las vejigas internas del BCD!



Enjuaga todos los equipos en agua dulce

(e.g., en un cubo de 5 galones) Descarta adecuadamente la solución desinfectante que acabas de utilizar a tráves del fregadero o la ducha. ¡Recuerda que el cloro se descompondrá en el sol!

3 SECA AL AIRE Permite que el equipo se seque al aire completamente

For more information

 Atlantic and Gulf Rapid Reef Assessment (AGRRA),

https://www.agrra.org/coral-diseaseoutbreak/

Reef Resilience Network

https://reefresilience.org/managing-fordisturbance/managing-coraldisease/stony-coral-tissue-loss-disease/#



Total loss of offected

tissue



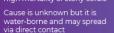
with no tissue

Meandrina meandrites

MPAConnect guide to detect

Stony Coral Tissue Loss Disease on Caribbean coral reefs





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

Correct field diagnosis depends on multiple factors

Highly susceptible species





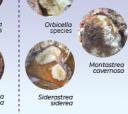




Sloughing away

of tissue





Rapid spread

Within one week

On coral colonies Multiple lesions

High prevalence and mortality

66-100% Species-specific background Stony Coral Tissue Loss

On dive sites Rapid spread among corals



Typical order of infection

What can managers do?

Monitor highly susceptible species via surveys





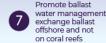
Inform your agency

about new threat.

support investi-

gate supplies for





Prevent spread wash dive gear in lots of fresh water and sun dry. disinfect survey tools. dive on clean sites before infected sites



Seek training in protocols for treatment of priority corals

Monitor sentinel

old, large, healthy

sites weekly –

colonies

Contact MPAConnect for advice and training mpaconnect@gcfi.org For more information, see https://floridakeys.noaa.gov/coral-disease, and https://www.gcfi.org/emerging-issues-florida-coral-disease-outbreak



