Update on Stony Coral Tissue Loss

Victoria Barker
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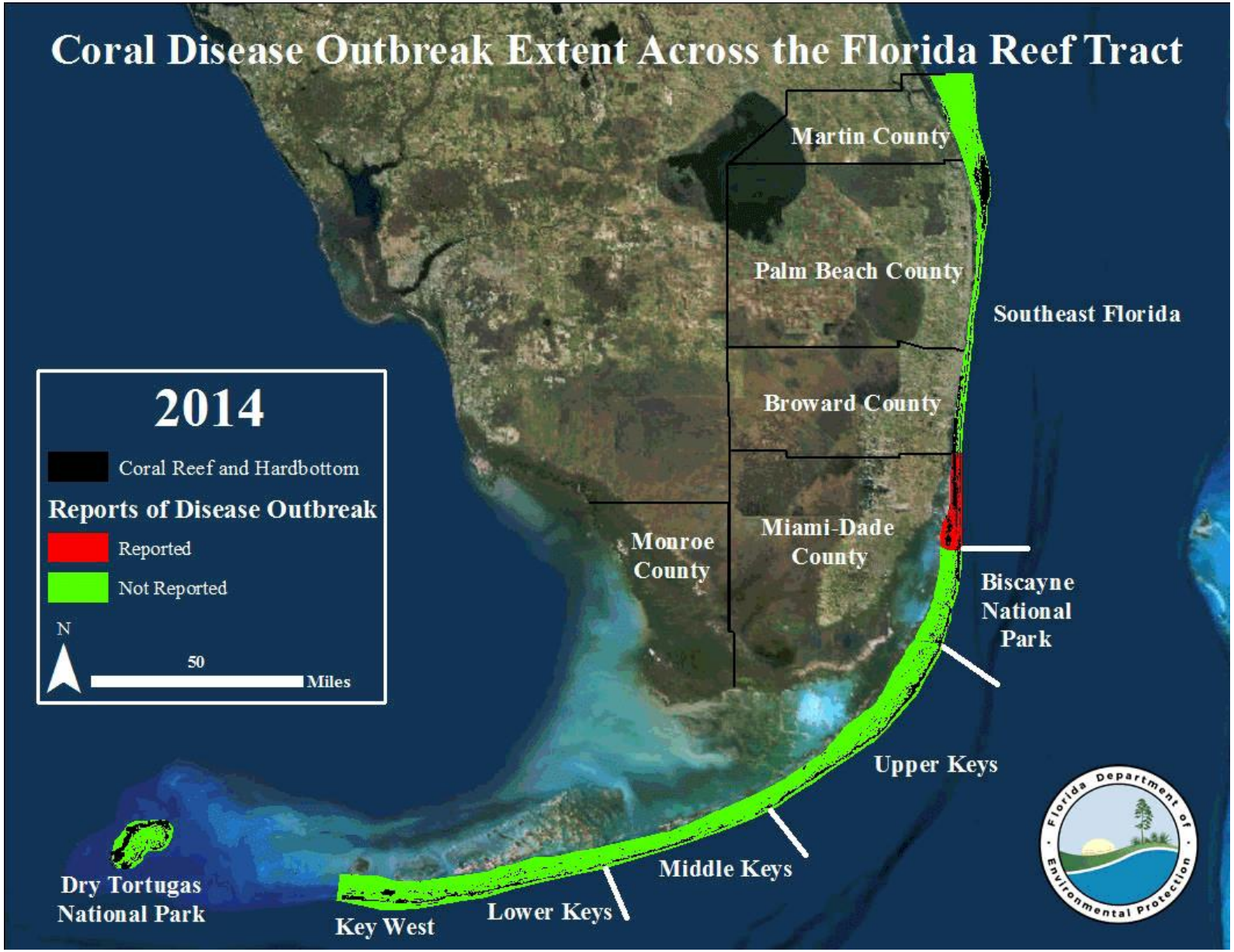
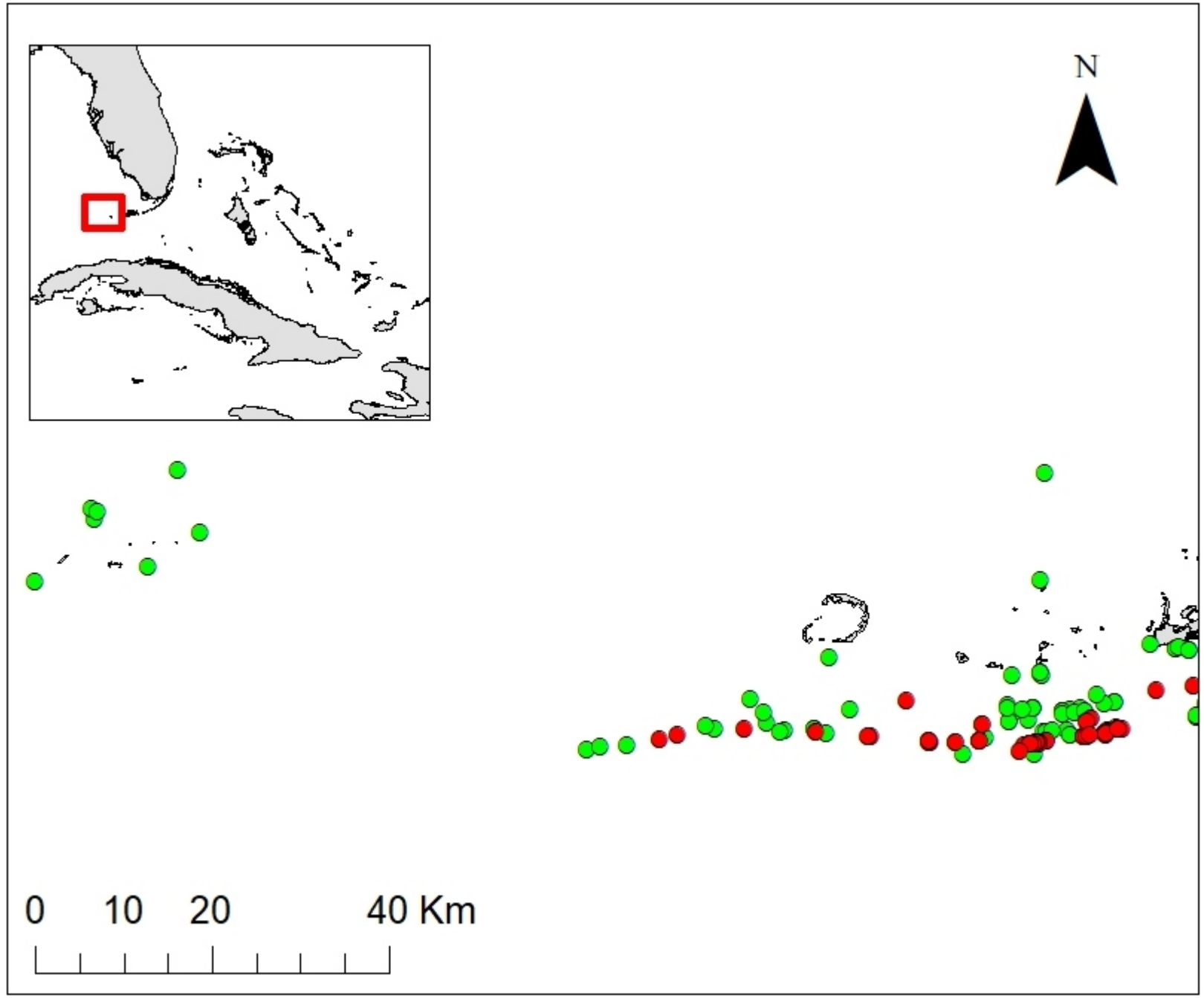
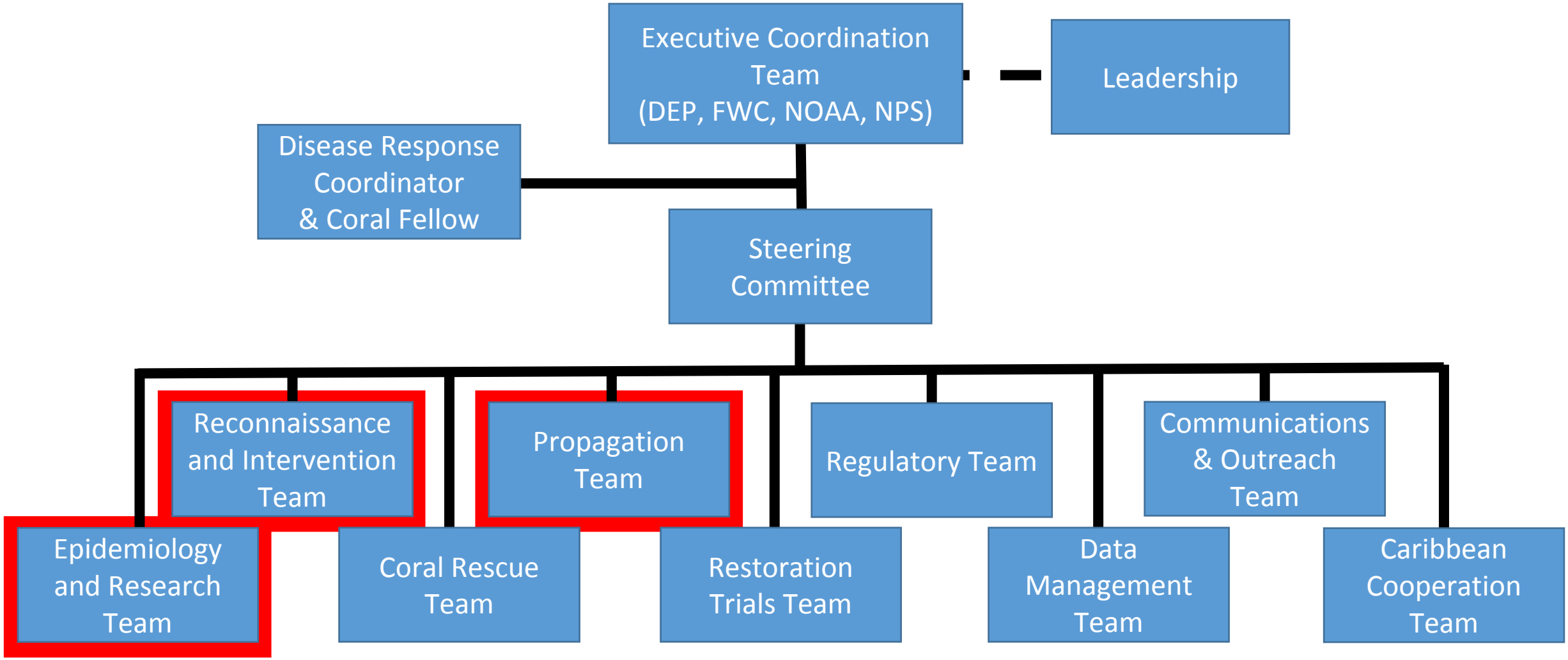

Coral Disease Outbreak Extent Across the Florida Reef Tract
Martin County
Palm Beach County
Southeast Florida
Broward County
Miami-Dade County
Monroe County
Biscayne National Park
Upper Keys
Middle Keys
Lower Keys
Key West
Dry Tortugas National Park
2014
Coral Reef and Hardbottom
Reports of Disease Outbreak
Reported
Not Reported
N
50
Miles
Florida Department of Environmental Protection


N
0 10 20 40 Km

Wider Caribbean

Source: http://www.agrra.org/coral-disease-outbreak/

Response Structure



2019 Technical Workshop

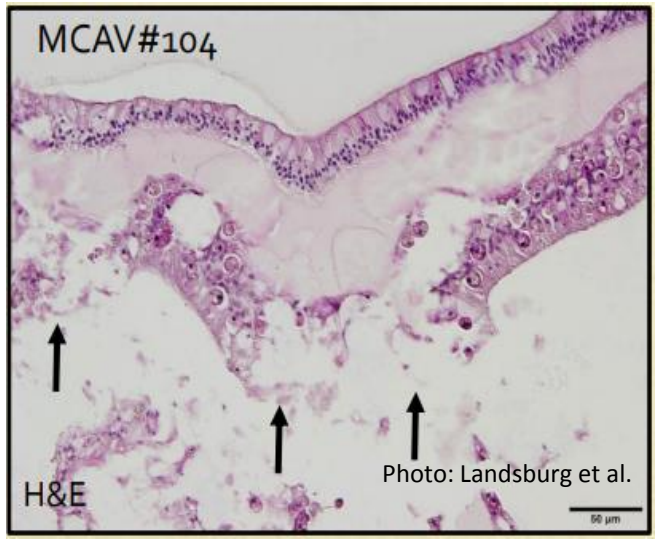
- Propagation: August 6
- Full workshop: August 7-9

- Florida Fish & Wildlife Research Institute (FWRI) - St. Petersburg
- Over 75 attendees
- Emphasis on research, intervention, and coral propagation

Epidemiology and Research Team Updates

Pathogen Identification & Microbiome Characterization

- fractionation

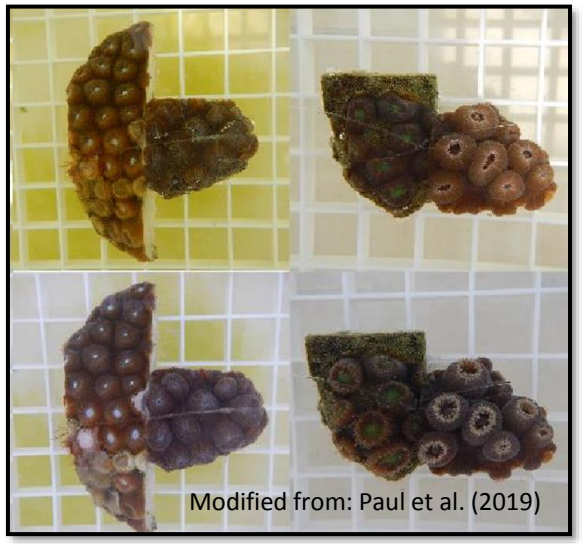


Histopathology

- time series

Disease Transmission & Environmental Co-factors

- pathogen persistence
- water quality



Coral Immune Response/“-omics”

- time series

Intervention Team Updates

- Abandon chlorinated epoxy
- Use Ocean Alchemists LLC/CoreRx Pharmaceuticals Base2b without antibiotics
- **Field trial probiotics**

Photo: Karen Neely

Photo: Karen Neely

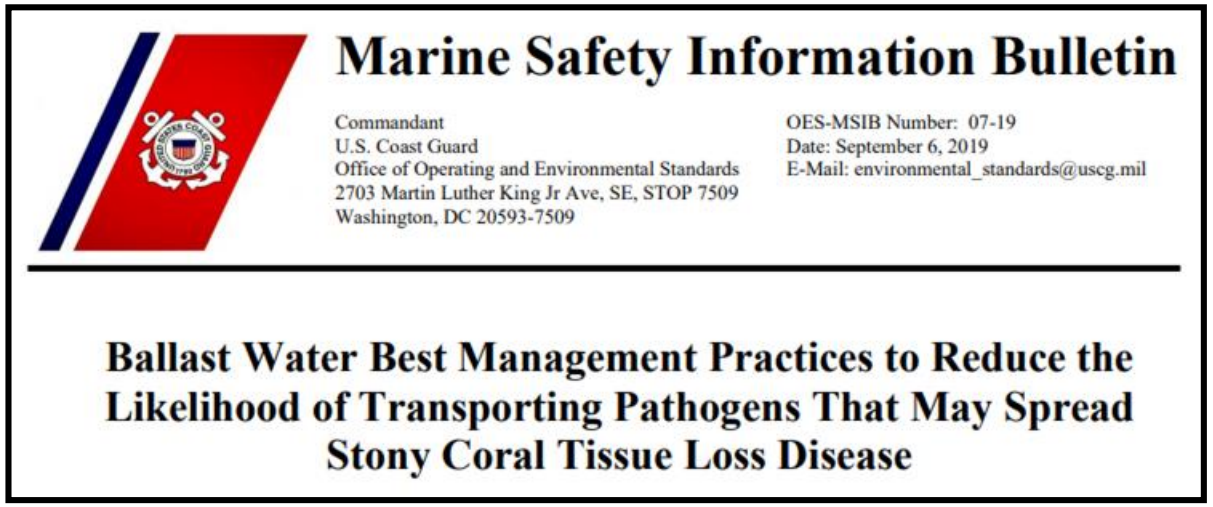
Propagation Team

- Newly formed at 2019 Workshop
  - Co-leads: Jennifer Moore (NOAA), Lisa Gregg (FWC)
- Priorities:
  - Assessing current coral holding infrastructure
  - Build-out of propagation infrastructure
  - Assess coral spawning, settling, and rearing expertise
  - Propagation of rescue corals
  - Cryopreservation of coral sperm (gene banking)


Photo: Karen Neely


Photo: Coral Restoration Foundation

Ballast Water



Marine Safety Information Bulletin

Commandant
U.S. Coast Guard
Office of Operating and Environmental Standards
2703 Martin Luther King Jr Ave, SE, STOP 7509
Washington, DC 20593-7509

OES-MSIB Number: 07-19
Date: September 6, 2019
E-Mail: environmental_standards@uscg.mil

Ballast Water Best Management Practices to Reduce the Likelihood of Transporting Pathogens That May Spread Stony Coral Tissue Loss Disease

- For vessels with a Ballast Water Management System or an accepted Alternate Management System, use the system and verify it is functioning properly.
- Voluntarily divert 200 nautical miles (nm) offshore to conduct an exchange. Vessels that do not voyage out 200nm, voluntarily conduct an exchange at least 50nm from shore and in waters of at least 200m depth.
- If discharging unmanaged ballast outside U.S. waters, prior to entry into port, discharge beyond 50nm of any shore and in water depths of 200m or greater.
- When safe and practicable, minimize ballast uptake and do not conduct partial exchange within 50nm.

MSIB portal: https://www.dco.uscg.mil/Featured-Content/Mariners/Marine-Safety-Information-Bulletins-MSIB/

Next Steps

- Research - SCTLD pathogen(s)
- Intervention - Explore colony- and reef-level methodologies
- Propagation - Identify appropriate facilities for coral propagation/rearing
- Regulatory - opportunities for coral restoration and mitigation
- Restoration Trials - reef wide restoration trials to determine when it is appropriate to outplant in the endemic zone
- Coral Rescue – returned from cruise #5 to Marquesas – 168 corals rescued

Photo: Blake Ushijima

Response Partners

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https://floridakeys.noaa.gov/coral-disease/

https://floridadep.gov/fco/coral/content/florida-reef-tract-coral-disease-outbreak