



CTA-199-Ballast Water and Coral Reefs

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The World Federation for Coral Reef Conservation
Vic Ferguson
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512.986.1902
Executive Director/Founder

642 S. Commerce
vic.ferguson@wfcrc.org

Sebring, Florida 33870
kyle.mathes@wfcrc.org

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Ballast Water Could Be Driving Spread Of Devastating Coral Disease

By JENNY STALETOVICH · FEB 4, 2020



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Stony coral disease has afflicted nearly half Florida's reef-building corals and has now spread beyond the 300-mile long reef tract to the eastern Caribbean and south to Mexico and Belize.

ANDREW BRUCKNER / NOAA

Scientists investigating a devastating [new coral disease](#) infecting reefs from Florida to and throughout the Caribbean may be zeroing in on a culprit behind the unpredictable spread: ballast water from big ships.

Investigators are now poring over shipping records housed at the Smithsonian to confirm the connection and better contain it.

Listen

Listening...

3:09

“This thing has now blown through most of the coral reef tract here in Florida,” said Dana Wusinich-Mendez, the Caribbean reef restoration team leader for the National Oceanic and Atmospheric Administration. “In 2014, we had no idea what it was when it came and what it was going to become. This has completely just overtopped [our] resources.”

Researchers suspect ballast water discharged from ships has helped spread the stony coral disease beyond the Florida reef to the wider Caribbean.

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Scientists were already battling [increasing threats](#) on a 300-mile reef that they say has lost about 90 percent of its coral cover. Climate change is increasing bleaching events and acidification that make it harder for coral to grow. In busy South Florida, heavy boat traffic has also marred reefs.

Coral biologists got their first inkling that [stony coral disease](#) might be unlike other diseases that waxed and waned with temperatures when it lasted nonstop [through the winter seasons](#). They confirmed it was waterborne and suspected it was caused by a bacteria. But like black band and other coral diseases, they struggled to determine other factors including where it came from.

When it spread to the Caribbean, defying ocean currents, they began to consider unnatural forces. They got their first solid clue in the U.S. Virgin Islands, Wusinich-Mendez said.

“Two weeks before the disease appeared in St. Thomas in the U.S. Virgin Islands, a ship there made an unauthorized release of ballast,” she said.

The ship had collected water from Port Everglades, where the disease spread after first appearing off Virginia Key near PortMiami in 2014. That raised a red flag, she said.

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“We watched when lionfish spread throughout the region, for example. We watched it follow the ocean currents and go from country to country across the region. This is jumping,” she said.

Ballast water is used to stabilize ships during ocean crossings and has long been blamed for spreading invasive species and toxic water. In the 1980s, ships from eastern Europe carried the voracious zebra mussel to the Great Lakes. The fast-growing mussels can now be found in freshwater throughout the eastern U.S., clogging pipes, littering beaches with their shells and choking out native shellfish. Ballast water has also been blamed for spreading cholera in the Gulf of Mexico. Scientists also think it’s capable of spreading toxic algae like brown tide.

In response to the zebra outbreak, federal regulators tightened rules around dumping ballast water. Ships are required to submit records on their movement and ballast water within six hours of entering ports, said Rob Brumbaugh, a senior scientist with The Nature Conservancy. Those records have been kept at the Smithsonian Environmental Research Center in Maryland since the 1990s as part of the effort to control Zebra mussels.

By 2024, he said, ships will be required to have onboard treatment systems to clean water under a 2004 treaty [administered by the International Maritime Organization](#). Countries representing about three-fourths of the world’s shipping fleet are now part of the treaty. The rule essentially covers all ships since any docking in ports that participate in the treaty must comply, he said.

Investigators are now going over old records to see if they can confirm the movement of the disease with the movement of ships.

Scientists also still need to ensure the current treatment methods — like using UV light — can kill stony coral disease. They’re now testing methods in labs, Brumbaugh said, even as they continue to search for clues about what’s causing a disease that has now infected nearly half of Florida’s reef-building hard corals.

“It’s not just a question of what made the corals sick. It could potentially be a question of what made the plant inside the corals sick,” he said. “So unlike looking for patient zero and a human being, you’re looking at what’s making the community of organisms sick.”

In a September alert from the U.S. Coast Guard reminding ships to swap water 200 miles from shore in deep water, officials also asked ships not sailing offshore to voluntarily make the detour to swap out water. At the very least, they asked that water be dumped at least 50 nautical miles from shore and far from reefs.

But in poorer Caribbean countries, Wusinich-Mendez worries that lack of resources could hamper efforts. Those countries could also suffer disproportionately because they rely so heavily on their reefs for both tourism and food.

“A lot of Caribbean countries just don’t have the ability to enforce those regulations,” she said. “We need to share as much information from our experience as we can with our colleagues and the wider Caribbean region.”

With the disease now spread as far east as Saint Martin in the Dutch Antilles — it’s also been found off Jamaica, the Turks and Caicos, the Dominican Republic, St. Thomas and the U.S. Virgin Islands — and stretching through

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Mexico south to Belize, Wusinich-Mendez said it may be in danger of infecting the entire Mayan Reef system, the planet's largest after Australia's Great Barrier Reef.



"It's not like coral bleaching, where there's hope that the coral will come back," she said, referring to the disease that causes coral to expel the algae when temperatures warm but remain alive. "With stony coral disease ... you're looking at skeletons. You're not looking at bleached coral. You're literally looking at a dead skeletons of what was a living creature that will never come back."



Scientists Coax Imperiled Florida Coral To Spawn In A Lab For The First Time

By CRAIG PITTMAN • AUG 22, 2019
OCTAVIO JONES | TIMES

APOLLO BEACH -- After two years and more than \$4.5 million, scientists working with the Florida Aquarium have pulled off something no one else ever has: They coaxed imperiled Atlantic Ocean coral into spawning in a laboratory, aquarium

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officials announced Wednesday.

Florida's Coral Reefs Are In Trouble. Here's A New \$160 Million Plan To Save Them

By ALEX HARRIS • AUG 2, 2019



EMILY MICHOT / MIAMI HERALD

The odds are stacked against Florida's coral reefs.

A mysterious disease is devastating them. So is climate change, which warms and acidifies ocean waters. Development and pollution don't help much, either.

Landmark federal legislation to help corals expired in 2000, and [a new bill](#) introduced Friday by Florida's Republican senators would revive it.

Are Feds, State Officials Keeping Fishermen, Divers In Mind For Water Conservation Efforts?

By ALEXANDER GONZALEZ & TOM HUDSON • DEC 13, 2019

MICHAL KRANZ / WLRN

Federal and state officials are trying to strike a balance between conservation and public access to South Florida waters.

The Florida Fish and Wildlife Conservation Commission agreed Thursday [to back](#) tighter fishing limits in Biscayne National Park, where fish populations have dwindled.

Vic Ferguson

The World Federation for Coral Reef Conservation

Executive Director/Founder

Relief without Borders

March for the Ocean

642 So. Commerce Ave

Sebring, Florida 33870

vic.ferguson@wfcrc.org (best method of contact)

512.986.1902

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