

Coral disease outbreaks fluctuate with El Niño years, new research finds

July 31 2017



New research from Florida Institute of Technology has found that instances of three common diseases afflicting Caribbean coral reefs like the one shows here have occurred more frequently in El Nino years. Credit: Florida Institute of Technology

Occurrences of three common diseases affecting Caribbean corals spike during El Niño years, an alarming association given how climate change may boost the intensity of El Niños.

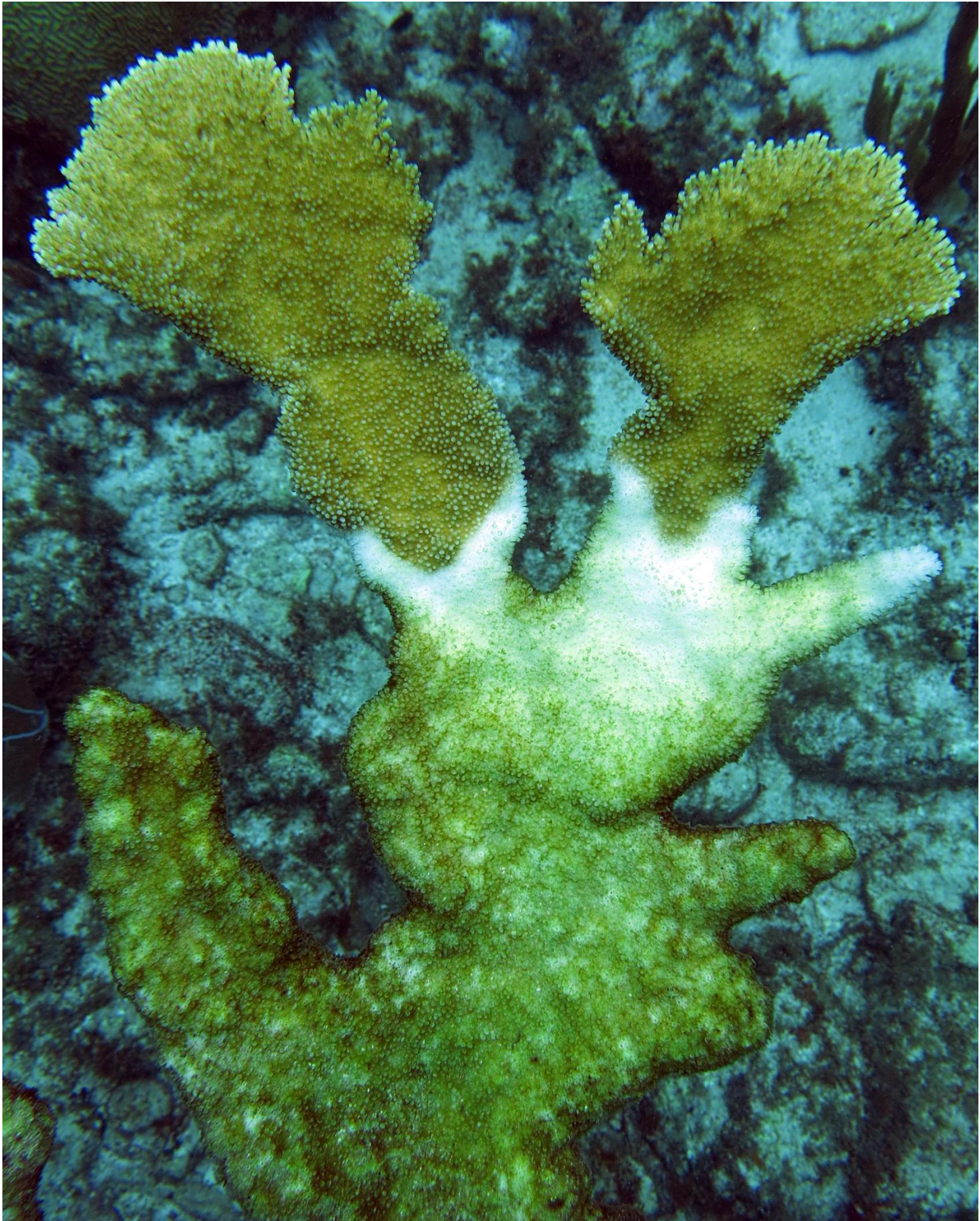
The findings from Florida Institute of Technology research associate Carly Randall and biology professor Rob van Woesik, published earlier this month in the journal *Scientific Reports*, are based on an analysis of 18 years of coral-disease data, at nearly 2,100 sites collected by the Atlantic and Gulf Rapid Reef Assessment Program. Those data were compared with 18 years of coinciding climate data to see if the disease cycles matched the climate cycles.

"We found that three [coral diseases](#) - white-band disease, yellow-band disease and dark-spot syndrome - peak every 2-4 years, and that they share common periodicities with El Niño cycles," Randall said. "Our results indicate that coral diseases cycle predictably and that they often correspond with El Niño."

And because of the potential increase in the intensity of El Niño weather patterns associated with [climate change](#), "our findings suggest that we might see diseases in corals ramping up in the coming decades," Randall added.

Because disease outbreaks in corals have followed El Niño-fueled coral bleaching events in the past, there was speculation about the connection between the diseases and the El Niño cycles, which are associated with warmer than usual weather in the Caribbean. This study, titled "Some coral diseases track climate oscillations in the Caribbean," confirms the speculation.

Such climate-driven patterns in the ocean are similar to patterns described for malaria and dengue fever on the land, which are reported to track [climate cycles](#).



Coral with white-band disease. New research from Florida Institute of

Technology suggests that this disease and two other common coral ailments -- yellow-band disease and dark-spot syndrome -- occur more frequently in El Niño years. Credit: Florida Institute of Technology

More information: C. J. Randall et al, Some coral diseases track climate oscillations in the Caribbean, *Scientific Reports* (2017). [DOI: 10.1038/s41598-017-05763-6](https://doi.org/10.1038/s41598-017-05763-6)

Provided by Florida Institute of Technology

Citation: Coral disease outbreaks fluctuate with El Niño years, new research finds (2017, July 31) retrieved 26 April 2024 from <https://phys.org/news/2017-07-coral-disease-outbreaks-fluctuate-el.html>

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