

Corals in murky water less affected by temperature stress, research finds

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The two reef colonies in the middle of the picture are the same species, *Seriatopora hystrix*, but note the reduced bleaching for the colony on the bottom right when shaded by the large *Acropora* colony above. This demonstrates that reduced light moderates coral bleaching when temperatures are high. Credit: Florida Institute of Technology

Persistent temperature stress events are degrading coral reefs worldwide, but a new study from Florida Institute of Technology has found that corals in naturally turbid waters are less affected by thermal stress than corals in clearer water.

The findings from Florida Tech Ph.D. student Shannon Sully and professor Rob van Woesik were published Jan. 8 in the journal *Global Change Biology*.

"We hypothesized that reduced light on turbid reefs would reduce coral stress during [thermal stress](#) events, and our research verified that," Sully said.

The authors examined coral bleaching severity on a global scale and found that bleaching was indeed reduced during temperature stress events when [turbidity](#) was naturally elevated, although excess turbidity also harmed the reef.

"We found that about 12 percent of the world's reefs exist within this 'moderating turbidity' range," Sully said.

van Woesik, who directs the Institute for Global Ecology at Florida Tech, said that these new analyses could provide a new direction for marine policy.

"As climate change continues to threaten [coral reefs](#) globally, it is imperative to know locations where corals are likely to survive through thermal stress events. This information will help plan for change by focusing conservation on nearshore coral reefs in turbid waters," van Woesik said.

The authors suggested that nearshore turbid reefs will need particularly high conservation status not only because they act as modern climate-

change refuges and are repositories of ecological diversity, but also because they are close to human settlements.

"People have long considered clear-water [coral](#) reefs as the ultimate reefs worth preserving, and they are," van Woesik said. "But as we move into a warmer world, we need to adapt our conservation policies and understand that turbid nearshore environments, although less charismatic, may provide refuge from [climate change](#)-caused thermal stress."

More information: Shannon Sully et al. Turbid reefs moderate coral bleaching under climate-related temperature stress, *Global Change Biology* (2020). [DOI: 10.1111/gcb.14948](https://doi.org/10.1111/gcb.14948)

Provided by Florida Institute of Technology

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