

Study finds seasonal seas save corals with 'tough love'



Researchers from the Wildlife Conservation Society have found that corals living in variable temperatures are better able to survive warmer seas due to climate change. Credit: Tim McClanahan

Finally, some good news about the prospects of coral reefs in the age of climate change. According to a new study by the Wildlife Conservation Society, corals may actually survive rising ocean temperatures in 'tough love' seas with wide-ranging temperatures.

Researchers discovered that coral reefs in sites with varying seasonal temperatures are more likely to survive the 'hot pulses' of Climate Change. Conversely, reefs living in environments with stable but higher temperatures are more susceptible to "bleaching," a global phenomenon where beneficial algae are "evicted" by corals, ultimately leading to the reef's demise.

The study, which appears in the latest edition of the journal *Ecological Monographs*, presents the results of an 8-year study on the reefs of East Africa.

"This finding is a ray of hope in a growing sea of coral bleaching events and threatened marine wildlife," said Dr. Tim McClanahan, Senior Scientist working for WCS' Coral Reef Programs and lead author of the study. "With rising surface temperatures threatening reef systems globally, these sites serve as high diversity refuges for corals trying to survive."

Coral reefs are composed of tiny creatures that live in colonies in mostly tropical and subtropical waters. Corals are home to beneficial algae, which gives reefs their stunning colors. During prolonged, unusually high surface temperatures, many coral species bleach, discharging the algae and leaving the reefs white and sickly.

The study examined temperature variations and coral bleaching events off the coast of East Africa between the years of 1998 and 2005.

The researchers also discovered that the coral reefs in sites with the most temperature variation were in the 'shadow' of islands, protected from the oceanic currents that reduce temperature variations in reef ecosystems. According to the authors of the study, the results suggest that corals in these locations are better adapted to environmental variation. Consequently, they are more likely to survive dramatic increases in temperature.

"The findings are encouraging in the fact that at least some corals and reef locations will survive the warmer surface temperatures to come," added McClanahan. "They also show us where we should direct our

conservation efforts the most by giving these areas our highest priority for conservation.”

On a broader scale, the Wildlife Conservation Society engages in coral reef conservation on a global scale, with projects on reef systems in Belize, Indonesia, Papua New Guinea, Fiji, and Madagascar. All of these nations are island environments that may have similar persistence across the global warming crisis.

Source: Wildlife Conservation Society

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