

Great Barrier Reef coral predicted to last at least 100 years before extinction from climate change

Model predicts rapid adaptation of corals despite increasingly severe bleaching events, but corals' more distant future remains uncertain

Date: April 19, 2018

Source: PLOS

Summary: A common Great Barrier Reef coral species has enough genetic diversity to survive at least 100 years before succumbing to global warming, researchers predict.

FULL STORY



Great Barrier Reef coral predicted to last at least 100 years before extinction from climate change.

Credit: Mikhail V. Matz and colleagues

A common Great Barrier Reef coral species has enough genetic diversity to survive at least 100 years before succumbing to global warming predicts Mikhail Matz of

the University of Texas at Austin and colleagues. They report these findings in a new study published April 19th, 2018 in *PLOS Genetics*.

A warming climate, ocean acidification and destruction of coral habitats have all taken a significant toll on coral populations along the Great Barrier Reef. Previous studies offered hope that corals can adapt to warming conditions but no one knows if they can outpace climate change. Matz and his colleagues developed a model to estimate the ability of the common coral species *Acropora millepora* to evolve by redistributing existing heat-tolerance genes, taking into account the coral's present-day genetic diversity and how far its larvae migrate before settling down. The model predicts that the coral will become more sensitive to temperature swings, which will cause occasional die-offs, but that coral populations will successfully adapt to temperatures along the Great Barrier Reef and survive at least another century. Whether corals will be able to adapt any further is uncertain and depends on several currently unknown parameters of coral genetics.

This study of a common inhabitant of the Great Barrier Reef is a rare optimistic contribution to our understanding of how a species can adapt to changing climate conditions. The findings show that recent catastrophic coral bleaching events do not necessary signal imminent coral demise and can also inform reef management strategies, suggesting that interventions that help reshuffle coral genetic diversity among reefs will likely increase the coral's odds for survival in the near future.

Story Source:

Materials provided by **PLOS**. *Note: Content may be edited for style and length.*

Journal Reference:

1. Mikhail V. Matz, Eric A. Treml, Galina V. Aglyamova, Line K. Bay. **Potential and limits for rapid genetic adaptation to warming in a Great Barrier Reef coral**. *PLOS Genetics*, 2018; 14 (4): e1007220 DOI: 10.1371/journal.pgen.1007220

Cite This Page:

MLA

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PLOS. "Great Barrier Reef coral predicted to last at least 100 years before extinction from climate change: Model predicts rapid adaptation of corals despite increasingly severe bleaching events, but corals' more distant future remains uncertain." ScienceDaily. ScienceDaily, 19 April 2018. <www.sciencedaily.com/releases/2018/04/180419141520.htm>.

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