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CORAL REEFS AND CLIMATE CHANGE: WILL THEY SURVIVE?

Coral reefs are among the most diverse ecosystems on the planet, housing an estimated 25% of marine species yet occupying only 2% of the ocean area. Global climate models predict that by the end of this century, tropical seawater temperatures are expected to be up to 3°C warmer than they are today and at least twice as acidic, which threatens the long-term survival of coral reef ecosystems. Elevated temperature and ocean acidification have been shown to cause reduced coral growth rates and increased coral disease and mortality rates. My team is testing the hypothesis that some coral may adapt or acclimatize to global change conditions expected at the end of this century. If they can adapt, how fast is the adaptation rate? How do adaptation rates differ among species and geographic locations? Answers to these questions are key to developing strategic coral conservation and management plans. We are currently conducting a 2-year experiment in Hawaii to text this hypothesis and evaluate these questions.

Professor Grottoli has won several awards including the F.W. Clarke Award in Geochemistry, and the Mid-Career and the Best Paper Awards from the International Society for Reef Studies. She is currently a full Professor and Chair of the Promotion and Tenure Committee in the School of Earth Sciences at the Ohio State University and a Fellow of the International Society for Reef Studies and a AAAS Fellow.

Global change is causing the demise of coral reefs. We do not know if corals will survive this century.

RESEARCH TEAM

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