

Study finds ocean acidification threatens coral reef systems

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A new study led by The University of Western Australia has found the future of the world's coral reefs is under threat from ocean acidification with many corals unable to adapt to the conditions.

The study, published today in *Nature Climate Change*, determined the capacity of coral reefs to acclimatise to [ocean acidification](#) by investigating the chemistry in the corals' calcifying fluid.

Co-author Professor Malcolm McCulloch, ARC Laureate Fellow from UWA's Oceans, said the researchers examined four [species](#) of coral and two types of calcifying algae in a year-long test.

"We found that corals and [coralline algae](#) weren't able to acclimatise to ocean acidification," Professor McCulloch said.

"The effects of ocean acidification on the calcifying fluid were rapid and persisted after one year in the experimental conditions.

"Two coral species that were resistant to ocean acidification were resistant from the start while the two sensitive ones were affected from the start and were not able to acclimatise.

"The two species resistant to ocean acidification used different mechanisms to alleviate the effects of ocean acidification."

Lead author Dr. Steeve Comeau, from the Sorbonne Université – CNRS Laboratoire d'Océanographie de Villefranche sur Mer in France, said the results validated previous research that found [coral reefs](#) were under threat from ocean acidification.

"The results also confirm that [ocean](#) acidification could have repercussions on the competition between species which could in turn affect the ecological function of reefs," Dr. Comeau said.

More information: S. Comeau et al. Resistance to ocean acidification in coral reef taxa is not gained by acclimatization. *Nature Climate Change*, doi.org/10.1038/s41558-019-0486-9

Provided by University of Western Australia

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