Dying reefs bigger threat to coasts than rising seas

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Placing pressure transducers in the inner lagoon of Temae, Moorea. Credit: V. Parravicini

The death of coral reefs is a more significant factor in the erosion of tropical coastlines than rising sea levels, a new international study has revealed.

University of Queensland School of Earth and Environmental Sciences researcher Dr Daniel Harris said tropical coastlines are at a greater immediate risk of erosion from increases in wave heights due to the loss of live corals.

"The study shows that you don't need higher sea levels for there to be coastal erosion, just the loss of healthy coral reefs," Dr Harris said.

Dr Alessio Rovere from the MARUM Center for Marine Environmental Sciences of the University of Bremen and the Leibniz Centre for Tropical Research contributed to the study.

"We examined wave processes at coral reefs in Moorea and Tahiti in French Polynesia, and modelled future wave heights near the coastline by changing variables such as coral reef health and sea level," Dr Rovere said.

"The findings suggest that actively maintaining the health of coral reefs could reduce some of the negative impacts of sea level rise on tropical coastlines."

Dr Harris said the study showed that authorities and scientists need to adjust the methods of determining the erosion risk on tropical coastlines to include measurements of the health of coral reefs.

The research is published in *Science Advances*.

More information: Daniel L. Harris et al. Coral reef structural complexity provides important coastal protection from waves under rising sea levels, *Science Advances* (2018). DOI: 10.1126/sciadv.aao4350

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