

Evidence highlights threat to Caribbean coral reef growth

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Many Caribbean coral reefs have either stopped growing or are on the threshold of starting to erode with potential impacts to people, according to research from The University of Queensland (UQ).

Coral reefs build their structures by both producing and accumulating calcium carbonate, and this is essential for the maintenance and continued vertical growth capacity of reefs.

UQ and the international research team has found that the amount of new carbonate being added by Caribbean coral reefs is now significantly below rates measured over recent geological timescales, and in some habitats is as much as 70 percent lower.

Professor Peter Mumby from UQ's School of Biological Science said this discovery could affect millions of people who benefit from reef structures.

"Reef structures provide benefits such as being fishery habitats for seafood, they are used for recreational diving adventures, and often provide a natural barrier to storm surge," Professor Mumby said.

"Our new findings imply that the benefits people receive from reefs will deteriorate considerably unless we take greater care of them."

Coral reefs form some of the planet's most biologically diverse ecosystems, and provide valuable services to humans and wildlife, however their ability to maintain their structures and continue to grow depends on the balance between the addition of new carbonate.

This is mostly produced by corals themselves, set against the loss of carbonate through various erosional processes.

Scientists have long known that reef ecosystems are in decline and that the amount of live coral on reefs is dwindling.

The [research](#) was published on January 29, 2013 in *Nature Communications* and is the first evidence that these ecological changes are now also impacting on the growth potential of reefs themselves.

Professor Chris Perry of the University of Exeter led the international team of researchers on this project.

"Our estimates of current rates of reef growth in the Caribbean are extremely alarming. Our study goes beyond only examining how much coral there is, to also look at the delicate balance of biological factors which determine whether coral reefs will continue to grow or will erode," Professor Perry said.

"Our findings clearly show that recent ecological declines are now suppressing the growth potential of reefs in the region, and that this will have major implications for their ability to respond positively to future sea level rises.

"It is most concerning that many coral reefs across the Caribbean have seemingly lost their capacity to produce enough carbonate to continue growing vertically, whilst others are already at a threshold where they may start to erode.

"At the moment there is limited evidence of large-scale erosion or loss of actual reef structure, but clearly if these trends continue, reef erosion looks far more likely. Urgent action to improve management of reef habitats and to limit global temperature increases is likely to be critical to reduce further deterioration of reef habitat."

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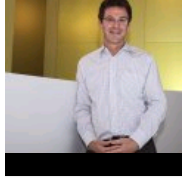


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