

Carbon dioxide affecting coral growth

By environment reporter [Sarah Clarke](#)

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Early results of a new study show that carbon dioxide (CO₂) emissions absorbed by the ocean are having an effect on coral growth.

Situated at the lower end of the Great Barrier Reef, Heron Island is surrounded by pristine waters and a spectacular array of coral and fish species endemic to the region.

And it is there that a team of scientists from the University of Queensland is conducting a world-first experiment assessing the effect of CO₂ on a living coral reef.

Every day they are pumping different levels of carbon dioxide into underwater chambers housing coral and other ocean creatures.

UQ's David Kline says the aim is to get a better picture of how reefs of the future respond to changed climatic conditions.

"What we've been working on is trying to understand the impacts of future levels of CO₂ on coral reefs, but doing it in a way that's more natural than any experiment on reefs and climate change than ever has been done before," he said.

"We have four experimental chambers, two of which we'll take to the future CO₂ scenarios, two of which we'll keep at controlled conditions, and we'll make sure the response we are seeing is actually due to the factor of adding more CO₂."

Each underwater chamber comes complete with coral colonies, crabs, sandworms and many other creatures.

Everyday, CO₂ is being pumped in and sensors are monitoring the pH levels and feeding the results back into the lab, delivering real life data.

"We're starting to get data already," Dr Kline said.

"The thing about CO₂ and its impacts on the reef is it's really going to be long-term impacts and we'll see where the impacts really start to begin.

"We'll have this whole timeline of where we start seeing the growth rate of the corals being affected, if there's any change in the ecosystem.

"We're planning on running the experiment for at least a year so we can get these harder, longer questions

Slideshow: Photo 1 of 2



Simulating the future: part of the underwater carbon dioxide trial on a coral reef off Heron Island (Global Change Institute, UQ: David Kline)

- [Map: Heron Island 4680](#)

answered."

More than a third of carbon dioxide emissions are absorbed into the ocean. But as more CO₂ is soaked up, the ocean is becoming more acidic.

Studies already indicate that is posing problems for the marine ecosystems such as the Great Barrier Reef.

Ove Hoegh-Guldberg from the Global Institute at the University of Queensland says increasing carbon levels could put one million species at risk.

"When CO₂ is absorbed by the ocean, it creates a dilute acid which then erodes things like carbonate concentrations," he said.

"Carbonate turns out to be the chemical that corals and other calcifiers need to build their skeletons, and if they can't build their skeletons then a lot of this might eventually break down and disappear.

"Now, if that happens the habitat for an estimated million species may well disappear."

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