

Climate change dictated by the ocean

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Tasman glacial melt. Photo by EmmaJG <http://www.flickr.com/photos/emmajg/>

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The scientists – Dr. Michael Ellwood from the ANU Research School of Earth Sciences in the College of Physical and Mathematical Sciences and Professor Bill Maher, Head of the EcoChemistry Laboratory, University of Canberra – have developed techniques to test what nutrient levels marine plants need to survive. The research, which studied

nutrient levels back to the last Ice Age and beyond, sheds new light on the impact of carbon dioxide on the planet.

The researchers say that with carbon dioxide levels predicted to rise due to the continued burning of fossil fuels it is essential to understand what stimulates the growth of marine algae.

“Our study revealed that marine plants help to control the level of carbon dioxide released in the atmosphere,” said Dr. Ellwood.

“Understanding the distributions of key nutrients such as phosphate, nitrate and silicate in the surface and deep-ocean is essential to understand the method by which marine plants influenced the drawdown of atmospheric [carbon dioxide](#) in the past,” he added.

Through their research Dr. Ellwood and Professor Maher have been able to monitor changes in [ocean](#) nutrient levels back to the last ice age and beyond.

“This research reconstructed the distribution of nutrients in the Southern Ocean using the silicon isotope composition of fossil marine sponges,” Dr. Ellwood said.

Professor Maher said “this is the first time that scientists have had a complete historical picture of nutrients in the Southern Ocean. These findings allow us to better understand the role [marine plants](#) will play in the marine carbon cycle and the how it is likely to be impacted from burning fossil fuel burning.”

More information: The researchers’ paper: *‘Glacial silicic acid concentrations in the Southern Ocean: Higher concentrations in the Pacific Sector’* is published in the most recent *Science Express*.

Provided by Australian National University

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