

New PhD project @ Archaeology and Natural History, ANU 2007-2009

Holocene climatic variability and human impact in the central Pacific



There is an increasing interest to try to resolve questions of environmental change in the southwest Pacific during the Holocene, in particular the history of the El Niño-Southern Oscillation (ENSO) phenomenon and its overlap with the period of human colonisation. The islands of the central Pacific provide an ideal situation to test assumptions about climate change and human impact as they are insular and were only settled by people only during the late Holocene.

While we have an improving appreciation of how ENSO operates in the present and the impact it has in the contemporary environment there is still some uncertainty about;

1. how long ENSO has operated,
2. how intense or variable it has been during the course of its existence,
3. how the terrestrial environment has responded,
4. the intersection of ENSO with human activities.

In the Pacific, the history of ENSO is largely being studied through the high-resolution records provided by coral growth bands. In general, these are century scale data sets with annual or seasonal resolution, detecting the subtle changes in sea surface temperature that are associated with El Niño events. High-resolution terrestrial records that have a decade or less between data points are therefore needed as comparative data sets to examine the impact of this phenomenon on the terrestrial environment. However, nearly all the pollen records studied from the tropical south Pacific are less than 6000 years old with centuries between data points. As a result they are unsuitable for assessing rates of change or the impact of short-term climatic variability and are equivocal when it comes to assessing the various elements that contribute to fire histories.

The successful PhD candidate will work on the large crater lakes of Wallis Island in the central Pacific. By utilising a variety of palaeoenvironmental proxies, the student will produce some of the first high-resolution terrestrial records from the central Pacific, providing a much-needed perspective on the intersection of climate variability and human activity and their respective impacts on Pacific island landscapes.

Resources and associations: This is a well-resourced project conducted on established sites with an extensive palaeoecological research history. You will join a vibrant palaeoecological and archaeological group at ANU where you will have access to state-of-the-art laboratory facilities. You will be enrolled in the Archaeology and Palaeoanthropology Graduate Program and be based in the Department of Archaeology and Natural History, RSPAS.

Background of candidates:

We are seeking highly motivated and enthusiastic students with a background in biology, geography, archaeology, environmental science, or similar. Some field experience would be an advantage. A first class honours or research masters in a relevant field is required.

Applications and closing dates for international (IPRS) and local (APA) scholarships:

Interested applicants should submit an application for a graduate scholarship to ANU. *The deadline for receipt of IPRS applications from international students is 31st August 2006; for APA/ANU/GSS scholarships for Australian and New Zealand students the deadline is 31st October 2006.* RSPAS also has funding available for tuition and full scholarships for outstanding students. The successful candidate will be expected to commence between 2nd Jan and 31st Mar 2006. Application forms for both international (IPRS) and local (APA) scholarships are available at <http://www.anu.edu.au/sas/forms/>

For further information about this project contact:

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Relevant web links:

PalaeoWorks <http://palaeoworks.anu.edu.au/>

Department of Archaeology and Natural History <http://rspas.anu.edu.au/anh/>

Australian National University Graduate School <http://www.anu.edu.au/graduate/scholarships/>