FINE RESOLUTION AMS ^{14}C CHRONOLOGY FOR LUNETTE-LAKE SEDIMENT SEQUENCES, LAKE BOLAC, VICTORIA

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Lunette-lakes have the potential to provide palaeoenvironmental records which are two-fold - the palaeoecological record from lake sediments and the somewhat independent geomorphological and sedimentological record from lunettes. However, it is possible that while the lake sediment sequences present palaeoecological records which cover extensive periods of time, these sequences may also contain discontinuities indicative of deflation of sediments from the lake floor to the dune during periods of aridity. If detected, such hiatuses are useful indicators of dry lake phases, and in turn of effective precipitation, and may be interpreted as specific lunette building episodes. Hiatuses may be identified in lake sediment records by the presence of pedogenic zones which are unfavourable for pollen deposition and/or fossilisation, or more accurately, by fine-resolution dating.

This study aims to provide a fine-resolution chronology for lake sediment records from Lakes Bolac and Turangmoroke, located within the drier part of the Western Plains, Victoria. These lakes are expected to be sensitive to subtle climate and vegetation variability and have long been recognised as archaeologically rich, bearing stone tools, hearth and other cultural materials dated to the late Pleistocene (Horton, 1984; former Victorian Aboriginal Survey, unpublished data). Fine-resolution chronological control has rarely been attempted in this sedimentary and (semi-arid) climatic context owing to the paucity of material available for conventional ^{14}C dating. However, pollen and microscopic charcoal in the lake sediments at Bolac and Turangmoroke are suitable for AMS age determination with the most important sedimentary section well within the range of ^{14}C making them ideal records for such a study. The project is supported by a AINSE Postgraduate Award Special Grant and recent dating results have substantially increased chronostratigraphic interpretation of concurrent palaeoecological and sedimentological work in progress.

Reference:

Horton, D.R. (1984) 'Red Kangaroos: Last of the Megafauna' in Martin, P.S. and Klein, R.G. (eds) *Quaternary Extinctions* University of Arizona Press, Tuscan.