

## Modelling sites and landscapes in the central Murray River valley

Jessie Birkett-Rees<sup>1</sup>, Jillian Garvey<sup>2</sup>, Darren Perry<sup>3</sup> and Jacqui Tumney<sup>2</sup>

<sup>1</sup> Monash University, Melbourne

<sup>2</sup> La Trobe University, Melbourne

<sup>3</sup> Ngintait Traditional Owners

Investigating the chronology and nature of colonisation of the Central Murray River region in far north-western Victoria has broad implications for our understanding of culture, climate and change in eastern Australia. The cultural landscape of Trust for Nature’s Ned’s Corner Station and the adjacent Murray-Sunset National Park (*Yanga Nowie*) provide a rich record, including artefact scatters on late Pleistocene and Holocene landforms, stone quarries indicating long-term land use, and the Murray River dunes which form a sacred landscape containing the largest extent of human burials on the continent.

Geospatial analyses and data visualisation techniques have much to offer archaeology and are assisting us to model long-term, large scale changes in physical and cultural landscapes. Modelling the varied cultural record within an integrated study of landform development and palaeoenvironmental context provides a method by which to address the human occupation and use of the central Murray River. We present a method of geospatial analysis, drawing on machine learning technology, which develops a predictive distribution surface for different types of archaeological sites. Beyond this, we can also interrogate the existing cultural and physical landscape to determine the relative influence of different variables on the presence of archaeological sites. This is allowing us to further investigate human occupation of the region and approach questions of long-term behavioural responses and adaptive strategies to environmental change.

