
Submerged Landscapes and Deep History of Sea Country in Western Australia

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Abstract

Given the current time range, 65,000 to 50,000 years ago, for earliest human colonisation of the Australian continent, first landfall and the earliest processes of settlement and dispersal must have occurred in coastal territory that is now under water. Yet, despite the critical relevance and considerable extent of this now-drowned territory, relatively little underwater exploration has so far taken place in Australia. Here, we report on the preliminary results of a project that is one of the first in Australia to examine the drowned continental shelf in a systematic way and to seek to integrate the existing on-land terrestrial record of human occupation with investigation of the drowned shelf. The area of study is the Pilbara region of Western Australia, which has a well-established 50,000-year on-land record of cave occupation, rock art, stone fish traps and shell middens. The aim of the research is to map the offshore landscape and to identify and investigate archaeological and palaeoenvironmental features using predictive archaeological modelling, underwater acoustic survey and airborne LiDAR, coring and inspection by divers. The project includes acoustic and geoarchaeological investigation and excavation of a submerged Danish shell midden, one of the few known submerged shell middens anywhere in the world, to establish whether this type of underwater feature can be discovered by remote sensing and to establish guidelines for use in underwater research elsewhere. The research is expected to promote investigation of the underwater archaeology associated with traditions of 'Sea country', to provide the first detailed modelling of an underwater archaeological landscape in Australia, a morphometric

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and marine geophysical template for the identification of key cultural features including the development of a Danish model for the prospection and identification of submerged shell middens, and the basis for comparison with similar research now being conducted in other parts of the world

Keywords: Submerged landscapes, Australia, Denmark, shell middens, rock art, underwater archaeology, LiDAR, acoustic survey