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## The timing and use of offshore islands in the Great Barrier Reef Marine Province, Queensland



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### ABSTRACT

Archaeological research on islands of the Great Barrier Reef Marine Province (GBRMP) only commenced in the mid-to-late 1970s. Initial research was exploratory and restricted in scope. Recent research on a limited number of island groups has been more focussed. Despite the large area and numerous islands some significant issues have been identified in respect to Aboriginal and Torres Strait Islander use of the area. We review these issues here and also highlight others requiring ongoing investigation. In particular we focus on the extent of Pleistocene and Holocene environmental change within the GBRMP and how this affected Aboriginal and Torres Strait Islander use of the islands. While our emphasis is on environmental factors we do not consider them the sole cause of change in the archaeological record or in human responses. We also address what role population change, culture contact, economic adaptation, insularity and other factors played in the complex interplay of environment and human adaptation in the GBRMP.

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### 1. Introduction

Coasts and islands were important in the colonisation of all continents, and almost no part of the human story is untouched by the influence of coastlines, marine resources and seaborne contacts (Bailey, 2004). Australia's coastal zone and numerous offshore islands (over 8000) have played a key and at times controversial role in interpretations of Aboriginal and Torres Strait Islander cultural and economic adaptations (e.g. Beaton, 1985; O'Connor, 1992; Bowdler, 1995; Mulvaney and Kamminga, 1999; Barker, 2004; Hiscock, 2008; Sim and Wallis, 2008; Rowland, 2008; McNiven et al., 2014). Wide-ranging and often intense (e.g. Stager et al., 2011) and variable (e.g. Haig et al., 2014) climate and sea-level change occurred in both the Pleistocene and Holocene. These changes impacted on the pattern of archaeological sites in space and through time and can be linked to evidence of cultural change in the archaeological record (Rowland and Ulm, 2012). The study of coastal and island archaeological sites within the context of sea-level and climate change can therefore provide considerable insights into the interrelationship between environment and culture

(e.g. Erlandson and Rick, 2010). In this paper we review archaeological research undertaken on the offshore islands of the GBRMP with a focus on sea-level and climate change. We identify broad environmental and cultural issues requiring ongoing investigation. In particular, we introduce evidence for a correlation between sea-level and climate change and changes in the archaeological record at ca 3500 BP which we will pursue further in ongoing research.

### 2. Queensland coast and islands

The length of the Queensland coastline, encompassing its offshore islands, is over 13,000 km extending through 19° of latitude (Fig. 1). From 9° to 24° S the east coast is dominated by the Great Barrier Reef (Hopley et al., 2007; Hutchings et al., 2008). In the north, the shallow Torres Strait separates Australia and New Guinea by 150 km at the most. Over 2000 islands lie off the coast of Queensland and from the Tropic of Capricorn to Cape York northward there are over 600 continental and reef islands ranging in size from ca 50,000 ha to less than 1 ha and totalling in excess of 2500 km<sup>2</sup> (Rowland, 2008; Ulm, 2011). These islands, and in particular those of the southern GBRMP, are the focus of this paper.

Rowland (1996) suggested that most continental islands of the GBRMP formed after 6000 years ago (at the time the broadly

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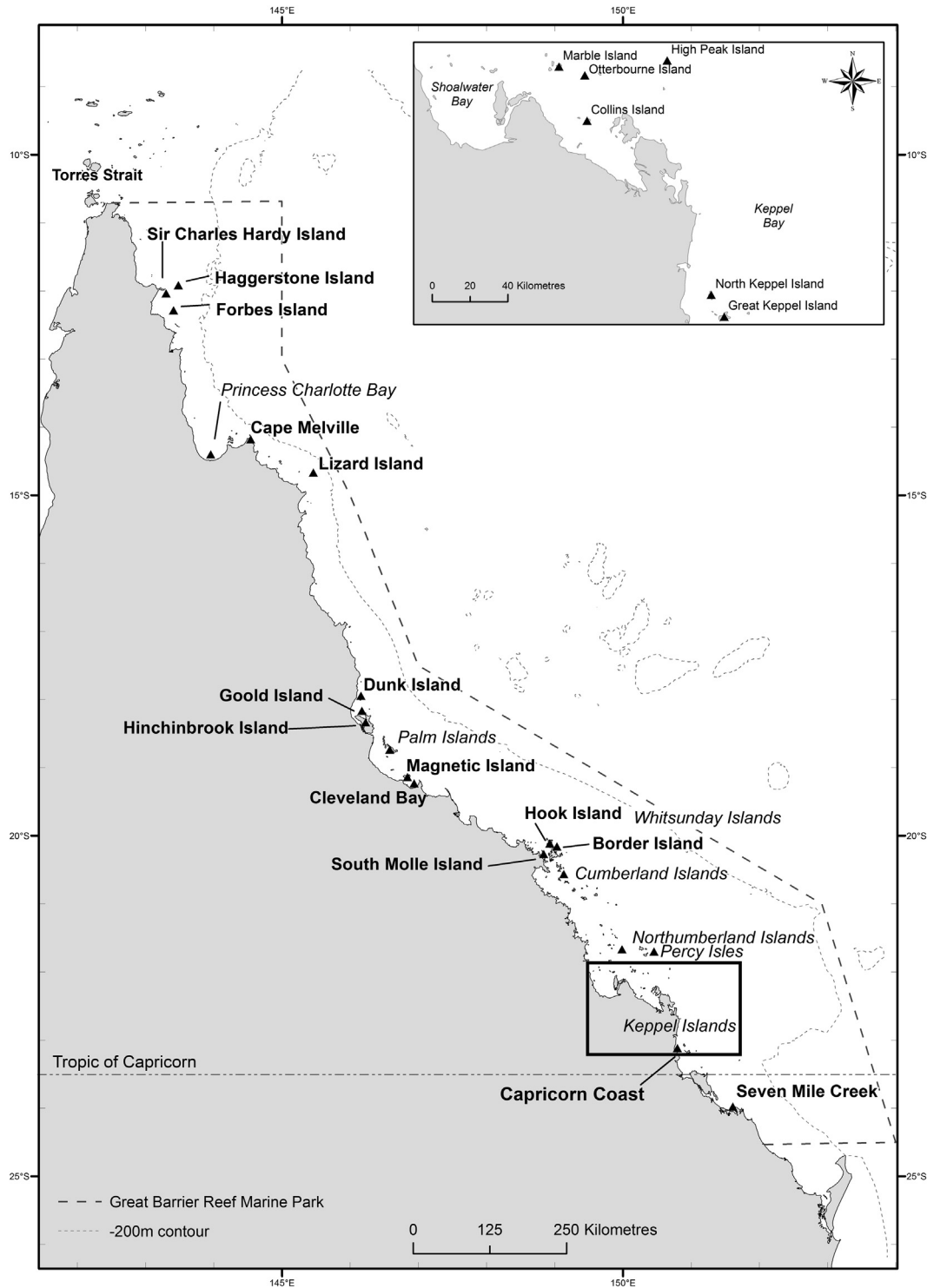


Fig. 1. Map of places mentioned in the paper. The dashed line indicates the extent of the Great Barrier Reef Marine Park.

accepted date of sea-level stabilisation) but failed to take account of the fact that some of the more distant landmasses would have become islands earlier as sea-level rose from its Pleistocene position. As pointed out by McNiven et al. (2014) for the Shoalwater Bay islands (see also Barker, 2004 for the Whitsunday Islands and Border, 1999 for the Cumberland and Northumberland Islands) High Peak Island at 40 km from the mainland formed at around

11,500 cal. BP and its modern configuration was reached at 10,000 to 9000 cal. BP. Otterbourne Island which is closer to the mainland probably reached its modern configuration at 8000 cal. BP. Other islands would not have formed until ca 7000 years ago. The recording and excavation of sites on those islands formed prior to 7000 years will be critical to an ongoing understanding of the use of marine resources in the GBRMP.

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