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Occupation duration and mobility in New Zealand prehistory: Insights from geochemical and technological analyses of an early Māori stone artefact assemblage

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ABSTRACT

Defining settlement–subsistence configurations, their long-term dynamics, and related mobility strategies is an on-going archaeological challenge. We undertake technological analyses of stone artefacts from a ~late 14th century Māori occupation at Tauroa Point, Northland, New Zealand. From the results we infer artefact production strategies, occupation duration, and population movements to and from this locale. Our analysis identified more than 13 stone types, with varied functional properties, and from sources up to 300 km away. The most abundant were obsidian, chert, silicified tuff, and fine-grained volcanics, including materials from the important source of Mayor Island and Tahanga. Use of exotic raw materials, especially when local equivalents were available, indicates population mobility and/or interaction with social groups residing elsewhere. The technological analysis considered tool production, use, and discard patterns as indicated by core and flake size, form, and cortex patterns; flake scar properties; and core-flake ratios. The results inform on differences in the nature and intensity of raw material use, patterns of artefact movement to and from the site, and occupation duration. Notably, preferential and intensive use of non-local obsidian suggests a social component to its procurement and use. Local obsidian, chert and silicified tuff were used less intensively, and possibly for different functions. Overall, an extended but not necessarily permanent occupation involving a variety of activities is indicated. The Tauroa Point site was clearly one component of a larger regional settlement system that involved significant mobility, with connections to other localities within the region, and quite possibly beyond.

1. Background to research

Understanding the spatio-temporal dynamics of human mobility and settlement is one of the most challenging arenas of archaeological study, with a long history of theoretical and analytical efforts.

Pioneering works (e.g., Sahlins, 1958; Service, 1962; Trigger, 1967; Willey, 1953) introduced useful conceptual frameworks that often were focused on understanding major cultural transitions, such as the development of agriculture or socio-political state formation, and found utility in assigning behaviours to dichotomous or categorical types (e.g., sedentary – nomadic; forager – herder – farmer). The reality, however, is often more complex, with a diversity of settlement–subsistence behaviours indicated across time and space, and within and across human populations. Additionally, there is increasing interest in tracking different forms of mobility at multiple social and demographic scales (Barnard and Wendrich, 2008; Holdaway and Douglass, 2012; Holdaway et al., 2010; Kelly, 1992). Historically, archaeologists have focused on the ability of populations to move, or interpreted mobility using ethnographic scale observations. Problematically, however, these approaches are not commensurate with the time-averaged nature of the archaeological record (see Bailey, 2007; Close, 2000; Holdaway et al., 2008; Murray, 1999) and human movement can rarely be distinguished as single events or the activity of single individuals. The challenge thus is to develop archaeological methods that are independent of ethnographic analogy and which explicitly consider the time-averaged nature of archaeology's material records (e.g., Close, 2000; Douglass et al., 2008; Turq et al., 2013). To this end, Close (2000) usefully distinguishes between the 'hard evidence' of *movement* as recovered from the material record versus *mobility*, which she argues is a conceptual inference derived from multiple measures of movement. In this paper, we integrate geochemical and technological approaches to inform on dimensions of artefact movement and, by extension,

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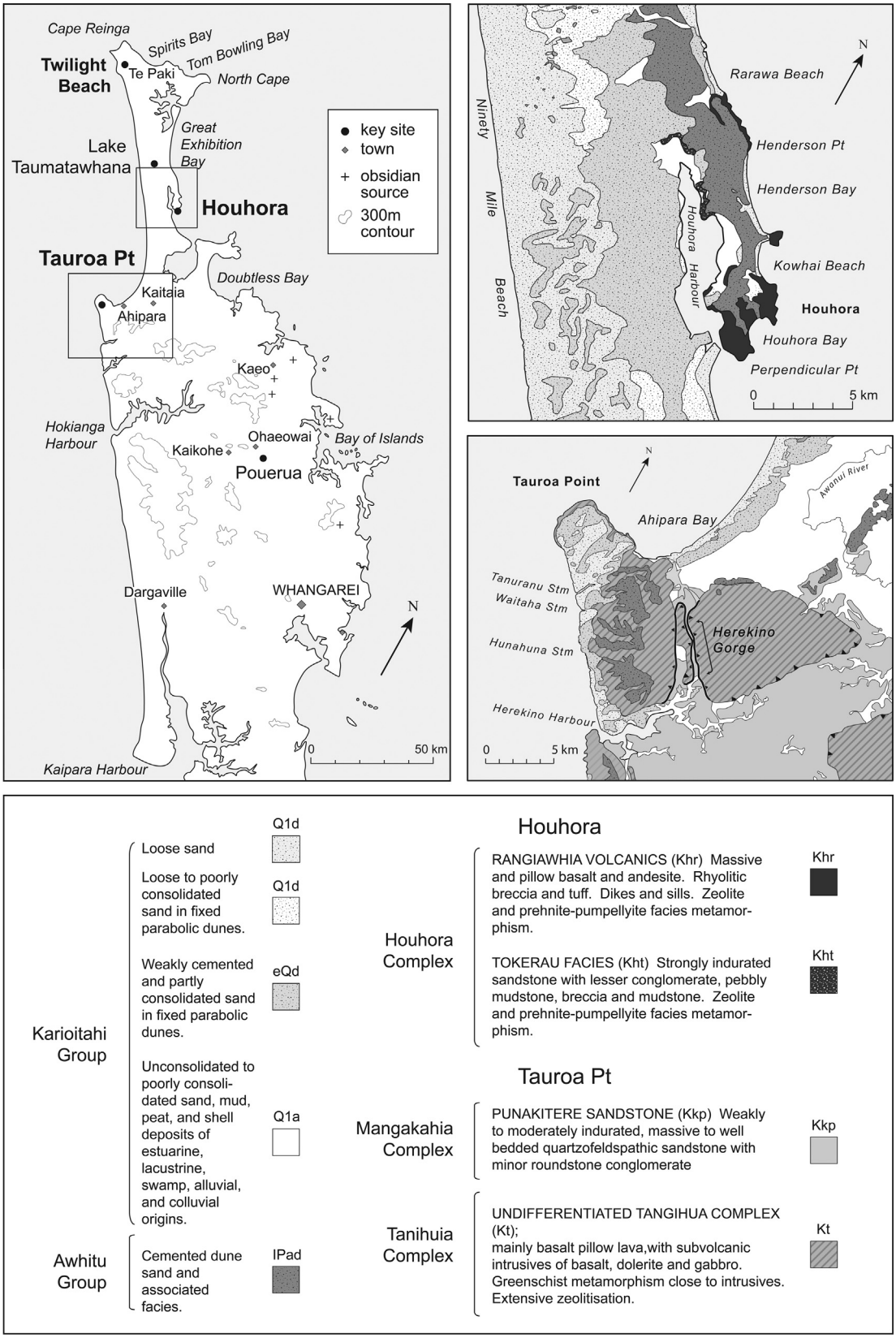

Fig. 1. Geological map of Northland, New Zealand showing rock sources and archaeological sites discussed in the text (after Isaac, 1996).