NEW ZEALAND
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ARCHAEOLOGY IN NEW ZEALAND

INVESTIGATIONS ON AHUAHU GREAT MERCURY ISLAND 2012

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Ahuahu Great Mercury Island lies off the east coast of the Coromandel Peninsula, approximately 6 km from Opito on the Kuaotunu Peninsula (Figure 1). A major long-term archaeological project on the island is underway, and the February 2012 field season was to evaluate the logistics of accessing and working on the island. The Ahuahu Great Mercury Island Archaeological project is a partnership between The University of Auckland and Auckland War Memorial Museum, in collaboration with Sir Michael Fay representing the landowners, and Ngati Hei of Wharekaho.

Ahuahu Great Mercury Island is approximately 1730 hectares in extent and is currently farmed with approximately half in pasture grass, 780 ha planted in pine trees and the remaining area in native vegetation. Due to the relatively low impact farming of sheep and cattle, and the absence of ribbon housing development, the archaeological landscape is better preserved than on the mainland.

Geologically the island consists of three parts (Hayward 1976). The northern part is largely made up of more recently deposited andesite over the older rhyolite material which makes up the southern part of the island. There are intrusions of basalt in the northwest at Tamewhera, at Paritu in the southwest, and on the northern coast. The two higher parts of the island are joined by a low sand tombolo with more recent dune sand overlying older weathered dunes. The southern part of the island, excluding the coastal fringe and stream catchment areas, has been planted in pine trees and has weathered clay derived from rhyolitic parent material with little topsoil development and is relatively infertile, possibly due to kauri vegetation in the past forming polzol soils (Wright 1976). The majority of the coastline of the island is low cliff or rocky shore. There are small sandy bays on the south coast, and the central tombolo area has sand beaches on each side. Huruhi Harbour, oriented north west south east, also has rocky shore or scarps around the margin. A notable feature of the island is White Cliffs on the southeast coast. These are vertical cliffs approximately 200 m high and visible from some distance out at sea. The island has natural chert sources, some of which is very good flaking quality,

Figure 1. Ahuahu Great Mercury Island showing places referred to in the text.

and petrified wood. Some of the basalt may also be suitable for flaking, and has been used for ovenstones.

Previous archaeological work includes an expedition by Jack Golson in 1954-55 when a terrace on Stingray Point Pa/Matakawau (T10/169) was excavated (Golson 1955, Ambrose 2004), revealing two large storage pits with a complicated network of drains and multiple postholes in the floor of each pit. During an extended stay on the island in 1970 Steve Edson recorded 125 sites in the NZAA Site Recording Scheme, and used the information in an MA thesis (Edson 1973). An eroding dune site known as Te Mataku (T10/358) in a small bay to the north of Coralie Bay was also surface collected. This material, now held in Auckland Museum, contained moa bone and egg shell, dog, bird and

fish bone, flakes of basalt, obsidian and chert, adzes, drill points, and sandstone files. Further survey work was carried out by Louise Furey (1983) during vegetation crushing and preparation of a large part of the southern half of the island for planting in pine trees. Excavation of Waipirau Pa (T10/323) on the west side of Huruhi Harbour was carried out by Geoff Irwin of the Anthropology Department, The University of Auckland, in 1984. This investigation, which uncovered shell midden and a basalt working area, in addition to storage pits, firescoops and postholes, was preliminary to his study of settlement patterns and spatial approaches to pa which focused on the Poutu Peninsula (Irwin 1985).

A severe weather event in 2008 caused extensive erosion on the dunes at Whites Beach on western side of the central tombolo. The vertical eroding face of the dune contained occupation evidence in the form of intermittent dark charcoal staining with eroding stone artefacts and shell midden over a 600 m distance. Three site numbers were assigned to the visible evidence, and samples of material taken from T10/944 for analysis. Sea mammal bone, dog and fish bone, shellfish, and stone artefacts were recovered (Furey 2009). This visit was the catalyst for the Great Mercury Island Archaeological Project, initiated by Sir Michael Fay, to investigate the settlement history of the island.

Great Mercury Island is in close proximity to Opito where numerous early occupation sites have been recorded and excavated. Opito is also the source of Tahanga basalt, used for adzes and other tools. Concentrations of basalt flakes present on most beaches down the east coast of the Coromandel Peninsula are associated with occupation sites and are the remains of secondary working areas where adze blanks, roughly shaped at the quarry, were shaped and finished (Turner and Bonica 1994). Great Mercury Island is no exception and there are numerous flakes scattered over the island in erosion scars, and also in concentrations in some sites and on the harbour foreshore. There are 21 recorded pa, garden areas of different types predominantly in the northern half of the island, and wetlands with potential for environmental data.

The objectives of the project are to gather data relevant to colonization, settlement, mobility, changing resource exploitation and socio-political strategies over time. There will also be an emphasis on environmental data including geomorphology, vegetation change and soil nutrient dynamics. Initially two areas will be the focus of archaeological activity: the tombolo and surrounding slopes, and the large garden complex covering several hectares consisting of terraces, stone alignments and stone faced terraces near Tamewhera Pa.

Most importantly a project running over a number of years will examine the archaeology of the island in some detail and will allow the archaeology of the nearby mainland sites of Opito and the remainder of the Coromandel Peninsula to be placed into context and explained more fully. There have been

very few regional research studies carried out, notably the Wairarapa Project (Leach and Leach 1976), the Southern Hunters Project (Anderson 1982), the Chathams Island Project (Sutton 1980) and smaller projects such as the Pouerua Project in Northland (Sutton 1990, 1993; Sutton et al. 2003) and Motutapu Island (Davidson 1978). This project will have a wider focus than other regional studies and be of greater relevance than the southern projects for interpreting northern North Island archaeology. Most importantly however, large projects generate enthusiasm by new generations of archaeologists and it is anticipated that the data will be used by students at post-graduate level to develop new research ideas and theoretical approaches.

Figure 2. T10/944 (EA 1) excavation area

Two sites, a dune site and a garden area, in the central part of the island were excavated by The University of Auckland Anthropology Department Field School between 13-26 February 2012. The dune site (T10/944), recorded in 2008, was relocated beneath 1.6 m of more recent sand overburden. The cultural layer was again exposed in profile and a T-shaped trench, in total 12 m^2, excavated into the dune to interpret the stratigraphy and provide context for what was visible in the exposed section (Figure 2). Excavation of the area was not completed in February so a small group returned to the island for a week in June 2012 to complete the excavation. There was a single occupation

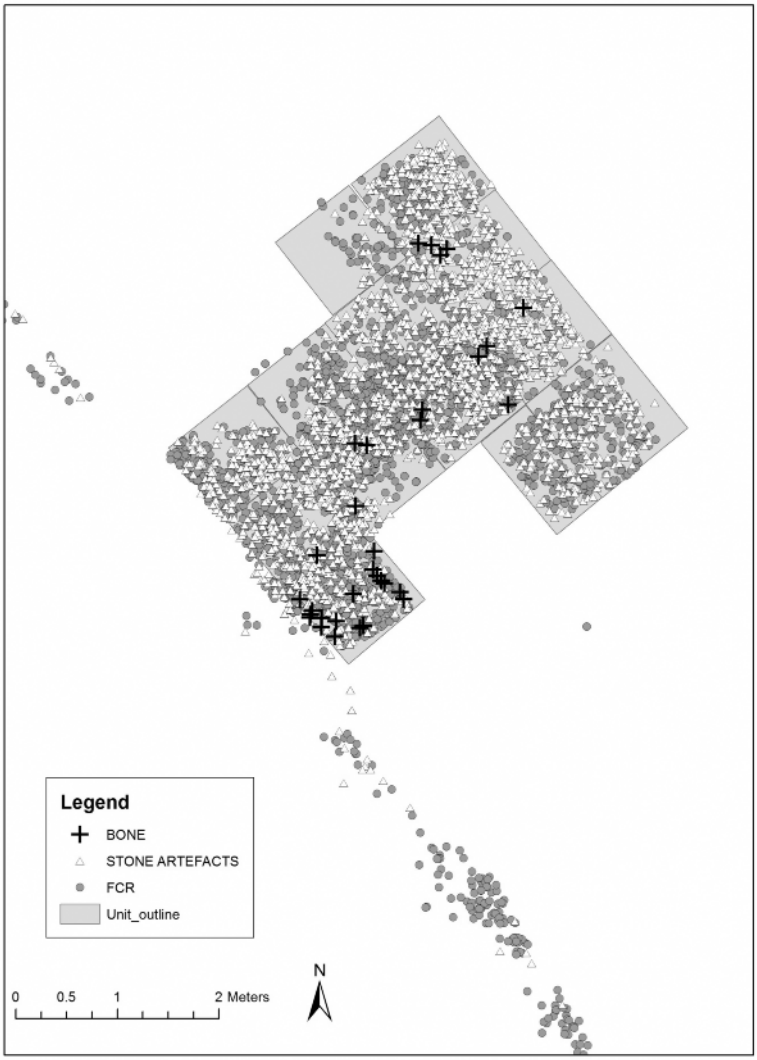

Figure 3. T10/944 (EA 1) distribution of flake artefacts and fire cracked rocks, and distribution of material eroded from profile.

layer from which approximately 2118 stone flakes of basalt, chert and obsidian were recovered. These were predominantly waste flakes although there were some flakes with secondary working, and other stone artefacts such as sandstone abraders. The large quantity of micro-flakes of all stone materials indicates stone was being worked here. A small amount of faunal material was recovered, notably shell, seal, whale and dog, and a single worked tab of moa bone. There was a single large fire feature which appeared to be responsible for the charcoal-rich sand and also the large quantity (n=3776) of heat fractured stones present throughout the 200-300 mm thick layer. The base of the feature had intact stones representing its last use, but the widespread scatter of stones suggested it been raked out and reused a number of times (Figure 3). Four postholes, fortuitously exposed in the eastern wall of the excavation, indicated an associated structure: stones were present to one side of each posthole to support the post.

A robotic total station theodolite was used to record the position of each stone flake and each thermally altered rock in three dimensions, and will allow analysis and reconstruction of the depositional process. The stone material has not yet been analysed in detail but sourcing studies have been carried out on the obsidian and the basalt indicating that material was being imported from Mayor Island, Hahei, Cooks Beach and Tahanga at Opito. A radiocarbon age estimate on tuatua shells recovered in 2008 gave a range of AD1420-1640 at 95.4% confidence (Wk25355, 807±30 BP).

An excavation area of 7 m^2 on the top of the high dune back from the beach consisted of a number of test squares placed over anomalies identified in the geophysical survey. Fire features, postholes and flaked stone of basalt, chert and obsidian were uncovered, along with a small quantity of fishbone and shell midden. In this excavation the compact weathered pre-Holocene sand was present approximately .5 m below the surface of the dune. The small number of features identified does not reflect the intensity of occupation on the top of the dune: each erosion scarp, or denuded area of sand, reveals stone flakes.

The garden site (T10/356) at the south end of the dune system was a series of single boulders forming lines running down a northwest facing slope (Figure 4). A range of investigative techniques were used including detailed mapping of surface features using a robotic total station theodolite, creation of a 3D model using a Leica laser scanner, and excavation of small trenches across and between selected stone rows. Additional small test pits were dug through and outside the garden area to help understand geomorphological changes and soil development.

Excavations documented horticultural practices including the construction of boulder alignments, garden soils between alignments, and boulder-filled ditches running down the slope of the garden (Davies and

Ladefoged, 2013). Soil analysis will focus on present soil fertility and the implications for long term changes in the soil resource base through measurement of resin-extractable Phosphorus (P), and exchangeable cations and cation exchange capability, with a view to establishing the horticultural potential of the soils and the impact of horticultural activity.

Charcoal samples from both sites have been identified to allow environmental reconstruction at the time of occupation. Selected samples can now be processed at the University of Waikato Radiocarbon Laboratory.

The 2013 Field School will be working on the ridge to the north of the tombolo, approximately 100 m upslope from the defences of Stingray Point Pa/Matakawau.

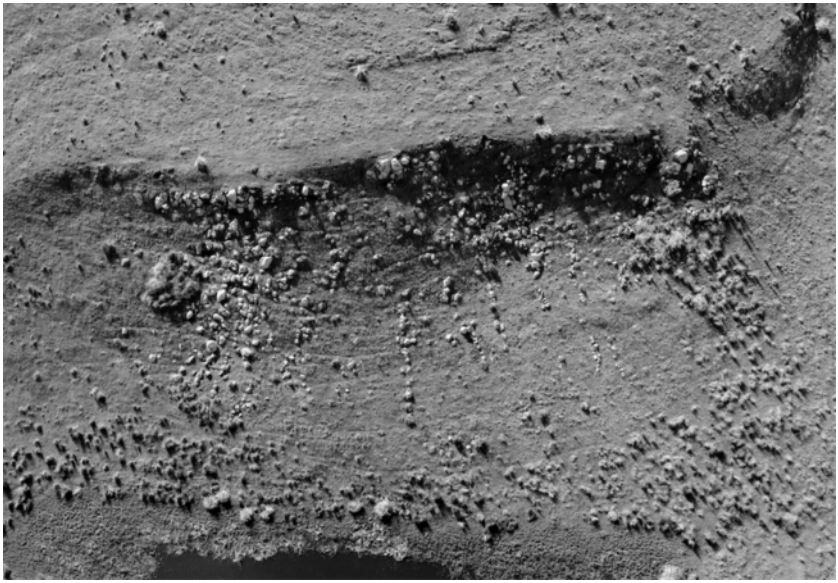

Figure 4. T10/356 stone alignments. (Photo T. Mackrell)

Acknowledgements

Thanks to Peter Tiki Johnston and Peter Matai Johnston for their involvement, and to the Ngati Hei Trust Board. Sir Michael Fay has provided on-island support without which this work could not have been carried out. Thanks also to BJ and Mike on the island for their assistance.

The students and support staff from 2012 were good company and hard workers, and it was encouraging to see the enthusiasm of the next generation of archaeologists.

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