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Radiocarbon dates from some small undefended archaeological sites with houses on Motutapu Island, Inner Hauraki Gulf

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Introduction

This paper reports seven C14 dates from five small undefended sites investigated on Motutapu during University of Auckland archaeological field schools, 1995-1998, and not previously reported (Figure 1). These five sites produced a range of settlement evidence comparable with earlier excavations by Janet Davidson and Anne Leahy at sites R10/31 and R10/38 at Station Bay (Davidson 1970, Leahy 1970). Houses were excavated at three sites in 1995-1997 and there was possible, but incomplete, evidence of them at the other two. A sixth undated site with a house was excavated in 1998 (Ladefoged and Wallace 2010), and has an age estimate based on the shellfish species composition of its midden. Most of these sites, if not all, had multiple occupations. Similar small household units appear to range in age from the 15th to the 18th centuries AD.

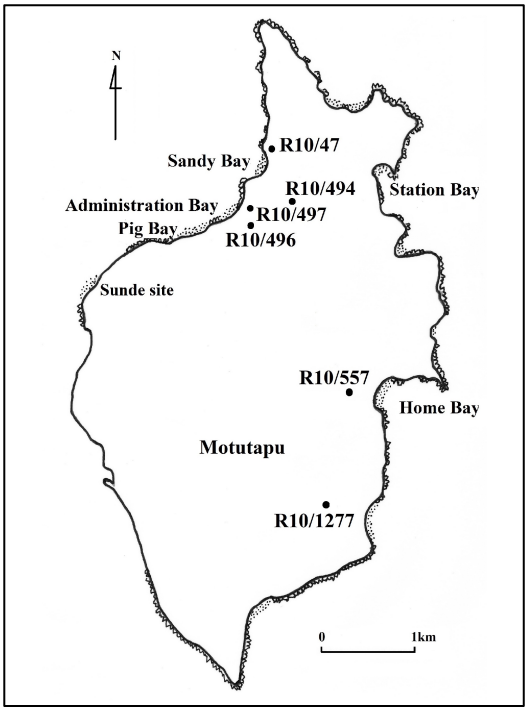

Figure 1. Archaeological sites excavated in 1995-1998.

Maori dwellings must have been very common in pre-European times, but they have not been so common archaeologically. Prior excavations on Ponui Island, also in the inner Hauraki Gulf, had found houses on terraces on pā, with walls and drains set back into the base of the scarps behind, and sometimes the back corners of these houses could be seen from the surface (Irwin 2020).

Undefended pit and terrace sites are abundant on volcanically fertile Motutapu and we were interested to see if similar houses could be found with them.

An opportunity arose when the Motutapu Restoration Trust initiated the revegetation of the island with a plan to reintroduce endangered birds in a pest-free habitat. In association with DOC and Ngai Tai Ki Tamaki Trust, these field schools re-surveyed large areas of the island so that forest planting could avoid encroaching on archaeological sites (Irwin *et al*. 1996). Sites were mapped by plane table and data was entered into a GIS at a feature level in order to study the distribution of features and the structure of sites and, subsequently, Moira Doherty experimented with defining sites on the basis of varying distances between surface features (Doherty 1996).

In 1995 initial test excavations were carried out at R10/47, R10/497 and R10/1277 (Figure 1). R10/497 was the most promising, so work was focussed there in 1995 and again in 1996. In 1997 excavations were carried out at R10/496 and R10/557. The field supervisors included, at various times, Simon Best, Caroline Phillips, Michael Taylor, Marianne Turner, Rod Wallace and me. The project continued in 1998 when R10/494 was excavated by Thegn Ladefoged and Rod Wallace (2010).

R10/497

This was a small and apparently typical Motutapu terrace site above Administration Bay. It revealed a house located at the back of a terrace with successive drains at the uphill side (Figure 2). There were concentrations of flaked stone mainly in the porch but also at the back of the house. Contemporary with the house on the same terrace, were several intercutting kumara storage pits. Downslope from these was an area of concentrated shell midden spilling over the front of the terrace. There was also an extensive, but later, scatter of cooking stones and worked local greywacke over parts of the site.

The house was 5.5 metres long, including a porch at the northern end, and nearly three metres wide. Drains along the eastern side were dug on three occasions and were all associated with the same adjacent house wall and floor. The kumara pits were also replaced a comparable number of times. Regarding periodicity, the pits would have been re-dug for separate harvests at least a year apart. We might conclude that the house remained in use permanently or seasonally over the period of a decade or more.

Large numbers of obsidian and greywacke flakes were found around the house, but there were very few flakes near the pits and no midden in the house. There

was abundant evidence for manufacture and reworking of adzes of greywacke available on the beach and bluffs close below the site in the form of adze roughouts, waste flakes, hammerstones and grindstones, and also for the manufacture and use of two-piece fishhooks made from dog bone (Watson 2004). There were 806 pieces of obsidian including 360 flakes, and pXRF analysis attributed 183 of these to Great Barrier, 151 to Fanal/Burgess Island, 21 to Mayor Island, three to Coromandel and two to Northland (Milicich 2008).

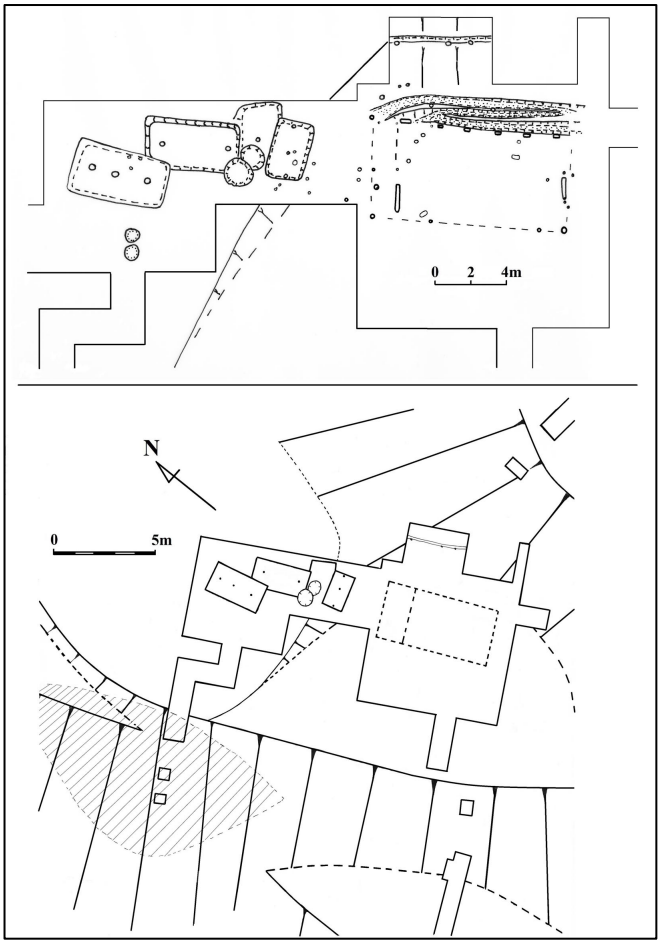

Figure 2. R10/497 had drains and pits rebuilt during an occupation of a decade or more.

The midden had a surface layer of shell crushed by stock trampling, but underlain by nearly a half-metre of midden and ovenstones in primary deposition. The midden, as described by Szabo (1999), was almost pure shell, and had numerous lenses of shell that had been burnt *in situ*, indicating cooking activity on the spot. There were two C14 dates from R10/497 (Table 1). Wk 5976 came from the midden, stratigraphically associated with the pits and the house. Wk 5975 came from a fireplace in a deposit above and much later than the house, above its western wall.

A possible interpretation of the site was that it was used by a small, presumably family group, who over-wintered their kumara on-site, suggesting possible year-round occupation. This group supported itself by fishing, shellfish gathering and kumara growing and was heavily engaged in using the locally available greywacke for adze manufacture.

R10/496

This site is a flight of terraces inland from Administration Bay on a slope leading up towards the World War II guns on the hilltop. The top-most terrace was cut through Rangitoto Ash into the underlying clay (Figure 3). A house was set with its side against the back of the terrace in what now seems to be a fairly typical location, and was found at the same level as the last of a row of kumara pits arranged along the front of the terrace. The house measured six metres long, plus around another metre for a porch, and some three metres wide. Some of the postholes indicate that the frame was constructed of squared and dressed timbers. At the front to the house there was a slight rise in floor level up to the porch, which is similar to low steps at the front of two houses excavated at S11/21 on Ponui (Irwin 2020). In contrast to R10/497, the floor of this house was very clean with only a small number of obsidian flakes and a meagre scatter of charcoal; however, evidence of stone working was evident on one of the lower terraces of the site. The sample for a single C14 date (Wk 5878) was taken from the floor of the house (Table 1).

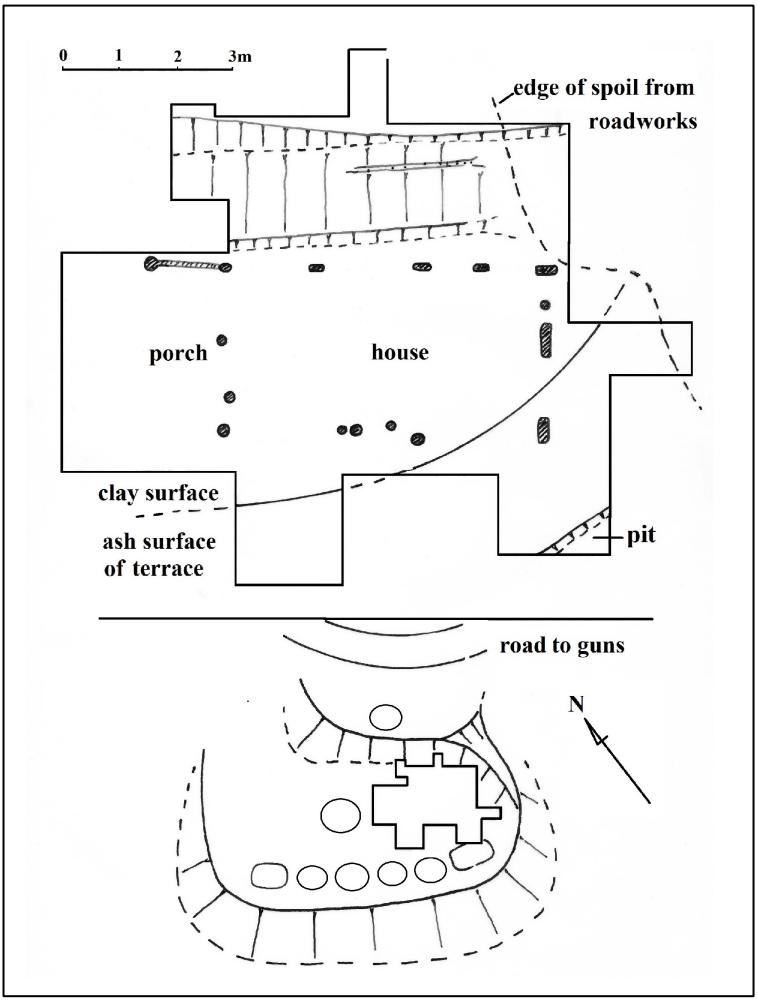

Figure 3. R10/496: A house and kumara pits on the top terrace.

Table 1. Radiocarbon dates from Motutapu sites excavated 1995-1997

Site No. and context	Lab No.	Material	CRA	δ13c[2]	Years AD at 95.4% probability
R10/497 midden associated with house	Wk 5976	shell *Dosinia anus*	800±40 BP	0.8±0.2	1420-1660 (95.4%)
R10/497 fireplace from later occupation	Wk 5975	charcoal	% modern 98.0±0.4	-26.9±0.4	1670-1780 (31.0%) 1790-1960 (64.4%)
R10/496 house floor	Wk 5878	charcoal	460±50 BP	-25.5±0.2	1410-1520 (70.4%) 1530-1630 ((25.0%)
R10/557 Terrace 6 house	Wk 5880	charcoal	350±40 BP	-26.7±0.2	1460-1650 (95.4%)
R10/557 Terrace 1 kumara pit	Wk 5879	charcoal	210±40 BP	-26.0±0.2	1640-1900 (87.4%) 1920-1960 (8.0%)
R10/1277 terrace	Wk 5977	charcoal	270±40 BP	-26.0±0.2	1500-1590 (13.0%) 1610-1690 (42.4%) 1720-1810 (40.0%)
R10/47 midden	Wk 5978	shell Tuatua	620±40 BP	1.6±0.2	1510-1870 (95.4%)

(Delta R = -7±52)

R10/557

This site comprised a flight of terraces on a hillside facing eastwards over Home Bay. Two terraces were selected for excavation - the lowest, Terrace 1, and the one second from the top, Terrace 6 (Figure 4). On Terrace 6, a house six metres long and nearly three metres wide, with a small drain at each end, was found on a living surface on top of the clay natural in association with two pits (Figure 5), and a C14 sample (Wk 5880) was collected from a small fireplace adjacent to the house (Table 1).

On Terrace 1, a trench six metres long and 0.80 metres wide was set across the eastern side of the terrace from the back to the front, and intercepted two kumara storage pits, one of which, at least, had a buttress end. Both of the pits had been filled with spoil and were sealed by an overlying midden layer. A C14 sample (Wk 5879) came from a fireplace within the midden, so the pits themselves were earlier, but remain undated. There would have been enough room for a house in the unexcavated part of Terrace 1, as there was on Terrace 6, but it was not investigated. The available dates for the two excavated terraces at R10/557 represent two distinct episodes of occupation.

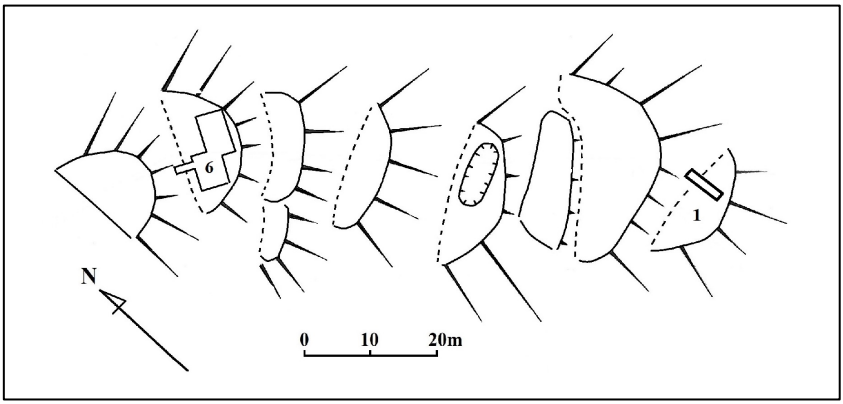

Figure 4. R10/557: Excavations were made on Terraces 1 and 6.

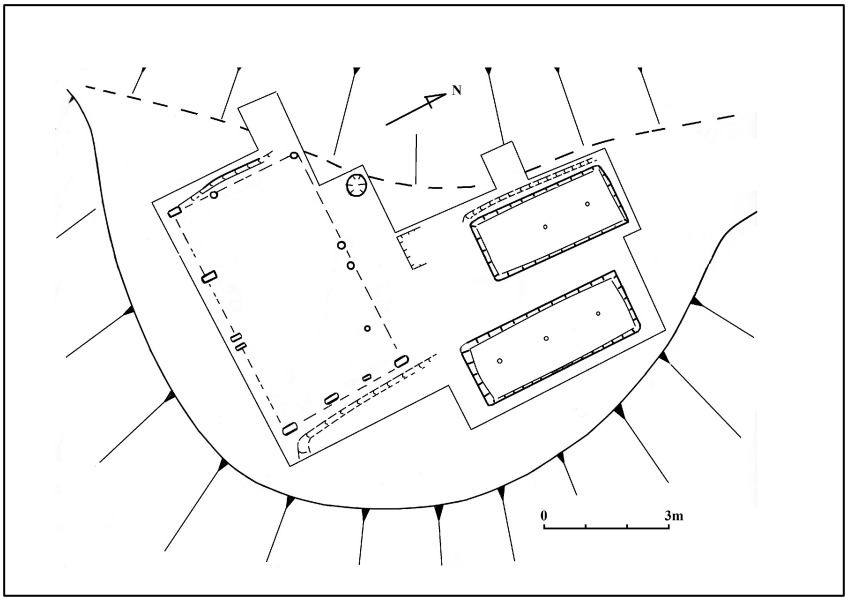

Figure 5. R10/557: Excavated structures on Terrace 6.

R10/494

This small site lay on a north-facing ridge line above a valley draining into Sandy Bay some 300 metres to the west. In 1998 three excavation units found a house, a kumara storage pit and a probable cooking area, as reported by Ladefoged and Wallace (2010). The back of the house and one side were set back into the slope with a drain around both. The internal dimensions were 4.0 x 3.1 metres with a 1.6 metre porch extension. Artefacts described in the report include 758 obsidian pieces of which 692 were on the house floor. The pit measured 5.4 x 3.0 metres with two rows of posts and a buttress step at the entrance.

R10/47 and R10/1277

There are single C14 dates from each of these two sites but they were investigated in 1995 in a different way to the others. At that time, DOC archaeologists and iwi were interested in establishing the perimeters of archaeological sites - to avoid planting trees on them - by non-invasive geophysical methods. Following an earlier project (Ross 1994), Sarah Ross and Stephanie Clout surveyed these sites with an EM-38 ground conductivity meter and trenches were dug to ground-test the results.

At R10/1277 six test trenches - covering a total area of 25 square metres - were dug over two terraces and two units from the lower terrace are relevant to this discussion. The remains of a possible house nearly three metres wide were excavated in Unit 1. The evidence consisted of parallel drains or slots, one of which was across the back of the terrace at the foot of the scarp (Figure 6). The supervisor did not uncover the whole structure, but the evidence is consistent with some known houses. A C14 sample (Wk 5977) was collected from a firescoop on the same terrace, but may not date the structure.

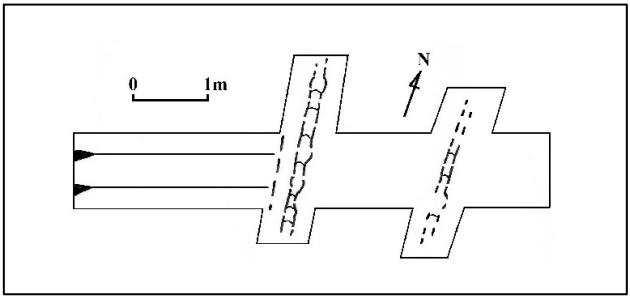

Figure 6. R10/1277: Excavation Unit 1 on the south-eastern side of the lower terrace.

R10/47 was a line of four small terraces running down a spur at the northern end of Sandy Bay. A 50-metre baseline was aligned to the long axis of the site and test units one-metre wide - in total 15 square metres - were dug at intervals at the top

of the spur and on each terrace, and the ground was probed over the wider site. On the top spur there was fireplace rake-out and midden, and there was a kumara pit on Terrace 1 estimated to measure 3.0 x 1.5 metres. Terrace 3, the largest, had a lateral drain at the foot of the scarp, which is typical of these houses, plus a number of post holes and stake holes. The bottom terrace was natural. A shell sample (Wk 5978) for dating was taken from the midden, but it was not in stratigraphic association with the possible house drain.

Discussion

It seems that similar undefended household units continued in use through time (Figure 7, Table 1). Specifically, if pā were first built on Motutapu soon after AD 1500, as on Ponui (Irwin 2020), then the R10/496 house (wk 5878) was likely pre-pa, the R10/497 house (wk 5976) was either late pre-pā or early in the pā period, and the R10/557 house on Terrace 6 (wk 5880) was contemporary with 16th century pā. The household at R10/494 has no radiocarbon date but was estimated by Szabo (2001) as a 15th or 16th century occupation on the basis of the shellfish assemblage in the midden. The terraces at R10/47 (Wk 5978) and R10/1277 (Wk 5977), with possible houses, could belong to the 17th or 18th centuries. Thus, houses of this general type existed before and after the construction of pā and are numerous, both in undefended sites and inside pā, in the inner Hauraki Gulf and probably elsewhere. Their ages range from the 15th to the 18th centuries AD.

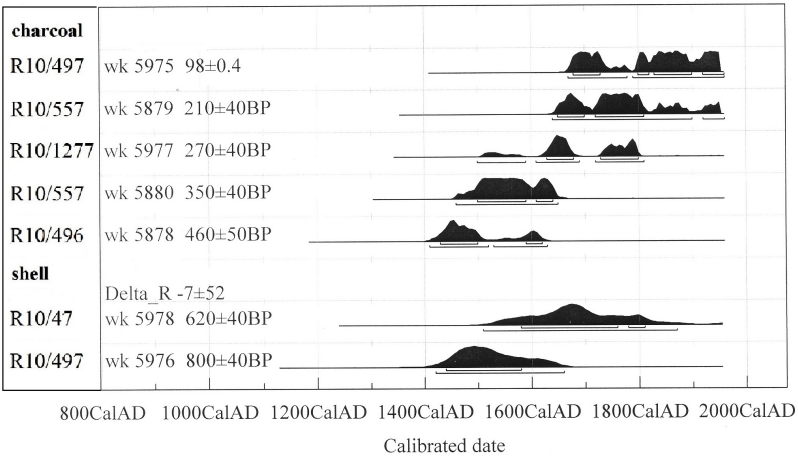

Figure 7. Calibrated C14 dates (Oxcal) from Motutapu excavations, 1995-1997. Similar house structures range from the 15th to the 18th centuries.

The small sites investigated in 1995-1998 shared elements in common with one another, and also with those excavated previously at Station Bay (Davidson 2017). They were located in a horticultural landscape with ready access to seafood and canoe landing places. When excavated they produced evidence for a house, associated kumara pits, cooking areas and accumulations of midden. All of them had imported obsidian and there was evidence for stone working. We have options for interpreting them, for instance, as semi-permanent occupations as suggested for R10/497 (above), or perhaps as seasonal camps in late pre-European times. The latter option fits with ethnohistorical research by Agnes Sullivan for the period around AD 1800, which showed that much of the population of the Tamaki isthmus dispersed to small summer camps around the Waitemata Harbour and the inner Hauraki Gulf (Sullivan n.d.).

Another point of interest is that we recorded earthwork features during survey and not sites. But when we excavated clusters of features we found them to have coherent structural, functional and chronological relationships, and they could justly be regarded as sites that were occupied at different times. It seems that the Maori earthworks we have long regarded as sites from surface evidence, have some reality. Unfortunately, with weathering and the running of cattle on fragile soils, these earthworks are becoming blurred and disappearing under our eyes.

Motutapu was not typical of northern coastal settlement patterns. While it had similar coastal middens and pā to its Hauraki Gulf neighbours, it had a much greater density of undefended sites. With fertile volcanic soil derived from Rangitoto Ash it was largely cleared of forest for gardens, unlike neighbouring Waiheke and Ponui (Irwin 2020), and it had the added bonus of adze-quality greywacke.

Motutapu archaeology was clearly related to the Auckland mainland. The volcanic lands of Tamaki Makarau were a powerhouse for horticulture and the cones provided the strongholds to defend it. The constriction of the North Island at the isthmus provided a terrestrial choke-point, whereas the shelter of the Hauraki Gulf provided ease of maritime movement. The two harbours were rich in seafood and the portages provided channels for communication and trade between east and west coasts. Auckland and its nearby islands were unique.

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