

**Archaeological investigation of site U14/3221,
350 Wairoa Road, Te Puna: final report**

**report to
The New Zealand Historic Places Trust
and
Murray and Margie Lloyd**

Matthew Campbell

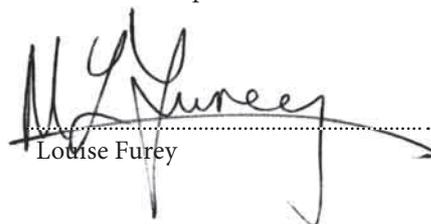
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Murray and Margie Lloyd are undertaking a rural residential subdivision on their property at 350 Wairoa Road, Te Puna, above the Wairoa River and Tauranga Harbour, Lots 1 & 4 DPS 85841 and Lots 1 & 3 DPS 78794. In particular three house sites, one on each of newly subdivided Lots 2–4 DP 361331, and the access road leading to them were the subject of archaeological investigation under authority 2005/139 issued under section 14 of the Historic Places Act 1993 by the New Zealand Historic Places Trust. An archaeological survey and assessment of effects for the property had been carried out by Charlotte Judge and Ken Phillips in July 2004. They recorded a shell midden site, U14/3221 in the New Zealand Archaeological Association site file, on the slope below Lot 4, and noted the high likelihood of further archaeological features being located on the three

lots. Monitoring of topsoil stripping on the access road and investigation of exposed features was undertaken by Siân Keith and Noel Hill on 20–22 July 2005. Monitoring of topsoil stripping and investigation of exposed features and the previously recorded midden was undertaken by Matthew Campbell on 20 March 2006.

Methodology

Topsoil was stripped from each investigation area with a 12 tonne backhoe equipped with a cleaning bucket. Features exposed in the subsoil were excavated and mapped by hand as appropriate. A 10 litre sample of midden was taken from the face of U14/3221 exposed in a farm track for analysis and radiocarbon dating.

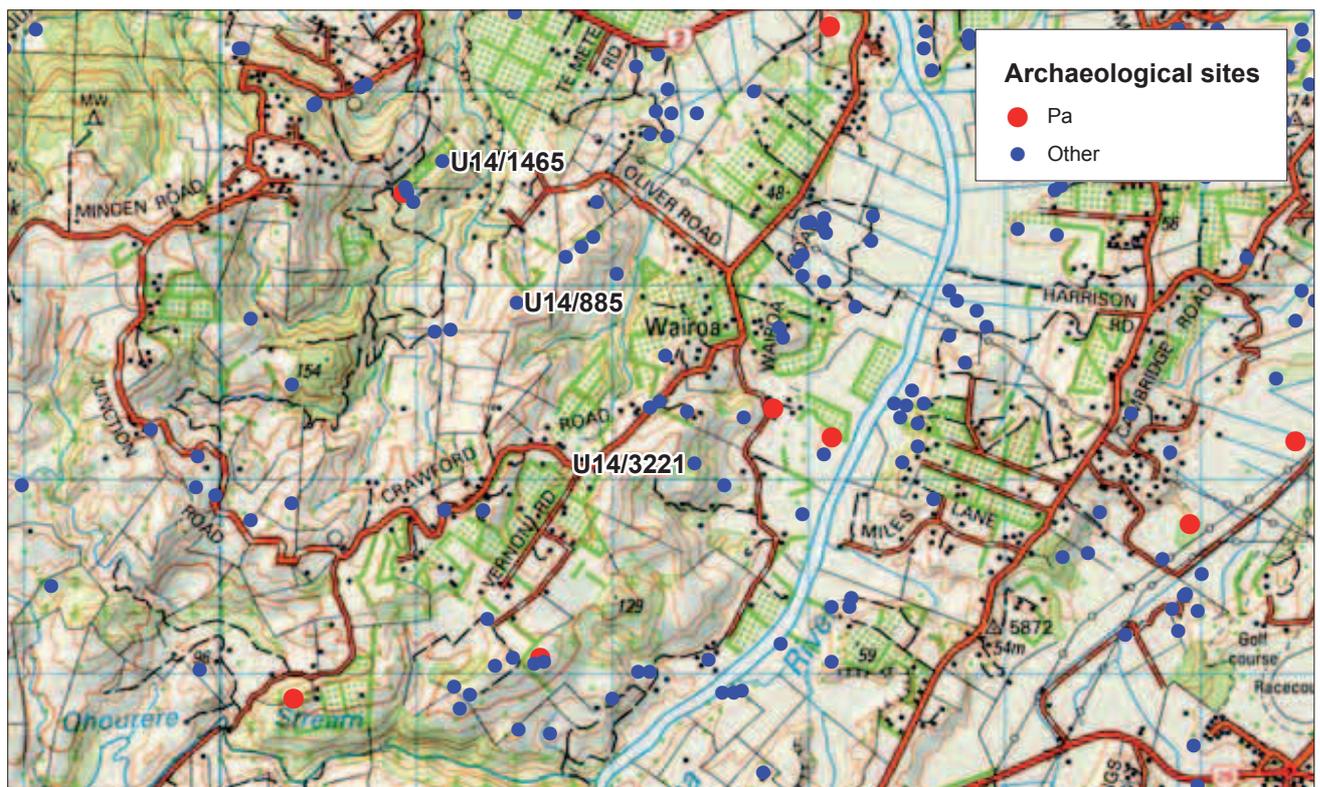


Figure 1. The location of U14/3221, showing other sites in the area. Sites mentioned in the text are labelled.

Archaeology

The access road

Only four definite features were found during the investigation of the access road (there were numerous clusters of roots that were originally mistaken for small stakeholes as they were very regular and vertical, but some still had tap root in them). Feature 1 was an oven scoop measuring 800 x 700 mm and 80 mm deep. It contained shell in a black charcoal stained matrix.

Feature 2 was a small square pit at the edge of the excavated area, 880 mm wide with 600 mm visible in the exposed surface. It was 260 mm deep. It was filled with dark, charcoal stained soil. In its base was Feature 3, a posthole 120 mm in diameter and 150 mm deep which was filled with shell.

Feature 4 was an oven scoop with near vertical sides, 1100 x 750 mm and 120 mm deep. It was filled with black, charcoal stained soil.

All these features occurred in an area of 3 x 1.5 m in the north end of the access road about 10 m from the existing access.

The house platforms

At the eastern edge of Platform 2 there were some remnant oven scoops badly disturbed by a water pipe that ran through them. These were visible as shell (pipi (*Paphies australis*) with occasional cockle (*Austrovenus stutchburyi*)) in a matrix of dark, charcoal stained soil with occasional heat cracked rocks. The deepest remaining scoop was 120 mm deep. The rest of the area appeared to be quite disturbed, probably from tree roots – Murray Lloyd informed me that pines had been harvested as recently as 2001–02 and stumps were still visible. There was also a lot of evidence of burning, but this also appeared to be related to burning trees and stumps in the historic period.

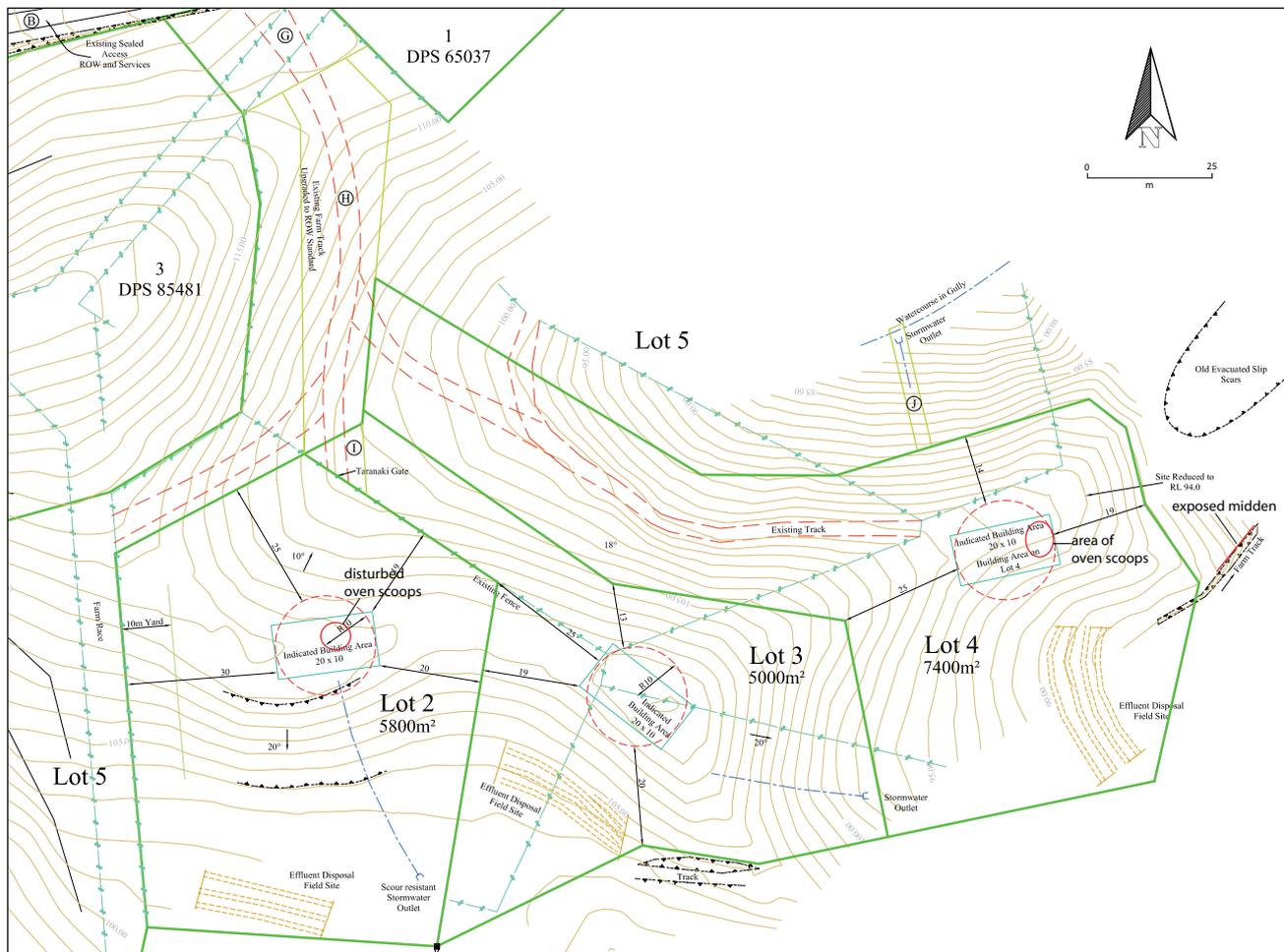


Figure 2. Location of the building platforms and archaeological features. Base data supplied by S&L Consultants.



Figure 3. Oven scoop on Platform 4: left, before excavation; right, after excavation. Scale = 0.5 m.



Figure 4. Midden exposed in the farm track. Scale = 1 m horizontal, 0.5 m vertical.

No features were observed on Platform 3, though an adze was found on the surface exposed by the backhoe (Figure 5).

At the east end of Platform 4 there were at least two oven scoops and two further features were probably truncated ovens. One of the ovens had a tree root through it but the other was relatively undisturbed. It was approximately 800 mm in diameter and, when excavated in half-section, 140 mm deep (Figure 3). The topsoil on Platform 4 was very

thin and the features were truncated, again probably as the result of disturbance from pine roots and harvesting.

On the farm track below the house platforms a shell midden was exposed in section. This was the site originally recorded by Phillips and Judge. This midden is almost certainly related to the cooking events on the ridge top above it and represents cooking waste thrown over the edge of the slope. The exposure was roughly 3 m long and up to 250 mm thick (Figure 4). The exposed face was cleaned

down with a spade and a 10 litre sample was taken for dating and analysis.

Midden analysis

The midden exposed in the farm track was sampled for dating purposes. The shell in the oven scoops was very burnt and unsuitable for dating and while it would have been possible to take charcoal samples for dating it was simpler to date the intact shell midden. A 10 litre sample of midden was taken and also analysed using conventional methods. Table 1 gives the weight of the sample before sieving, and the weight of sieved shell. 15.1% of the sample was lost by sieving, representing the soils and stone that was removed, which indicates that the shell midden here was clean and undisturbed – as much as 90% of a sample taken from a disturbed context or an oven scoop can consist of material other than shell (e.g., Campbell 2008). Table 2 shows that the midden is dominated by pipi (*Paphies australis*) with other species so uncommon as to be considered a bycatch. All these species prefer an estuarine habitat, indicating that they were probably gathered from the harbour, some 5.5 km distant. 19.8% of the midden by weight was uncountable fragments, a relatively low figure again indicating that the midden was not very disturbed – in disturbed contexts a much higher proportion of the shell is broken fragments.

volume (l)	dry weight (g)	sieved weight (g)	% loss
10	8425	7153	15.1

Table 1. Metric statistics of midden sample (shell only).

	MNI	weight (g)
Pipi (<i>Paphies australis</i>)	1064	5714
Cockle (<i>Austrovenus stutchburyi</i>)	4	2
Wheel shell (<i>Zethalia zelandica</i>)	2	2
Mud snail (<i>Amphibola crenata</i>)	2	4
Top shell (<i>Thorsitella</i> sp.)	1	<1
Shell residue		1431
Stone		57
Total	1073	7210

Table 2. Counts and weights of midden shell by species.

Artefacts

The only artefact found was a small quadrangular cross-sectioned adze of fine-grained stone, possibly sandstone, which was exposed by the digger at the interface of the topsoil and subsoil on Platform 3. There were no archaeologi-

cal features found on Platform 3. The adze had maximum dimensions of 676 mm long x 358 mm wide in the centre x 202 mm thick (Figure 5). The asymmetrical cutting edge was 407 mm wide. The surface was ground, with grinding over hammerdressing or bruising on the sides, and flaking scars on the front near the poll. The adze does not taper to the butt end, and the poll is clearly a sheared or broken surface. However, heavy haft polish on the poll indicates it was used extensively in this shortened form, and the poll probably slotted into a wooden haft socket into which it was bound by fibres.

Chronology

Twelve pipi valves from the midden were submitted to the Radiocarbon Dating Laboratory at the University of Waikato for dating. This returned a Conventional radiocarbon age of 768 ± 35 BP, which calibrates to AD 1450–1660 at a 95% confidence interval (Lab number Wk 20104). This is very similar to other dates on nearby sites (see Figure 1). Two dates were obtained from U14/885: Wk 16784, AD 1440–1620; and Wk 16785, AD 1460–1640 (Moore 2005). Two were also obtained from U14/1465: Wk 20987, AD 1460–1690; and Wk 20988 AD 1470–1760 (CFG Heritage report in preparation). This indicates an occupation of this part of Te Puna from the mid 15th to mid 17th centuries, which is similar to dates from Waimapu and Papamoa (e.g., Campbell 2004a, 2004b, 2005, 2008; Fredericksen et al 1995; Furey 2004; Gumbley and Phillips 2000; CFG Heritage report in preparation). These occupations are thought to represent a movement or expansion inland from early occupations more closely associated with the Tauranga Harbour, though these putative early sites have not been located.

Discussion

The site was originally recorded as a small midden, visible in the farm track off the end of the ridge. Investigation during topsoil stripping of the access road and there building platforms revealed some clusters of postholes and some oven scoops, but very little else apart from an isolated adze. No kumara storage pits were found, though such features are often located on hill tops where water will be less likely to accumulate. Neither was there any evidence of housing. Midden analysis showed that the midden was relatively intact, indicating that it had not been substantially disturbed since it was deposited approximately 450 years ago. Although there was no evidence directly linking the midden to the oven scoops above it, it is most probable that the midden represents waste from the cooking activities taking place on the hill top.

While there has been considerable residential, commercial and industrial subdivision and development elsewhere in the western Bay of Plenty, particularly at Papamoa but also Bethlehem, Welcome Bay and Oropi/Ohauti among



Figure 5. The adze found on Platform 3.

others, there has been much less at Te Puna, particularly in places such as this situated a few kilometres from the harbour. We are only aware of two other investigations undertaken in this general area. U14/855 was first recorded in 1982 as three large terraces spread along a 150 m length of a narrow ridge crest (see Figure 1). Much of the site had been bulldozed in the intervening period and in 2005 Moore (2005) investigated only the end terrace, where four pits were visible as surface depressions. In total he found seven pits and eight oven scoops. Some of the pits were large – Pit 1, at 5.4 x 2.9 m, or 15.6 m², is large by any standard (Law 1999). Pit 2 had an internal drain, which is an unusual feature in the free-draining volcanic soils of the Bay of Plenty. Midden was dominated by pipi and cockle (*Austrovenus stutchburyi*) which is typical of sites focussed on the Tauranga Harbour.

Site U14/1465 at Florence Lane (see Figure 1) was investigated in 2006 (CFG Heritage report in preparation). Two areas were investigated, both, like U14/885, containing evidence of cooking and kumara storage in the form of 13 pits. None of the pits were as large as Moore's Pit 1, but there was evidence of repeated occupation of the site. The sample of sites from this part of Te Puna is only three and all are fairly small; the Florence Lane sites were the largest. While the picture of pre-European archaeology at Te Puna remains sketchy the evidence so far is typical of sites in the Tauranga Harbour catchment. Further investigation will reveal how the specifics of occupation at Te Puna may differ from the general pattern as it is currently understood, and how it may contribute to the wider picture of pre-European Maori life in this part of New Zealand.

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Report on Radiocarbon Age Determination for Wk-

20104

Submitter	M Campbell
Submitter's Code	Crawford Road
Site & Location	, New Zealand
Sample Material	Papies australis
Physical Pretreatment	Surfaces cleaned. Washed in an ultrasonic bath. Tested for recrystallization: aragonite.
Chemical Pretreatment	Sample acid washed using 2 M dil. HCl for 120 seconds, rinsed and dried.

$\delta^{14}\text{C}$	-40.9 ± 4.2	‰
$\delta^{13}\text{C}$	1.2 ± 0.2	‰
D^{14}C	-91.1 ± 4.0	‰
% Modern	90.9 ± 0.4	%
Result	768 \pm 35 BP	

Comments

21/12/06

- Result is *Conventional Age or % Modern* as per Stuiver and Polach, 1977, Radiocarbon 19, 355-363. This is based on the Libby half-life of 5568 yr with correction for isotopic fractionation applied. This age is normally quoted in publications and must include the appropriate error term and Wk number.
- Quoted errors are 1 standard deviation due to counting statistics multiplied by an experimentally determined Laboratory Error Multiplier of 1.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB.
- Results are reported as *% Modern* when the conventional age is younger than 200 yr BP.

Marine data from Hughen et al (2004);Delta_R -7±45;OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]

