

**8B VERNON ROAD: ARCHAEOLOGICAL
INVESTIGATION OF SITE U14/3478
(HNZPTA AUTHORITY 2017/36)**

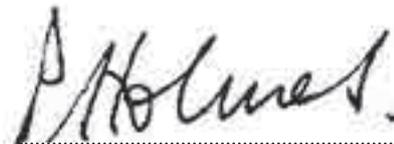
**REPORT TO
HERITAGE NEW ZEALAND POUHERE TAONGA
AND
DAVIN AND CHARITY TAN**

PETER HOLMES AND DANIELLE TRILFORD

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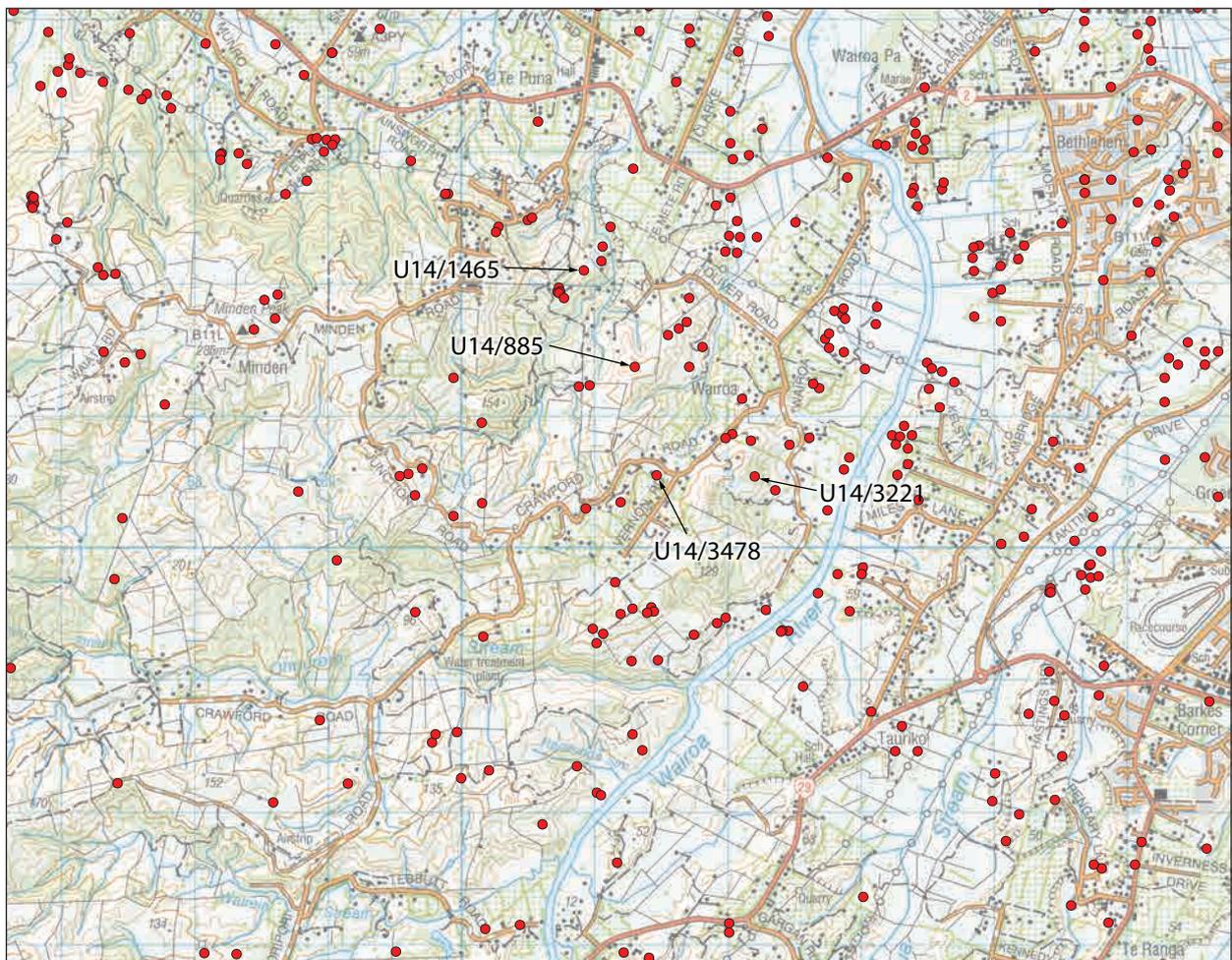
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8B VERNON ROAD: ARCHAEOLOGICAL INVESTIGATION OF SITE U14/3478 (HNZPTA AUTHORITY 2017/36)

PETER HOLMES AND DANIELLE TRILFORD

Davin and Charity Tan commissioned CFG Heritage Ltd to undertake an archaeological assessment as the result of accidental damage to a midden during topsoil removal for a proposed residential development on their property at 8B Vernon Road, Te Puna (LOT 2 DP 459549) on June 30 2016 (Holmes 2016) (Figure 1). Following preparation of an archaeological assessment of effects the site was recorded as U14/3478 in the New Zealand archaeological (NZAA) Site Recording Scheme (SRS), and the Tans applied to Heritage New Zealand Pouhere Taonga (HNZPT) for an archaeological authority to modify the site under section 44 of the Heritage New Zealand Pouhere Taonga 2014. Authority 2017/36 was issued by Heritage New Zealand on 1 August 2016. Site works recommenced on the 22 August 2016 and Peter Holmes of CFG Heritage Ltd undertook the archaeological monitoring and excavation of U14/3478.

1. Location of 8B Vernon Road (Lot 2 DP 459549) showing archaeological site U14/3478 and surrounding archaeological sites.



Background

Traditional history

The following brief account is taken from published sources.

Ngamarama, the descendants of Toi (Te Tini o Toi) are said to be among the earliest people in the Bay of Plenty (Stokes 1980; Allen 1996). Other peoples followed them from the *Mataatua*, *Takitimu* and *Tainui* waka around the mid-1300s and intermarried with Te Tini o Toi. The descendants of Ranginui, great-grandson of the captain of the *Takitimu*, became the ancestor of Ngati Ranginui and Ngamarama, with the result the former consolidated their claim to much of the coast land of the Tauranga Harbour, however Ngamarama retained their hold over coastal areas from Waihi to Omokoroa until they were displaced by the Ngati Ranginui around 1530 (Stokes 1980; Allen 1996; Dinsdale 1959)

Around 1650 war broke out again in two directions. Ngaiterangi from the eastern Bay of Plenty attacked the great pa at Mt Maunganui of Ngati Arawa and Ngati Ranganui. Ngaiterangi continued to move west consolidating their conquest of the Tauranga Harbour with the construction of the Wai-Huri Pa on the Omokoroa Peninsula.

European History

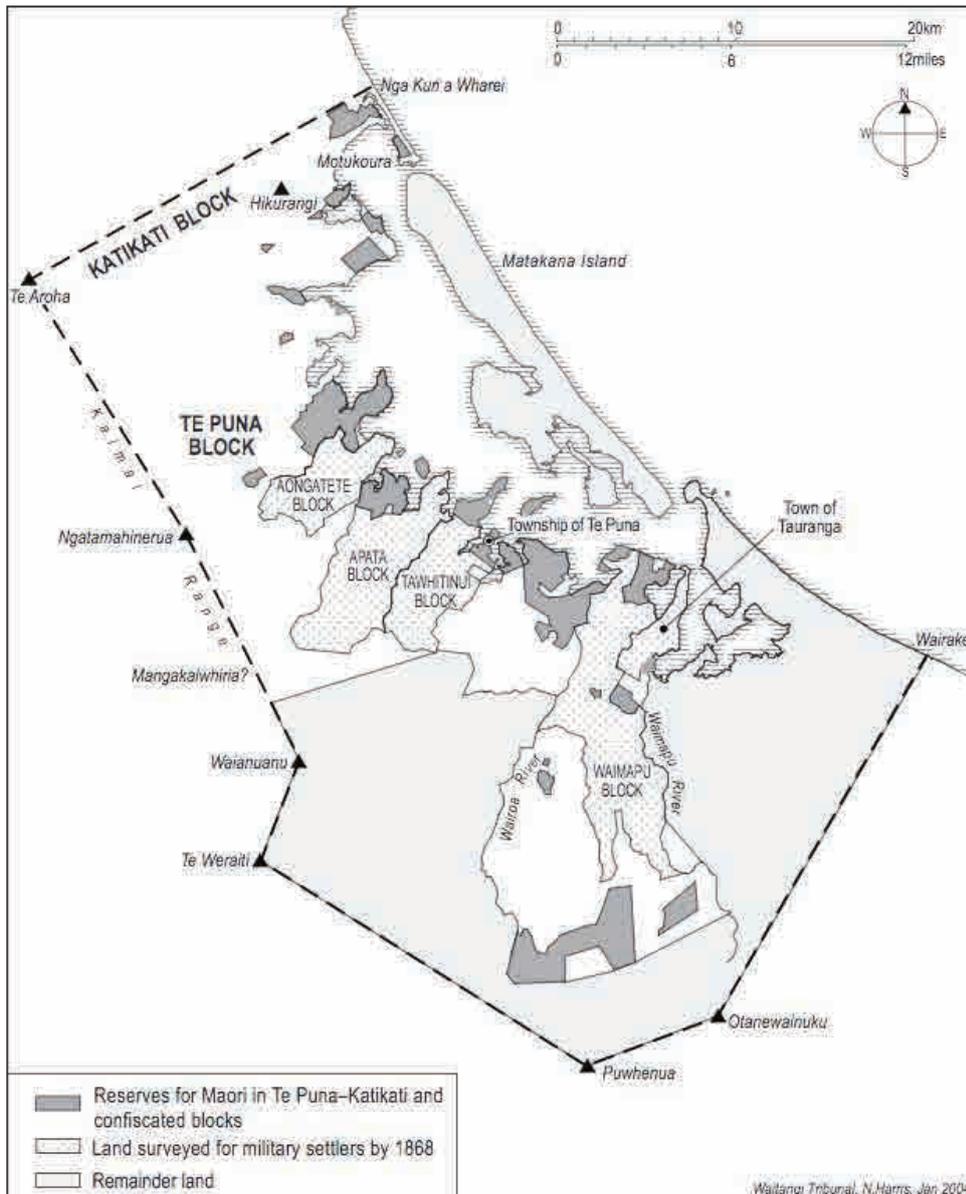
By the time Marsden visited Tauranga in 1820 local Maori had already encountered the effects of European contact; Marsden found pigs and potatoes in abundance. Viewed from Mt Hikurangi, all the land around the western end of the Tauranga Harbour was clearly visible which was, according to Marsden, covered in fern and apparently clear of large trees. It was not until later on his way to Tauranga he met local Maori.

In the 1830s both mission and trading stations were established in Tauranga. Initially the missionaries were keen to see peace between the tribes, but by the 1840s it became the job of the Protector of Aborigines, who was often backed by Government troops. Consequently, by the mid-1840s peace was made between the warring factions (Allen 1996: 13)

Auckland became well established economically during the 1840s and 1850s, which resulted in an expanding trade for Maori in foodstuffs, and a fleet of vessels to transport the goods to developing markets in the city. However, the Land Wars erupted during the 1860s in the Waikato and Taranaki. Government authorities suspected Maori in the Tauranga District of supplying Waikato tribes with food and arms as well as warriors. As a consequence, Government troops were sent to Tauranga in January 1864. As a result of the ensuing battle at Te Ranga (7 km south of Tauranga), Governor Grey accepted the surrender of Tauranga Maori subject to the confiscation of most of the western Bay of Plenty but promised that Maori reserves would be set aside, including at Omokoroa, and to confiscate no more than a quarter of their land while other lands would be purchased at 3 shillings an acre.

Previous archaeological investigations

There are 14 archaeological sites located within 1 km of the property, these are all pre-European Maori sites (Figure 1). Three of the nearby sites have been investigated by archaeologists: U14/885, U14/3221 and U14/1465. In 2005 Phil Moore investigated site U14/855, 800 meters north of 8B Vernon Road, which had been damaged by heavy machinery. Seven pits (one measuring 5.4 x 2.9 m), eight firescoops and several midden deposits were found (Moore 2005). Site U14/3221 is approximately



2. Vernon Road on the western side of the Wairoa River lay outside the confiscated block of 1868 (Waitangi Tribunal 2004).

700 m to the east of 8B Vernon Road and was excavated by Matthew Campbell of CFG Heritage Ltd in 2006. One small pit, 2 oven scoops, midden and small adze were found (Campbell 2008a). Investigations to site U14/1465 at Florence Lane in Te Puna found the largest site of the area, consisting of firescoops, midden, post holes and several both large and small storage pits which often were superimposed (Furey 2008). These three sites provided occupation dates between the mid-15th to early / mid-17th centuries. Beyond the 1 km radius there are other archaeological sites within Te Puna providing evidence of storage pits (U14/778, U14/805, U14/3112, U14/3408, U14/3409, U14/3433, U14/3434) (Hooker 2003, 2009; Spinks 2015). Of these investigations, only U14/778 has been radiocarbon dated, providing dates that indicate site use around the 14th to 17th centuries (Mallows 2011). Unlike other areas around Tauranga, the archaeology of Te Puna is not widely reported or understood.

Methodology

Archaeological monitoring of the site was undertaken by Peter Holmes of CFG Heritage on 22 August 2016. The earth was stripped with a hydraulic digger and works ceased while investigation and recording of any archaeological features was occurring. Features were excavated in full, then photographed and recorded following standard archaeological recording procedure. A Garmin etrex 30 handheld GPS, with a reported accuracy of ± 4 m, was used to record the location of points of interest. All spatial information was uploaded to the project GIS. Samples of midden deposits were taken for analysis.

Archaeology

U14/3478 is currently comprised as the two features identified during the initial assessment, one is a small pit filled with a primary deposit of midden (Feature 1) while the other is an additional scatter of degraded midden (Feature 2) (Figure 3 and Figure 4). Around a third of the western tip of Feature 1 was damaged during the accidental discovery, although the original dimensions remained intact (Figure 5). The midden was within a rectangular pit measuring 1180 x 400 mm and possibly up to 900 mm below the original subsoil surface (Figure 6). There were no

3. Aerial overlay of Lot 2 DP 459549 showing the extent of earthworks and location the two features from the project GIS.





4. The final extent of earthworks at 8B Vernon Road, view east.



5. Feature 1 before excavation showing the damage caused on the western tip.



6. Feature 1 after midden was excavated, facing north.

features, such as postholes, in the base of the pit. A 60 litre bulk sample of midden was collected from Feature 1 for analysis. There were no additional pits discovered during the earthworks. Fire cracked rock within Feature 1 was sampled separately.

Feature 12 was a small truncated midden consisting of a thin deposit of a few degraded shell fragments in a dark sandy matrix, located approximately 7.5 m to the northeast of Feature 1. The deposit was clearly displaced and not sampled. No other archaeological material or features were identified during the rest of the works.

Midden analysis

A 10 litre bulk sample from Feature 1 was analysed; the results are summarised in Table 1. The midden was washed and analysed using conventional methods, with species identification based on Morley (2006). Table 1 provides the weight of the sample dried before sieving, and the weight after the shell was washed and dried. 11.5% of the weight was lost by sieving. This indicates the shell midden was probably in a primary and undisturbed context, which is also supported by the relatively low percentage of unidentifiable shell fragments (16% of total sample weight), often caused from disturbance. In disturbed and secondary deposits, up to 90% of a deposit can include additional sediment and rock (e.g., Campbell 2008b).

Table 2 shows the midden was dominated by pipi (*Paphies australis*), and almost all the other species present were soft shore harbour or estuarine species caught at mid or low tide, which are likely to be bycatch during pipi collecting from the nearby Tauranga Harbour, approximately 6.5 km away. Tuangi cockle (*Austrovenus stutchburyi*) valves were very small compared to the consistently larger pipi shells, supporting to the likelihood these were bycatch. A single sandy shore species, wheel shell (*Zethalia zealandica*) was identified, a very small gastropod that was probably not collected for consumption.

Volume (L)	Dry weight (g)	Sieved weight (g)	% loss
10	5900	5218.5	11.5

Table 1. Statistics of midden sample from Feature 1.

Species	NISP	Weight (g)	Environment	Tidal depth
Tuangi cockle (<i>Austrovenus stutchburyi</i>)	101	59	Soft	Mid to low
Pipi (<i>Paphies australis</i>)	767	4280	Soft	Mid to low
Wheel shell (<i>Zethalia zelandica</i>)	3	6	Sandy	Low to deep
Turret shell (<i>Maoricolpus roseus</i>)	2	1	Soft	Low to deep
Horn shell (<i>Zeacumantus lutulentus</i>)	1	0.5	Soft	Varies
Unidentifiable residue	N/A	840	N/A	N/A
Total		5186.5		

Table 2. Summary of shellfish species identified at Feature 1, environment and tidal depth data are based from Morley (2006) and Powell (1961).

Chronology

A sample of 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 746 ± 28 BP, which calibrates to cal AD 1502–1621 at a 68% confidence interval (Table 3). This is a similar period to dates at nearby Te Puna sites (Figure 1). Two dates from U14/885 suggest occupation was between cal AD 1440 – 1620 and 1460–1640 (Moore 2005). Dates from U14/1465 indicate site use between AD 1470–1760 and 1460–1690 (Furey 2008). Similarly, dates from U14/3221 suggest site use between AD 1450–1660 (Wk 20104). Further toward the Te Puna coastline, investigations at Maramatanga Park at U14/778 provided dates from AD 1444–1650 and 1435–1635 (Mallow, 2011).

Lab No.	$\delta^{13}C$	CRA BP	cal AD 68%	cal AD 95%
Wk 44748	1.1 ± 0.4 ‰	746 ± 28 BP	1502–1621	1466–662

Table 3. Radiocarbon date.

Discussion and conclusion

Archaeological investigations in Te Puna are limited, but the few that have been done to date, at U14/885, U14/3221, and U14/1465, have produced similar data to this investigation. Midden deposits at all three sites indicate an intentional harvest of pipi in the Tauranga Harbour with less frequent small sized harbour species representing a bycatch. Also, two of the nearby Te Puna sites had small pits (< 1500 x 1500 mm), which are interpreted as having been used for storage, primarily for kumara. The superimposed features at U14/1465 indicate at least two periods of occupation (Moore 2005; Campbell 2008a; Furey 2008).

The chronology of U14/3478 indicates occupation was between the early 16th to early 17th century, dates which so far appear to be common for pre-European Maori settlements at Te Puna. This century of occupation also fits in with dates from sites at Waimapu and Papamoa (e.g. Campbell 2004a, b, 2005; Furey 2004, 2008; Frederickson et al. 1995). The occupations are thought to represent an initial expansion inland and along the coast from early period coastal occupations. The same dates are also recorded from Oropi near Welcome Bay which can suggest bush clearance and horticulture at inland Tauranga was common during this period (Campbell 2004a, 2004b, 2008b; Furey 2004, 2008). Future investigations at Te Puna should work to collect reliable radiocarbon dates and evidence of the currently unrecorded garden sites that would have been used to produce the tubers stored in the dozens of storage pits discovered so far.

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Radiocarbon Dating Laboratory

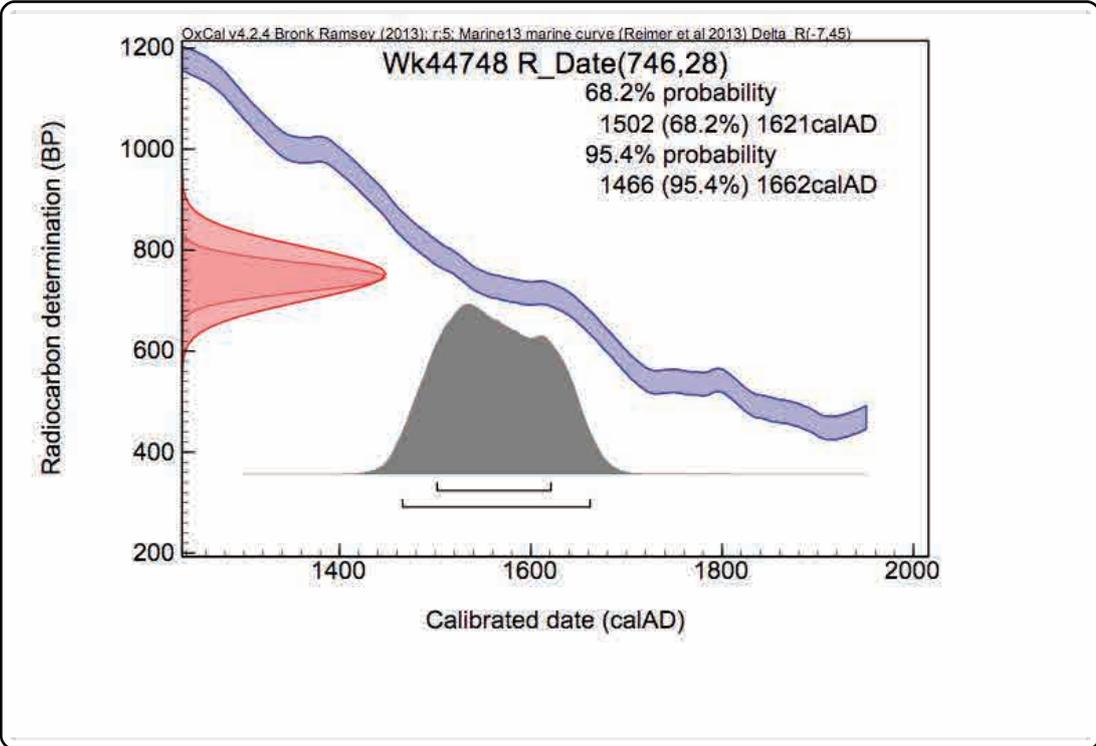
Wednesday, 25 January 2017

Report on Radiocarbon Age Determination for Wk- 44748

Submitter	M Campbell
Submitter's Code	U14/3478
Site & Location	U14/3478, New Zealand
Sample Material	Pipi
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.

$\delta^{13}\text{C}$	1.1 ± 0.4 ‰
D ¹⁴ C	-88.7 ± 3.2 ‰
F ¹⁴ C%	91.1 ± 0.3 %
Result	746 ± 28 BP

Comments



- Explanation of the calibrated Oxcal plots can be found at the Oxford Radiocarbon Accelerator Unit's calibration web pages (<http://c14.arch.ox.ac.uk/embed.php?File=explanation.php>)
- Result is *Conventional Age or Percent Modern Carbon (pMC)* following 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.
- The isotopic fractionation, $\delta^{13}\text{C}$, is expressed as ‰ wrt PDB and is measured on sample CO₂.
- F¹⁴C% is also known as *Percent Modern Carbon (pMC)*.

Ali Hogg