

Archaeological investigation of site Q07/1215, Reotahi: final report

**report to
Greg and Dianne MacDonald**

Matthew Campbell and Sian Keith

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Introduction

On 12 of October 2005 an archaeological mitigation excavation was undertaken at site Q07/1215, 6–8 The Heights Road, Reotahi, Whangarei Heads (Lot 9 DP 113547) under the terms of Authority 2006/75 issued by the New Zealand Historic Places Trust under Section 14 of the Historic Places Act 1993. Greg and Dianne MacDonald propose converting an existing barn to a dwelling and constructing a 3-berth garage on their property which will affect the archaeological site. As a condition of the archaeological authority, under section 17 of the Historic Places Act, consent was notified for Matthew Campbell with such assistants as may be necessary, as the person approved to do the work. In the event, illness prevented Matthew Campbell from being on site and the section 17 approval was transferred to Sian Keith.

An archaeological assessment of the site was carried out in May 2005 (Williams 2005) which identified two areas of midden: Areas A and B. Area A was located east of the standing building where the garage is proposed; Area B was located on the slope south of the standing building and will not be affected by the proposed garage. The property is located on a southwest facing slope that runs roughly 200 m down to Reotahi Bay and the Whangarei Harbour (Figure 1). Soils are predominantly clay.



Figure 1. Location of Q07/1215.

Methodology

Two long trenches were excavated using an 11 tonne mechanical excavator with 1.8 m weed bucket. The topsoil was stripped off the site over the extent of the development area. All features were photographed, planned to scale, and two profiles were drawn to scale. Samples of the shell were taken for analysis. All of the archaeological material was removed from the development zone.

The excavation took place in fine weather on damp ground. The team consisted of Sian Keith and Chris Williams.

Area A

The proposed garage is to be built in this area and its footprint had been marked out with wooden pegs. The site was covered in long grass making it impossible to distinguish midden deposits from visual inspection of the surface.

Trench 1

A north-south trench, 10.75 m long and 1.8 m wide, was excavated through the centre of the proposed outline of the building with the digger (Figure 2). This was done in order to ascertain the nature and extent of the midden within the proposed development zone.

The east-facing section was drawn to scale. The stratigraphy consisted of natural clay at the base of the trench which was compact, mottled grey and orange with some shell noted pressed into the surface of the clay. This clay was overlain by a dark-brown silty-clay topsoil 200–250 mm deep, containing a very small proportion of broken shell fragments which were well mixed

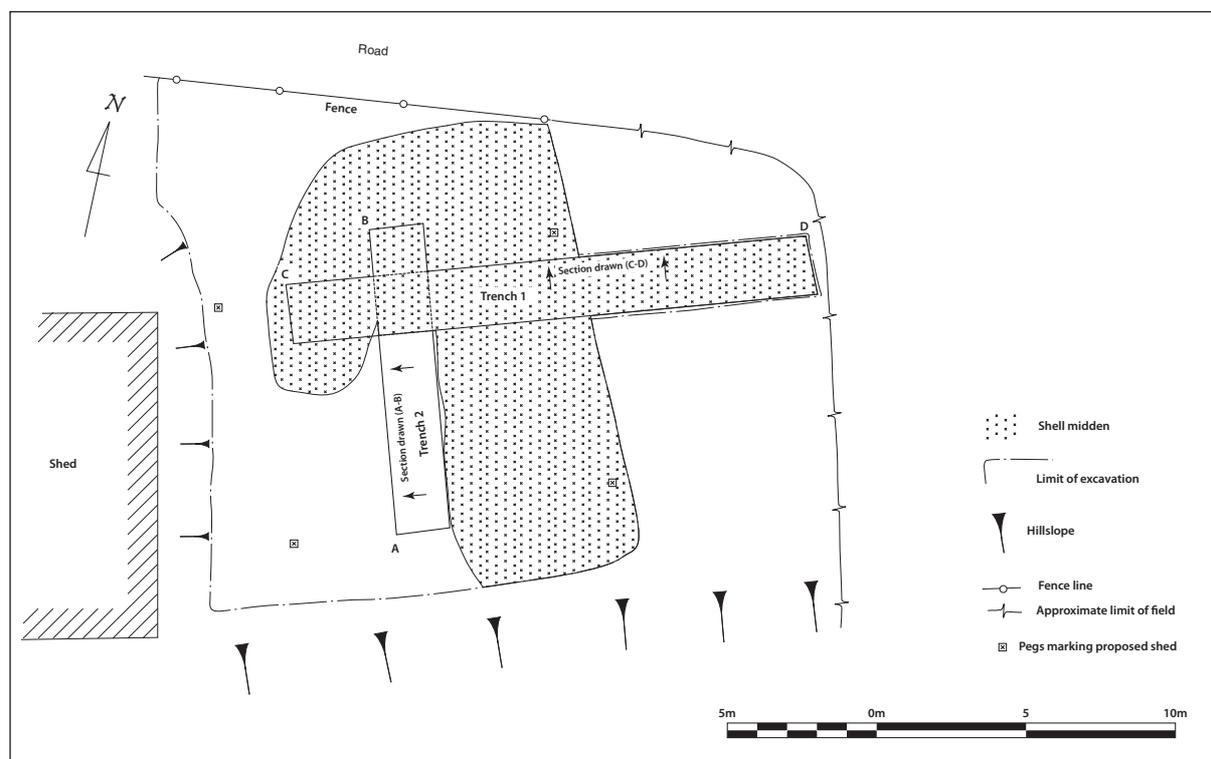


Figure 2. Plan of the excavation showing Trenches 1 and 2.

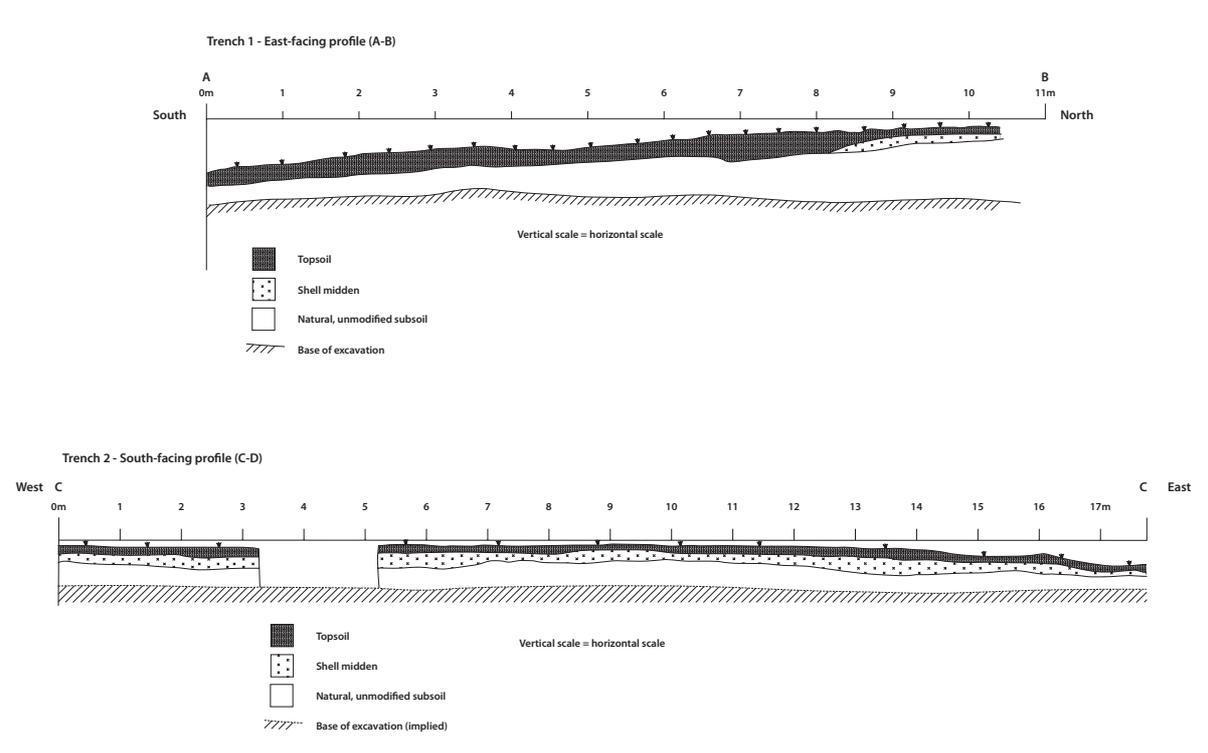


Figure 3. Top, profile of Trench 1; bottom, profile of Trench 2.

through the matrix. At the very northern end of the trench a compact shell deposit was noted – this was the shell midden, Feature 1.

Except for this northern end Trench 1 mostly avoided the concentration of midden material; the shell noted in the topsoil and natural stratigraphy is likely to have been washed down from the main midden area.

The machine was then used to remove all of the topsoil from the development area in order to expose the top of the shell midden. This exposed an area of midden measuring 11 x 16 m (Figure 2); midden continued beyond the limit of excavation to the east and south. The midden was widely spread and patchy in places and the greatest concentration was towards the northern part of the site. To the south of the concentrated shell, there was a gradual thinning out. No further archaeological features were noted within the midden, nor around it, in the area exposed. The shell was mainly whole and broken pipi, and it appeared to be a mostly undisturbed in situ deposit.

Trench 2

A second trench was then excavated using the machine; this was positioned through the concentration of midden material towards the northern half of the site. It was excavated beyond the proposed development area to the eastern limit of the paddock. The east-west oriented trench was 17.5 m long and 1.8 m wide. The south-facing section was drawn to scale (Figure 3). The stratigraphy here was noted to be natural clay (as discussed above) over which was F1— a tightly compacted deposit of shell 200–300 mm in depth; this was overlain by topsoil generally about 150 mm deep. Midden material was noted all along the trench faces indicating that the midden extends to the east of the site. The shell deposit became thinner towards the eastern limit of the trench, this also being the eastern limit of the property.



Figure 4. Midden shell in the baulk of Trench 2.

Figure 5. Test pit 2 after excavation.



The midden material was then excavated down to natural clay in the proposed development area. No further archaeological features were recorded below the shell deposit F1. Samples of the shell material were taken for analysis.

Area B

The steeply sloping ground south of the standing building prevented the use of the machine on this area of the site, which was in any case outside the proposed development area. The area was covered in long grass and it was not possible to see surface evidence of the shell midden. Three shovel test pits were excavated on the steeply sloping ground inside the area initially identified by Williams, placed at intervals proceeding up the natural steep slope and excavated in order to ascertain the nature and extent of the shell midden here (Feature 2). The locations of these were recorded on a schematic plan but are not shown on Figure 2.

Test pit 1

This was 280 x 250 x 250 mm). The stratigraphy consisted of a natural clay over which was a 150–200 mm deposit of compact shell (Feature 2), and overlying this was 50 mm of dark-brown silty-clay topsoil.

Test pit 2

This was 300 x 300 x 480 mm. The stratigraphy consisted of a natural clay over which was a 250 mm deposit of compact shell (Feature 2), overlying this was 230 mm of dark-brown silty-clay topsoil (Figure 4).

Test pit 3

This was 450 x 450 x 920 mm. The stratigraphy consisted of a natural clay over which was a 600 mm deposit of compact shell (Feature 2). Overlying this was 320 mm of dark-brown silty-clay topsoil.

All the test pits contained compact in-situ shell most of which were whole pipi shells. They indicated that a fairly substantial midden was present here and that it increased in depth substantially towards the higher ground. Some charcoal was noted within the matrix of the midden material but no associated oven scoops were recorded. Shell samples from Test pit 2 was taken for analysis.

Midden analysis

The midden sample was returned to the lab where it was wet sieved, air dried, hand sorted, and counted (but not weighed). Whole or nearly whole hinges of bivalves were counted. Left and right hinges were not distinguished and MNIs (Minimum Numbers of Individuals) were calculated by dividing the total number of shells by two. Whole or nearly whole terminal spires of gastropods were counted. The results are given in Table 1.

species	Area A F1	Area B F2
pipi (<i>Paphies australis</i>)	110	151
cockle (<i>Austrovenus stutchburyi</i>)	21	4
cat's eye (<i>Turbo smaragda</i>)	1	1
unidentified gastropods		5

Table 1. Minimum numbers of mollusc species from midden samples.

Both samples were dominated by pipi, with only a few cockle present in each case. This contrasts with sites on the other side of the harbour at One Tree Point, where cockle is invariably the predominant species (Campbell 2006; Phillips and Harlow 2001). This probably reflects the more open situation at Reotahi compared to the mudflat environment at One Tree point. In addition to the shellfish, a few fish bones were noted, mostly vertebrae of unidentified species.

100 randomly selected whole pipi shells were measured from each sample using analog engineering callipers. Mean lengths and standard deviations are given in Table 2. The data is also plotted in Figure 5. The Area A pipi ranges between 24 and 76 mm with a clear peak between 50 and 54 mm. This is a normal distribution, whereas the Area B pipi, ranging from 26 to 68 mm, has two peaks around 38–42 mm and 58–64 mm. The reason for this may be that the pipi population was recovering from previous high exploitation levels but such patterns can also be natural.

sample	mean	standard deviation
Area A F1	51.5	48.7
Area B F2	10.88746	11.00596

Table 2. Mean lengths and standard deviations for pipi.

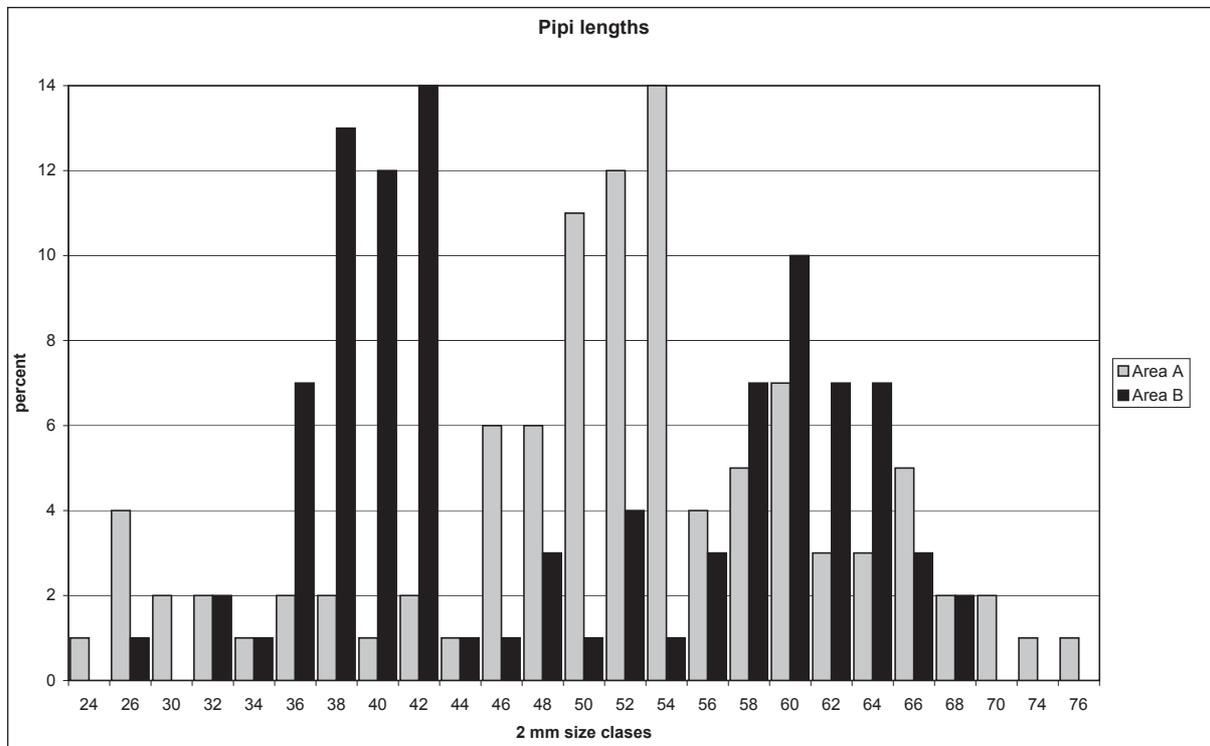


Figure 6. Lengths of pipi plotted by 2 mm size classes.

Chronology

Six pipi shells from Area A Feature 1 were submitted to the University of Waikato Radiocarbon Dating Laboratory for dating, lab number Wk-18305. A conventional radiocarbon age of 575 ± 32 BP was obtained, which calibrates to AD 1650–1840 at a 95% confidence interval. At a 68% confidence interval there is a 58% probability that the date falls between AD 1670 and 1770. This places occupation of the site in the last century of the pre-European period.

Summary

The site consisted of a simple shell midden with no other features observed in it. There was indirect evidence of cooking in the form of charcoal, but no oven scoops or oven stones were observed. Most probably these were located upslope from the visible midden and the excavated part of the site consists of a dump of cooking refuse. If this is the case, the site has not been recorded as extending so far. The midden was dense and in places up to 600 mm in depth. In contrast to middens in nearby One Tree Point it was dominated by pipi rather than cockle. The site dated to the last century of the pre-European era which again contrasts with One Tree Point where sites date to a century before this.

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