Archaeological investigations at 3, 9 and 14 Gane Place and 45 Western Avenue, Omokoroa (HNZPTA authority 2016/60)

report to
Heritage New Zealand Pouhere Taonga,
JMC
and
Rowesdale Developments Ltd

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Rowesdale Developments Ltd has subdivided and undertaken earthworks on four properties at 3, 9 and 14 Gane Place and 45 Western Avenue, Omokoroa (Lot 5, Lot 6, Lot 7 and Pt Lot 8 DPS 27322) (Figure 1). There are 13 archaeological sites recorded in the New Zealand Archaeological Association (NZAA) Site Recording Scheme (SRS) within 1 km of the properties, indicating that unrecorded archaeology was likely to be present in the development area. Rowesdale Developments Ltd commissioned CFG Heritage Ltd to undertake an archaeological assessment of effects in support of archaeological authority applications to New Zealand Historic Places Pouhere Taonga (HNZPT) and resource consent applications to Western Bay of Plenty District Council. Authority 2016/60 was granted by HNZPT on 22 August 2016. During earthworks nine archaeological features were exposed and investigated, and have been added to the SRS as site number U14/3526.

Background

The Tauranga Harbour is an archaeological landscape comprising coastal pa sites on promontories and headlands jutting out into the harbour with gardening, fishing and living sites along the coast and in the inland valleys. This basic settlement pattern is replicated at Omokoroa, with Wai Huri Pa (U14/159) located at the tip of the peninsula. The area associated with these pa usually contains numerous shell middens, pits and garden soils (McFadgen 1980). Archaeological investigation of these features and their distribution provides further insight into the cultural history and settlement patterns of the area.

Pre-European Maori history

The descendants of Toi (Te Tini o Toi), are said to be among the earliest people in the Bay of Plenty, which was soon to become the chief landing place of Polynesian settlers (Stoke 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 *Takitimu*, became the ancestor of Ngati Ranginui and Ngamarama, with the result that the former consolidated their claim to much of the coast land of the Tauranga Harbour, with Ngamarama retaining 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 Ngati Arawa and Ngati Ranganui pa at Mauao. Ngaiterangi continued to move west consolidating their conquest of the Tauranga Harbour with the construction of Wai Huri Pa on the Omokoroa Peninsula.

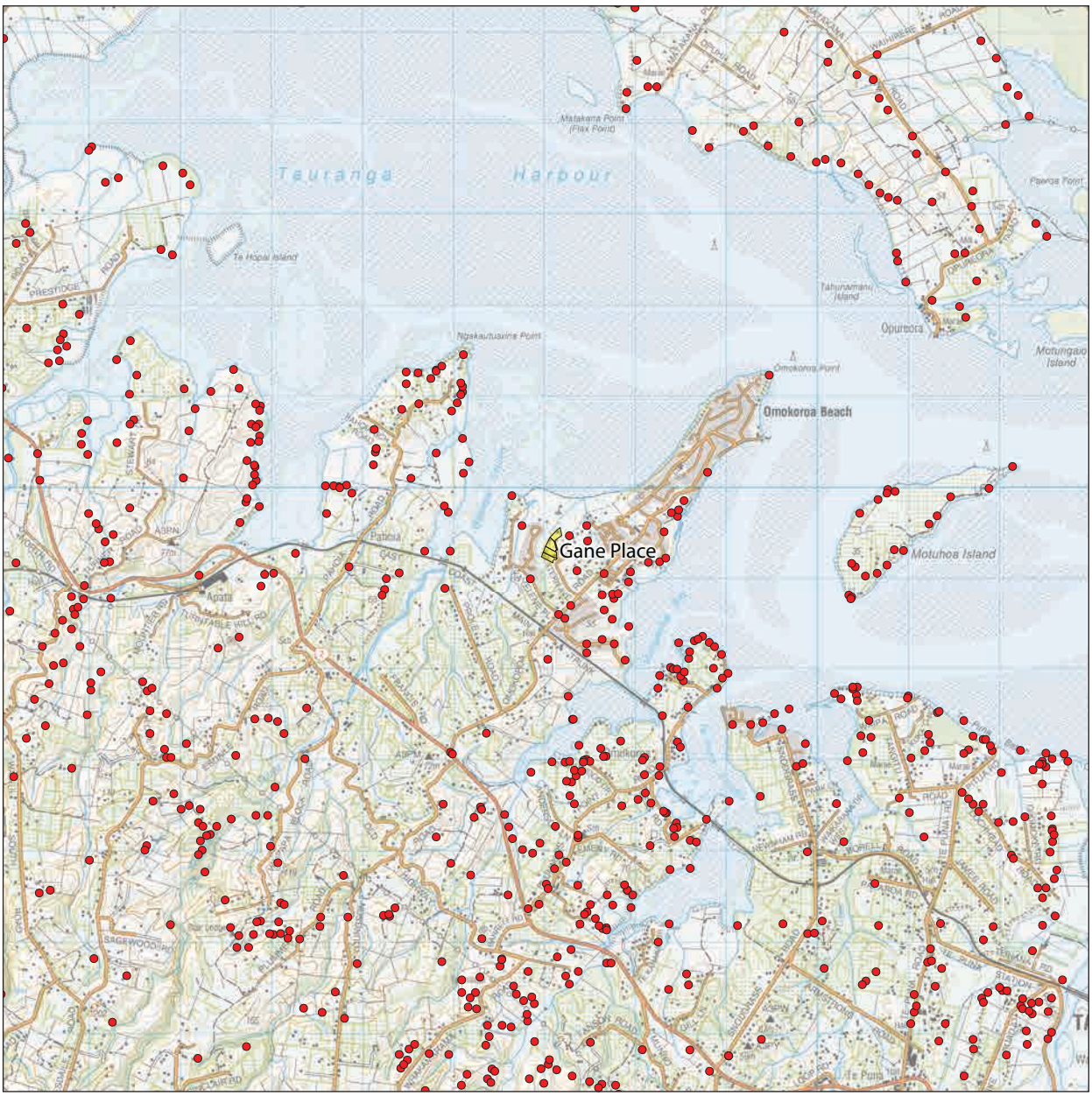

Figure 1. Location of the Gane Place properties, showing archaeological sites recorded in the vicinity.

19th century history

By the time Samuel Marsden visited Tauranga in 1820, local Maori were already showing the effects of European contact and he found pigs and potatoes growing in abundance. Viewed from Hikurangi, all the land around the western end of the Tauranga Harbour was clearly visible and was, according to Marsden, covered in fern and clear of large trees.

In the 1830s 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 and by the mid-1840s the warring factions were at peace (Allen 1996: 13).

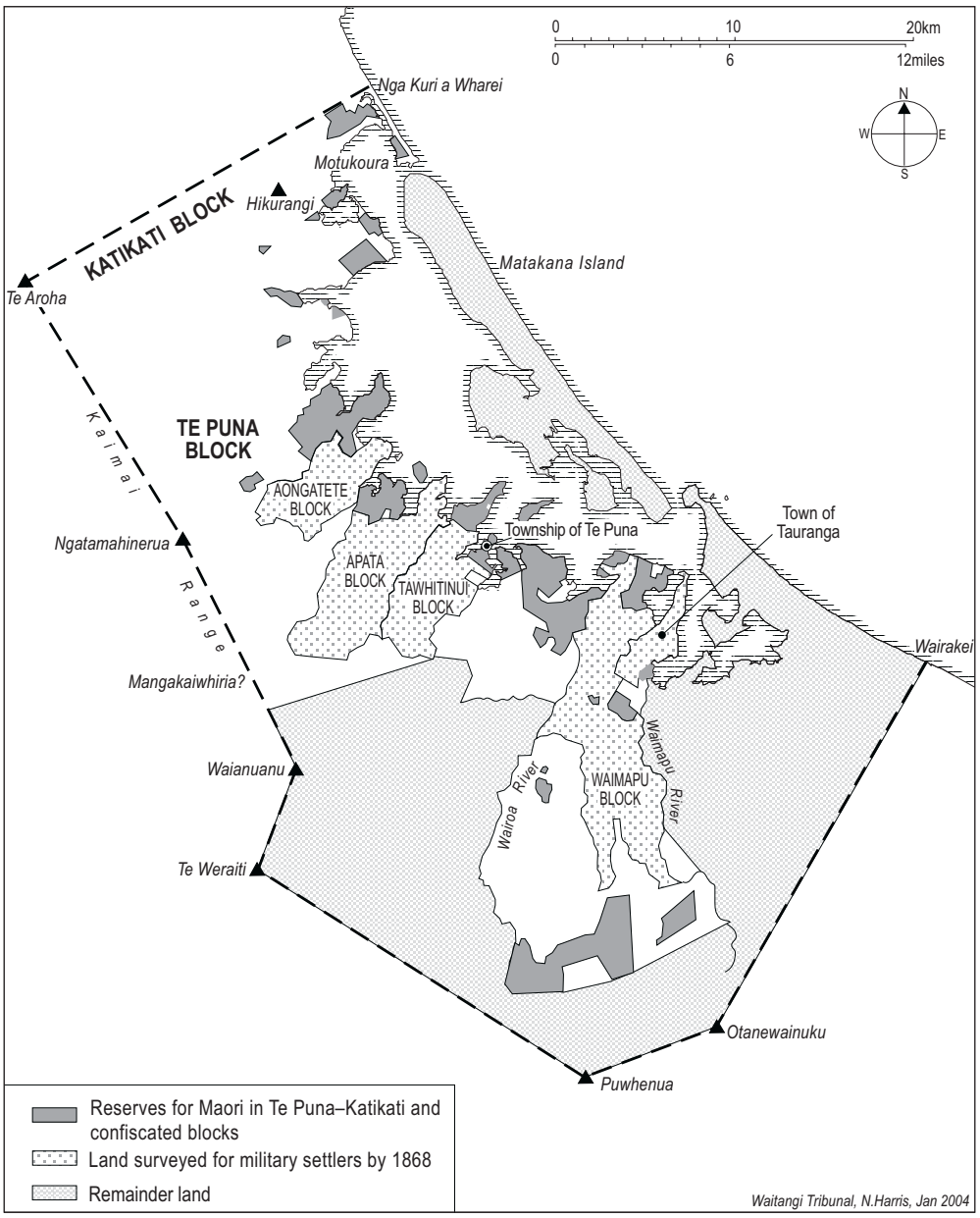

Figure 2. Tauranga military settlements following the Katikati–Te Puna Purchase showing Omkoroa reserved for Maori. The block to the east of the Wairoa River is the original confiscation block (Waitangi Tribunal 2004: Map 14)

The New Zealand Wars broke out during the 1860s in the Waikato and Taranaki. Government authorities suspected Tauranga Maori of supplying Waikato tribes with food and arms as well as warriors. As a consequence, Government troops were sent to Tauranga in January of 1864 and, following battle at Gate Pa and Te Ranga, Governor Grey accepted the surrender of Tauranga Maori subject to the confiscation of most of the western Bay of Plenty, but subsequently promised Maori reserves would be set aside, including Omokoroa, and that the Government would confiscate no more than a quarter of their land. Other land would be purchased at 3 shillings an acre.

In 1865 the Crown bought a large block of land, including Omokoroa, north of the confiscation and bordering the Tauranga harbour from Ngaiterangi, the Katikati–Te Puna Purchase. Other landowners challenged the right of Ngaiterangi to sell this land and final payments were not made until 1871. The block boundaries were not entirely settled until after 1886 (Waitangi Tribunal 2004). By 1877 Joseph Tice Gellibrand had already begun to purchase land on the Omokoroa Peninsula and in Tauranga. He continued to buy blocks of land at Omokoroa until he owned practically the whole peninsula. Gellibrand constructed a large kauri homestead out near the point, later to become the Crapp homestead.

Previous archaeological investigations

Archaeological site recording in Omokoroa began in 1968 when Wai Huri Pa was recorded by David Borell for the Tauranga Historical Society. Since then numerous pre-European Maori sites have been recorded on the peninsula including cultivation, earthworks and living areas reflecting long term occupation of the peninsula.

Several of these sites have been excavated recently, including U14/3283 and U14/3284 (Furey and Hudson 2008), where numerous intercutting pits, post holes and firescoops were uncovered. Some of the features were cut into a slope and pits had rafter slots on the uphill side. The density of surviving features was exceptional and indicated intensive or periodic occupation with a clear shift over time in the locations of areas associated with various activities. Full analysis and reporting have not yet been undertaken.

U14/3302 was also the subject of recent archaeological investigation (Harris and Furey 2011). Several pits, mostly on the same alignment with very few intercutting although some were oriented at right angles to others, along with postholes and firescoops were excavated. Several obsidian flakes were recovered but the site was not dated.

The lower terrace at U14/712 was investigated by Furey in 2004 (Furey 2011). Several intercutting pits indicated more than one phase of occupation while postholes and firescoops, with a fill of charcoal stained soil and burnt shell, were common. Midden was dominated by tuangi (*Austrovenus stutchburyi*) with some pipi (*Paphies australis*), with a few bones of barracouta (*Thyrsites atun*) the only fishbone identified. A few flakes of obsidian were also recovered but the site seems to have been used primarily for cooing and kumara storage. A single radiocarbon date on a late phase feature dated the site to 16th or 17th centuries AD.

The lower terrace was adjacent to the headland pa at U14/712, with which it shares a site number, though not necessarily related to it. The site was excavated by Furey in 2004 though only interim reports are currently available. No analysis or dating has been reported. There were two phases of defences, including a ditch that had been largely filled in in pre-European times. Several, sometimes complex, storage pits, firescoops and postholes were clustered at the northern end of the headland in at least four phases, with some activity overlying the infilling of the ditch (Furey 2004a). Other sites excavated as part of the same project, also not yet analysed or fully reported, include U14/3223, a midden and pit site with one pit containing several human burials; U14/716, a larger midden and pit site with more than one phase of occupation; U14/3076, several pits and firescoops spread over a wider area; U14/3208, further, more concentrated pits, some relatively large and complex, and firescoops (Furey 2004b, 2005).

In 2006 and 2009 Moore (2009, 2010) monitored stormwater upgrade works and landslip remediation on the peninsula. He found pits and firescoops in profile in the excavation trenches. Midden was dominated by tuangi. A few obsidian flakes were recovered. U14/3255 dated to the

mid-15th to mid-16th centuries, while U14/3276, U14/3327 and U14/701 dated a century or two later.

At U14/3270 Hooker (2007) found several pits and firescoops but did not analyse any midden or take a date.

In 2011 and 2014 Coster (2104) excavated U14/3371 where a single rectangular bin pit was found.

Monitoring at 262 Omokoroa Road in 2016–2017 (Trilford and Holmes 2017) revealed several disturbed middens and remnant firescoops as well as a single small pit. Midden was dominated by tuangi with sizeable quantities of pipi. Four radiocarbon dates returned varying ages between the 16th and 18th centuries AD.

In summary, the Omokoroa Peninsula is a rich archaeological landscape which has been occupied since at least the 15th century, but several of the larger and more informative excavations remain unreported and a full understanding of this landscape is not yet available. The small scale investigations at Gane Place reported here will contribute to this eventual synthesis.

Methodology

Archaeological monitoring was undertaken by Peter Holmes of CFG Heritage between 21 March and 21 April 2017. The topsoil was stripped with a hydraulic digger and works ceased while investigation and recording of any archaeological features occurred. Features were excavated, photographed and recorded following standard archaeological methods. A Garmin etrex 30 handheld GPS, with a reported accuracy of ± 5 m, was used to record locations. All spatial information was uploaded to the project GIS. Samples of midden deposits were taken for analysis.

Archaeology

During topsoil removal nine archaeological features were found: eight damaged middens and one bin pit. Features 1, 2, 3, 4 and 8 (the bin pit) were located in a cluster at the northern end of the works; Features 6,7 and 9 were located in a cluster at the southern area; while Feature 5 was somewhat isolated between the two clusters. All these features have been added to the SRS as new site U14/3526.

Feature 1

Feature 1 was a shallow truncated midden consisting of two patches approximately 1 m apart. The larger of the two deposits was 200 x 200 x 4 mm deep while the other deposit was 70 x 70 x 20 mm. A bulk sample was collected for analysis.

Feature 2

Feature 2 was an irregular sided and truncated midden spanning an extent of approximately 1400 x 1000 mm x 200 mm deep (Figure 4). The midden was finely fragmented and sparse shell, and included some concentrations of fire cracked rock and charcoal fragments. A bulk sample was collected for analysis.

Figure 3. Plan of archaeological features found during earthworks at Gane Place.

Feature 3

Feature 3 was a small remnant of truncated midden approximately 60 x 60 x 10 mm. No sample was collected.

Feature 4

Feature 4 was a truncated midden approximately 350 x 300 x 40 mm. A bulk sample was collected.

Feature 5

Feature 5 was a truncated midden made up of three small and isolated deposits within 300 mm of the other. The midden was irregularly sided and within a dark compact charcoal stained silty matrix. A bulk sample was collected.

Feature 6

Feature 6 was a scatter of crushed midden and charcoal stained silt over an area of 3.4 m in diameter. The deposit had a varying depth of 50 – 130 mm deep, and midden was densest at the base of the deposit in several isolated pockets. Within the matrix was also fire cracked rock. A bulk sample was collected.

Figure 4. Feature 3 after excavation.

Feature 7

Feature 7 was a truncated and irregular sided midden within a similar sediment to Feature 6 and spanning an area of 2.5 x 1.2m. Three points of the deposit were excavated, and the base of the feature ranged for 40 mm to 100 mm. A bulk sample was collected.

Feature 8

Feature 8 was a rectangular bin pit near the northern cluster of middens (Figure 3). The pit was 900 x 400 mm x 280 mm deep, the sides and base were straight and relatively intact. The fill of the pit was a mottled, light brown, moderately consolidated, silty sand with no charcoal or shell inclusions (Figure 5).

Feature 9

Feature 9 was at the southern end of the property, seen as a thin crushed lens of sparse midden spanning an area of 3.7 m x 300 mm x 100 mm in a matrix of dark brown to black, moderately consolidated sandy silt. The midden was heavily crushed and mixed with topsoil, no sample was taken.

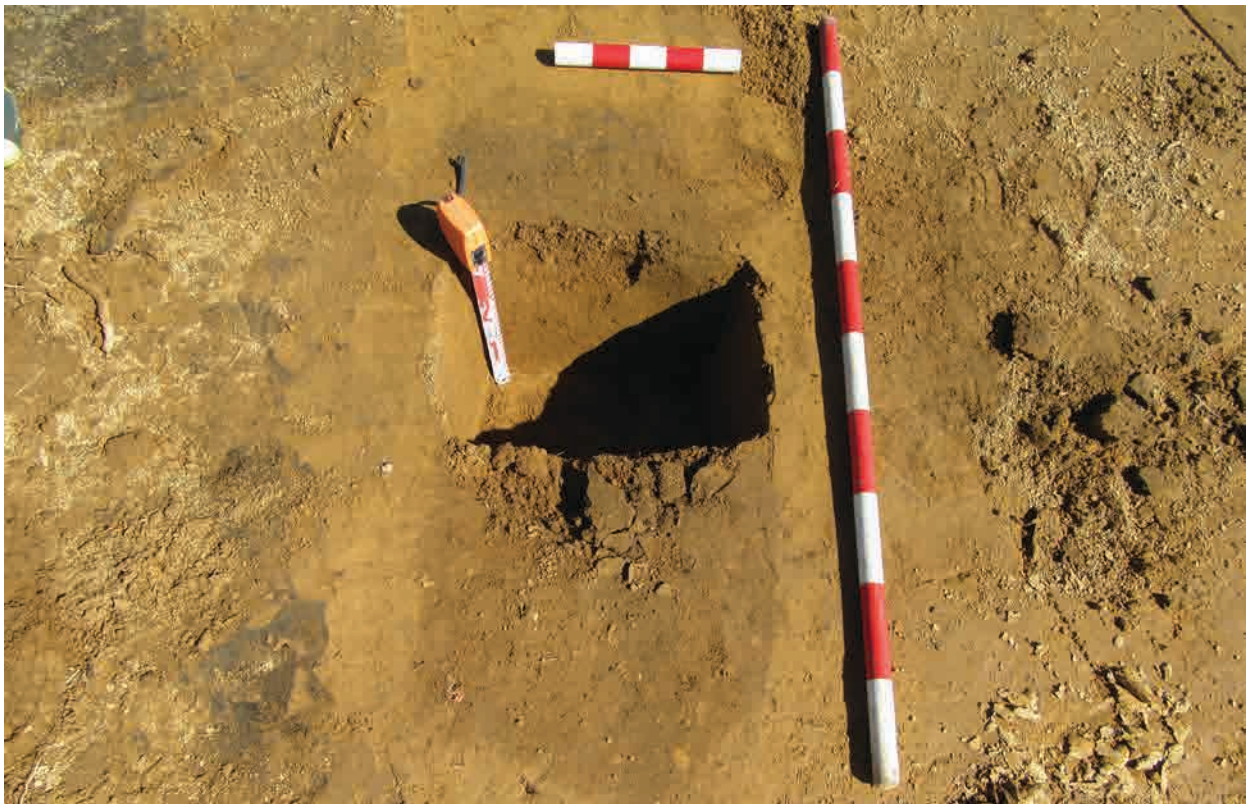

Figure 5. Feature 8 after partial investigation.

Midden analysis

The midden samples were wet sieved though a 3 mm screen in the lab and air dried. The dried material was sorted by hand to faunal class, as well as sorting stone and charcoal, and each class was weighed.

Shellfish

Shell species identification based on Morley (2006). A significant difference in weights before and after washing indicate samples were in disturbed contexts. The midden in the features was generally scattered and sparse. A comparison of diagnostic shell to non-diagnostic fragments by weight shows that most of the shell was crushed and fragmented beyond identification. (Figure 6). Some limited information about subsistence strategies that can still be gained from analysing the midden.

Numbers of identifiable shells were low for Features 4, 5 and 7 but all samples are dominated by tuangi (*Austrovenus stutchburyi*) with mudsnail (*Amphibola crenata*) or pipi (*Paphies australis*) the only other species present in reasonable numbers (Table 1). These species can all be harvested locally in estuarine or harbour environments. Tuatua (*Paphies subtriangulata*) and trough shell (*Mactra discors*) may have bene present in low numbers in these sorts of environments but are more likley to have been harvested from open sandy beaches such as at Mt Maunganui / Papamoa or the northern beaches of Matakana island.

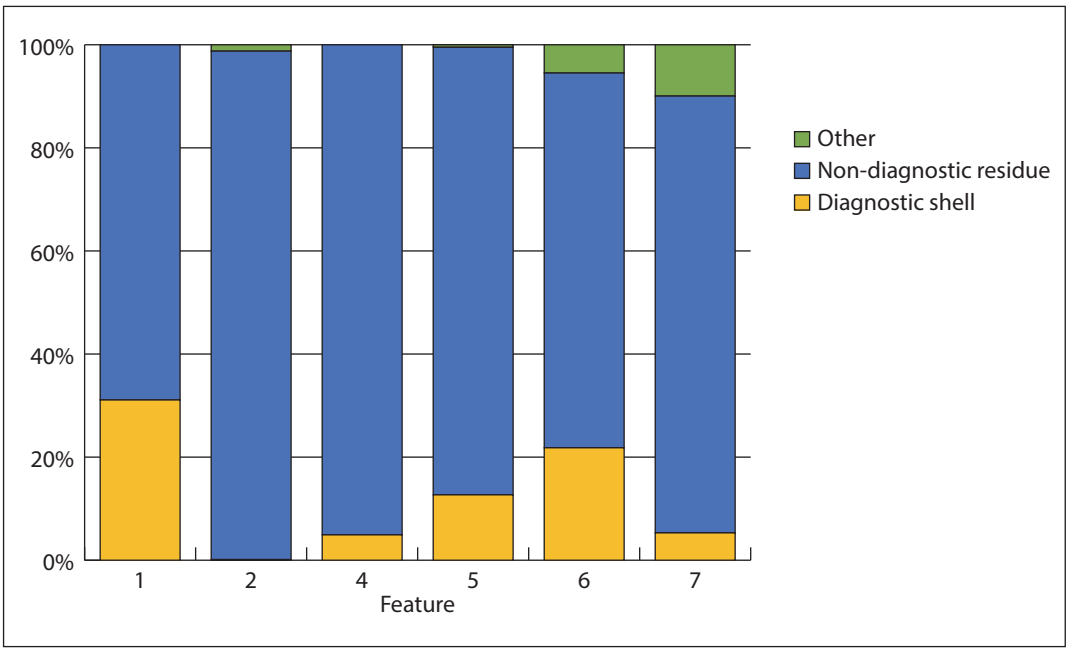

Figure 6. Proportions of diagnostic shell and non-diagnostic residue in each sample, showing the extent of shell crushing and fragmentation.

Table 1. Shellfish present in each sample (NISP).

		Feature					
Common name	Taxon	1	2	4	5	6	7
Bivalves							
Tuangi	*Austrovenus stutchburyi*	88	117	12	45	744	80
Pipi	*Paphies australis*		2			37	9
Trough shell	*Mactra discors*	3	11				
Tuatua	*Paphies subtriangulata*				2		
Large wedge shell	*Macomona liliana*					3	1
Gastropods							
Mud snail	*Amphibola crenata*	40	6		1		
Mudflat top shell	*Diloma subrostrata*	1				1	1
Purple mouthed whelk	*Cominella glandiformis*	1				5	
Speckled whelk	*Cominella adspersa*				1		
Siphon whelk	*Penion sulcatus*					1	
Lined whelk	*Buccinulum vittatum*						2
Non-economic gastropods							
Horn shell	*Zeacumantus lutulentus*	2	9			13	5
Banded ear shell	*Ophicardelus costellaris*		1				
Total		135	146	12	49	804	98

Fish

Fishbone was analysed following the methodology outlined in Campbell (2016). Very few fish bones were recovered from the samples: some from Feature 6 and a few from Feature 2 and only scutes of mackerel (hāture, *Trachurus* sp.) and vertebrae of school shark (hāture, *Galeorhinus galeus*) and yellow-eyed mullet (aua, *Aldrichetta forsteri*)were identified (Table 2). This is a very small assemblage, and little can be said regarding it. School shark were commonly targeted when they gathered in harbours in summer prior to giving birth when they were caught with baited hook and often preserved for later consumption. Mackerel, and especially yellow-eyed mullet, have small mouths and were more likely to be netted: Mair, cited in Best (1977[1929]: 11), describes netting using traditional techniques, which is how archaeologists have usually thought mackerel were caught in the Bay of Plenty. Sharks were also caught up in the general catch.

Table 2. Fish present in each sample (NISP).

		Feature	
Common name	Taxon	2	6
Mackerel	*Trachurus* sp.	2	2
School shark	*Galeorhinus galeus*		8
Yellow-eyed mullet	*Aldrichetta forsteri*		1

Charcoal analysis

Charcoal samples from three features were analysed by Rod Wallace, University of Auckland. The charcoal assemblages are dominated by regrowth shrubs, indicating that the land was cleared by the time the sites were occupied. Bracken (*Pteridium esculentum*) may have dominated the landscape by bracken charcoals are unlikely to survive the disturbance to the middens.

Table 3. Charcoal results by feature (pieces).

		Feature		
Common name	Taxon	2	6	7
Hebe	*Hebe* sp.	12	6	8
Tutu	*Coriaria* sp.			3
Coprosma	*Coprosma* sp.			1
Manuka	*Leptospermum scoparium*	5		8

Chronology

A tuangi sample from Feature 6 was submitted to the Waikato Radiocarbon Dating Laboratory at the for dating (Table 3), and indicates occupation around the mid-15th to late 17th centuries AD. This is consistent with other results from excavations at Omokoroa, discussed above.

Table 4. Radiocarbon date.

Lab no.	CRA BP	cal AD 68%	cal AD 95%
Wk 47003	686 ± 27 BP	1550–1664	1494–1698

Discussion and conclusion

Earthworks at the properties have revealed previously unrecorded archaeological features, which was expected considering the density of the archaeological landscape at the Omokoroa Peninsula. The new site, recorded as U14/3526, shows people were collecting shellfish and fish from Tauranga Harbour and cooking some of these catches on site. The small bin pit indicates kumara storage was also carried out, but large pits and pit clusters are absent. Radiocarbon dates from this investigation show occupation at some point between the mid-15th and late 17th centuries AD.

Residential development on the Omokoroa Peninsula is beginning to expose the density of archaeological deposits in the landscape. Based on the amount of site damage evident in this study at U14/3526, and several other nearby sites, it is likely the true density is under-represented. Future excavations on the peninsula are likely to further expose midden and storage pits. The Gane Place investigations provide further data regarding these occupations but a full synthesis must await the analysis and reporting of the Lynley Park investigations.

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Wednesday, 28 February 2018

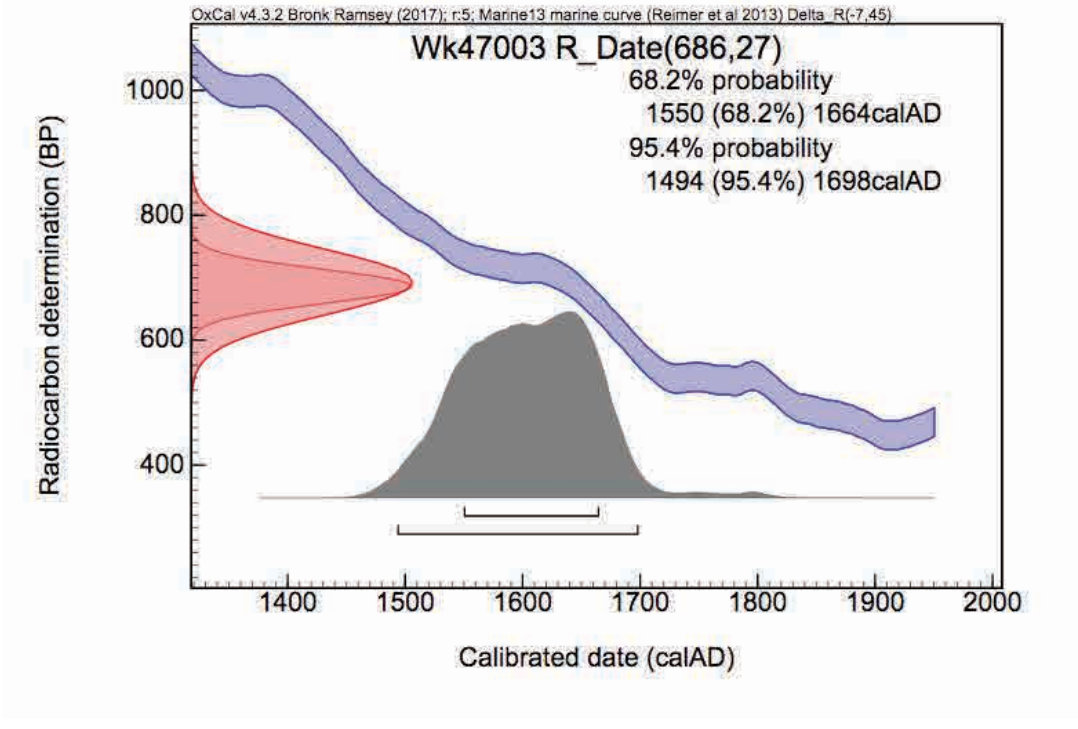
Radiocarbon Dating Laboratory

Report on Radiocarbon Age Determination for Wk- 47003

Submitter	M Campbell
Submitter's Code	Gane Place, U14/3526, Feature 6
Site & Location	Omokoroa Peninsula, New Zealand
Sample Material	Austrovenus stutchburyi
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.

$\delta^{13}C$	0.5	±	0.3 ‰	(CRDS)
$D^{14}C$	-81.9	±	3.1 ‰	
$F^{14}C\%$	91.8	±	0.3 %	
Result	**686 ± 27 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, $\delta^{13}C$, is expressed as ‰ wrt PDB and is measured on sample CO_2.
- $F^{14}C\%$ is also known as *Percent Modern Carbon (pMC)*.

Al Hogg