



Archaeological investigations at Q07/751, 6 Ocean Beach Road, Urquharts Bay (HNZPTA authority 2017/599)

report to
Heritage New Zealand Pouhere Taonga
and
Lou and Karen Kiss

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Danielle Trilford and Matthew Campbell

Lou and Karen Kiss are building a house on their property at 6 Ocean Beach Road, Urquharts Bay (Lot 1 DP 193279), including a driveway and garage. Archaeological site Q07/751, a shell midden, is recorded on the property in the New Zealand Archaeological Association (NZAA) Site Recording Scheme (SRS). This site also extends into adjacent properties (Campbell 2017) (Figure 1). Lou and Karen Kiss applied to Heritage New Zealand Pouhere Taonga (HNZPT) for an archaeological authority to modify the site under section 44 of the Heritage New Zealand Act Pouhere Taonga 2014, and authority 2017/599 was granted on 7 March 2017. Archaeological investigation of the site was undertaken by Matthew Campbell, Arden Cruickshank, Danielle Trilford, Samantha Agnew and Liam Johns of CFG Heritage Ltd on 12–14 September 2017.

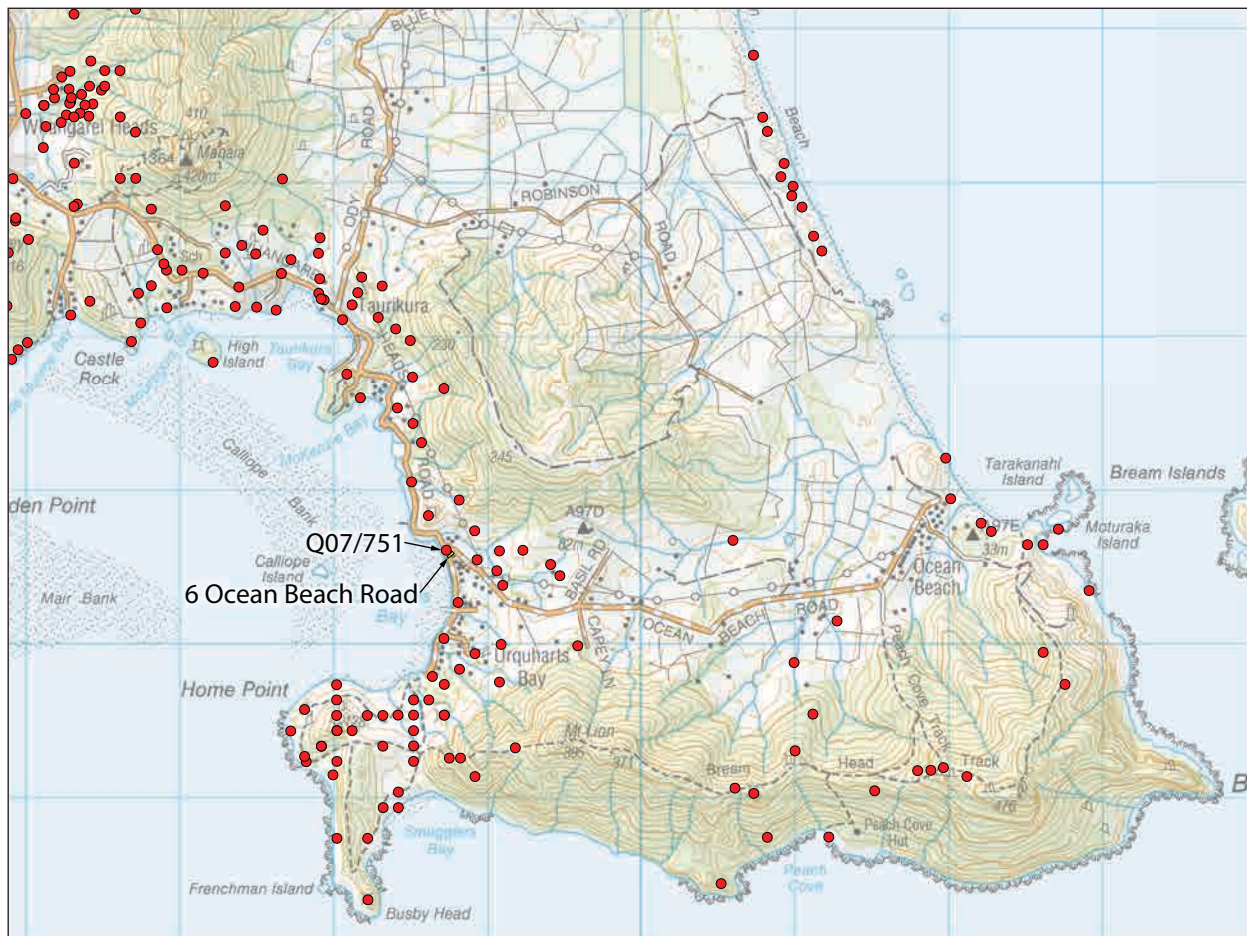


Figure 1. Location of 6 Ocean Beach Road, showing archaeological sites recorded in the vicinity.

Background

Q07/751 was first recorded by T.J. Te Weke and P. Deverall in 1981 as “a layer 25 cm deep and 40 cm long, and is adjacent to many other sites in the same field.” They recorded several more middens on the stream flat with separate site numbers. The site record was updated by Glennis Nevin in 1983 as “seven areas of shell midden within 250 m of each other, south of the stream.” Her plan of the site in the site record shows these patches all north of Ocean Beach Road (Figure 3), although midden is currently visible between Ocean Beach Road and Urquharts Bay Road, where 4 and 6 Ocean Beach Road are located (Figure 2). She also shows various midden deposits north of the stream that are the other sites recorded by Te Weke and Deverall. She describes the various middens, where visible in section, as unstratified, and concluded that each was deposited within a short time frame. She also states that “it is locally believed that this is where a Ngapuhi war party camped, for several months in the early 1800’s before continuing further south” (Nevin 1984: 60). These various midden deposits, recorded by a series of separate site numbers, are best considered as a single site complex across the stream flat.

The site was investigated on the opposite, north, side of Ocean Beach Road by Caroline Phillips in 2006. Following an initial damage assessment when cut and fill earthworks for house construction damaged the site (Phillips 2006a), in 2008 Brett Druskovich and David Rudd recorded the stratigraphy visible in the profiles of utilities trenches, including shell midden,



Figure 2. Approximate extent of midden currently visible along Ocean Beach Road and Urquharts Bay Road.

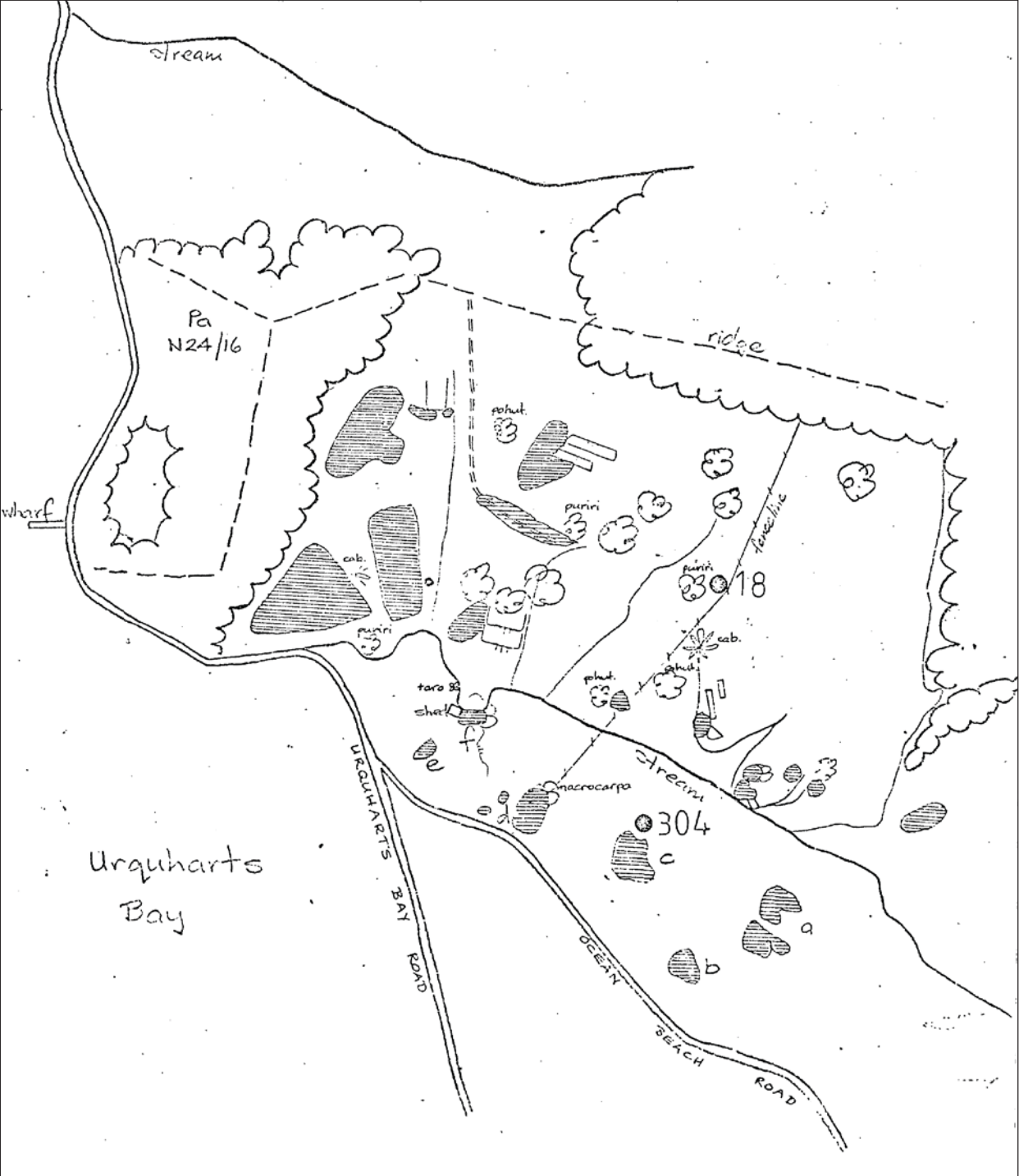


Figure 3. Nevin's 1983 plan of Q07/751, from the NZAA site record form.

possible garden soils, kumara pits and post and stake holes. The midden was dominated by pipi (*Paphies australis*) with numerous fish scales but no fish bones. Obsidian was sourced to Huruiki, in Northland, and Te Ahumata on Great Barrier Island. A date of cal AD 1520–1650 at 68% confidence interval was obtained (Phillips and Druskovich 2009).

Also in 2006, koiwi tangata (human remains) were found during earthworks for a utilities trench in the road adjacent to the Phillips and Druskovich excavation (Phillips 2006b). The bones were briefly analysed by Judith Littleton from the Anthropology Department, University of Auckland, from photographs. They belonged to two individuals: an adult, older than 30, and a mid-teen. The koiwi were reinterred nearby.

The site was next investigated by CFG Heritage Ltd in 2012 at 4 Ocean Beach Road prior to rebuilding of the house on the section (Harris 2012; Campbell 2016). Middens in the front (Urquharts Bay Road frontage) and rear (Ocean Beach Road frontage) of the house were investigated. The rear midden was up to 400 mm deep and contained several firescoops and postholes. Finds included obsidian and chert flakes and a fishing net sinker. Shell was mostly pipi, with the shells generally being quite large. In the front midden, shell was generally smaller, there were no features and only a few obsidian flakes were found. Fourteen fish taxa were found in the two excavations, the majority of which were blue mackerel (tawatawa, *Scomber australasicus*) from the rear midden, identified exclusively through vertebrae (no blue mackerel head bones were found), indicating the consumption of preserved fish bodies on site (Campbell 2016). The site was dated to AD 1510–1630 at a 68% confidence interval.

In the wider Whangarei Heads area, site Q07/1215 at Reotahi, just north of Urquharts Bay, was investigated by Sian Keith in 2006 (Campbell and Keith 2007) and again by Danielle Trilford and Matthew Campbell in 2017 (Trilford 2018). During the 2006 investigation a dense, compact shell midden was observed generally 200–300 mm deep but in places up to 600 mm deep. The midden consisted mostly of pipi with some tuangi (*Austrovenus stutchburyi*) and a single cat's eye (*Turbo smaragdus*). During the 2017 investigation a similar midden was found though not as deep, and occasional fishbone, of which one was identified as snapper (tamure, *Chrysophrys auratus*). A shell sample for the 2006 investigation was dated to AD 1670–1810 at a 68% confidence interval. This late date indicates a probable occupation in the last century of the pre-European period.

Sites Q09/797, Q07/798, and Q09/800 were monitored in 2005 during subdivision works at the Vinson Farm, McGregors Bay (Bickler et al. 2008). Several shell scatters were investigated, mostly dominated by pipi but in one case by tuatua (*Paphies subtriangulata*), with occasional tuangi and other minor species. No fish, bird or mammal bone was recovered. Although fire cracked rock was not uncommon, no firescoops were identified. Charcoal analysis showed the environment where people were collecting wood to burn were dominated by woody species, indicating open environments or re-growth scrub vegetation. A shellfish sample for Q07/800 returned a radiocarbon date from the 15th or early 16th centuries. Bickler et al. (2008) interpreted the sites as small-scale shellfish processing areas, with cooking and other activities taking place elsewhere, for instance nearby Castle Point Pa (Q07/801).

South of Urquharts Bay is the Smugglers Cove site, Q07/103, which has artefacts such as lures, fish hooks and other fishing equipment, tuatara jaw, several different species of bird bone, and evidence of a significant occupation, possibly within the early period of pre-European Maori occupation (NZAA SRS). Much of the site, located on a beach dune, has been destroyed by wind deflation since it was first recorded.

Across the harbour several investigations of extensive midden and occupations at One Tree Point and surrounding areas have shown semi/permanent occupation with people harvest-

ing large amounts of shellfish, fishing and drying the fish, and other activities at some stage in the 16th and 17th centuries (Phillips and Harlow 2001; Campbell 2006).

Methodology

A hydraulic excavator was used to expose two areas of midden, Features 1 and 2 (Figure 4). A 1 m grid running 1–12 east–west and A–V north–south was placed over the site. Five grid squares in each midden feature were excavated to the base of the midden and 10 litre bulk samples were taken from each excavated square. Several small lithics were recovered. Occasional mammal bone was handpicked, as well as siphon whelk (*Penion sulcatus*) and Arabic volute (*Alcithoe arabica*). The site was mapped by hand and digital photographs were taken. Features were excavated, then photographed and recorded following standard archaeological procedure.

Archaeology

During topsoil removal, two main areas of midden were exposed (Figure 4). Feature 1 was a disturbed and redeposited midden while Feature 2 was intact.

Feature 1

Feature 1 was a disturbed midden covering 11.2 x 10.4 m, 70–120 mm deep, with occasional ceramics, glass and iron nails mixed through it. The shell in Feature 1 was fragmented in a matrix of brown clay loam. Feature 4 was a scoop of whole tuangi, some still paired, at the base of Feature 1 in Square P7, separated from the main disturbed midden by a thin lens of clean topsoil loam. In the same square was Feature 5, a modern rubbish pit.

Feature 2

Feature 2 was a largely intact and undisturbed midden except where a service line runs through it. The deposit was mostly pipi in a loosely consolidated charcoal stained sandy loam containing small fire-cracked rock throughout the matrix. The exposed portions of the midden covered 7.5 x 5 m and was 150–440 mm deep, becoming deeper to the north east, toward Ocean Beach Road. Several large siphon whelks and Arabic volutes were hand-picked and collected for analysis.

Chronology

A shell sample from Feature 2 was submitted to the Radiocarbon Dating Laboratory at the University of Waikato for dating (Table 1), placing the occupation of the site in the mid-15th to mid-16th centuries. Previous investigations at the site yielded dates in the early 16th to early-mid 17th centuries (Phillips 2009; Harris 2012). Given the size of the midden, as well as the extent of middens across the stream flat, it almost certainly represents several occupations built up over period of several years or even centuries.

Lab no.	CRA BP	cal AD 68%	cal AD 95%
Wk 47591	792 ± 23	1456–1559	1441–1639

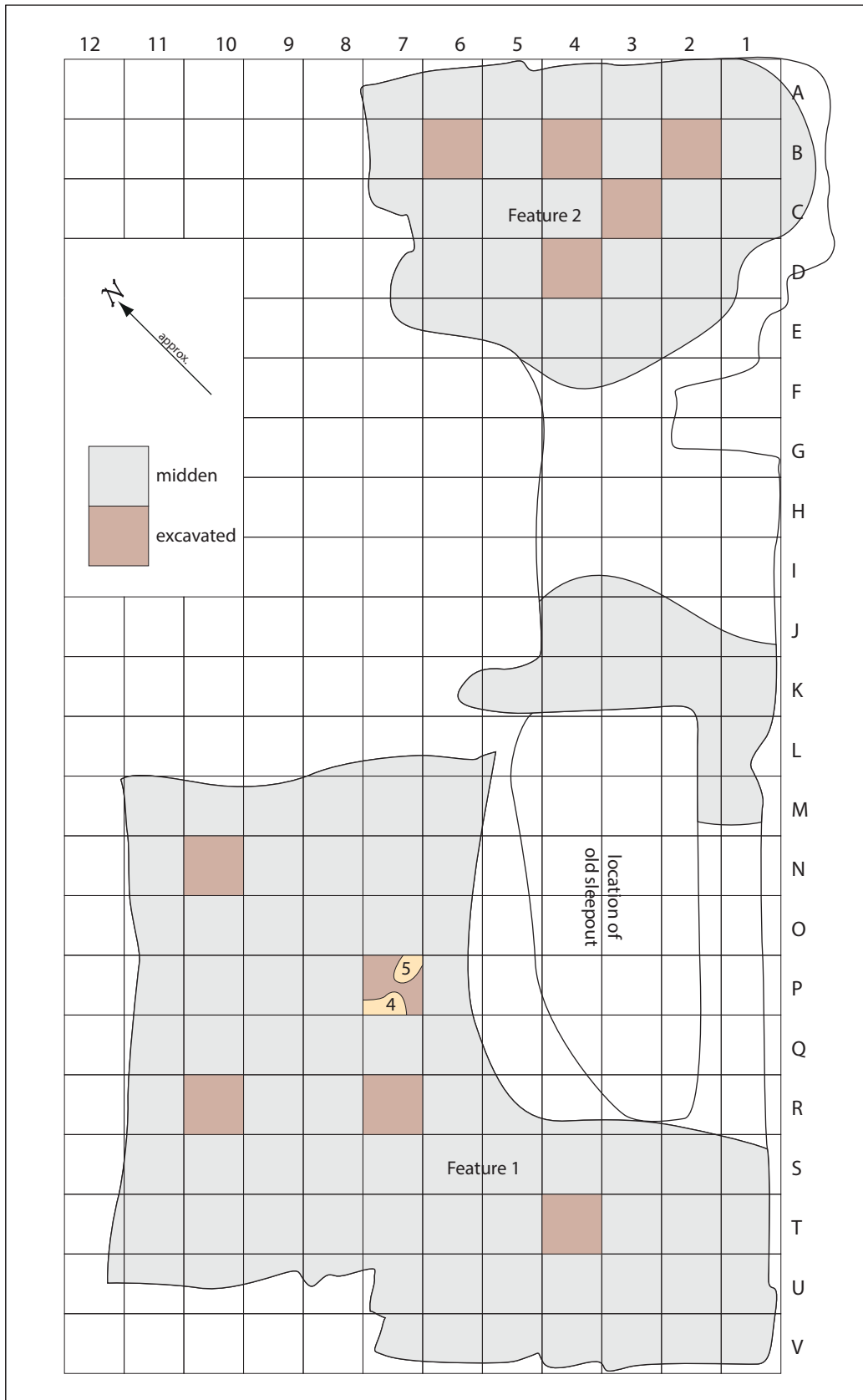


Figure 4. Plan of archaeological features found during earthworks at Q09/751. See also drone photo of the site on the report cover.



Figure 5. Feature 2 after excavation.



Figure 6. Square B4 in Feature 2 after excavation.

Analysis

The bulk samples taken from each excavated square were returned to the lab for analysis. Numbers for fish are reported as NISPs (Number of Identified Specimens), and for shellfish as MNI (Minimum Number of Individuals); bivalves were not identified to left or right, so MNI is NISP divided by two, while the MNI for gastropods is equivalent to the NISP.

Lithics

Two pieces of obsidian were recovered: an exhausted core measuring 22 x 20 x 13 mm; and a flake measuring 22 x 16 x 5 mm. Geochemical analysis of the obsidian was carried out by Andrew McAlister at the Anthropology Laboratory, University of Auckland, using a Bruker Tracer III SD portable X-ray Fluorescence analyser (pXRF). Both were sourced to a chemically distinctive source that is known only from archaeological sites, mainly Tawhiti Rahi in the Poor Knights Islands (Robinson 2016) and in small amounts on the Northland mainland. This type has been labelled 'Poor Knights' obsidian (Moore and Coster 2015) although the source has not been identified. Its chemical composition suggests that, if it is not located in the Poor Knights Islands themselves, it is probably from an unidentified source on another island in the Coromandel Volcanic Zone, such as Great Barrier and Fanal Islands, both of which possess high-quality obsidian deposits (McAlister 2019).

Shellfish

All diagnostic shell portions (hinges for bivalves; aperture or apex for gastropods, with operculums counted separately) were identified to the lowest possible taxonomic level, with species identification based on Morley (2006).

	Feature	
	1	2
Bivalves		
Tuangi (<i>Austrovenus stutchburyi</i>)	75	447
Fine dosinia (<i>Dosinia subrosea</i>)	1	
Pipi (<i>Paphies australis</i>)	166	822
Tuatua (<i>Paphies subtriangulata</i>)		1
Gastropods		
Arabic volute (<i>Alcithoe arabica</i>)		4
Speckled whelk (<i>Cominella adpersa</i>)	3	6
White rock shell (<i>Diacathais orbita</i>)		2
Black nerita (<i>Nerita atramentosa</i>)		1
Siphon whelk (<i>Penion sulcatus</i>)		12
Cat's eye (<i>Turbo smaragdus</i>) (opercula)	7	11
<i>Mactra</i> sp.		1
Uneconomic gastropods		
Smooth slipper shell (<i>Maoricrypta monoxylla</i>)		2
Lined whelks (<i>Buccinulum vittatum</i>)		3
Echinoderms		
Kina (<i>Evechinus chloroticus</i>)		1
MNI	252	1313

Over half the shellfish in each feature was pipi, with tuangi the only other common species. Pipi and tuangi would have been collected locally in Urquharts Bay. Some other species, present in very low numbers, such as tuatua or dosinia (*Dosinia subrosea*), are open beach species and might have come from Ruakaka or Ocean Beach, both less than 10 km, or a brief waka trip, from the site. Cat's eye are usually found on rocky shores but can sometimes be found in mangroves – both shore types are close to the site. Despite the presence of charcoal in the midden none of the shell was seen to be burnt.

One hundred and sixteen whole pipi valves were randomly selected from Feature 2 samples and their lengths measured. The results are shown by 5 mm classes in Figure 7. There is a bimodal distribution, with shells grouped around 30 mm and again at the 65 mm. This pattern may indicate separate harvesting events (Somerville et al. 2017: 228), it may be a result of people tending to target larger specimens, or it may be due to recruitment patterns within the pipi population. The same bimodal patterning was recorded in a sample of 100 pipi from Reotahi (Campbell and Keith 2007).

The results also match those from the midden at Reotahi (Q07/1215) (Campbell and Keith 2007; Trilford 2018). The site at Reotahi dates slightly later than that of Q09/751, indicating a continuity of shellfish exploitation. A similar pattern is seen at McGregor's Bay (Bickler et al. 2008), although here there were isolated patches of tuatua and, to a lesser extent, cat's eye and tuangi.

Large gastropods, in particular siphon whelk and Arabic volute, but also speckled whelk (*Cominella adspersa*) and white rock shell (*Diacathais orbita*), would have contributed more by meat weight than numbers alone suggest. These species could have been collected locally, on the soft shore or on rocky points.

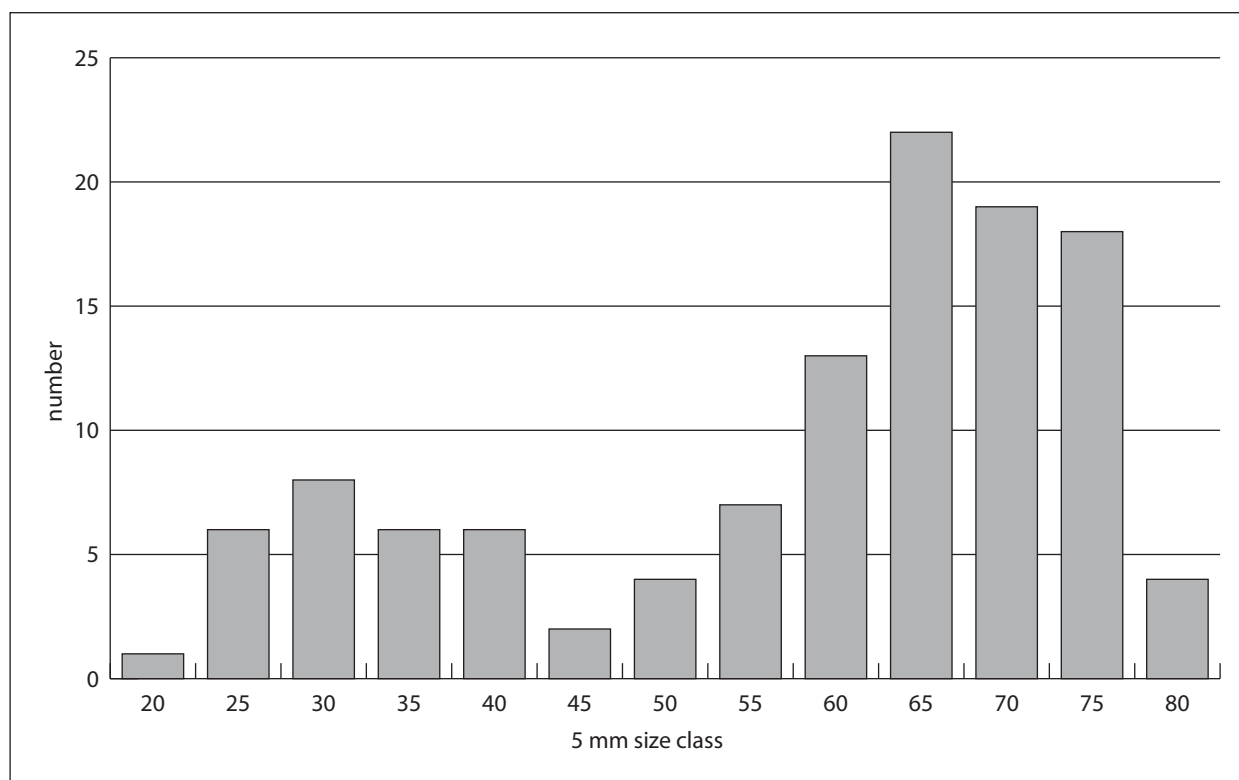


Figure 7. Lengths of pipi plotted in 5 mm classes.



Figure 8. Breakage patterns on siphon whelk (*Penion sulcatus*) and Arabic volute (*Alcithoe arabica*) (top right).

In addition to those found in the bulk samples, several large siphon whelks and Arabic volute were handpicked after observations of consistent shell damage patterns which suggested that the shells had been deliberately broken. The apex of many was missing and many also had a hole in the last, largest body whorl (Figure 8). In both cases this damage to the shell would appear to be a deliberate strategy to make removal of the flesh easier. Stevens (1974) undertook experiments with several gastropods (none as large as siphon whelk or Arabic volute) and found that, while cooked flesh could easily be removed from gastropods through the aperture with a pick, uncooked flesh was more difficult to remove, but that breaking the shell at the aperture or

main body whorl made flesh removal easier. This seems to be the strategy used at Ocean Beach Road.

On the other side of the harbour at One Tree Point cockle is the predominant species (Phillips and Harlow 2001; Campbell 2006). The One Tree Point environment is dominated by mudflats while Urquharts Bay is a more sheltered, sandier coast – people were generally collecting the closest available shellfish, rather than pursuing a preferred type of shellfish or eating imported dried shellfish.

Fish

Fish were identified following the method outlined in Campbell (2016). Fish were mostly recovered from Feature 2 although some were found in Feature 1. Numbers were low, with snapper the most common species, followed by piper (ihi, *Hyporhamphus ihi*) with lesser numbers of mackerel (hature, *Trachurus* sp.) and yellow-eyed mullet (aua, *Aldrichetta forsteri*) (Table 3).

This contrasts with the previously analysed assemblage from the site on the neighbouring property, 4 Ocean Beach Road (Harris 2012; Campbell 2016), where blue mackerel were by far the dominant species and provided evidence of preservation and transportation of fish. Snapper and mackerel were also present with other species in very low numbers. The assemblage from 6 Ocean Beach Road is far more typical of coastal assemblages in Northland. It is notable that little or no fishbone was recovered from several investigations nearby.

The presence of piper in the midden is unusual. This relatively small fish (usually about 200–250 mm long) schools in shallow waters in summer and could probably be easily caught by pre-European Maori using nets – it has a small mouth and would not take a hook (it will take a very small baited metal hook or fly, Paul 2000: 66). However, it has extremely fragile mouth and head bones that are unlikely to survive in archaeological contexts. Piper has been detected in midden material through mass DNA metabarcoding of non-diagnostic material (Seersholm et al. 2018) but has not been previously identified through analysis of diagnostic bones. All the bones identified at 6 Ocean Beach Road were vertebrae, which are more robust than the head bones. These would not have been recovered if the midden had been sieved through a 6 mm mesh on site but were more readily recovered in the 3 mm mesh from the samples returned to the lab. No piper bones are as robust as the bones of snapper, gurnard or tarakihi, and it is probable that there were originally many more piper in the assemblage than the counts in Table 3 indicate.

Table 3. Counts of identified fish taxa by NISP.

	Feature	
	1	2
Blue mackerel (tawatawa, <i>Scomber australasicus</i>)		1
Gurnard (kumu, <i>Chelidonichthys kumu</i>)	1	4
Kahawai (<i>Arripis trutta</i>)		1
Mackerel (hature, <i>Trachurus</i> sp.)	3	12
Piper (ihi, <i>Hyporhamphus ihi</i>)		29
School shark (kapeta, mango <i>Galeorhinus galeus</i>)		3
Snapper (tamure, <i>Chrysophrys auratus</i>)	12	38
Tarakihi (<i>Nemadactylus macropterus</i>)		1
Yellow-eyed mullet (aua, <i>Aldrichetta forsteri</i>)		11
Fish sp.	2	10
NISP	18	110

Bird and mammal

Small numbers of European domestic mammal (pig and sheep) bone and some bird bone were found in the disturbed upper layers of Feature 1. Included in this assemblage was some duck bone that is probably mallard (*Anas platyrhynchos*) but may be the native grey duck (*A. superciliosa*). This assemblage was not analysed further.

Discussion and conclusion

The series of middens recorded as Q07/751 have been investigated several times in the past (Phillips 2006a, 2006b, Philips and Druskovich 2009; Harris 2012; Campbell 2016) and the current investigation at 6 Ocean Beach Road has uncovered further parts of the site. The results are quite different to those from 4 Ocean Beach Road immediately to the north west. At number 4 the archaeology was more complex, with the midden containing firescoops and postholes; it contained different shellfish taxa and greater proportions of tuangi, though still dominated by pipi; different fish species; larger amounts of stone including obsidian flakes from as far afield as Tuhua / Mayor Island and Te Ahumata on Great Barrier Island as well as a stone net weight; and dated roughly a century later than number 6 (Phillips and Druskovich 2009 obtained a similar date to number 4).

When Nevin described the site, as a series of middens over a wider area, in 1983 she noted that they were unstratified and concluded that each was deposited within a short time frame. The varied excavation results indicate that while the deposits do not show any vertical stratigraphy, the larger site itself has been built up over a longer time frame, with different deposits lying next to each other in a horizontal stratigraphy. Similar patterns of horizontal stratigraphy have been noted at places like Karamea on the South Island West Coast (Jacomb et al. 2010) and Tiwai Point in Southland (Park 1969). At Karamea, an extensive and continuous pipi midden built up over 200 years with the younger, and deeper, component to the north of the site. The site complex at Urquharts Bay, of which Q07/751 is one component, is patchily distributed and is unlikely to have built up as regularly as Karamea, but time depth is still demonstrated by horizontal stratigraphy even where vertical stratigraphy is lacking. This sort of pattern can only be determined through dating the site.

Nevin also states that “it is locally believed that this is where a Ngapuhi war party camped, for several months in the early 1800’s before continuing further south” (Nevin 1984: 60). Urquharts Bay provides an ideal, sheltered campsite just inside the Whangarei Heads so this local belief may well be the case although no deposits have been recorded as containing any early 1800s artefacts or been radiocarbon dated as late as the 19th century. The evidence of the archaeology indicates that this process extends back further than the 1800s, to at least the early 1400s, indicating 400 years of occupation represented by the horizontal stratigraphy of Urquharts Bay. Quite possibly even earlier deposits may be present but, like the 1800s deposits, are not yet identified.

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