ARCHAEOLOGICAL INVESTIGATIONS AT THE
WAIMAHIA INLET RESIDENTIAL DEVELOPMENT
(HPA AUTHORITY 2014/574)

REPORT TO
HERITAGE NEW ZEALAND POUHERE TAONGA
AND
TAMAKI MAKaurau COMMUNITY HOUSING LTD

ARDEN CRUICKSHANK AND JADEN HARRIS
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Reviewed by: Matthew Campbell

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Tamaki Makaurau Community Housing Ltd are establishing an affordable housing development of up to 300 residential units on Crown Land at Weymouth (Sec 1 SO 362124), a block of 15.9 ha east of Weymouth Road and west of Waimahia Creek (Figure 1). A super lot consent and bulk earth works consent has been granted by the Auckland Council to commence site works (ref: 42510 SP 11081).

Simon Jacks of Hargrave Group, on behalf of Tamaki Makaurau Community Housing Limited, contracted CFG Heritage Ltd to provide an archaeological assessment of the development in support of applications to the New Zealand Historic Places Trust (now Heritage New Zealand Pouhere Taonga, Heritage NZ) for archaeological authorities under section 14 of the Historic Places Act 1993 (Campbell and Harris 2013). On 21 November 2013 a midden was uncovered by earthworks, triggering the Accidental Discovery Protocols in the Resource Consent 42510 SP 11081, work ceased and the area was cordoned off. Jaden Harris of CFG Heritage inspected the find on 22 November and on 27 November a full
field survey was undertaken of the development. As a result of the field survey three new small midden sites were recorded in the development area (a fourth was subsequently uncovered at a later date). Tamaki Makaurau Community Housing Ltd applied for an archaeological authority and authority 2014/574 was granted on 9 December 2013.

On 23 and 24 January 2014 sites R11/2886, R11/2887 and R11/2898 were investigated by Arden Cruickshank and Jarden Harris of CFG Heritage Ltd. The extent of another site, R11/2888, was determined by test pitting and found to be almost wholly outside the development area and was not investigated further.
BACKGROUND

Physical landscape

Sec 1 SO 362124 is located on the northern half of the Weymouth Peninsula and the eastern boundary is formed by Waimahia Creek. The property generally consists of low to slightly elevated land bisected by a number of minor gullies. One larger stream gully is located at the southern end of the property and forms a side inlet draining into Waimahia Creek. The land rises generally to the west to reach 22 m ASL at Weymouth Road. Part of the property fronting Weymouth Road has previously been developed, while the larger portion adjacent to Waimahia Creek was until recently open farmland.

Pre-European background

Among the first occupants of Tamaki were a people known as Turehu, or ‘the people from the earth’ (Murdoch 1990: 13). Subsequently Tīnō Maruiwi migrated north from Taranaki, conquering Turehu and settling in the Waitakeres. Oho Mata Kamokamo conquered the Tamaki isthmus, settling at Rarotonga (Mt Smart, a volcanic cone and pa now entirely quarried away) (Smith 1898: 33; Murdoch 1990: 13; Daamen et al. 1996). In the mid-14th century a number Ngati Awa from Taranaki moved north and settled peacefully among Nga Oho (Murdoch 1990: 12). Pa building on the isthmus may have commenced with Ngati Awa (Sullivan n.d.). They were followed by Nga Iwi whose chief, Hua, gathered together people of different origins into Te Waiohua; on account of this he was known as Hua Kai Waka “Hua the eater of canoes.”

Around the mid-17th century Maki of Ngati Awa in Taranaki settled in Tamaki where he became involved in local feuding, eventually siding with the people of Takapuna, attacking and defeating his Tamaki hosts. THe then moved on to conquer lands from the Manukau to the Kaipara. This was a less peaceful episode than the migrations of Ngati Awa some two centuries earlier and involved the conquest of most of Nga Oho and their incorporation into Te Kawerau a Maki (Murdoch 1990: 12; Sullivan n.d.). By the 18th century the peoples of Tamaki/Maunkau were principally Te Waiohua and Te Kawerau a Maki, though Sullivan (n.d.) mentions numerous sub groups.

In the 18th century Ngati Whatua completed their migration from the far north to Kaitaia and Kaipara where they encountered Te Kawerau a Maki. Te Kawerau were badly beaten in the battles known as Te Rau Patu Tihore, ‘the stripping conquest’, and all their pa in the Waitakeres are said to have been destroyed (Smith 1898: 68). Ngati Whatua attacked Te Waiohua in Tamaki and took various smaller pa but could not take Maungawhau or Maungakiekie.

In the late 18th century Te Waiohua, under their great ariki Kiwi Tamaki, occupied Tamaki/Manukau. Kiwi quarrelled with Te Taou in South Kaipara and attacked the at Waituoro. Afterwards Te Taou obtained utu from Te Waiohua at the pa at Taurere (Taylors Hill). Kiwi then attacked the people of Mimihau near Hellensville, killing men of Ngati Whatua (Stone 2001: 40–45; Ballara 2003: 206–209).

Te Taou then raised a taua under Te Wahi Akiaki and sacked Tarataua, a pa of Te Waiohua on the Awhitu Peninsula and then attacked Te Waiohua at Titirangi.
Kiwi raised a taua of 3000 or 4000 men and attacked Te Taou as they neared Te Whau. Te Wahi Akiaki led his taua in a feigned retreat uphill and, once they reached the ridge top, turned and broke the Waiohua advance. Te Waiohua fled down to the Manukau to Paruoa where Kiwi was killed and Te Waiohua were comprehensively routed (Agnes Sullivan pers. comm. 2010). Many Te Waiohua fled to the Waikato. Te Taou then took Tamaki as their own until Ngati Whatua then decided to seek utu for their kin formerly killed by Kiwi, sailing down the Waitemata to surprise and defeat Te Waiohua at Kohimarama.

At the same time various Hauraki tribes were pressing claims in Tamaki, conquering and occupying the North Shore and offshore islands, and sacked Maungarei and Maungawhau. Conflict soon arose between Ngati Whatua and Hauraki but in two important battles Hauraki were defeated and Ngati Whatua established their hegemony on the isthmus. They remained until attacked by musket armed Nga Puhi in the early 19th century (Simmons 1987: 30; Stone 2001: 49–52).

In around 1807 a battle was fought at Moremonui between Nga Puhi and Te Roroa, supported by Ngati Whatua, where Nga Puhi were defeated, losing several chiefs. This battle was known as Te Kai a te Karoro (the seagull’s feast). From 1814 Nga Puhi under Hongi Hika began to acquire muskets and monopolise contact with traders and missionaries in the Bay of Islands. In contrast, Kaipara Maori had little interaction with Pakeha until the 1830s (Waitangi Tribunal 2006: 15).
3. Village and Suburbs of Weymouth showing the layout of the proposed township. The plan is not dated but is presumably a copy or based on the survey of 1857 (Sir George Grey Special Collections, Auckland Libraries, NZ Map 4498-35).
Among those killed at Te Kai a te Karoro were Hongi’s brother Houwaea and his sister Waitapu (Waitangi Tribunal 2006: 45). In 1825 Hongi sought utu, and defeated the Ngati Whatua confederation in a series of battles around Kaiwaka, known as Te Ika a Ranganui. The survivors fled in several directions and for around 10 years Tamaki and much of the southern Kaipara remained only very sparsely inhabited, with the few remaining behind living in fear of further Nga Puhi raids. Eventually Ngati Whatua were able to return, so that when Lieutenant-Governor Hobson arrived in Auckland in 1840 Ngati Whatua were back in occupation.

This relationship between Tainui and the peoples of Tamaki and the Manukau was strengthened after Te Ika a Ranganui as the latter fled to the Waikato, becoming more closely tied to Tainui by marriage and more closely integrated into the wider Tainu–Waikato confederation. Inland Tainui had customary rights on the Manukau, and presumably Manukau peoples had reciprocal rights elsewhere in the Tainui rohe (Waitangi Tribunal 1985: 11).

Historic background

The land in which Weymouth is located was originally part of a very large block of land purchased from the Maori owners by the Church Missionary Society representative William Thomas Fairburn in 1836. The block known as Tamaki included all of the land that now makes up South Auckland and was estimated at the time to amount to about 40,000 acres. Later reviews suggested that the actual size of the claim was in the order of 70,000 to 80,000 acres. The circumstances of the purchase were unusual and when it came under review in July 1842 the Land Claims Commissioners recommended a grant of 2,560 acres to Fairburn (Tonson 1966: 52). Part of the peculiarity of the purchase had its origins in the Nga Puhi raids of the 1820s which resulted in the virtual desertion of South Auckland by resident iwi, many of whom did not begin to return to the area until the mid-1830s (Moore et al 1997: 80–82). Fairburn had reserved a third of his claim for the original Maori owners but this area was never surveyed or marked out in any way, which caused great difficulty when they later tried to claim title to the land (Moore et al 1997: 80). When the claim was finally settled in 1845 Fairburn was in possession of a total of 5,495 acres (Tonson 1966: 53). The remainder of the claim became surplus Crown Land, apart from a portion claimed by the Maori owners not part of the original purchase.

The Weymouth peninsula then became part of a 10,000 acre grant awarded to James Reddy Clendon by the Government. The grant was offered in compensation for a deal brokered in 1840 between Captain Hobson and Clendon for the purchase of Clendon’s estate in Okiato, Bay of Islands, as the location for New Zealand’s first seat of government. The Crown Grant for this block was awarded on 18 October 1842 (Tonson 1966: 56). Clendon never occupied or developed the land himself and the block was gradually split up and sold off for profit. Evidence from survey plans shows that Weymouth was Subdivision 8 of Clendon’s Grant.

Early European visitors to the district included the Wesleyan and Church Missionary Society missionaries and one of the frequent travellers was Bishop Selwyn who is known to have regularly conducted services in the old Urquhart homestead on the Karaka side of the Pahurehure Inlet (Tonson 1966: 202).

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1 Utu is often glossed in English as ‘revenge’, but in fact it refers to reciprocity, like-for-like, repayment of debt, re-balancing of obligations. Utu can refer to reciprocal gifting as much as reciprocal warfare. Utu in the context of war meant balancing an offence against the mana of a person or group. In war this was not for vengeance, but in order to achieve a balance and resolve the take, or proximate cause of action. If the take was the taking of a life then the balance was often achieved through the reciprocal taking of life (Ballara 2003: Chapter 6).
In the mid-19th century, before the development of formed road networks waterways played a major role in transport and communication in the district. From Auckland, prior to the development of the Great South Road the direct route south was across the Manukau Harbour at Weymouth to Karaka Point and overland from there down to the Waikato River (Tonson 1966: 203). Due to this regular traffic it was believed that Weymouth would become a town and that a bridge would eventually span the Pahurehure Inlet. In 1857, the district was surveyed into town and suburban lots (Figure 3). The development property covers part or all of original Suburban Sections 28, 29, 30 and 31. With the advent of the Waikato Wars in the 1860s, the Great South Road was pushed south to Drury and Weymouth never developed as planned. While there was some European settlement from this time, farming in the district developed later towards the end of the 19th century. Water remained a vital means of communication into the 20th century and in 1926 a new wharf and jetty was opened at Weymouth (Wichman 2001: 150).
Maps and images

Old survey maps and plans relevant to the study area were searched for primarily using QuickMap software. Other potentially useful maps and images were searched for through the Auckland Libraries and Alexander Turnbull Library websites.

Survey plan SO 111, Village and Suburbs of Weymouth, surveyed by F. J. Utting, is not dated but is presumably the original survey of the proposed township of 1857 (Figure 4). On Suburban Section 31, which is part of the development property, is the name 'Hayward', which appears to be a later annotation and not part of the original drafting of the plan. The only details of any possible European occupation are for Suburban Section 2 which is labelled 'Lawrie' and with possibly a building also indicated. Tonson suggests that the Lauries were a family of fishermen who had arrived in New Zealand from Scotland and moved to Weymouth from Drury during the Waikato War (Tonson 1966: 203).

The next available plan, SO 3745, Plan of Weymouth Suburban, surveyed by A.H. Vickerman in March 1885 shows more details (Figure 5). Of interest to the Waimahia development is a farm on Sections 26 and 31. The farm is divided into fenced paddocks with a combination of 'post-and-wire' and 'live hedge and ditch' fences and one paddock is labelled as 'partly ploughed.' On Section 26 a building is labelled 'Hayward's House' with what appear to be gardens to the south of the building. Section 26 is adjacent to but outside the development property and this area has since been developed for housing, so the actual site of Hayward's house has been destroyed. Other features relating to the farm may have been present on the portion of Section 31 within the development area, but this area has also been developed in the 20th century. Other details on the plan show that there was an established farming community in Weymouth by 1885. Several farms and houses with the names of the occupants labelled are shown on the north side of what is now Blanes Road. At the head of 'Waimipia Creek' [sic] by a 7 ft high waterfall an 'old flax mill site' and 'old water wheel' are labelled. The waterfall and the site of the flax mill are located where Mahia Road now bridges Waimahia Creek and so this site is also likely to have been destroyed.

The name Hayward referenced on the survey plans would appear to be Albert Henry Hayward. Albert Hayward appears to have died in 1900, aged 37 years (www.bdmhistoricalrecords.dia.govt.nz, reference 1900/3939), although it is not known if he was still resident in Weymouth. Given his death at a relatively young age in 1900 it would seem likely that his house and farm at Weymouth were only recently established when the Suburban Sections were surveyed in 1885. Most of the features relating to Hayward's farm would appear to have been destroyed by subsequent development, including the main homestead, and it is unlikely that any evidence of this occupation would be unearthed within the development area.

For the 20th century the most useful images are aerial photographs. The 1959 aerial photographs available via the Auckland Council GIS show two houses or groups of buildings in the area where Hayward’s house is marked on SO 3745 and another house to the north in the development area. It is not known when this other house was constructed but as Section 31 was part of Hayward’s farm it would seem likely that it dates to the 20th century. Various other aerial photographs taken by Whites Aviation from the 1950s to 1980s cover the area around Weymouth but only a couple show the development area in any detail. One view flown in October 1962 shows Weymouth from the north looking south (Figure 6). The site of Hayward’s house is clearly visible set amongst mature trees as well as
5. Survey plan SO 3745, Plan of Weymouth Suburban, 1885.

the other house to the north on Section 31. The remainder of the development area is undeveloped farmland. The next useful image dates to October 1973 and shows an oblique view of Weymouth taken from the north looking southwest. Large trees are still present around the site of the old Hayward homestead and Section 31 and part of Section 30 appears to have been developed for a large institutional complex. The area adjacent to Waimahia Creek still appears to be undeveloped farmland. By 1996 aerial photographs show that Section 26 and the site of Hayward’s homestead has been destroyed by housing development and by 2006 part of the institutional complex on Section 31 has also been demolished (Auckland Council GIS).
The Manukau Harbour cannot really be separated from land that surrounds it, from the sand dunes of the Awhitu to the west, the rolling lands of Pukekohe and Manukau City with their fertile volcanic loams to the south and east, the Tamaki isthmus to the north and the Waitakere ranges to the north west. Connecting these places are the waterways of the harbour. There are short portages at New Lynn to the Whau river and the Waitemata harbour, and at Otahuhu to the Tamaki river and the Hauraki gulf.

The stone fields sites of South Auckland are nationally significant archaeological sites and have figured heavily in discussions of pre-European Maori gardening. As little as 200 of the original 3000 or so hectares of stone fields in the Auckland Volcanic field may survive, mostly at Otuataua, Matukutureia McLaughlin's Mountain, Puketutu Island and Ambury Farm Park, all on or near the Manukau Harbour. The surviving stone fields have all been described and mapped to greater or lesser degrees and some archaeological excavations have been carried out, but analysis and reporting have been of a decidedly mixed standard.

The Ambury Farm Park stone field is associated with Mangere Mountain, though modern housing has destroyed features between the mountain and the remaining stoneworks (Rickard et al. 1983). Excavations in 1982 (Lilburn 1982) showed that there was limited evidence of clearance of stone to create gardens. Brassey and Addis (1983) excavated a midden mapped on the surface that was shown to be European in origin and many of the features previously recorded were shown to be natural. Pre-European middens were found that were not previously visible on the surface, one of which was associated with an obsidian working floor. They concluded that occupation was temporary and not associated with gardening.

The Wiri oil terminal site (R11/1187) was mapped prior to excavation, with stone features were interpreted as horticultural features while the stone free areas were interpreted as possibly gardens or marae (Cramond et al. 1982). Only a preliminary report of the excavations at the Wiri oil terminal site has been prepared (Bulmer 1983) which noted that "structural evidence, other than stone constructions, was very elusive."

The Wiri railway site was also mapped prior to excavation (Veart et al. 1984). Excavation concentrated on 14 rock and earth mounds. On the basis of stakeholes in the bases, these were interpreted as mounds for growing climbing plants, probably gourd but possibly yam (Coates 1992). Dates have not been fully reported, but Foster and Sewell (1995: 4) relate that the site had a 15th–17th century occupation. Two well defined house sites, fire scoops and some probable garden areas were also excavated but have not been reported (Dave Veart pers. comm. 1 July 2010).

The best preserved and most complex of the stone fields is at Otuataua. The site has been well mapped but no excavations have taken place. Features present include stone mounds and rows, including probable boundaries, house outlines and stone lined pits.

The Puhinui site (R11/25) on the Matukutureia McLaughlins Mountain stone field was subject to the most complete investigation of a gardened area in south Auckland, with 1500 m² excavated. While there was little evidence of occupation, in the form of any permanent or semi-permanent villages or hamlets, some possible huts or shelters were found. Along the bank of the Puhinui Creek terraces with scoria rock retaining walls had been constructed, containing evidence of intensive cooking; postholes outlined small huts or shelters; and stone heaps and rows, may
have been part of a wider boundary system. A series of stone alignments in the creek bed were interpreted as fish traps. In other areas, depressions in the underlying scoria loam were filled with a transported soil to form gardens. Stone mounds and heaps indicated clearance of stone from the soils, while stone rows were interpreted as garden divisions. Small garden shelters, but no substantial houses, were also excavated. Occupation at Puhinui dates to the 16th or 17th century (Lawlor 1981).

Excavations were undertaken at site R11/31, Elletts Mountain (Maungataketake) in two seasons from 1973 to 1975 prior to quarrying. These excavations have never been fully reported but preliminary reports (McKinlay 1974, 1975) indicate that
stone faced terraces, pits and living platforms were excavated. The archaeology indicated at least two phases of occupation.

In 1984 test excavations were undertaken at site R11/665 at Nga Kapua Kohu Ora Crater Hill (Foster et al. 1985). A possible house was found next to an extensive cobbled-paved platform of unknown function. Nearby a pit with an internal drain was found, overlain by later evidence of cooking which was itself overlain by a garden wall, indicating repeated occupation.

In 1999 Foster (2000) excavated pit site R11/1930 on the Pukaki Creek. Of 11 pits, five were deep (greater than 600 mm) and had internal and external drains, the latter up to 1400 mm deep. Foster suggested that the site represented a single occupation, but some time depth was indicated by Pit H overlying Pit E. A single radiocarbon date of AD 1460–1700 was obtained.

It is fairly clear that the stone fields have been over-interpreted on the basis of visible surface features. Excavation has in every case (where reported) revealed that there is much less to them than was first thought. The most extensive and best reported excavation is from Puhinui (Lawlor 1981). It seems certain that the stone fields were used for gardening but the interpretation of them as major villages can no longer be supported. The investigations listed above date to the early 1980s and there has been little investigation of these sites since.

In 2006 Horrocks and Lawlor (2006) took soil samples from a variety of locations within the stone fields as well as on Mangere and Wiri mountains and tested them for microfossils – pollen, starch and silica. They found starches and other distinctive residues of both kumara and taro at Ambury Farm Park, Mangere Mountain and Otuataua stone fields. The results help confirm the agricultural use of the stone fields.

In 2008 and 2009 the NRD site (Northern Runway Development, R11/859) was excavated ahead of runway construction (Campbell 2011a; Hudson and Campbell 2011). The site was located on a sandy beach beside a freshwater stream and the only canoe landing for some distance. Excavated areas consisted primarily of middens and fire scoops, terraces and pits with internal and external drains, and three houses. In two areas numerous koiwi (burials) were found, in some cases buried in deep round pits (rua kopiha). Many burials had items from distant places deliberately buried, or even buried instead of humans (non-local stone, whale bone, dogs, toheroa shells). Area A dated between AD 1620 and 1690 while Area B was a little later at 1650–1830. The site was interpreted as representing the deliberate creation and maintenance of a shared identity of geographically dispersed peoples (Campbell 2011b).

Excavation on the Pukaki Creek revealed the historically attested site of Papahinau (R11/229), overlying an earlier midden, dated to AD 1450–1690. In historic times the site was occupied from at least the early 19th century up until 1823 and then reoccupied from 1835 until 1863 when Te Akitai refused the oath of allegiance to the Crown and departed to the Waikato (Sullivan 1973; Foster and Sewell 1995: 15, 56). Fourteen houses were excavated falling into the two historically recorded phases, with European tools and artefacts become increasingly common in the late phase.

Archaeological excavations in Mangere/Manukau have been dominated by horticultural sites, with the important exceptions of Papahinau and the NRD site – in fact the emphasis on stone field sites probably biases our understanding of pre-European occupation. House sites are less common but the unreported excavation of the Wiri railway site contained two well preserved houses, several houses were found in the historic period Papahinau site and three were found at the NRD site. Today, where not built up and incorporated into Auckland City, horticulture continues to dominate land use, taking advantage of the fertile soils to supply the city with fresh produce. Combined with a focus on these soils, pre-European Maori
also had a focus on the marine resources of the Manukau Harbour, another fertile environment. There is no reported archaeological evidence of preservation of seafood though this presumably was an important aspect of marine resource exploitation. Given the emphasis on horticulture more kumara storage pits than have been reported would also be expected; this may indicate that the archaeological emphasis on gardening may be over-exaggerated or research designs looking specifically at gardens may have biased the record. Other activities that are not well represented are industrial activities such as stone tool manufacture, though the area contains no significant stone sources.

The NRD site demonstrates that pre-European occupation was more complex than just the exploitation and extraction of physical resources, though this excavation was far more extensive and provided far richer assemblages than any other in the region. Meanwhile, the Papahinau sites shows that a distinctly Maori occupation continued into historic times.

Survey and investigation in Weymouth

Weymouth is located approximately ten kilometres south west of the Tamaki isthmus, on the Manukau Harbour. It forms the northern head of the Pahurehure Inlet and its tributary, Waimahia Creek.

The Manukau Harbour was of great importance during the pre-European period, both as a food resource and as a major transport route. There were important portages that linked the Manukau Harbour with the Waikato river, the Waitemata Harbour and the Tamaki river providing access for the inland and west coast iwi to the lithic resources of the East Coast (Turner 2000: 447).

Few investigations appear to have been undertaken in the Weymouth area – four archaeological reports are available on the New Zealand Historic Places Trust digital library and a further for on the Auckland Council Cultural Heritage Inventory (CHI).

Chambers (1979) undertook a student project recording sites in Weymouth but didn’t provide site numbers or grid references and it is unclear where these sites are located.

In 1996 Foster assessed the archaeology of the Waimahia Block, immediately to the south of the current Waimahia subdivision. Three sites had been previously recorded in the project area: R11/1042, R11/1043, both middens; and R11/1045, a pit site that proved not to be a site. Foster recommended that the two middens be excluded from development.

In 1997 Foster assessed the archaeology of the Harbourview Estate, on the west side of the Weymouth Peninsula, which identified two archaeological sites that would be damaged by housing development: R11/1036 and R11/1895 (Russell Foster and Associates 1997a). These were investigated later that year. R11/1036 was recorded as a pit site, but these proved to 1960s–70s European rubbish pits. R11/1895 was a shell midden that had been re-deposited in recent times – it contained 96% cockle with some minor species and a flake of obsidian, probably from Northland. No further analysis was undertaken and the midden was not dated (Russell Foster and Associates 1997b, 1998).

In 2000 Foster undertook another archaeological survey for a housing development at Palmers Road just to the south of Harbourview Estate but identified no further sites (Russell Foster and Associates 2000).

In 1999 Prince investigated site R11/2009 ahead of sports field construction at Weymouth Domain. The site consisted of two small (6 x 3 m and 8 x 3 m) midden scatters, primarily cockle with minor species present. The middens were not dated. Several dumps of 20th century rubbish were also found. The site was further moni-
tored during development but no substantial further information was recorded (Clough and Bacquié 2001).

In 2006 Bacquié and Clough undertook an assessment of the current Waimahia subdivision. They noted that a midden, R11/1044, had been previously recorded on the property but were unable to relocate it due to the dense vegetation on the fore-shore. They concluded that no further sites were located in the development area and that there were no archaeological constraints on the proposed development.
ARCHAEOLOGY AT WAIMAHIA

The sites investigated were three small middens. These were only located when they were exposed by the motor scraper, which had the effect of taking off the top layer. It was not possible to say if they had been ploughed but this seems highly probable.

Method

Sites R11/2886, R11/2887 and R11/2898 were investigated following standard archaeological procedures. They were mapped and located with GPS, test excavated in 1 m squares, photographed and sampled. Apart from the small deposits of shell midden exposed on the surface, no associated features or artefacts were recorded in relation to any of the sites. All of the midden deposits investigated appear to represent small, temporary occupations. The whole of the property has been devel-
oped and all archaeological sites and deposits identified within the development area have been investigated and destroyed. Sites within the Esplanade Reserve have not been affected.

R11/2886

R11/2886 was located on the north side of the main stream gully separating the higher southern ridge from the rest of the property. This is in the area of the ornamental pond being created for the new subdivision. Two areas of midden were cleaned down by hand, one covering an area of 8 x 3 m and the other 2.6 x 1.6 m. Two 1 m squares were excavated in the larger deposit (Squares A and B) and one in
the smaller deposit (Square C). On the surface both deposits were relatively sparse with scattered shells and fragments of rock, with some slightly more concentrated patches of shell within them. In Square A the midden comprised compact and fragmented cockle and oyster shell 10–50 mm in depth resting on clay subsoil. Square B was very similar but contained more clay and soil mixed in with the midden deposit. Square C comprised compact midden, mainly oyster with some cockle, fire cracked rock and charcoal, with a maximum depth of 50 mm but more in the range of 30–40 mm.

**R11/2887**

R11/2887 was located on the high ridge at the southern end of the property and consisted of three separate small midden exposures uncovered during preliminary earthworks. Midden A comprised a very sparse surface scatter of shell fragments over a maximum area of 2 x 1.5 m. A 1 m square was excavated and sampled but the deposit found to have no depth or integrity and was not investigated further.

In the centre of the ridge, Midden B represented two more concentrated patches of midden. The main patch covered an area of 5.5 x 2 m with a more concentrated deposit of mainly mud snail shells at the northern end. This concentrated deposit was excavated in half section and sampled, but found to be just a slight natural depression where the midden had...
accumulated rather than a cut feature. The midden in this depression was up to 100 mm thick. 4.5 m to the southwest another sparse scatter of shell was over a maximum area of 3 x 2 m was visible on the surface. A section was dug through this deposit and revealed only a depth of 20–30 mm where shell fragments were mixed into the soil, and was not sampled. Around Midden B several fragments of rock were exposed on the surface, including small unmodified cobbles of locally available red chert, but there was no indication of any cooking features.

At the back of the ridge along the southern boundary of the property Midden C was exposed as a small north west–south east orientated deposit covering a maximum area of 3.5 x 1.5 m. On the surface the deposit comprised crushed oyster and cockle shell with other minor inclusions. A cut along the boundary of the property revealed that part of the ridge had been previously cut down, presumably during earthworks for the existing subdivision developed in the 1990s and Midden C had probably been truncated by these works. A sample was taken from the most concentrated area of midden and the deposit found to contain
densely packed crushed shell mixed with dark soil up to 40 mm in thickness.

**R11/2888**

Site R11/2888 is located just back from the bank along the edge of Waimahia Creek and was only identified by the midden deposit being cut by the installation of a silt fence around the extent of the development area. Two test pits were dug by spade on the uphill side of the silt fence 1 and 3 m from the fence to determine if the deposit extended into the development area. In the first test pit a very sparse layer containing a few fragments of cockle shell and in the 3 m test pit no midden was observed. This indicated that the main part of the midden deposit was within the Esplanade Reserve outside the development area. Two test pits were similarly dug at 1 and 3 m from the fence on the downhill side of the silt fence to the top of the midden deposit. The midden contained mainly small cockle shells and appeared to be more intact than the small portion within the development area. The bulk of the site lies outside the development area and it was not investigated further.

**R11/2898**

Site R11/2898 was another new site uncovered by earthworks after the field survey had been completed and before the authority was in place. The site was located on an elevated area back from the creek and consisted of a concentrated patch of midden, mainly cockle shell, extending over a maximum area of 4.5 x 3.3 m. The area of the shell midden was cleaned down by spade apart from the southeast corner and a 1 m square excavated and sampled. On the surface the midden could be seen to comprise mainly crushed cockle shell, with some oyster shell along with fire cracked rock and charcoal flecks, although only cockle and miscellaneous gastropods were identified from the sample analysed. The midden was the most intact deposit sampled and was up to 40 mm thick.

**R11/1044**

Site R11/1044 was the only site previously recorded in the wider development area and during the field survey was visible as a 1 m long exposure of cockle shell in the creek bank. No shell midden or other features were identified during earthworks above the silt fence where site R11/1044 is recorded and the site would appear to be wholly confined to the Esplanade Reserve. It was not investigated.
**ANALYSIS**

No artefacts were found during the excavation. Seven 10 litre bulk midden samples were taken from the three sites. No charcoal was found.

**Bulk midden samples**

The bulk midden samples were wet sieved through a 6 mm screen, dried and then sorted following standard archaeological procedure (Table 1 and Table 2). The majority of samples were from reasonably dense deposits, but R11/2887 Middens A and C, which were very sparse as the comparison of dry and sieved weights and MNIs shows. Six of the seven middens are dominated by two species:

<table>
<thead>
<tr>
<th>Site</th>
<th>Sample</th>
<th>Dry weight (g)</th>
<th>Sieved weight (g)</th>
<th>stone (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R11/2886</td>
<td>Square A</td>
<td>10130</td>
<td>1494</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Square B</td>
<td>10210</td>
<td>1533</td>
<td>231</td>
</tr>
<tr>
<td></td>
<td>Square C</td>
<td>9320</td>
<td>2034</td>
<td>192</td>
</tr>
<tr>
<td>R11/2887</td>
<td>Midden A</td>
<td>9310</td>
<td>186</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Midden B</td>
<td>9450</td>
<td>1372</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Midden C</td>
<td>9510</td>
<td>571</td>
<td>-</td>
</tr>
<tr>
<td>R11/2898</td>
<td>Square A</td>
<td>9840</td>
<td>2551</td>
<td>52</td>
</tr>
</tbody>
</table>

*Table 1. Comparison of dry weight and sieved weight.*

<table>
<thead>
<tr>
<th>Site</th>
<th>Sample</th>
<th>Cockle (Austrovenus stutchburyi)</th>
<th>Rock oyster (Saccostrea cucullata)</th>
<th>Mud snail (Amphibola crenata)</th>
<th>Cat's eye (Turbo smaragdus)</th>
<th>Miscellaneous gastropods</th>
<th>Total MNI</th>
</tr>
</thead>
<tbody>
<tr>
<td>R11/2886</td>
<td>Square A</td>
<td>149</td>
<td>58</td>
<td>1</td>
<td></td>
<td></td>
<td>208</td>
</tr>
<tr>
<td></td>
<td>Square B</td>
<td>56</td>
<td>108</td>
<td>1</td>
<td></td>
<td></td>
<td>165</td>
</tr>
<tr>
<td></td>
<td>Square C</td>
<td>39</td>
<td>146</td>
<td></td>
<td></td>
<td></td>
<td>185</td>
</tr>
<tr>
<td>R11/2887</td>
<td>Midden A</td>
<td>11</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Midden B</td>
<td>5</td>
<td>17</td>
<td>359</td>
<td></td>
<td></td>
<td>381</td>
</tr>
<tr>
<td></td>
<td>Midden C</td>
<td>69</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>R11/2898</td>
<td>Square A</td>
<td>233</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>238</td>
</tr>
</tbody>
</table>

*Table 2. Summary of 10 litre midden samples by MNI.*
cockle and rock oyster, while R11/2887 Midden B is dominated by mud snail. All of these species could have been gathered in the immediate vicinity in the soft muds and consolidated rocks of the estuary.

**Chronology**

One sample of cockle shell was selected from each of R11/2886 and R11/2898 for radiocarbon dating. The sample of cockle was too small for R11/2887 so a sample of rock oyster was submitted.

The dates for the three middens are all essentially similar, indicating occupation of the development area in the 16th or early 17th century. No other sites in Weymouth have been dated, but these dates can be compared with others in South Auckland. The dates area earlier than for the NRD site (Campbell 2011a) or Puhinui (Lawlor 1981) with little overlap even at 95% confidence interval. Dates from the earliest layer at R11/229 Papahinu (AD 1450–1690, Foster and Sewell 1995) and from R11/1930 on the Pukaki Creek (AD 1460–1700, Foster 2000) are similar, but there are few reliable dates from the Manukau generally. It is unlikely that the Waimahia sites, along with Papahinu and Pukaki Creek, represent the earliest occupation of this part the Manukau, but no early period sites are known.

<table>
<thead>
<tr>
<th>Site</th>
<th>Sample</th>
<th>Lab No.</th>
<th>CRA BP</th>
<th>cal AD 68%</th>
<th>cal AD 95%</th>
</tr>
</thead>
<tbody>
<tr>
<td>R11/2886</td>
<td>Square A</td>
<td>Wk-39107</td>
<td>720 ± 20</td>
<td>1529–1639</td>
<td>1485–1672</td>
</tr>
<tr>
<td>R11/2887</td>
<td>Midden B</td>
<td>Wk-39108</td>
<td>816 ± 32</td>
<td>1444–1538</td>
<td>1420–1630</td>
</tr>
<tr>
<td>R11/2898</td>
<td>Midden A</td>
<td>Wk-39109</td>
<td>780 ± 34</td>
<td>1463–1581</td>
<td>1445–1650</td>
</tr>
</tbody>
</table>

*Table 5. Radiocarbon dates.*
**Discussion and conclusion**

The small size of the three middens investigated, the lack of fish bone or any other material and the lack of features, such as fire scoops, within the middens indicates that they were places where shellfish was probably eaten after being gathered in the nearby estuary. The sites do not represent living areas or processing areas on any large scale.

The middens at this site appear to be similar to those found in the area during other archaeological investigations. Foster surveyed the housing development immediately southwest of the site, and recorded two middens, one of which (R11/1043) is recorded as being “small and [does] not appear to relate to an extensive site” (Foster 1996: 4). This midden, although not discussed in detail is listed as being within 100m of R12/2887, and is probably essentially similar.

In 1997, Foster investigated another midden (R11/1895) on the northern edge of the peninsula. This midden was not in situ, but contained many of the same species as those noted within the samples collected during this investigation.

Clough and Bacquié (2001) recorded similar species to the ones found in this site at the Weymouth domain, and also did not note any non-shellfish material within the midden.

The Weymouth area has been extensively modified during the past 150 years of European settlement in the area. Horticultural practices would have destroyed much midden and surface evidence for storage pits as the land was levelled for farming. More recently, housing developments constructed during the 20th century would have modified, destroyed or obscured any remaining archaeological features. Even so, the Waimahia middens provide a baseline for the future archaeological investigation of Weymouth.
Waimahia Inlet

REFERENCES


NZHPT (New Zealand Historic Places Trust Pouhere Taonga) 2006. Guidelines for writing archaeological assessments. Archaeological Guidelines Series No. 2


