Waikanae estuary: archaeological assessment

Report to Richard Nester, Department of Conservation

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1. Introduction

Department of Conservation (DoC) proposes to develop a walking track at the estuary of the Waikanae River, on the Kapiti Coast. The walkway would be for the public to access and enjoy the natural and historic resources of the estuary area.

Figure 1: Location of Waikanae estuary

Mary O'Keeffe, of Heritage Solutions (the consultant), has been engaged by DoC to undertake an archaeological assessment of the potential archaeology of the proposed development area.

1.1 Statutory context

Archaeological sites are defined in the Historic Places Act 1993 as:
"...any place in New Zealand that

(a) Either -

(i) was associated with human activity that occurred before 1900; or
(ii) is the site of the wreck of any vessel where that wreck occurred before 1900; and

(b) is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.[1]"

All archaeological sites in New Zealand that conform to the definition from the Historic Places Act 1993 cited above have legal protection under Part 1 of the Historic Places Act 1993, whether or not they are recorded or their existence is known.

In addition, the Resource Management Act 1991 identifies the protection of historic heritage from inappropriate subdivision, use and development as a matter of national importance (section 6f).

Historic heritage is defined as those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, derived from archaeological, architectural, cultural, historic, scientific, or technological qualities.

Historic heritage includes:

- Historic sites, structures, places and areas
- Archaeological sites
- Sites of significance to Maori, including wahi tapu
- Surroundings associated with the natural and physical resources

Archaeological sites by implication are physical and tangible; they can be observed and measured.

Archaeological sites may be of Maori origin and therefore of significance to Maori. There may also be other sites of significance to Maori for their spiritual and traditional values, and which may have no physical or tangible remains, and therefore do not fall within the legal definition of an archaeological site. This report is looking only at the archaeological resource in the study area, and will not attempt in any way to comment on or judge the Maori values of these sites. This is not meant to detract from or undermine the value of these places of significance to Maori; rather, this acknowledges that it is not appropriate for an archaeologist to comment on matters of significance to Tangata Whenua.

Archaeological sites only have a sense of meaning if they are examined in the context of a cultural landscape. Sites can be examined by archaeological methodology, that is, by applying a variety of scientific techniques to examine and rationalise the data;

[1] Historic Places Act 1993, Section 2, Interpretation.

however, ultimately these places must been seen as remains of human populations, and their relationships with environmental factors are a by-product of this.

Archaeology can never say definitively "what happened" on a site or a landscape; instead, data and information is gathered, and a hypothesis is proposed to explain the possible relationships between data, known information and possible interpretations.

Archaeological sites in New Zealand are recorded by the NZAA and records entered into the site recording scheme. A site will be included simply by virtue of its existence; the NZAA file is an information database and makes no selection or ranking. Grid references given for an archaeological site are simply an indication of the site's location, and do not delimit the site's extent. In addition, some sites included in the NZAA list may no longer exist, as they may have been destroyed since they were recorded.

1.2 Scope and limitations of this report

This report presents an archaeological assessment of the proposed area of work, but it is only that. The land and wider vicinity may also be of significance to the Iwi through tradition or association; this report does not constitute an assessment of Maori values.

2. History, archaeology and the environment

Data and information for this study was sourced from CINZAS (Central Index of New Zealand Archaeological Sites), the electronic version of the NZ Archaeological Association's (NZAA) site recording file that is maintained by the Department of Conservation. Data was also obtained from the Historic Places Trust and the Kapiti Coast District Plan.

Information has also been gathered from a variety of documentary sources: the key historical texts for Wellington and the Kapiti Coast were consulted (see bibliography), and relevant historical survey plans held at Land Information New Zealand (LINZ) were studied. Survey plans can be rich in archaeological or historical detail, as the surveyors of the time often noted many extant features, including settlements, buildings and other landscape sites and features.

2.1 Maori and European occupation of the Kapiti coast

There has been human settlement on the Kapiti Coast possibly since first Polynesian settlers some time after the 12th century AD.

Although relatively little strategic archaeological surveying has occurred along the Kapiti coast, enough sites have been recorded to give a clear idea of the nature of occupation in the pre-contact period. The Maori population would have been living in an environment rich with resources and opportunities. The coast and estuaries would have provided fish and shellfish, the forested dunes would have provided birds, rats and plant species, and the swamp areas would have yielded birds, eels and yet more plant species.

Behind the flat coastal edge the hills would have provided soils for gardening. Other resources were not far away, such as the food and plant resources available from Kapiti Island, and the important lithic (stone) resources available from D'Urville Island at the top of the South Island[2].

Various tribal groups moved in and out of the region, including Waitaha and Muaupoko, who lived along the Kapiti Coast until about 1822. At this time Te Ati Awa of Taranaki accompanied Te Rauparaha on his great heke of 1821-22, and they settled around the Waikanae estuary area[3].

Around this time Te Ati Awa built the Waimea pa, located at the junction of the Waimeha stream and the Waikanae River[4]. Carkeek also notes the spelling would probably be more correct as Waimeha[5]. Carkeek also notes Arapawaiti pa, located on

[2] D'Urville Island argillite is an important source of stone for adzes and other tools, and artefacts made from this material were being traded throughout New Zealand at least by the 12th Century AD (Davidson, 1984:195)
[3] WRC River Flood Plain Management Plan, 1992
[4] Carkeek, 1966:152
[5] *ibid*

the southern side of the Waikanae River[6]. However the main pa of the immediate area was the Waikanae pa at Kenakena, located on the southern side of the Waikanae River near the old river mouth.

With the discovery that the Southern Right whale makes an annual migration along the coastline between Kapiti Island and the mainland, whaling stations were established on the Kapiti Coast by the late 1820s. At the same time a market for flax arose in Sydney, and a large flax industry commenced on the Kapiti-Horowhenua coast.

The Haowhenua battle of 1834 was a long-running dispute between Ngati Awa and Ngati Raukawa largely over land. A group of Ngati Awa arrived in the area between Waikanae and Otaki in 1833, putting pressure on the land resources there. Ngati Awa attacked Ngati Raukawa in their pa at Rangiuru, and then sought refuge in their own pa of Haowhenua across the Otaki River. A series of battles ensued, with Ngati Raukawa coming south at one stage and attacking Kenakena pa. There was no clear victor and a peace was made[7].

However, the peace did not last long, and land grievances reached a head in 1839 with the Kuititanga battle. This battle was fought at the Waikanae estuary between Te Ati Awa and their northern neighbours, Ngati Raukawa, over disputed land, and was the last tribal battle fought in the Waikanae district[8]. Although Ati Awa repelled the Ngati Raukawa attack, a large number of warriors on both sides were killed. Ngati Raukawa attacked the Waimeha pa, and forced Te Ati Awa to retreat across the Waikanae River to Arapawaiti. Here Te Ati Awa rallied and forced Ngati Raukawa back up the beach[9].

In 1839 Octavius Hadfield set up a mission station at Kenakena Pa near the Waikanae river mouth. In October 1839 the New Zealand Company survey ship *Tory* sailed along the Kapiti Coast and dropped anchor. The ship carried Colonel Wakefield, Archdeacon Henry Williams and Ernest Dieffenbach, who went ashore to help the wounded from the Kuititanga battle.

Land trade and acquisition occurred from the 1840s. The first Europeans to settle in the region were the missionaries of the Church Missionary Society. European settlement developed through the region, based in part on the flax industry and on farming, and Maori continued the flax trade already established. Maori also had access to new crops, and new horticultural tools and techniques, which increased the range of available food. Mills for water, flour and flax were built in the district.

Construction of the line enabled development commerce and farming along the line on the Kapiti Coast. It also facilitated urban development: in 1886 Wiremu Parata gave land for the railway and moved the Te Ati Awa village of Tuku Rakau to the Township of Parata (modern Waikanae). The adjacent Maori land (Ngarara Block) was opened for sale as village and farmland.

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[6] *ibid.*:110, 173
[7] MacLean, 1988:18-20
[8] Carkeek, 1966:55
[9] MacLean, 1988:20

2.2 Archaeology and the environment

Along the Kapiti-Horowhenua coast, the coastal plain between the hills and the sea is covered with dunes that have formed during successive dune building phases. These dunes have influenced the nature and location of human settlement and need to be examined in detail to understand the relationship. The dune sands are made up of material brought to the coast by rivers and moved along the coast and inland by wind and wave action. Some dunes have been reworked (McFadgen, 1997). The oldest sand dunes are generally found furthest inland.

All along the coastal plain the landward dunes are interspersed with areas of peat swampland, which also is significant in terms of human occupation. The swamp areas would have been rich sources of food and raw materials, including birds, eels and plant species. Further north in the region lakes and lagoons were formed within the dunes, which would have provided routes for canoe travel, birds and freshwater species, and island pa provided safe refuges.

At the time of human settlement, McFadgen considers that the dunes would have been largely forested. This is inferred through analysis of landsnails found in archaeological deposits taken from the dunes. Land snails are extremely species specific, and thus identification of the particular landsnail can infer the paleoenvironment in which the snail was living (McFadgen, 1997). The forest species also would have provided plant and birds species for food and utilisation.

There is a strong functional relationship between the environment and the archaeological resource. Along the Kapiti-Horowhenua Coast the predominant site type on the coastal dunes is midden. These are deposits of shell, occasionally with oven evidence or some bone, marking either a temporary resting place of groups of people, or occasionally locations of more permanent settlements. The shell content of the midden varies. Some are almost entirely made up of tuatua, a coastal species. Other middens have a variety of species, including both coastal and estuarine species, indicating exploitation of the resource from both locations. Most middens contain either just shell, or shell with some fishbone.

The other type of site found relatively frequently within the sand dunes is burials. Placement of a body in sand was a common burial technique of the pre-European Maori, along with secondary burial.

Archaeological work along the coast shows that due to the dynamic nature of the unstable dunes sites can be found several metres below the ground surface. Middens especially are inundated by windblown sand.

In marked contrast to the dunes are the sites found in the foothills behind the dune area. Here the types of sites recorded include pa, pits and terraces, as a result of the more stable soils and geology.

The sites on the coastal sandy strip represent more transient settlement, either small groups of people collecting resources from the coast, river, forest or swamp, or groups

of people passing through the region. More permanent settlement would have been in the hills above the coastal flat where more stable soils and geology would have permitted the construction of more permanent shelters, and would have provided gardening soils, along with the strategic advantage of height.

There is a marked relationship between the location of the sites on the coastal flat and the geomorphology. Sites have been recorded along the Taupo and Waitarere-Motuiti dunes north of Waikanae, and within the Older and Younger Waitarere dunes south of Waikanae. There are fewer sites within the Foxton dune. Sites are also found along the edge of the swamp areas. To date no material has been recovered from the swamps themselves within the study area, but it is likely that the swamps may yield artefacts, especially made of wood. This has been the case elsewhere in the region, most notably around Lake Horowhenua.

It has previously been noted that in many cases sites have been buried beneath sand dunes. In much of the study area the most recent dune episode, the Younger Waitarere, may have inundated sites.

Pits have also been recorded on the dunes, representative of agricultural activities. Pits were used to store food crops, generally kumara. The actual kumara gardens are unlikely to be found due to the dynamic nature of the coastal dunes.

Behind the flat coastal edge of the study area the hills would have provided soils for gardening, and food and resources such as birds and plants. Other resources were not far away, such as the food and plant resources available from Kapiti Island, and the important lithic (stone) resources available from D'Urville Island at the top of the South Island[10].

The Maori population of the study area would therefore have been living in an environment rich with resources and opportunities. The coast would have provided fish and shellfish, the forested dunes would have provided birds, rats and plant species, and the river, streams, lakes and swamp areas would have yielded birds, eels and yet more plant species.

It can be concluded that this was an environment rich in resources and opportunities.

2.3 Recorded and known sites

There has been sporadic archaeological site recording in the Kapiti-Horowhenua region from the 1950s through to the present. Only one planned systematic survey has been undertaken, by Colin Smart and students of the Wellington Teachers College in 1959-61. Smart was specifically sampling and analysing midden, so arguably was not concentrating on other possible sites. However, he also noted the relationship between the dunes and the midden sites.

[10] D'Urville Island argillite is an important source of stone for adzes and other tools, and artefacts made from this material were being traded throughout New Zealand at least by the 12th Century AD (Davidson, 1984:195)

Recorded sites in the wider vicinity are predominantly midden, which is the dominant site type on the Kapiti Coast.

Beckett wrote in 1957 of observations made in the 1920s and before, prior to substantial development of the area. Beckett uses terminology in a different way to that in use today: for example, he uses the term "pa" within the archaeological definition of the term to describe defended settlements and also to describe undefended settlements or kainga. However, Beckett's notes provide invaluable data on sites that are now completely destroyed.

Most other archaeological recording has either been opportunistic sightings, or sites notified or recorded after exposure through development or landmoving.

A distribution plot of recorded sites in the vicinity of the Waikanae estuary can be seen in figure 2.

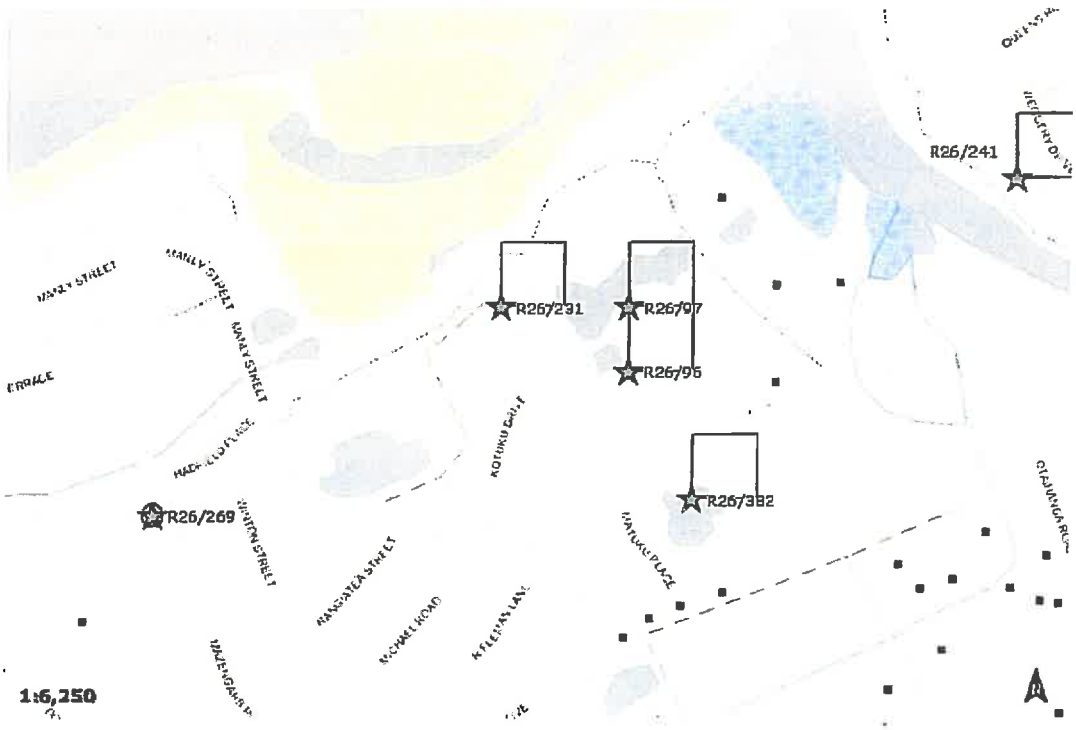

Figure 2: Recorded archaeological sites in the vicinity of the Waikanae estuary
Archsite

The recorded sites are:

site number	site type	detail	status
R26/269	Historic Church	Hadfield's church, built 1842	historic reserve
R26/231	burial	Maori burial. Male, Musket ball (deformed by impact) found next to shattered right femur. Clay pipe bowl found in region of chest.	Recorded 1982, burial removed & reinterred elsewhere

R26/96	possible burial ground	Burial ground reported by Field in the 1890s	unknown
R26/97	midden	Recorded by Field in the c. 1890s	
R26/382	middens/ovens	five areas of archaeological material recorded on Kotuku Parks subdivision in 2003	destroyed
R26/241	middens	Exposed during bulldozing for subdivision in 1984	destroyed

It is noted that the most common recorded site type on the Kapiti Coast are middens, indicating the strong subsistence relationship between the people and the sea. Middens have been recorded and observed in the vicinity of the Waikanae estuary.

H C Field observed and recorded sites in the 1880s and 1890s, including middens. In particular he observed

> "A large series of kitchen middens extends for fully a mile south of the Waikanae River, and these are constantly being scattered by the wind, so that their contents are scattered over probably 20 or 30 acres of ground. Most of these middens were certainly in use during the whaling days, as all sorts of European artefacts are found in them"[11]

In addition Field observed

> "A sandhill 30ft to 40ft high, which formerly stood behind the hotel[12], and which, from the immense amount of pipi shells which it contained, formed a very conspicuous landmark for entering the river, has been entirely blown away, and its contents are now scattered over nearly flat ground"[13]

Another relatively common site type on the Kapiti Coast is burials. The majority of burials are single people, interred within the sand dunes, and inundated by the windblown sand. An exception to this was a group of seven individuals recorded in late 2004, at Waterstone subdivision off Mazengarb Rd, Paraparaumu[14]. As noted above burials have been recorded in the vicinity of the Waikanae estuary – a single individual Maori, buried in the early contact period, and also a larger burial ground, possibly dating from a battle event, (perhaps the Kuititanga battle of 1839)

Carkeek records an important site on the south bank of the Waikanae River. Arapawaiti was a large pa on the southern bank of the river, close to Otaihanga[15].

A ford was built across the river for early European coaches, and a coaching inn, later owned by H C Field, was built near the ford, in the vicinity of Otaihanga.

[11] Field, 1891a: 560
[12] The former coaching hotel on the south bank of the river
[13] Field, 1891b: 562
[14] O'Keeffe, 2005
[15] Carkeek, 1966:110

2.4 Statutory lists

The following sites are listed on the Kapiti Coast District plan:

B18	Arapawhaiti (Ferry House Inn) NZHPT Register No. 4967 Cat. II	2 Otaihanga Rd, Otaihanga

2.5 Historic survey plans

Relevant historical survey plans held at Land Information New Zealand (LINZ) were studied. Such survey plans are often rich in archaeological or historical detail, as the surveyors of the time noted many extant features, including pa and settlements, burial ground and other landscape sites and features.

Detail from SO plan 13444 (1890) shows the estuary of the river has taken various paths to that seen today. It also shows that the adjacent Waimea River used to share the same outlet.

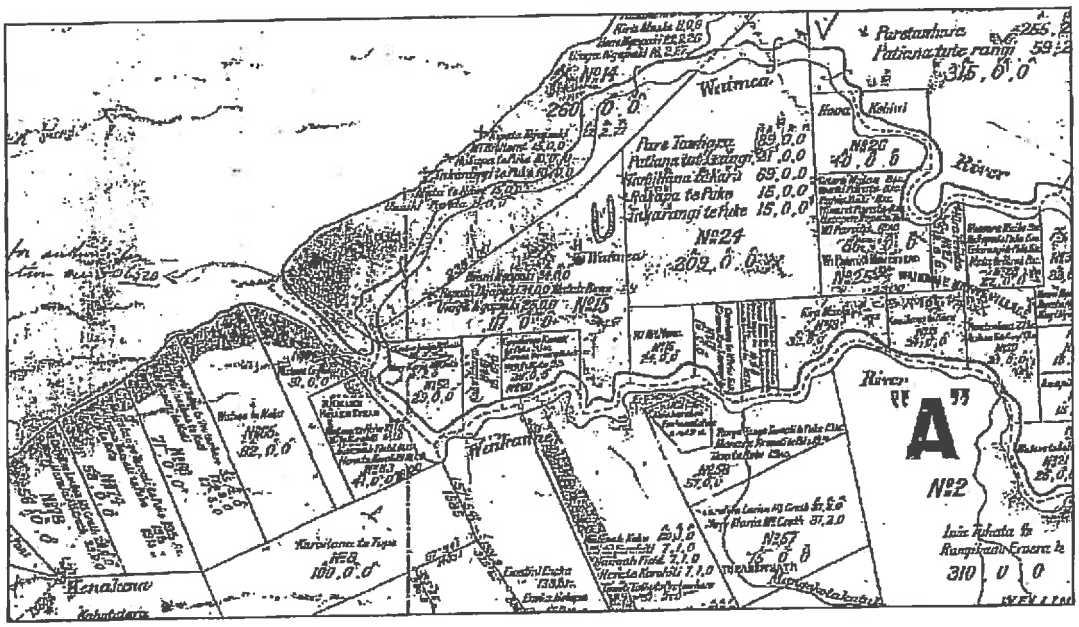

Figure 3: detail from SO 13444, 1890

Quickmap

Figure 4 shows details of the environment around the estuary in the 1890s: much like today there are swamps interspersed with sand dunes.

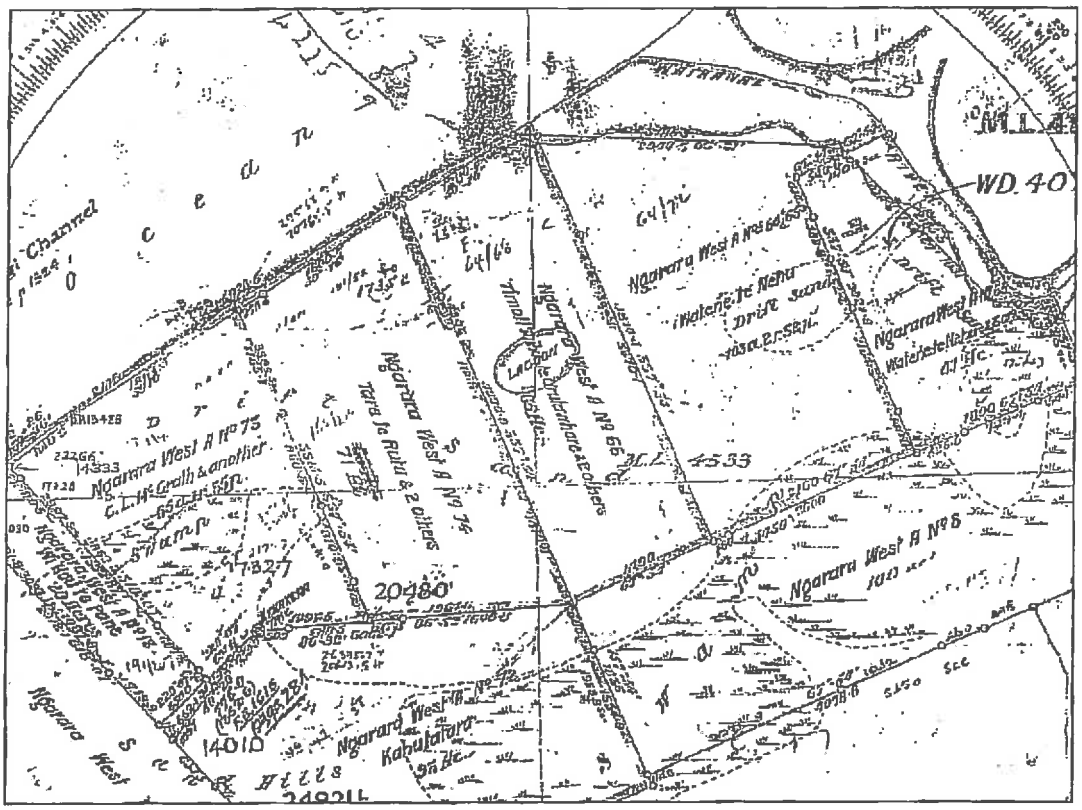

Figure 4: detail from ML 1122, 1892
Quickmap

Detail from ML 4533 (1952) shows the river in a different position to that shown in the 1890s (closer to today's alignment). However it also shows several small lagoons and an oxbow lake formed from a previous curve in the river.

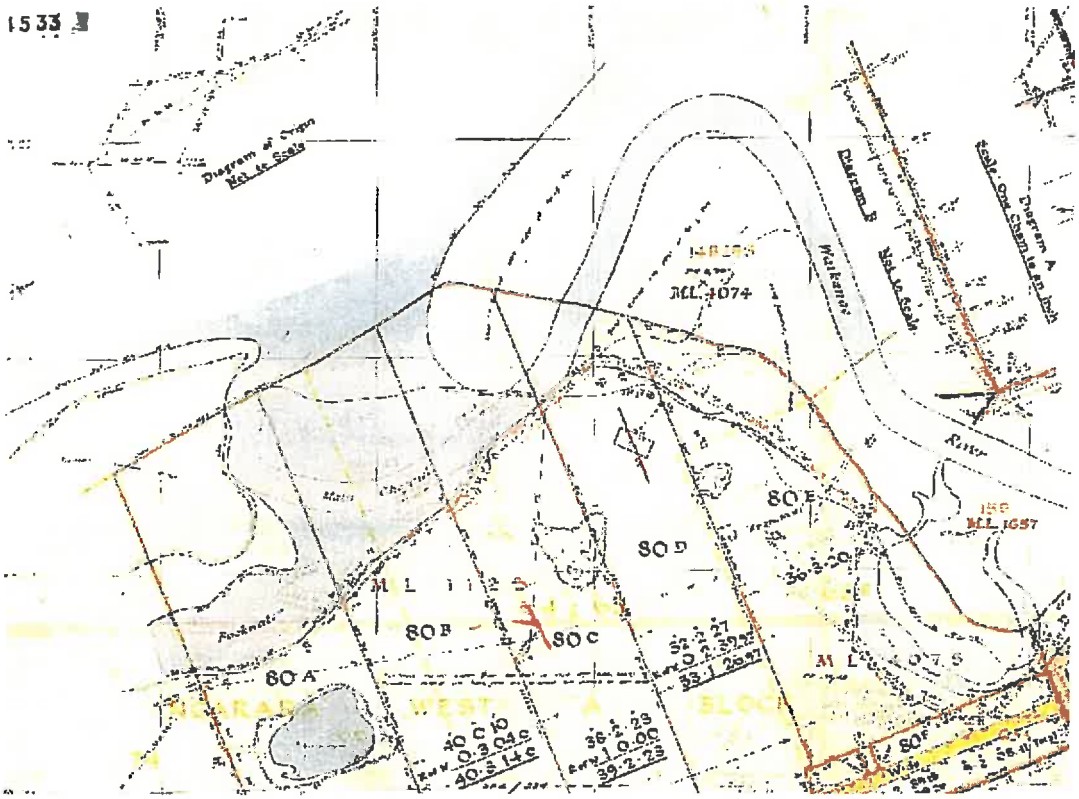

Figure 5: Detail from ML 4533, 1952
Quickmap

2.6 Predictive model

On the basis of the known archaeological record, historically observed sites, the historical record and what is understood of the changing pattern of the river a predictive model for the likely occurrence of sites may be developed:

- Sites are likely in the area of the estuary
- They are most likely to be located on the raised sand dunes that are interspersed with the former wetland and swamps
- The most likely sites to be located in the dunes are middens, including oven remains; and burials. The possibility of other sites within the dunes should not be discounted.
- The archaeological evidence associated with pa and more substantial settlements that is likely to be found in the sand dunes will be middens and ovens. Stratigraphic evidence of house sites, such as postholes, is less likely to survive.
- There is a low likelihood of recovering artefacts from within swamp areas, especially wooden artefacts or other material.

3 Assessment

3.1 Proposed work

DoC proposes to extend the visitor walking track located in the Waikanae estuary. DoC notes "The Waikanae Estuary Scientific Reserve is 65 hectares and comprises a freshwater lake and saltwater lagoon network surrounded by dunes and sandy beaches at the mouth of the Waikanae River. Most of the reserve is dominated by river, old river channels, salt marsh and tidal flats. Southward long shore sediment drift causes the position of the river mouth to migrate periodically".[16]

DoC's AEE lists the project aims and process:
"The project will for fill the following:

- Provide a linkage from Otaihanga access to the present tracking system from Manly Street.
- Provide an enhanced experience by providing access to/through a different habitat zone.(Salt Marsh.)

The project involves the provision of a Short Walk, linking Otaihanga access to the Reserve with the rest of Waikanae Estuary Scientific Reserve.

Construction of a new Short walk track which will involve vegetation clearance, construction and installation of boardwalks and bridges."[17]

[16] DOC AEE: 2
[17] DOC AEE: 3

Waikanae Estuary Operational Area

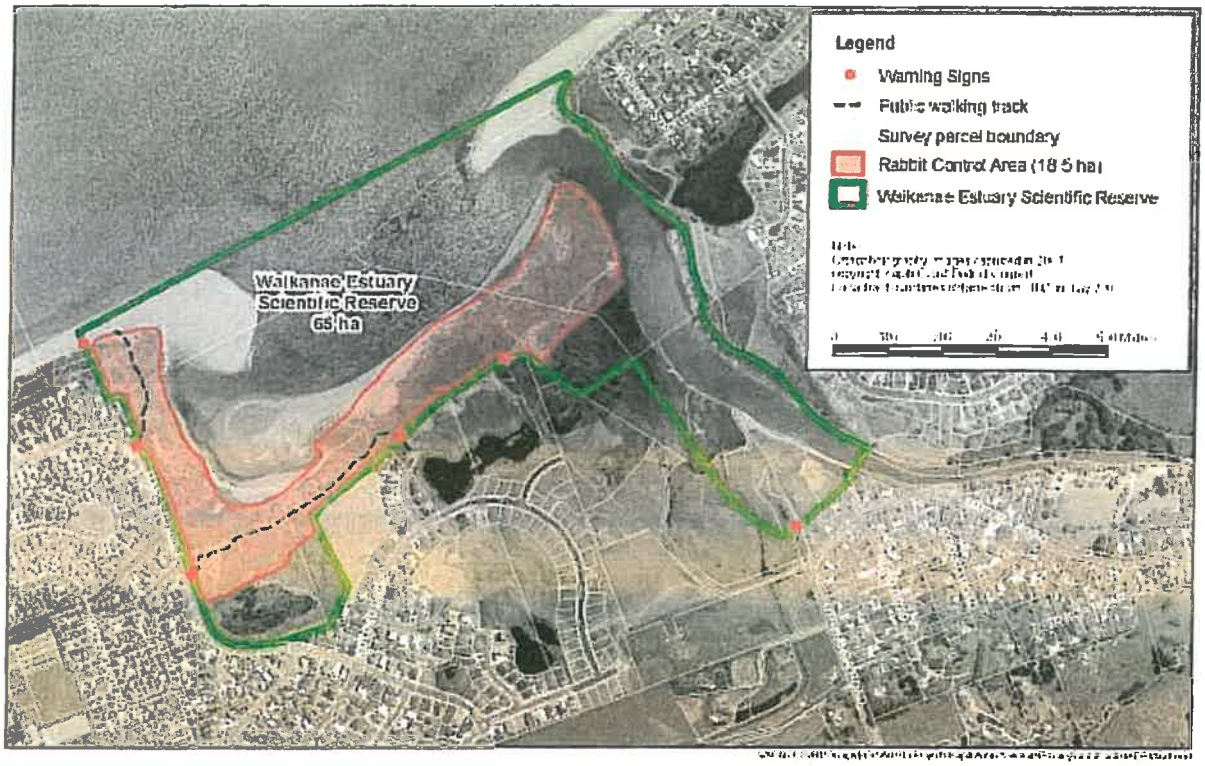

Figure 6: Estuary Area
DoC AEE

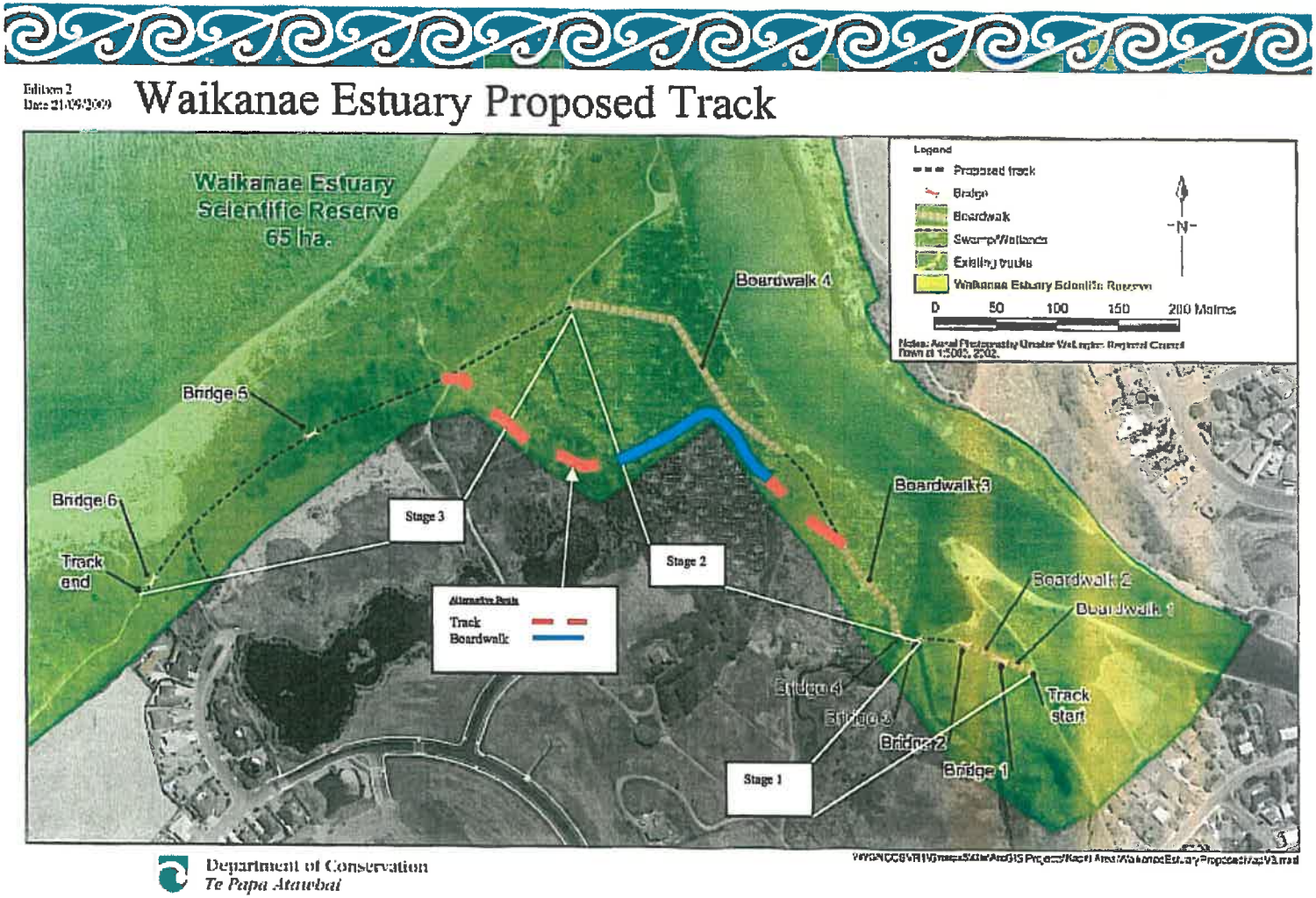

Figure 7: Proposed work

DoC AEE

The track will be in two forms: a cleared track on the underlying earth, and raised boardwalks. Both forms have the potential to impact on and expose underlying archaeological deposits; obviously the formed track has a much higher potential impact than the small postholes of the boardwalks.

Additional work on site including vegetation clearing using a scrub bar and mulcher.

3.2 Site visit

The consultant made a site visit on 20 October 2009, accompanied by Richard Nester, Technical Support Officer – Historic for the Wellington Conservancy, and Dan Tuohy, DoC area office.

The consultant walked much of the area of the proposed alignment of the track, and viewed areas where vegetation (blackberry and gorse) prevented access.

No sites were seen or recorded. The very thick vegetation – blackberry, gorse, raupo reeds and grass, precluded a view of the ground surface. Occasional sparse fragments of crushed shell was observed; there was no obvious archaeological source for this. Occasional exposed faces on the sides of sand dunes were viewed for sites, none were seen.

The estuary is adjacent to a subdivision named Kotuku Parks, where a large number of archaeological sites have been recorded.

3.3 Potential impact on archaeology

The track lies though areas of former wetland and will cut across or around several sand dunes.

Figure 8: Topography at estuary
Mary O'Keeffe

Figure 8 shows one of the sand dunes.

Work within areas of former wetland or swamp has a very low likelihood of impacting on sites. However the possibility should not be discounted – it is noted that wetlands further north around Horowhenua have yielded wooden artefacts.

Track work that impacts on sand dunes has a high likelihood of impacting on sites. Therefore an archaeologist or heritage specialist should be present on site during those parts of work that impact on the sand dunes.

Ideally it would be preferable that the track alignment along the dunes avoids the dune crests, as this is where sites are most likely. Equally, however, it is recognised that the crests of the dues give the best views o the area and across to Kapiti Island.

Richard Nester will be on site for most of the construction process for the track. Richard has sufficient and appropriate understanding of the nature of the archaeology of the Kapiti Coast, and appropriate skills and experience to be able to undertake this monitoring for this project.. As and when necessary he can call other archaeologists to provide assistance and advice.

In addition to the track construction, planting is planned in an area adjacent to the estuary, beside the area beside bridges 5 and 6, as seen in figure 7, and in figure 9.

This area is sand dunes, and there is a high likelihood of sites. The planting work should be monitored by an archaeologist also.

Figure 9: Areas of planned planting
DoC AEE

4. Conclusions

The Kapiti Coast was an area of high population density and resource utilisation during New Zealand's pre European period, as evidenced by the high number of archaeological sites present. The area of the Waikanae river estuary contains several recorded prehistoric and historic sites.

Department of Conservation propose to construct a track within the scientific reserve at the Waikanae estuary, to enhance the visitor experience. Such construction has the potential to impact on unknown and unrecorded archaeological sites.

Sites are far more likely to be present within areas of sand dunes, than within the areas of former wetland and swaps. The most likely site type is middens, with a high likelihood of burials.

It is recommended that Department of Conservation Wellington Conservancy apply to the Historic Places Trust for an authority under Section 12 of the Historic Places Act 1993 to modify, damage or destroy potential archaeological sites revealed during track construction and adjacent planting at the Waikanae estuary scientific reserve, Waikanae.

The following conditions for the authority are recommended:

1. That a monitoring strategy will be developed to manage the archaeology, setting out roles and responsibilities;

2. That an archaeologist or heritage expert be on site during clearing, cutting or construction work on areas of sand dune

3. Artefacts and material uncovered and recorded during site work will be lodged with an appropriate repository. The developer will pay for the cost of any conservation required for artefacts or material.

Sources

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