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## ARCHAEOLOGY IN NEW ZEALAND



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## TAURANGA: SURVEYING LOST RESOURCES

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### INTRODUCTION

Following a request by the Ngatamarawaho hapu of the Huia Marae, a survey of the Judea Valley, Tauranga, was undertaken. This survey was carried out by contract to the Rotorua Regional Office, Department of Conservation. The survey was conducted during October 1989 and had a dual purpose: firstly, to record Ngatamarawaho traditional sites and, secondly, to record any archaeological sites within the area. With respect to the traditional sites, they were identified by kaumatua and kuia of the Marae, and were subsequently checked to see whether any surface indications were visible. With regard to the archaeological sites, the rest of the valley was surveyed, with particular attention being paid to the northern portion where land development is being carried out. Sites outside the survey area were recorded if and when sighted.

This article focuses on the archaeological sites recorded during this survey of the Judea Valley. Although traditional records are drawn upon the traditional sites themselves are not discussed in this article.

### THE JUDEA VALLEY

The Judea Valley (Fig. 1) is centred on the Kopurererua Stream, which begins in the Kaimai Ranges and exits at the Waikareao Estuary at Tauranga Harbour. The survey area was bounded by Cambridge Road to the west, Cameron Road to the east and State Highway 29 to the south. The northern boundary was Waihi road, which runs across the former mouth of the Kopurererua.

In general the eastern side of the valley is heavily urbanised, with streets extending almost to the stream itself. The western side is mostly farmland, although housing subdivisions are currently in the planning stages. At the point where the Kopurererua flows into the Waikareao Estuary an industrial zone has been created (Plate 1).

In the late 1940s the Kopurererua Stream was diverted to a straight alignment and reclamation of the area adjacent to Waihi Road was completed in the 1960s. This reclamation of land is now approximately 200 m in extent. Stopbanks and accompanying dirt roads have been created alongside the Kopurererua.

The impact of these changes on site preservation is unpredictable except in general terms. Certainly some sites will have been destroyed or severely damaged. Other sites will have 'moved' further from or closer to the stream

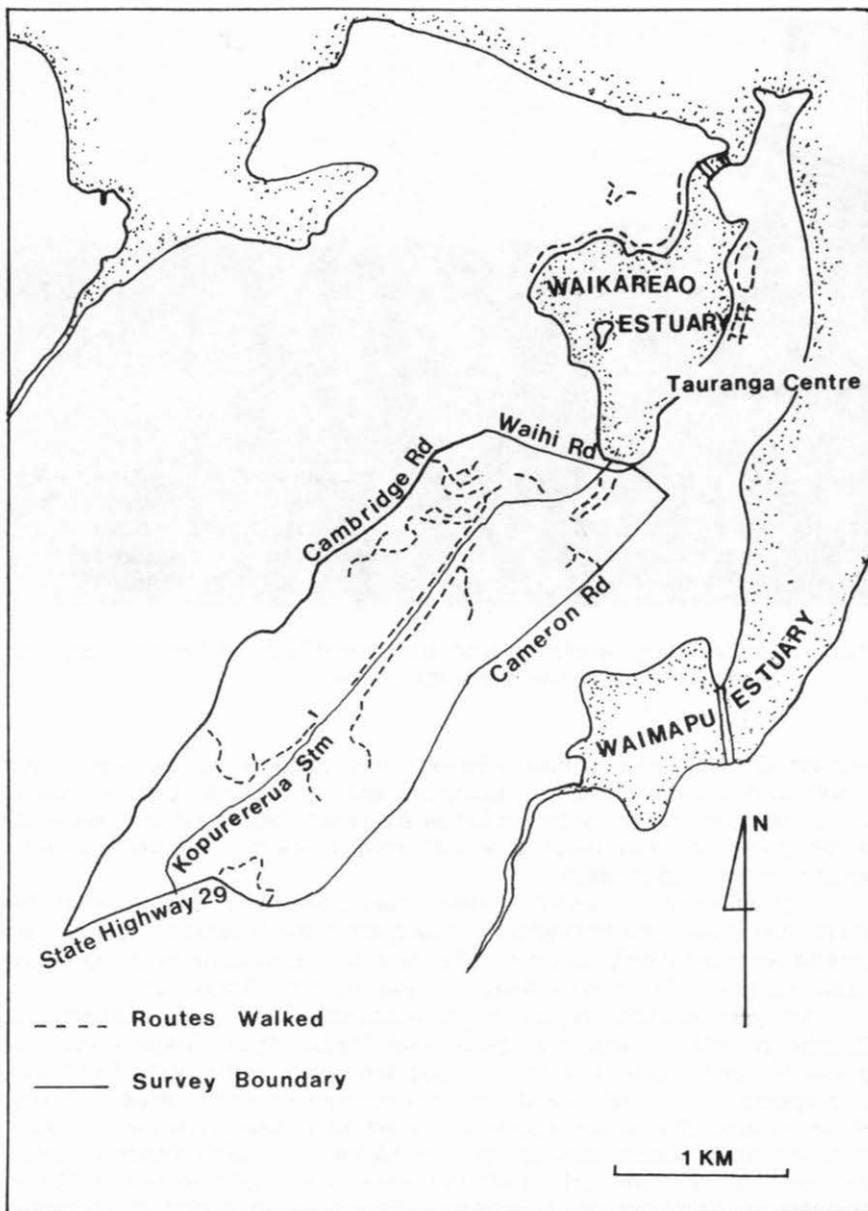


Fig. 1. Judea Valley Survey, Tauranga.



Plate 1. Judea Valley: western slopes and stream flats with farm drainage ditch. Looking north-east towards industrial zone.

and estuary, thus altering their detectable environmental context and creating problems in site interpretation. European farming practices, following drainage of the valley, will have resulted in further damage to sites by direct means such as ploughing and farm roads, as well as indirectly by the removal of protective vegetation by grazing stock.

Ngatamarawaho kaumatua have noted that fish and shellfish have diminished in size and population numbers within the Waikareao Estuary. Most notable amongst the depletion of fisheries is the disappearance of the flounder spawning ground from the estuary and eels from the Kopurererua.

An Environmental Impact Report commissioned by the Tauranga City Council in 1988 reported that dead New Zealand Rock Oyster (*Crassostrea glomerata*) beds were to be found in localised parts of the Waikareao Estuary. Live oysters are currently found only in small numbers in the estuary. The size of the cockles (*Chione stutchburyi*) in the estuary's larger beds average only 16 to 17 mm for a species that can grow to 80 mm. For pipis (*Paphies australis*) the norm in the larger beds is 42 mm, when their maximum size is 100 mm, and the pipi beds are largely confined to the northern portion of the harbour. Fish caught during the environmental study were predominantly Yellow Eyed Mullet (*Aldrichetta forsteri*) and Flounder (*Bothidae* or *Pleuroectidae* orders). Present in smaller numbers were Kahawai (*Arripis trutta*), Pakiti (*Rhombosolea plebeia*) and Whitebait (*Galaxias* sp.).

The environmental assessment concluded that nitrogen concentrations in the Kopurererua Stream were very high, indicating that organic waste, probably farm waste, was entering the stream in addition to leaching from the city tip. While these levels of nitrogen are not dangerously high, the conditions cannot be considered as ideal for kaimoana as they were in prehistory.

On the basis of the environmental report and the recollections of the kaumatua it can be supposed that the Kopurererua Stream and the Waikareao Estuary produced shellfish and fish in much greater quantities in the past than they do at present.

The amount of kaimoana previously available is hard to estimate, but the size and extent of the middens present in close proximity to each other without the expected proportional number of settlement or horticultural sites (Fig. 2), would indicate that it was considerable. This is in keeping with traditional accounts of travel from the inland regions of Tauranga to this estuary for the purpose of gathering kaimoana. Another unknown factor is the percentage of shellfish in the Judea Valley middens that were actually gathered from inside the estuary area as opposed to gathering from the rest of the Tauranga Harbour. The presence in these middens of Tuatua (*Amphidesma subtriangulatum*), an ocean beach species, and Green-Lipped Mussel (*Mytilus canaliculus*), another species that lives outside estuarine conditions, confirms that this larger resource area was being utilised in prehistory.

## SITE DISTRIBUTION

In almost all cases the new sites located were shell middens (see Appendix), although these were at times associated with other site types. The midden sites are heavily concentrated at the lower, northern, end of the valley, primarily on its west bank. This distribution and the high proportion of middens to other site types is a result of two independent factors: the nature of the archaeological evidence and the prehistoric and contact period activities taking place in the area.

## The Archaeological Evidence

Previous archaeological recording in the area has meant that most of the larger and more prominent sites, particularly pa, have already been recorded. Structural site types such as pa, pits and terraces are visible in all but the most adverse conditions.

For this reason most structural sites will be recorded, regardless of circumstances, in the first surveys of any area, while a greater proportion of depositional sites, such as midden, will remain undiscovered. As a result sites subsequently discovered will increasingly tend to be depositional sites. However, this does not mean to say that all the structural sites have been located in the Judea Valley: U14/2240, when excavated in May 1985 (McFadgen 1985), revealed a number of pits of considerable size of which there were no

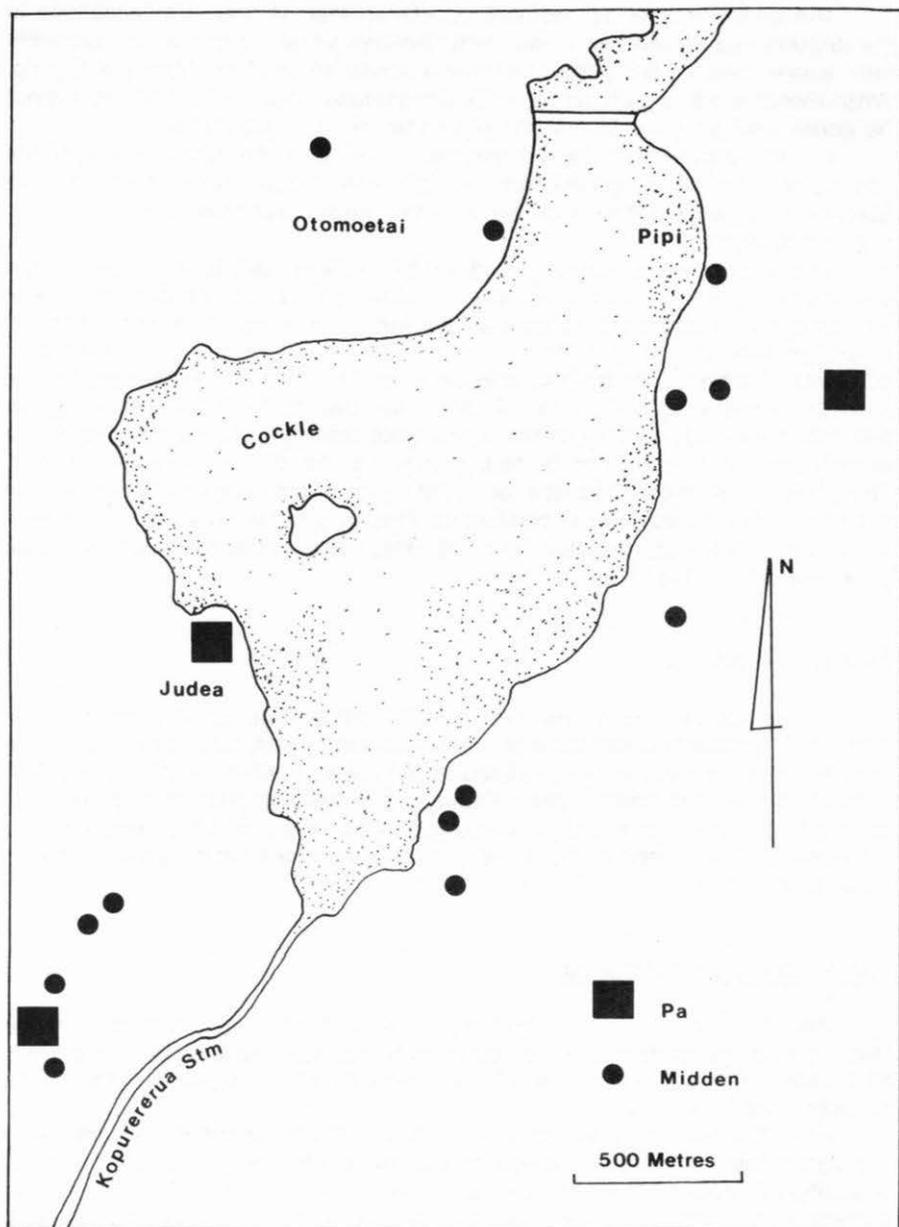


Fig. 2. Waikareao Estuary: site typology and distribution.

surface indications.

Secondly, depositional sites are more often subject to chance exposures. As a result visibility varies according to ground cover, which in turn alters with land use and vegetation cover. The increasing use of the Judea Valley, particularly its west bank, for housing subdivisions, industrial complexes and pasture has increased these exposures, while at the same time destroying these very same sites.

### Prehistoric and Contact Activity

Tradition records that the Kopurererua Stream was used by the Taumata people to travel from their area in the Kaimai Ranges to the Waikareao Estuary in order to collect kaimoana. The lower area of the stream is recalled in oral tradition as being particularly good for fishing, eeling and collecting whitebait as well as shellfish. Each of these resources would be gathered, preserved and stored in flax for transport back to Taumata. Most of those permanently settled on the Kopurererua lived on the western side towards the Cambridge road and it was at their pa that the Taumata people stayed overnight on their travels to and from the Waikareao Estuary.

On journeys between Taumata and Judea overnight stops would be made at pa placed alongside the Kopurererua. Four pa besides that at Judea itself are remembered: Pukehinahina (Gate Pa), Tukarere, Pukemiro and an unnamed pa, probably U14/1068, that was reoccupied after the battle at Gate Pa in 1864.

Ensign Best witnessed the travel of inland hapu to the sea, similar to that recorded in the above traditions, but in a different part of Tauranga Harbour. Best saw 14 canoes with 250 people arrive at Maungatapu on 4 January 1842 in order to fish. He records that no shelters were built and that they seem to have camped on the beach by the canoes. At the end of the day:

'The canoes returned having taken great quantities of fish which had been sent to Mouna Tapu [Maungatapu] to be cured for winter stock reserving sufficient for present consumption.' (Taylor 1966: 397.)

Best was near Maunganui at this time, so it appears that fishing camps were at times established on the ocean side of the harbour. Best makes no mention of shellfish gathering, but there are at least two possible explanations for this. Shellfish gathering may have occurred during the daytime when Best was absent, or the shellfish beds may have been elsewhere.

Des Kahotea discusses such movement between inland and coastal Tauranga, specifically the people of Ngati Ranganui and Waitoha and their territory that included forest areas and the harbour areas of Matapihi, Te Papa, Wairou and Te Puna (Kahotea 1983: 92-3).

Te Tumi's track, a historic track over the Kaimai ranges, has a concentration of archaeological sites alongside that suggests it falls into the same pattern of site distribution beside a forest-coast route (O'Keefe 1991: 85).

Besides the Kopurererua stream there are a number of other routes

traditionally remembered, such as the Mangarewewa River to Paengaroa and the Upokokuti River from Taumata.

### Site Placement

The fact that the majority of sites were recorded on the western slopes of the Kopurererua stream accords with tradition, though the reasons for this preference are not apparent. The middens on the western side are also denser and generally appear in exposed sections. Of the 12 west bank midden exposures, half were of a single shellfish species (Plate 2). By comparison midden sites on the eastern bank are smaller and usually appear as scatters with a mixed matrix of shellfish species (Plate 3). Additionally all middens immediately alongside the Kopurererua are heavily disturbed, but those on the east bank far more so than those on the western bank.



Plate 2. U14/2714: a dense concentration single species midden. Typical of the western side of the Kopurererua Stream.



Plate 3. U14/2723: a typical Kopurererua Stream eastern bank shell scatter.

One reason for this bias in midden distribution is the urbanisation of the eastern ridge slopes along the whole length of the survey area. The alteration of the Kopurererua stream into a new canal-style channel may also account for the loss of sites on the eastern bank.

In addition to the differential distribution of sites by distance from the estuary and the Kopurererua, there is a marked difference in their elevation. Midden sites are present alongside the stream and the lower slopes of the two main north-south ridges. Pits and terraces are on mid-slope and usually on discrete spurs or knolls that lie just above the swampy river flats. Two of the four pa lie in much the same positioning as pits and terraces, although generally on a slightly higher elevation. This accords well with what is suggested for areas elsewhere in the Tauranga region with midden sites around the coast and up the river valleys and those pa beside streams on edges of promontories above 100 m (O'Keefe 1991: 85).

Of the other two pa, Pukehinahina (Gate Pa), is on the top of the eastern ridge on what was the main access route to Tauranga in the 1860s when it was built, making its position understandable. The fourth pa, U14/1068, is only 2-3 m above the flats. This low-lying position is not so easily explainable, but its close proximity to the Kopurererua may be the significant factor. U14/1068 has

no visible earthworks as such, being a flat raised plateau a few metres in height with virtually no views of the surrounding countryside. It is, however, extremely close to the river with a great many shell middens and fire-cracked rocks visible, and it might be more accurate to regard this site as a kainga, although possibly fortified with palisades.

From a functional point of view the distribution of site type according to elevation is the logical answer to the different functional requirements of each site. Rubbish disposal and food preparation sites involving shellfish gathered from the estuary and transported by river canoe are all placed close to the river and where they do not have to be carried up hill. This also ties in with the traditional and ethnographic reports of specialist gatherers preparing food on the beaches, as discussed above.

Housing, gardening and food storage occur on the dry ground above the swampy flats but still close to the river for convenience. Pa are located less accessibly, however, on higher ridges easily partitioned off by ditch and palisade and with a good lookout for a considerable distance (excepting U14/1068).

As a final comment it may be possible to tentatively distinguish occupational midden sites utilised by the residents of the area from the specialist camp middens of those who came from outside the area to gather kaimoana. Large groups gathering from particular shellfish beds would rapidly form these large single species middens. The more mixed species midden may reflect smaller groups of people gathering from different areas of the harbour over a longer period of time. An alternative explanation is the possible change of subsistence patterns over time. The fact that local traditions indicate that the strategy detailed in the above explanation was being used late in prehistory inclines me towards this view. A series of dates from the two types of midden might assist in reaching a firmer conclusion by establishing whether the activities were concurrent or not.

## CONCLUSION

The predominance of shell middens in the lower part of the Judea Valley, established during the 1989 survey, appears to accurately reflect the food gathering strategies of the inhabitants of this area during the prehistoric and contact period. Traditional and early ethnographic accounts discussed in the paper tend to confirm that this was a major area for the gathering of kaimoana. The present levels of fish and shellfish combined with low site visibility have, however, concealed the area's importance in the Tauranga Harbour from researchers.

## ACKNOWLEDGEMENTS

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Walton edited an early draft, and Ann Williams, as always, allowed light to filter through at the end of the tunnel by editing a final version.

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## APPENDIX. ARCHAEOLOGICAL SITES RECORDED

(All site numbers U14)

- 2712 Scatter of shell midden over 20 m area. Contents appear to be entirely pipi. Descends from a slight rise on the west bank of the stream and erodes into stream flats.
- 2713 Two bulldozed road cuts have been made through a 15 m long midden, contents predominantly pipi.
- 2714 Thin band of midden extending 20 m to connect with a concentration of pipi shells. The concentration extends 40 m up a knoll. Fifty m further on another 2.5 m band of pipis. All are exposed by a farmer's road cutting.
- 2715 Three middens 10 m apart on top of the western stopbank of Kopurererua Stream. Two contain a mixture of pipi and cockle, but the third is cockle only. All three are heavily disturbed by stopbank construction and dirt road on top of stopbank.
- 2716 Two small middens on disused farm road below western spur. Concealed by overhanging vegetation and moss. First exposure is 2 m long, the second a dense 4 m of pipi.
- 2717 A pipi-only midden on the south side of a spur of western ridge exposed by farmer's fence; forms a dense scatter of shell rather than a defined section.
- 2718 Slope descends from western ridge onto an east-facing terrace

- overlooking Judea Valley. Midden is eroding from three sides of the terrace. A shallow pit occupies part of the terrace.
- 2719 Twelve m of midden exposed in bulldozed road leading along spur from western ridge. Fire-cracked rock with a mixture of shell types.
- 2720 On north slope below spur, midden exposed by stock tracks, extends for 8–10 m down slope without a clear section. Both pipi and cockle present.
- 2721 Between east ridge and the Kopurererua, a midden scatter exposed partly by section in drain. Scatter occurs over unpaved foot track.
- 2722 Firescoops and midden exposed in foot track between Kopurererua and east ridge. Four black indistinct firescoops, one of which contains crushed shell. Dense undergrowth on either side of track.
- 2723 Midden scatter on west bank of Kopurererua. Mostly heavily crushed shell exposed in foot track, but one large unbroken tuatua shell present.
- 2724 Indistinct pits on knoll overlooking western stream flats. Sizes and shapes are indistinct but approximately 8–12 pits of 3–4 m oval shape.
- 2725 Small band of midden 1 m long; other smaller exposures at same level are also present. Situated at top of scarp on eastern side of Waikareao Estuary.
- 2726 Eastern side of Otumetai peninsula has a midden that extends with few gaps for 800 m. Pipi, cockle, mussel, oyster and fire-cracked rock are all present. Not really one midden, but a number of overlapping middens.
- 2727 Exposures and sections of midden on both banks of a road descending into a valley or ravine. Mostly pipi contents but some cockles and fire-cracked rock.
- 2728 Midden with pipi, cockle and obsidian in a new subdivision road cutting. Section exposed is only 300 mm long.