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EXCAVATION OF SITE U14/1945, OROPI VALLEY, TAURANGA

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Introduction

Site U14/1945 was originally recorded as two small terraces, with two probable kumara storage pits visible on the surface of the upper terrace, and shell midden visible on the surface of the lower terrace, on a low, approx 4 m high, hill. The site is located at Oropi Road, Tauranga (Figure 1). During preliminary earthworks for the Oropi Downs subdivision the site was scheduled for development and an authority to modify or destroy was granted by the Historic Places Trust (2003/185). The site was investigated over two days in April 2003.

The site had been somewhat disturbed by a number of activities: European farming over at least a century; recent use of heavy machinery to remove a barberry hedge, which disturbed the midden; and earthmoving machinery encroaching on the margins of the site.

Two trenches were dug through the midden with a backhoe equipped with a weed bucket. Trench 1 began on the lower terrace, where shell midden was visible on the surface, and extended downslope to the east (Figure 2). A number of features were observed in the profile of this trench. In particular, in the base of the trench near the crown of the hill, a large oven scoop was observed in plan (Figure 3). An area of darkened soil, outlined by a band of soil stained with charcoal, and in places burnt to a red colour, and a number of large hangi stones were visible. The stained area extended across the whole base of the trench (about 1.5 m north-south), and 1.65 m east-west. It was excavated to its base along the southern edge of the trench to reveal a wide, flat bottomed feature with a thin (50–80 mm) layer of very black greasy soil and charcoal at the base. Above this was a layer of fill, consisting of the original topsoil mixed with charcoal derived from the oven scoop (Figure 4). Presumably this originated with a soil that covered the oven during operation. Above this again was a lens of clean, redeposited Kaharoa tephra.

Above the oven scoop, and overlying the undisturbed tephra in the rest of the trench, the shell midden was visible in profile, in a matrix of black, charcoal

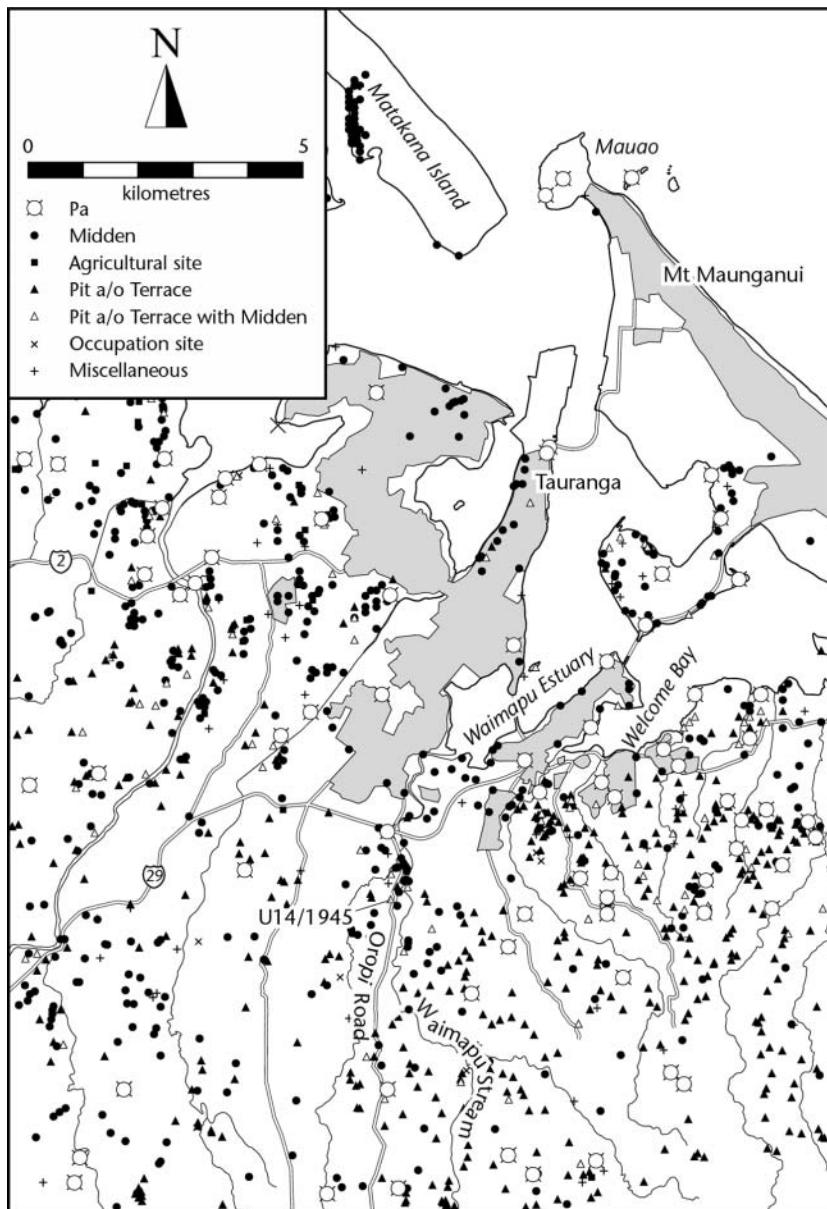


Figure 1. Location of U14/1945

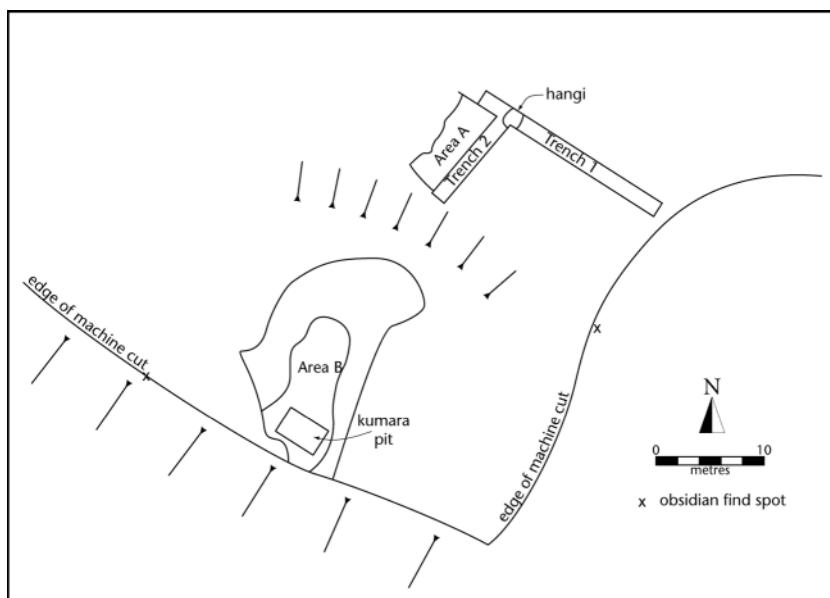


Figure 2. U14/1945, showing excavated areas

stained topsoil. As already noted, the midden had been disturbed by the removal of the barberry hedge, and in places it had clearly been redeposited downslope. The midden was patchy, and not particularly dense. Two samples were taken for analysis and dating, one from above the oven scoop, another from lower down the slope.

Trench 2 ran across the surface of the lower terrace, north-south at roughly right angles to Trench 1. Although midden was clearly visible on the surface in this area it seems that this had been recently redeposited, probably during removal of the hedge. In the west profile of the trench two small oven scoops could be observed in profile. Seven postholes were observed in the base of the trench, with depths ranging between 200 and 400 mm. All were round in plan, indicating that they had not been cut with steel tools, and so are probably prehistoric in origin.

In order to examine these postholes a wider area, Area A measuring roughly 9 x 3.5 m, was cleared with the backhoe. All topsoil and most midden was stripped away to reveal a series of postholes clearly visible in the tephra subsoil, and the bases of a number of oven scoops surrounded by reasonably dense midden (Figure 5). Most of these postholes contained a fill of dark, charcoal stained topsoil and midden, but some contained only a fill of old topsoil. These



Figure 3. Large oven scoop in plan. Scale is 0.5 m.



Figure 4. Large oven scoop in section. Scale is 0.5 m.

latter therefore predated the deposition of the midden, indicating use of the area over a number of years. Although they occurred in groups, particularly in two reasonably straight lines, they did not seem to form part of structures such as houses etc.

At the north end of Area A a number of postholes with midden fill were observed within a roughly circular area ca. 2 m in diameter. Surrounding this to east and west was the densest midden in this area, and also the bases of a number of shallow oven scoops. These features are interpreted together as a food preservation area, with the postholes representing frames for drying food (probably shellfish, and perhaps fish or shark) prepared in the surrounding oven scoops. Given the number of postholes it appears probable that these frames were rebuilt on two or three occasions. The postholes at the south of Area A may also represent drying frames, or perhaps temporary shelters and windbreaks.

Area B was an area of approximately 10 x 20 m opened up on the top terrace, where two shallow depressions observed on the surface had previously been interpreted as kumara storage pits. On removal of the topsoil it soon became apparent that they did not represent pits. They are probably natural features, or perhaps agricultural in origin. One pit was found, but not where the surface

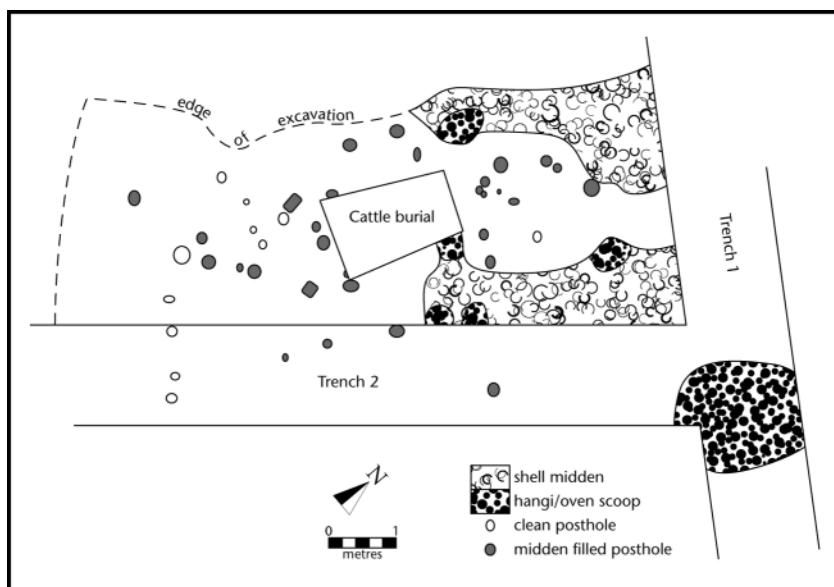


Figure 5. Area A.

depressions indicated. This feature measured 4.5 x 1.4 m in plan. Charcoal stained soil could be seen to extend irregularly some 10 m or so north of the pit beneath the topsoil layer. A number of shallow oven scoops were observed in the base of this dark soil, marked by a fill of very burnt and broken shell and ash. These oven scoops are probably, like those in Area A, food preservation features, but with no midden being observed in conjunction with them it is likely that midden was disposed of down the slope to the north, or that the ovens were used to dispose of any waste material.

The kumara pit was cross sectioned with the backhoe to reveal a feature 0.8 m deep containing layers of very clean fill. The pit appears to have been deliberately filled soon after it ceased to be used, and the lack of charcoal stained soil indicates that it predates the nearby oven scoops. Part of the fill was a shell midden. This was, compared to midden elsewhere on the site, relatively clean and whole. A sample was taken for analysis.

Midden analysis

Midden samples were taken at three points during the excavation—twice from the profile of Trench 1 (Samples 1 and 2), and from the profile of the storage pit (Sample 3). Each sample was roughly 14–15 litres in volume. Samples were wet sieved through a 1.6 mm screen, air dried and sorted by hand. Rather than count left and right hinges of bivalves, the total number of hinges was counted and divided by 2.

The results are given in Table 1. It can be seen that pipi (*Paphies australis*) and cockle (*Austrovenus stutchburyi*) are far and away the dominant species. Other species are, in fact, so uncommon by comparison that they probably only represent stray shells in the pipi/cockle bed, and may not even have been harvested live. The condition of each sample was also noted. Sample 1 was very fragmented and much of the shell was burnt. This fragmentation is probably due in part to crushing by stock trampling and farm and heavy machinery in modern times, but is largely due to burning. This sample also contained the most oven stone fragments, and the most charcoal. Sample 2 was also fragmented, but much less burnt. It has probably been crushed by farming practices and perhaps partially redeposited in the process.

Sample 3 was quite different. It was largely clean and whole, and would seem to have remained undisturbed since it was deposited as part of the kumara pit fill soon after the pit went out of use. It was the densest midden sample taken, consisting almost entirely of pipi and cockle, at a ratio of roughly 3:4, but the cockle was notably very small, while the pipi was all quite large. In order to investigate this more closely a sample of 100 each of cockle and pipi was taken as randomly as possible (the first 10 measurable shells that came to hand from

Table 1. Midden analysis

	Sample	1	2	3
Shell				
Pipi (<i>Paphies australis</i>)		179	121	663
Cockle (<i>Austrovenus stutchburyi</i>)		28	26	859
Tuatua (<i>Paphies subtriangulata</i>)				3
Cat's Eye (<i>Turbo smaragdus</i>)		1	9	
Venus Shell (<i>Dosinia</i> sp.)				1
Whelk (<i>Buccinulum</i> sp.)				4
Ostrich Foot (<i>Struthiolaria papulosa</i>)				1
Mudsnail (<i>Amphibola crenata</i>)				1
Fish Bone				
Scute	Mackerel (<i>Trachurus</i> sp.)			1
Vertebrae	(Fish sp.)	1	2	5
Oven Stones	n.	26	7	6
	wt. (gm)	260	40	95

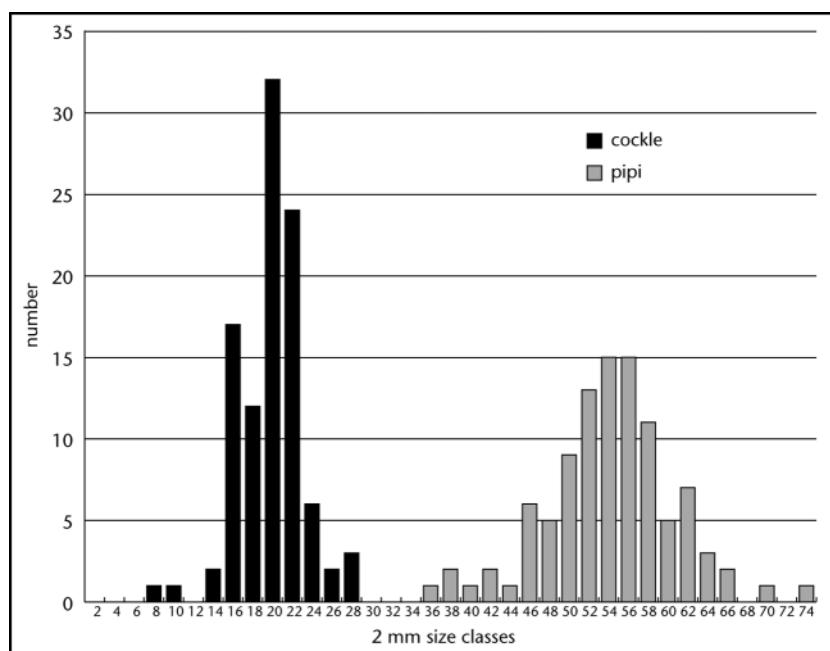


Figure 6. Size frequency distribution for cockle and pipi from Sample 3.

each of 10 sorting trays). Each was measured at the widest part of the shell transverse to the hinge with electronic callipers, to the nearest millimetre. The results are graphed in Figure 6. There is no size overlap between the two species—all the cockle is smaller than all the pipi. This seems quite unusual. In most middens with which I am familiar pipi is usually larger than cockle, but only on average, and there is usually some overlap.

The cockle are generally all too small to be worthwhile as a food resource, while the pipi are of a size to make them well worth while gathering for food. It seems likely that the cockle were a by-catch, taken when pipi were harvested by dredging or raking in bulk. The shellfish midden is representative of the live shellfish beds from which they were harvested. These beds were probably located at the Waimapu Estuary and Welcome Bay, roughly 5 to 6 km distant, and indicate that at the time of occupation of U14/1945 the environment was more open and sandy than it is now.

Only one identifiable fish bone was recovered, a mackerel (*Trachurus* sp.) scute. It seems that fishing was of only very minor importance at the site, despite the marine focus of much of the activity here.

Dating

Two samples were submitted for radiocarbon dating: a shell sample from the midden in the storage pit; and a charcoal sample from the base of the oven scoop in Trench 1. The storage pit (Wk-13116) gave a date of cal. AD 1440–1610 at a 95% confidence interval. The oven scoop (Wk-13117) was dated to cal. 1470–1650 at a 95% confidence interval—a date statistically indistinguishable from the storage pit. It is clear that the site represents a single occupation, which may have occurred over a number of years, some time during the sixteenth century AD. Although there are clear stratigraphic relationships between various features on the site, these cannot be separated by radiocarbon dating.

Charcoal

Charcoal from Samples 1 and 3, as well as a sample from the oven scoop in Trench 1, were submitted for analysis to Dr. Rod Wallace of the Anthropology Department, University of Auckland. The results show a rather mixed bag, making a secure identification of the forest type difficult. A mixed broadleaf podocarp forest is a broad description, but it does usefully illustrate one or both of two things. Firstly, the site may have been located close to the forest edge. Secondly, broadleaf podocarp forests are usually mature forests, so the vegetation may not have been very disturbed at the time of occupation, indicating that the occupation represented at U14/1945 was early in the sequence for the local area. This is

reflected in the makeup of the shellfish populations, which lead to the conclusion that the Welcome Bay estuary was a cleaner, sandier environment than it is today—not until the forest is destroyed does the estuary environment begin to silt up.

Mahoe

The most unusual feature in the site, and my main purpose in writing this paper, was the oven scoop in Trench 1 (Figures 3 and 4). This feature appeared rather unusual when excavated for a number of reasons: it was wide (1.65 m), but shallow (0.4 m); it contained a shallow layer (50–80 mm) of pure mahoe (*Melicytus ramiflora*) charcoal at the base; it was ringed, partly, round the edge with large hangi stones; and the fill above and to either side of it was clean soil apart from inclusions of charcoal. One explanation for this feature is that it was not a hangi or umu used to cook food, but rather used specifically to make charcoal.

Knight (1964) describes a not dissimilar feature from Huriawa Pa in Otago, which he interprets as an ahi komau. The Huriawa feature was located in a deep pit, and a high earth dome covering it was still intact. Best (1976[1924]: 116) described ahi komau as a covered fire, “often done in order to keep embers alive.” He implies that it is derived mythologically from volcanic fires. Ahi komau is described in greater detail in a 19th century Ngati Kahungunu, Hawkes Bay, manuscript, of which a copy, made before 1908, is quoted here:

Na, whakamarama ake e au te ahi komau. Ko te ahi komau, mo te makanga i te ahi ki roto ki te houama, ka kiia he ahi komau. Ki te haere te tangata i te ope haere, ka tikina te ti maroke, me te tokitoki maroke, he kopaka matau ranei, ka tapahia kia penei tonu me au te roa o nga tutanga. Ka kawea ki te taha o te pukepuke, ka karia te rua penei ma te awa nei. Ka whakatakoto ai te tokitoki ki te tuatahi, ko te ti me hono mai ki runga ki te tokitoki. Ko te pito ki runga o te hiwi kia ara ki runga kia to nga turi te hohonu o te awa, te pito ki runga o te hiwi. Ko te pito ki raro o te awa kia to nga hope te hohonu o te awa, kia kotahi te hau mataratanga mai i te tokitoki o te awa. Me waiho he koroputa kia ahua tahinga ki raro koi heke te wai ki roto ki te awa. Me maka te ngarehu ki te pito ki runga o te ti, katahi ka whakapipi ki te kohatu a runga o te tokitoki me te ti, katahi ko hoatu te one uku, ka tapuke katoa i te awa. Ka kiia i konei tenei ahi, he ahi komau. Ahakoa haere i te ope, haere te ope taua ranei, ka rokohanga mai e koe e ka tonu ana te ahi komau.

Ka mea atu a Ripeka Ihaka—“Hei aha te koroputa me nga kohatu?”

Moihi—“Ki te wera te kohatu ka mau tonu te mahana, ka kore e tohauki te tokitoki me te ti. Ko te koroputa hei putanga mo te hau angi ko roto.

Ki te kore te koroputa hei ara mo te hau angi ki rito ka mate tena ahi komau. Waihoki, ki te kore te pongare o te ihu e puare, kua kore te hau angi hei ora mo te tangata.

Now, I will explain the ahi komau (covered fire). The ahi komau, from the placing of the fire in the houama was called an ahi komau. On men going on a journey, they looked for any dry cabbage tree, and dry tokitoki, of dry matai, the lengths cut as long as I am tall, then carried to the side of a hillock, a hole is dug like a river (bed). The tokitoki is placed in first and the cabbage tree is joined to the top of the tokitoki. The depth of the furrow on top of the ridge is as high as the knee. The lower end of the furrow is as deep as the hip, so that only wind can blow in the quiet of the furrow. But leave a hole sloping down to prevent water coming into the furrow. If charcoal is put in the end on top of (a) cabbage tree (stick), then stones are stacked on top of the tokitoki and cabbage tree then clay, and the furrow heaped over. This fire is called ahi-komau (covered fire). Even though the group goes away, or on a war party when you come back, the covered fire still burns.

Ripeka Ihaka asked—"What are the hole and the stones?"

Moihi—"The warmth is kept in by the heat of the stones to stop the tokitoki and ti (sticks) from getting damp. The hole is the entrance for draught. If there is no hole for the flue then the covered fire would die out. Likewise if the nostrils of the nose are not open then a man would not have breath to keep alive. (Best-Matororanga n.d.: 159, translation supplied by David Simmons)

The purpose of the ahi komau, then, was to literally keep the home fires burning while groups were away from their home base. Not only would this have provided embers for relighting fires when they returned, but also would have served to reinforce territorial rights. The feature at U14/1945 may have been an ahi komau. It does not exactly fit with either Matororanga's description or the feature at Huriawa, but it is not too different and may have had a similar function. Given that the Oropi Valley was a route for people travelling from the coast to the hinterland, this makes sense.

An alternative explanation is provided by the evidence of a kaumatua (since deceased) of Ngati Rangi, who lived at a marae just out of Waipoua. When asked how they managed to live in such a cold place over the winter he explained that they used to make charcoal. They would get a fire going and stack a large amount green mahoe around the fire. They would then cover the whole stack with large clods of earth leaving only a hole for the smoke at the top. After some days the fire would have gone cold and they would then carefully

remove the clods of earth. The mahoe had now become charcoal. This would be carefully stored and stacked away in a dry place for winter.

The homes in the area were built into the ground with a ridge pole (tahuhu). In the evening somebody would bring in a shovel of hot embers which would be placed in a shallow pit in the centre of the whare under a hole that served as a chimney. The embers were then feed with the dry charcoal. A very hot fire with virtually no smoke was the result (ethnographic data collected by Rob McGowan, early 1990s).

Ngati Rangiteauria, Ngati Rangituhia and Uenuku are closely related hapu in the area around Ruapehu. They are descended from Paerangi, and consider themselves to be part of the Whanganui River iwi. Marae were established in the area in the late 19th century to retain ownership of the land through occupation. Unoccupied lands were deemed to be Waste Lands and were taken over by the Crown for development and allocation to settlers. The land was particularly valuable because of its forests.

The date of the feature is a little too early to place it in the “Little Ice Age”, a period of worldwide colder temperatures that prevailed between about AD 1600 and 1830, but given that it is located along a route into the interior, where winter temperatures are always colder than on the coast, it may represent charcoal for use by travellers. Charcoal would be easier to carry than wood and cleaner burning and a smoke free source of heat and cooking fuel would certainly seem advantageous. But is mahoe a likely source for such charcoal? Salmon (1980: 118) records that mahoe is a soft, brittle wood, but it was used to make charcoal for gunpowder, and that in prehistory it was rubbed with kaikomako (*Pennantia corymbosa*) to make fire, so an association of mahoe and fire/charcoal can be established. However, a soft light wood like mahoe is not likely to burn with any heat or duration, either as wood or as charcoal.

A definitive interpretation of this feature is not, then, possible at present but it is distinctive enough to indicate some sort of specialist function involving the manufacture of charcoal or with charcoal as a major by-product. While an association with fire can be established for mahoe, the properties of mahoe charcoal are not well known. On the face of it mahoe would not seem to be a good source of heat, but this could only be demonstrated through experimentation.

Conclusion

In general, three not necessarily unrelated activities have taken place on the site within a relatively short space of time in the 16th century—kumara storage, shellfish (and perhaps fish) preservation, and charcoal manufacture. The midden material is not particularly dense and there are no postholes indicating substantial structures. Although there are two terraces within the site, these are

probably largely natural, perhaps modified for use, but not substantially. There are two possible groups whose occupation may be represented here. It may be a group of people who in general lived locally and who camped here for 2 or 3 months while they exploited the local resources of Welcome Bay and its hinterland. Alternatively, since the Oropi Valley is a route into the interior, it may equally represent the occasional and repeated occupation of a group of travellers, perhaps a group from the interior who had seasonal use rights to exploit the Welcome Bay shellfish beds. Such a group would have had set camping spots to which they also had rights. Either way the occupation of the site was probably only seasonal and associated with occasional use by a small group.

Acknowledgements

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