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SITE RECORDING, SITE TYPES, AND SITE DISTRIBUTION ON THE KING COUNTRY COASTLINE

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If you tell people that you have been tramping along the King Country coastline they sort of look at you blankly for a few seconds then say "But the King Country... that's inland... it hasn't got a coastline. Has it?" In fact the King Country does have a coastline, between Kawhia Harbour in the north and the Awakino River in the south. It has 70 kilometres of wildly beautiful and lonely coastline, a succession of surf-bound beaches alternating with rocky headlands, and placid estuaries. It is backed by fertile flats and valleys, and by bluffs, cliffs and plateaus. There are great expanses of blacksand dunes, several large sheep and cattle stations, and considerable areas of original bush. It is almost entirely unroaded, which is probably why most people are hardly aware it exists, although they are aware that there must be something out there between where Auckland leaves off and Taranaki hasn't yet started. The only way to see it is to walk it and very few people do.

Late in 1992 I was preparing to tramp along this coastline with May Bass, of Waikato DOC. She wanted to familiarise herself with the terrain as background for writing up a history of settlement (Bass 1993). I offered to point out some of the archaeological sites. I knew nothing about the area, but I had done a lot of site recording down in the South Island in the pre-metric 1960s. (In fact at one stage I was simultaneously file keeper for Canterbury, Marlborough, Nelson and the West Coast.) So I went along to see Neville Ritchie at the Hamilton DOC office where the files for the King Country were kept. When I looked at sheets R15, 16 and 17, which cover the Kawhia-Awakino area, I was amazed to discover that hardly any recording had been done on the coast. Few records were more recent than 1978. John Coster and Gabrielle Johnston had intensively surveyed a very small area at Te Maika in the far north, Sue Bulmer and Jim McKinlay had surveyed the sand dunes now being consumed by BHP-NZ Steel's ironsand dredge at Taharoa, Steve Edson had pinpointed some of the more obvious pa on aerial photos, and Alistair Buist had recorded a number of pa in the south. And that was it! It was practically virgin territory! I had not dreamed there could be so much terrain anywhere in the North Island still crying out to be recorded. With encouragement and assistance from Neville Ritchie I decided to record as many sites as possible during our tramp.

We were to start our tramp the day they hold the lamb fair at Awakino saleyards, and it always rains on Awakino saleday. So just about every farmer from along the coastline sought shelter in the pub when the sale finished, which was very handy for meeting all the people whose land we were to cross, and

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learning about which headlands could be traversed at low tide and which ones we would have to climb over. There was initial suspicion that we might be meddling 'environmentalists', but without exception the landowners were very helpful.

It took us ten mostly leisurely days to walk the coastline. We walked up the beaches and over or around headlands to Waikawau, went up the Waikawau valley through Whareorino state forest, over Maungamangero, the highest point in the northwest King Country, down the Marokopa valley to the coast again, along the coast to the Taharoa sand dunes, where we turned inland and followed an old clay road over to the Kawhia mudflats and Te Maika peninsula, finishing up at Kawhia town. Over those ten days we recorded or revisited some 95 sites. That was without really trying - these were sites that we more or less stumbled over while tramping. Some of the pa we saw were, to my South Island eyes, quite spectacular.

Obviously the King Country coastline was rich in archaeological remains, and by now I was hooked on recording them. Later in the 92-93 summer I did a tramp in the opposite direction to traverse those sections of coastline bypassed on the first trip. This brought the tally up to 200 sites. At one sandhill I found a Duff 3A spade-shouldered Archaic adze; at another I found a heap of moa and elephant seal bone. My feelings were probably similar to those of Walter Mantell and the Rev Richard Taylor in 1847 at the Waingongoro rivermouth down in Taranaki. At the end of eight solo days following in the footsteps of Te Rauparaha's heke I had some difficulty re-integrating myself back into the twentieth century, although the Awakino pub was a big help.

Maniapoto people were keenly interested in the results. They had recently been putting a lot of effort into recording their oral heritage, and were keen to see a start being made on recording their physical heritage. With Maniapoto Maori Trust Board encouragement I decided to keep going.

A Historic Places Trust grant towards field expenses allowed me to spend a further two and a half months recording sites along the same coastline during the 1993-94 summer. This was a fairly intensive survey, working long hours and spending on average slightly more than one day on every kilometre of coastline. It was blessed with beautiful weather. I am confident that I have recorded at least 70% of the sites that have any visible surface expression, along a 4 km-wide coastal strip. Altogether 700 odd sites are now recorded on 68 km of coast - a little more than ten sites per kilometre of coast, or, over the width of the strip surveyed, a density of 2.5 sites per km². This is higher than would be expected, given the rugged and largely inhospitable nature of the coastline, or from reading such early works as Percy Smith's [1910] *History and Traditions of the West Coast Maori*. The only area that remains unrecorded is in the vicinity of Albatross Point, where the Maori landowners declined permission.

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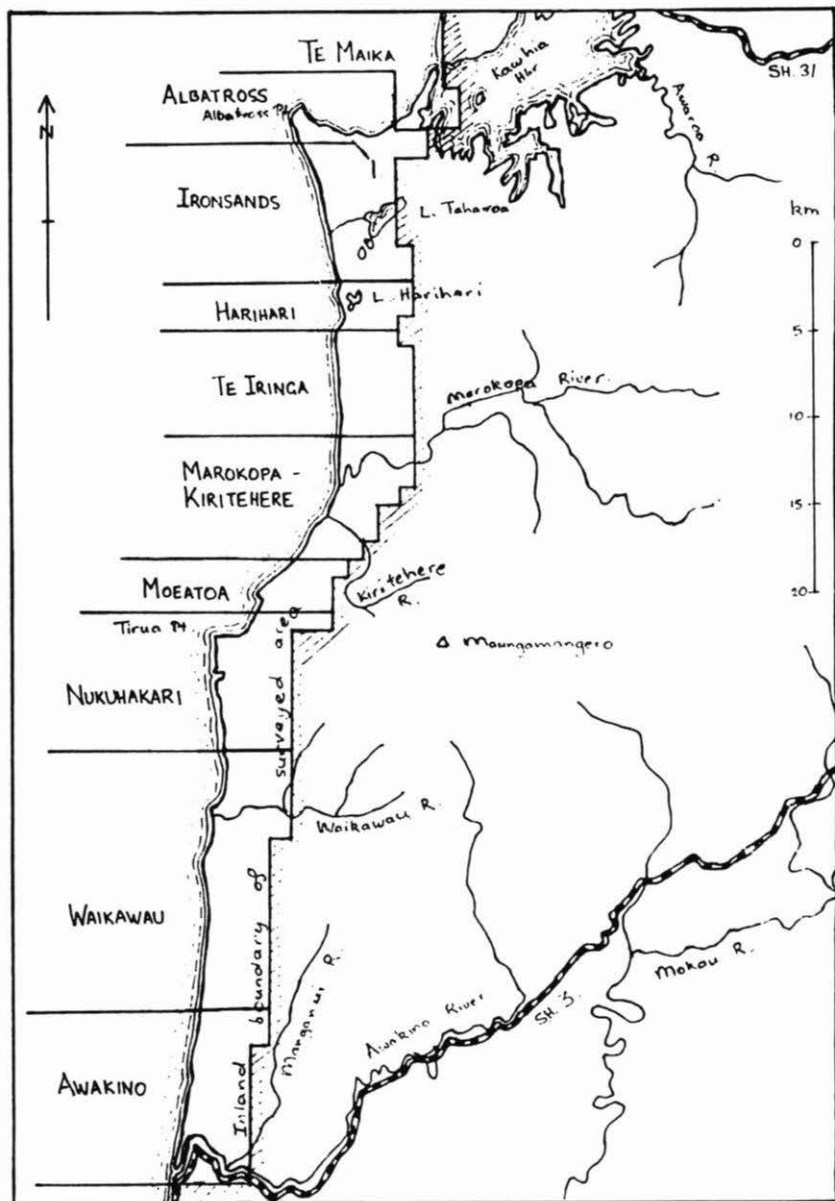


Figure 1. King Country coastline showing the four kilometre-wide coastal strip surveyed and the division of this strip into 'sectors'.

The remainder of this article describes the broad pattern of distribution of site types on the King Country Coastline. More detail can be found in a 153 page report and site list prepared for NZHPT [Wilkes 1994].

SITE TYPES AND ANALYTICAL METHODS

In general sites were classified on the basis of what was visible in the field rather than on the basis of inferred function or traditional nomenclature. Five main site types were recognised:

Fortified (or F) sites. Any site which showed evidence of having been fortified.

Most of these sites would usually be referred to as 'pa', but some of them were so tiny that the term pa seemed inappropriate.

Habitation (or H) sites. Sites which were dominated by habitation evidence.

The usual evidence has terraces which appeared more suited to habitation than to anything else.

Kitchen (or K) sites. Sites characterised by substantial amounts of midden, by ovenstone scatters, hangi scoops etc, where the evidence for food preparation outweighed evidence for other activities.

Pebble scatters and pavements (or P) sites. These relatively unusual sites have been distinguished from others because they seem to have archaic/moahunter associations.

Storage (or S) sites. These are sites in which the dominant feature are pits or rua presumed to have been dug for the storage of kumara.

Site acronyms are combined where necessary in an order representing their significance at that site. Thus for example, many 'pa' consist of more than just fortification - they have habitation terraces and are called FH, or they are fortified storage sites and are called FS. A combination of midden and habitation is HK or KH depending on which seems to be the most important.

Each site is regarded as being made up of one or more components, such as defensive ditches and banks, middens, hangi residues, and pits. Since components (with the exception of fortifications) are not restricted to particular site types they are described separately.

For descriptive purposes the coastline has been divided into 10 'sectors' (Figure 1). For analytical purposes the coastline has been further divided up into 68 'segments' each consisting of one kilometre of coastline and 4 topo grid squares of hinterland (with some fiddling necessary where the coast does not run north-south). Data on all sites was entered into a database using Quattro spreadsheet software. This allows site and component distribution data to be presented in the form of bar graphs, one bar for each segment. The King Country coastline is ideal for distribution studies because it runs almost due north-south for most of its length so that distributions can be shown by one-

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dimensional graphs rather than two-dimensional maps.

DISTRIBUTION OF SITE TYPES

Sites are found all along the coastline but are definitely more abundant in some sectors than others. There is an inverse correlation between site density and coastal ruggedness (Figure 2). The highest site density was found in the Te Maika sector, where it is about 25 per km². The distribution and characteristics of sites here are more typical of those in the rest of Kawhia harbour than of the Tasman sea coastline. There are large numbers of relatively huge middens up to a metre thick. Fortified sites are rare, large, and show indications of sustained occupation. Habitation sites are concentrated on rather featureless horizontal ridge tops, recognisable mostly by presence of high-pH soil grassed clearings in the prevalent manuka scrub.

The Ironsands sector is dominated by large sand-dunes and by Lake Taharoa and other lakes and swamps dammed at the inland margin of the sand. This sector also has a high site density, 9 sites per km², in part because wind erosion has exposed a higher proportion of sites than in other sectors.

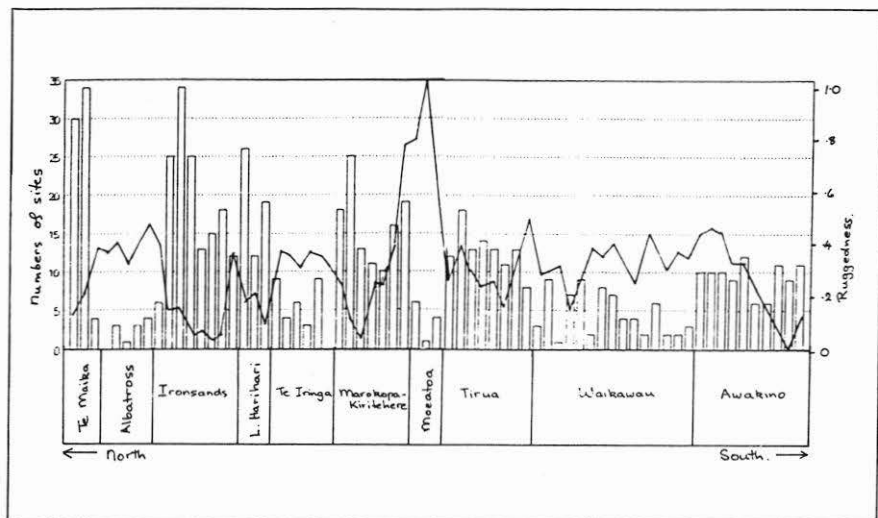


Figure 2. Total numbers of sites per segment (bar graphs) and coastal ruggedness (line graph). Coastal ruggedness is defined by the highest elevation within 250 metres of the shore divided by 250.

The Lake Harihari sector obviously offered a very favourable environment for human subsistence and has a fairly high site distribution, characterised by evidence of abundant kumara cultivations. South of Lake Harihari the coastline is mostly quite exposed and the terrain is relatively rugged and site densities are lower than in the northern sectors, except in the vicinity of stream mouths. The Marokopa river mouth, together with the mouths of two small streams north and south of it show a wide range of site types, apparently related to the fact that the Marokopa river was canoeable and provided one of the main routes between the coastline and the Te Kuiti-Otorohanga lowlands in the interior.

The most rugged portion of the coastline, the Moeatoa sector, showed the lowest site density anywhere on the coastline. Paradoxically this sector seems to feature more prominently in Tainui traditional history than any other sector. South of the Waikawau river the topography starts to resemble that of Taranaki, and in the Awakino sector the characteristics and distribution of sites starts to resemble that typical of the north Taranaki coastline.

From the sparse accounts of rare early Pakeha travellers one would expect to find numerous sites in valley bottoms. In fact they are quite rare, having presumably been obliterated by lateral stream erosion and/or progradation following bush clearance.

Fortified sites

A wide variety occur and are widely distributed. Of the 702 sites recorded 103 show evidence of having been fortified - nearly 1.5 per coastal kilometre. The distribution along the coastline shows an inverse correlation with ruggedness, indicating that the tendency for population to be concentrated in less rugged areas more than counterbalances any preference for pa to be located on more rugged topography. Proximity to peacetime settlement was apparently more important than optimum defensive location.

The highest density is 7 per coastal km, and density increases towards the south, both in absolute and relative terms, so that by the time the Awakino river is approached the density starts to approach the 12 pa per coastal km mapped by Buist (1964) in north Taranaki.

Site sizes range from a mere 62 m² (a single pit on a ridge defended by a transverse ditch and bank) to 1.3 ha (a 4-unit plateau pa with 4 transverse fortification lines and 38 pits). The typical site has a defended area of about 1500 m².

Most show no evidence of sustained occupation, and several appear to have never been occupied. They presumably served as refuges rather than as fortified settlements. In the northernmost sector, however they are larger, rarer,

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and show abundant evidence of sustained occupation. Te Rauparaha's pa at Te Totara is a pre-eminent example.

Unfortified habitation sites

Some 28% of the sites recorded are classified as habitation sites. If the survey had been a perfect one the proportion would probably be higher, as their topographic expression is often quite subtle and they are harder to detect than pa or pit sites. Many of the sandhill sites probably would have been classed as habitation sites if they had not been subjected to severe wind erosion.

Distribution is shown in Figure 3. Overall there are 3 per coastal km, and they make up about 40% of all sites as far south as segment 140. Southward of this they are less abundant, probably due to the increasing tendency as Taranaki is approached for habitation sites to be fortified and hence classed as such.

Habitation sites typically occur on the ends of low flattish spurs protruding out onto coastal and valley lowlands. They typically cover less than 1000 m², consist of 2-10 terraces, and often have a scatter of different pit types. Most of these sites, if excavated, would probably be found to possess the same sort of

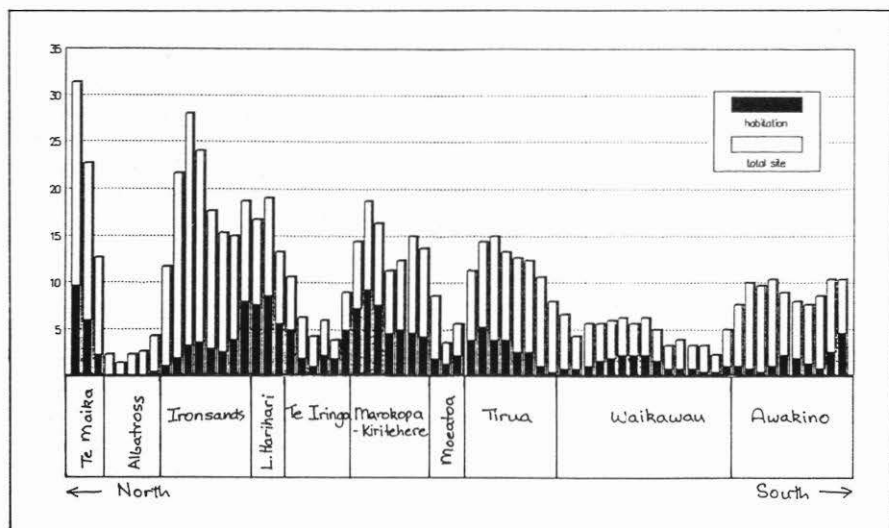


Figure 3. Numbers of 'habitation' sites per segment (black bars) and site totals per segment (open bars). Numbers smoothed by running average of three.

subsurface data as was recorded during excavation of a terraces-and-pits site near Aotea Harbour, slightly to the north of the King Country coastline (Fox and Cassels 1983).

Kitchen Sites

Some 25% of sites recorded are classed as kitchen sites. If we had full data on these sites many would probably be re-classified as habitation sites. Their distribution is shown in Figure 4. They are most commonly recorded on sand dunes and occur in highest densities in the Ironsands sector, where they make up 70% of the recorded sites, and many of them are quite large - 1 ha or larger. Half way along the surveyed coastline they become quite rare - about 10% of recorded sites. Further south they are largely absent, and in the far south they start to become more abundant again. This distribution is taken in large part to reflect the nature of the coastline, lengthy stretches of which are steep high-energy beaches which yield little seafood.

Kitchen sites in the Te Maika sector tend to consist of extensive, thick dense shell midden deposits. In the Ironsands sector wind erosion has generally left them as of considerable areas of ovenstone lag gravels with occasional shell midden patches standing out as miniature mesa-like features. Further south they

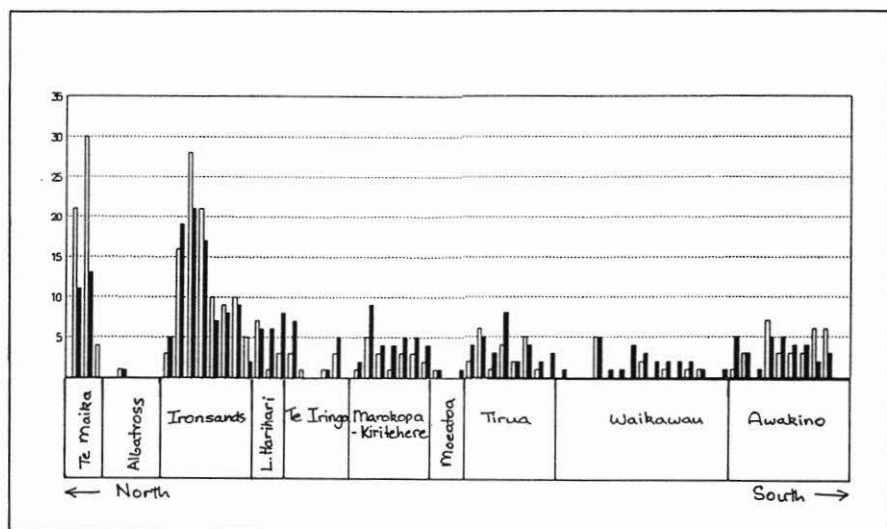


Figure 4. Numbers of 'kitchen' sites per segment (black bars) and site totals per segment (open bars). Smoothed.

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mostly consist of fairly insignificant thin lenses of shell midden.

Pebble scatter/pavement sites

This is a somewhat artificial category, including all sites in which the dominant visible feature is a widespread scatter of pebbles. Pebble scatters are mainly found in sandhill areas, where wind erosion tends to leave pebbles behind as a lag, while destroying other occupation evidence. Often associated with the pebble scatters are remnants of stone pavements. Pavements also occur independent of pebble scatters.

Some 27 pebble scatter/pavement sites are distributed fairly evenly over the entire coastline, located wherever sand-dunes and stream mouths occur together.

Storage sites

Of the 702 sites recorded 160 or 23% are classified as storage sites. The typical site consists of 2 to 10 pits located on the end of a low flattish spur, or on a flattish portion of ridge. These topographic settings are similar to those of habitation sites, and H and S sites are probably the 2 extremes of a continuum, the middle of which is occupied by HS and SH sites.

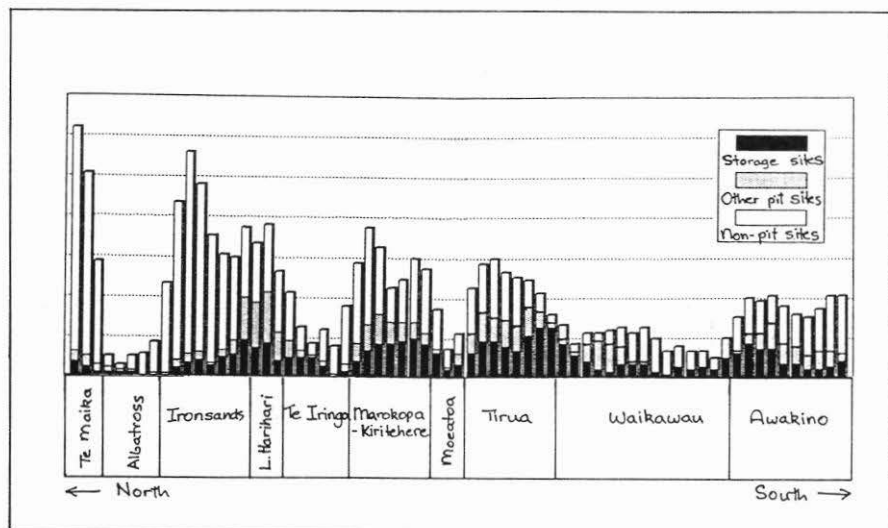


Figure 5. Numbers of 'storage' sites (black bars), other sites with pits (stippled bars) and site totals (open bars). Smoothed.

The distribution curve (Figure 5) shows a relatively uniform distribution along the coast of about 3 sites per segment, indicating an even distribution of kumara cultivation and/or consumption despite the considerable variations in topography, local climate and soil type. An analysis of aggregate pit volumes (not reported on here) gives a different picture however. There also seems to be a correlation between the distribution of storage sites and kitchen sites along the coastline. Food, it seems, was consumed in the same localities as it was stored.

SITE COMPONENTS

This section summarises the distribution and characteristics of the major component types, except for storage pits, which have a section to themselves.

Fortifications

Fortifications along the King Country coast include all the usual varieties, combinations, and permutations of single and double ditches, inner and outer banks, scarps and/or terraces and at first sight there is no clear pattern. On analysis however, it becomes clear that some quite simple 'rules' apply. The type of earthwork chosen to fortify any section of the perimeter of a pa was a response to the topographic situation found at that section of the perimeter. The most important topographic factor is the degree of slope across the fortification line from the exterior to the interior of the pa. There are 5 basic topographic situations, to each of which the pa builders had a specific response. The various fortification designs were apparently chosen so as to facilitate disposal of spoil and thus minimize expenditure of time and energy in constructing the fortification, rather than for reasons of cultural preference or to best exploit the defensive potential of the location.

The conclusion to be drawn from this is that ease and speed of construction were more important than tactical perfection or stylistic flourishes. Such a conclusion is in consonance with the impression that many of these fortifications have been constructed hurriedly and occupied only once or perhaps not at all.

There seems to be no equally simple explanation of all the variations in scale and repetition of fortifications. Presumably the scale & complexity reflected historical circumstances such as the amount of time available, the amount of labour available, the size of the perceived threat, and so on. Perhaps the ratio of warriors to labour was the controlling factor - if warriors were abundant weak fortifications could suffice, if labour was abundant then complex fortifications would make up for any deficiency of warriors. A general comment would be that fortifications are frequently massive - steep-walled ditches excavated 5 m deep into consolidated tertiary sediments, for example, not being rare. There is no

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obvious correlation between pa size and fortification strength, unless it is an inverse correlation: some of the more massive fortifications are found on some of the smallest pa.

Habitation terraces

Non-defensive terraces have been grouped into 4 rather vaguely-defined classes:

D-shape (or D) terraces. Small terraces, typically located on sloping ridge crests and spur ends, formed by levelling a relatively small area of the available terrain to give a relatively equilateral terrace with a straight scarp on the uphill side and a semi-circular lip on the downhill side. Often they accommodate one or more small pits.

Elongate (or L) terraces. Terraces generally 10-20 m long and 3-6 m wide, cut into gentle slopes, and often parallel to the length of the ridge or spur on which they are located. Generally there is unmodified terrain between L terraces.

Wide (or W) terraces. Strongly developed terraces, usually more than 6 m wide, with substantial scarps to their rear, and on large sites of considerable length. There is little unmodified terrain, if any, between terraces. W terraces generally run parallel to the ridge or spur, and are mostly found on larger fortified sites with indications of sustained or repeated occupation.

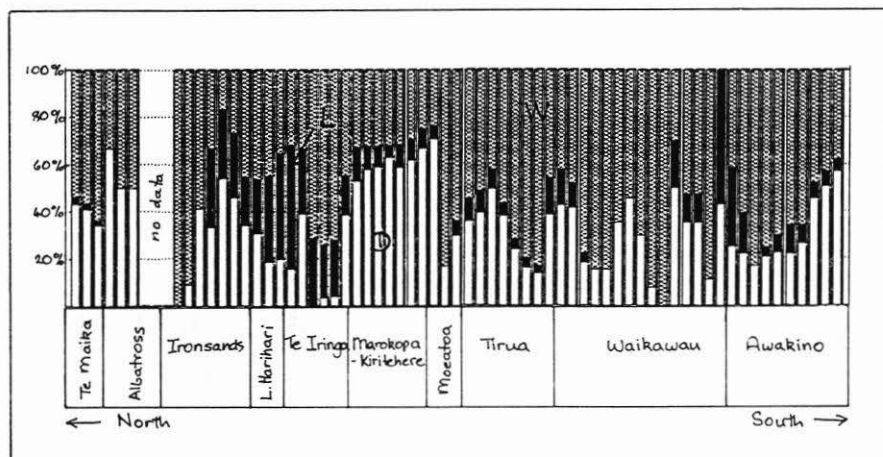


Figure 6. Distribution of terrace types. D terraces (white), L terraces (black), and W (including S) terraces (hatched) as percentages of total number of terraces recorded per segment.

Step (or S) terraces. These are a variant of the W terraces and are lumped with the W terraces in the distribution graphs. S terraces are wide terraces which run across a ridge or spur crest, and thus transform the ridge or spur into a flight of steps.

Terraces are less common in the south, probably because the topography makes them largely unnecessary, there being plenty of flat space on elevated benches and plateaus. This may not be the full explanation, however, since over the entire coastline there is a tendency to excavate terraces on spur-end slopes even where there are abundant flat spur crests. There seems to have been some preference for sloping sites requiring terraces.

The ratios of D, L and W and S terraces are shown in Figure 6. Apart from L terraces being more common in the Lake Harihari sector there is no pattern in the distribution.

Middens

Te Maika shell middens are up to a couple of metres thick and often consist of quite pure shell with very little charcoally matrix, indicating presumably that at these sites shellfish were being prepared for sun-drying and subsequent storage or transport inland rather than being cooked and consumed on site.

Elsewhere on the King Country coast midden deposits tend to be rare, thin, and of minor extent. Sites consisting only of midden are rare. More commonly there will be one or several small patches of midden on a site. Midden usually makes up only a small proportion of the area of any site or the volume of any occupation layer. Middens seem to be more common, more varied, larger, and thicker on what are presumed to be the older and possibly archaic sites.

Midden contents have not been analyzed in any detail. In general middens are made up almost entirely of shell, and the species' composition reflects the nature of the nearby marine/coastal environment. Middens are of pipi near sandy beaches, of cockle near estuary mudflats, of mussel and gastropods near rocky shorelines.

Pipi middens are most common, and middens of mussel and rocky shore gastropods next most common. Te Maika pipi middens are of shells comparable in size to those harvested today, but on the rest of the coast pipi are quite small, some being quite literally of only thumbnail size. This seems to be the result of unfavorable habitat rather than over-harvesting. Cockle middens are most common in the Te Maika sector. Rocky shore middens usually consist of crushed mussel matrix, in which were embedded paua (including silver paua), catseye, Cook's turban, and white rock shell (*Thais orbita*).

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Vertebrate remains are rare outside the Archaic sites described below. Fishbone was remarkably rare, given the fishing possibilities of the coastline, in particular the legendary kahawai runs in the Marokopa estuary. What little fishbone there is was mostly of kahawai size or larger. Occasional fur seal occurred, always near rocky coast. Bird bone was seen at only one site.

Other occupation residues

Occupation residues other than midden which were recorded included charcoaly soils, ovenstones, in-situ hangi and fireplaces. The distribution of middens and other occupation residues is shown in Figure 7. Except in the Te Maika and Ironsands sectors, midden occurs less frequently than other occupation residues. This suggests that along the King Country coastline vegetable foods (cooked in hangi) were more important than seafood, compared with the south Kawhia area. Occupation residues occur in only about 40 % of sites recorded. If midden and occupation layers are taken to be indicative of sustained or repeated occupation then most sites appear to have been subjected to only brief or ephemeral occupation.

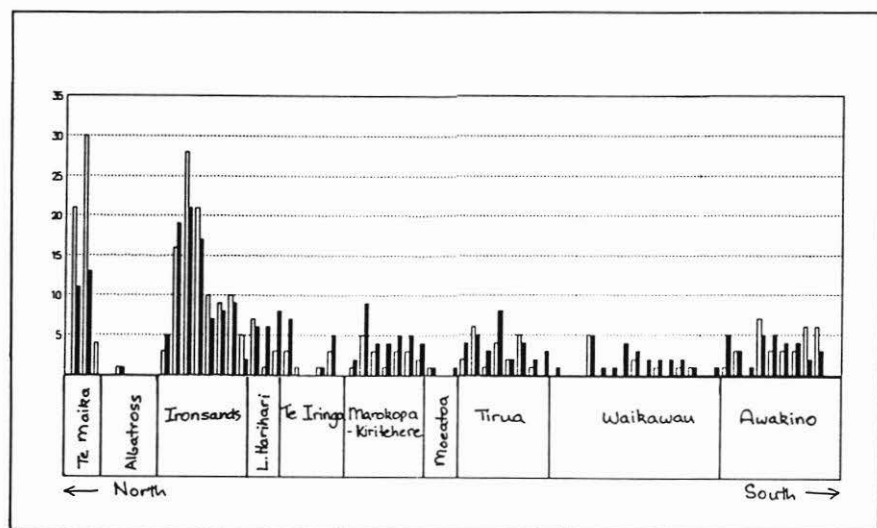


Figure 7. Numbers of sites per segments containing midden (open bars) and/or other occupation residues (black bars).

Pebble scatters and pavements

A distinctive feature of the sandhill areas is the presence of pebble scatters

of up to several hectare extent (See Plates 1 and 2) The pebbles generally are either about 1 cm or about 5 cm across, do not occur elsewhere in the dunes, and are quite rare on nearby beaches. They are always associated with other evidence for human occupation. The pebbles must have been gathered at some distance and transported to the sites by humans. Densities of up to 8 kg of pebbles per square metre of site have been recorded and the aggregate weight of them could be up to 100 tons or so per site. Much effort must have been expended in bringing the pebbles to the sites, assuming the beaches then were similar to what they are now. In general the pebble scatters are reminiscent of the kirikiri coral gravelling found at ceremonial and other sites on Rarotonga, Cook Islands (see for example Walter 1994).

The pebble scatters appear to be quite old. Many rest on an old iron-pan soil formed prior to devegetation and destabilisation of the sand. Many show archaic/moahunter associations (described below).

Two sites on Te Maika peninsula show cobblestone pavements exposed by wave erosion. At one there is a pavement about 2 m wide and 21 m long with a raised 'kerb' of thicker rocks. This is reminiscent of the paved approach to ceremonial paepae in the Cook Islands (Trotter 1974) There are two smaller pavements nearby, similar to those at the Heaphy River moahunter site in the South Island (Wilkes and Scarlett 1967) and at an early site in Palliser Bay (Walton 1984). Several of the pebble scatters also have localised scatters of cobblestones or flagstones which appear to be the remnants of pavements.

STORAGE PITS

There are up to 80 pits per segment, and in general about 20 pits per segment, except in the Waikawau sector, where there are only about 5 pits per segment. Peak concentrations of pits occur in the Harihari sector.

Three varieties of presumed kumara storage pit are recognised:

B pits are the typical bell-shaped rua.

R pits are rectangular, with the minor dimension greater than 2 metres.

S pits are small, squareish or 'circular' pits, less than 2 m wide.

B pits

Typically bell-shaped pits or rua are about 1.5 m diam and 1.5 m deep, with entrances about 0.5 m in diameter. In this paper the term rua is reserved for such bell-shaped pits. They are most commonly located in the angle between a terrace tread and the scarp behind it. They also occur seemingly at random locations on otherwise featureless gentle slopes, where drainage would seem to be less than ideal. One such rua, according to the landowner, had been lined with impermeable clay and may have served for water storage.

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Plate 1. The author weighs pebbles in a moa-hunter period pebble scatter near Awakino. Pebbles were subsequently restored to the site. They weighed 6kg/sq m and there were probably over 100 tons on the whole site.



Plate 2. Part of a stone pavement with 'kerbstones' exposed on a shore of Kawhia harbour. Similar sites have been found at a few moa-hunter sites elsewhere in NZ and are common in East Polynesia.

Kawhia harbour. Similar sites have been found at a few moa-hunter sites elsewhere in NZ and are common in East Polynesia.

Rua seldom occur on their own. Of the 48 sites with rua 25 have apparently contemporaneous r-pits as well. Most commonly rua are associated with pa. Some 24% of all pits on fortified sites are rua, as compared with 8% of all pits on habitation and storage sites. Rua are present on 18% of fortified sites and on only 13% of storage sites.

Of the 18 fortified sites with rua, eight have rua located in defensive ditches or scarps. The rua associated with fortified sites often appear to be younger than the rest of the site, and it may be that abandoned pa were later used as storage sites. At one pa, the walls of rua showed pick-marks from the tools used to excavate them. At two pa the rua are located quite close together and interconnected by short tunnels cut between them at floor level. In one of the interconnected rua 13 cm high numerals - '1793' or '1703' - have been scratched into the wall.

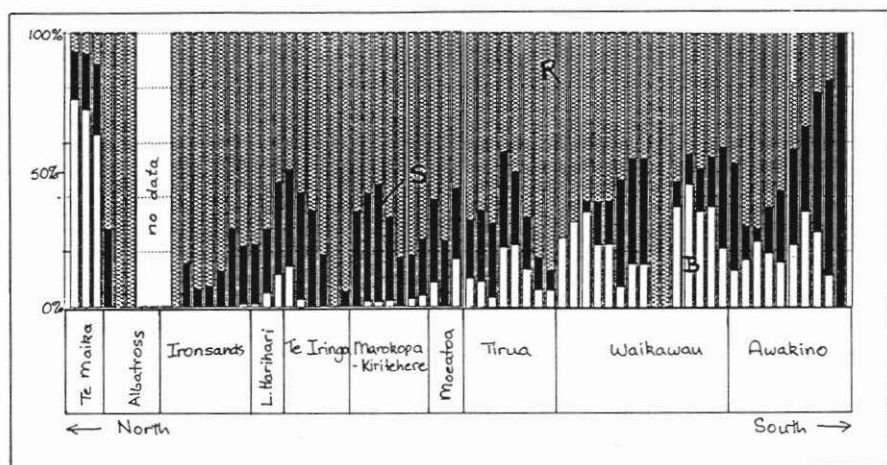


Figure 8. Distribution of pit types. Bell-shaped rua ('B': open bars), small pits ('S': black bars) and rectangular ('R': hatched bars) as percentages of total number of pits recorded per segment.

The distribution graph (Figure 8) shows that rua constitute about 70% of all pits on Te Maika peninsula, are rare in the Taharoa area, and then become increasingly common southward - another example of a Taranaki characteristic occurring in the south of the study area. These trends are even more pronounced if the S and B pits are lumped together on the assumption that at

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least half the S pits are badly eroded *rua*. The southward-increasing ratio of B and S pits relative to R pits may be a consequence of the increasing frequency of *pa* toward the south.

S pits

Generally S pits are quite shallow, and for this reason they have been counted separately from B pits although many of them if not most may be partially filled-in *rua*. Where S pits and R pits occur together the S pits often appear to be older than the R pits. This may simply be that as erosion and filling-in proceeds R pits start to look more like S pits. It could also be due to younger S pits being classified as B pits. S pits tend to occur in clusters whereas R pits tend to occur in rows.

R pits

Rectangular pits are typically 2 x 3 m to 3 x 4 m and about 0.8 m deep. The R pit category seems to break down into several subcategories. Most common are rectangular pits about 2 x 3 m or 3 x 4 m, and 0.6 m deep, distributed over the entire coastline. In the Nukuhakari sector and the northern half of the Waikawau sector very large rectangular pits - up to 6 x 9 m - are common. Further south, in the north part of the Awakino sector, deep square pits - 3 x 3 or 4 x 4 m across and 1 m or more deep, are common.

Quite often B, S, and R pits are all found on the one site, suggesting they may have served somewhat different functions. Similarly the different forms of the R pit can all be found on one site.

Raised-rim pits occur occasionally, with the raised rim generally present only on 2 opposed sides. In the better preserved of these the raised rims can be seen to have a gable-shaped profile. There is also a type of R pit, generally square, which has a massive raised rim maybe 0.5 m high and 1 m wide on all four sides. Often the bottom of the pit is not much lower than the ground level outside the raised rim, so that these pits are better referred to as raised-wall pits. There is never more than one of these per site, and they are generally associated with fortifications.

Other site and component types

Other site and component types found in the King Country coastline but not discussed further in this report include burials, ceremonial or religious features, garden sites, areas of fern soil, borrow pits, eel-trapping ditches, a single clump of relict taro, rockshelter habitation sites, and an unexplained category of 'mini-ring ditch' sites.

ARCHAIC / MOAHUNTER SITES

Twenty four sites are classified as archaic/moahunter, of which at least six are doubtful. Several of the pebble scatter sites have archaic/moahunter associations, and all pebble scatter and pavement sites are regarded provisionally as archaic because of their apparent East Polynesian associations. Most are located at stream or river mouths, and all are located on destabilised sand dunes. Most of them are quite large, one hectare or more. The largest is about 11 ha.

Workshop areas are quite common in these sites, and yield vastly greater quantities of flakes. One site, at Ngararahae Bay, had numerous large well shaped obsidian knives/scrapers. A Duff 3A (spade-shouldered subtriangular cross-section) adze made of Nelson argillite was picked up as were a number of other less diagnostic artifacts. Adze roughouts were earlier fossicked in some number at a site in Mangangu Bay. At all workshop areas black basalt (Tahanga?) apparently brought to the sites in the form of waterworn boulders is the most common adze material. A greenish greywacke amenable to hammer-dressed finishing was also used, and flakes of Nelson argillites are reasonably common. A yellow chert is common. Drill points were made from this chert and from obsidian. Only one stone material appears to be of local provenance - a turquoise jaspillite (?) from the Mesozoic Moeatoa conglomerate.

One Ngararahae Bay site, when visited in January 1993, had a midden made up almost entirely of bone, identified at the National Museum as being from large moa, (*Dinornis* sp., probably *giganteus* or possibly *novaezelandiae*), and elephant seal. By December 1993 this midden had completely disappeared. Midden kuri bone was seen at a couple of sites. Midden moa bone has been seen at other sites in the Tirua and Ironsands sectors.

Prone foetal-position burials are eroding out of the sand at one pebble scatter. A fossicker has reportedly taken a 'necklace' from here.

SUMMARY AND CONCLUSIONS

The King Country coastline is something of a lost world in New Zealand archaeology. Because it was part of the King Movement's Rohe Potae it was closed off to Pakehas until the 1880s and never studied by the pioneer ethnologists. Because it is still relatively isolated it has been largely ignored by contemporary fieldworkers. Most of it was not opened up to Pakeha farming until about 1900 and still lacks roading and other development. Thus a relatively complete suite of all site types and site settings has survived to this day. Apart from the sandhill sites being sucked up the snout of the Taharoa dredge, this site suite is still suffering little destruction. Farming is extensive rather than intensive, the bach-building blight hasn't really struck yet, and the main problems

KING COUNTRY COASTLINE

are wind and goats. All this is no doubt likely to change, but in the meantime the King Country coastline probably contains the best-kept suite of coastal sites in the North Island.

Strung out along this coastline are a variety of habitats and resources, ranging from the bountiful mudflats of Kawhia to the barren cliffs and crags of tradition-soaked Moeatoa. The rectilinear nature of the coastline makes it easy to apply quantitative analysis to make sense of the intricate interplay between habitats, resources and settlement. Spreadsheet software has proved ideal for this purpose. A start has been made on analysis and some patterns are starting to emerge.

Overall the coastline is a zone of transition between South Auckland / Waikato characteristics in the north and Taranaki characteristics in the south. History (Smith 1910) suggests the coastline served as a main route between these areas, and the site survey bears this out. Settlement is strongly focused on the coastline, and there is a wide empty hilly hinterland separating the coastline from the densely settled Te Kuiti - Otorohanga lowlands in the interior. There is little evidence for widespread contact with the interior except in and via the Marokopa valley.

Despite proximity to the sea on the west and to large tracts of forest and swamp on the east, sea foods and forest birds do not seem to have been important to the coastal settlements. Only on the shores of Kawhia harbour were vast quantities of shellfish consumed and/or preserved for consumption elsewhere. Kumara, fern and other vegetable foods seem to have been the nutritional mainstay.

A wide variety of site types and components occur along the coastline. undefended habitation sites make up the most common category of sites. The typical King Country settlement seems to have been a homestead or hamlet made up of one to several houses on terraces together with a few kumara pits, a cooking area, and a peripheral tip-face midden, all located on the end of a low spur, and presumably inhabited by one or a few families. Each of these sites was probably only occupied for a year or two and then abandoned.

Sites where food preparation seems to have been the main activity are the next most common category. Except near Kawhia harbour, kitchen residues are not particularly voluminous, and populations were not very dense, although Polynesian subsistence activities supported a population density higher than that currently found on the coastline.

Storage sites are nearly as common as kitchen sites, and, together with garden sites indicate that kumara cultivation was widespread and important in the local economy. Borrow pits are rare, and there is little evidence for soil

improvement as practiced elsewhere. Rua and rectangular pits often appear together, and presumably had complementary roles, one for short-term and the other for long-term storage maybe. There seem to be regional preferences for pits of different sizes and shapes.

Of all site types it is the fortified sites which most dominate the landscape. They are located on the most prominent places, and their earthworks are obvious to the untrained eye. However only one in every seven sites is fortified, and in general they show little evidence of sustained or even ephemeral occupation. This may indicate that warfare was not as dominant in the prehistoric lifestyle as one might assume from published traditional history. The fortified sites show all the usual complexities of defensive arrangements, choice of which seems to have been controlled by the topography of the site and by the desire to minimize labour and time expenditures. Despite this the defensive arrangements often seem to be massively out of proportion to the size of the site or to any conceivable scale of attack, and it seems possible that the smaller sites at least were constructed for reasons of prestige rather than from dire necessity.

A mere 4% of sites are classified as pebble scatter and/or pavement sites. These appear to date back to moahunter times. The occupants were big game hunters. Moa bone and seal bone occurs in midden along with a wider range of food remains than is found in the presumably later sites. Workshop residues indicate that stone tools were made locally using 'foreign' raw materials rather than imported ready-made from the raw material source locations. Artifacts are more common on these than on later sites, and those of diagnostic value indicate Archaic culture. The pebble scatters and the pavements themselves appear to have East Polynesian associations. The inhabitants buried their dead within their settlements. All the archaic/moahunter sites so far recognised are located at the conjunction of coastline, waterway, and sand-dune. They are underlain by old iron pan soils which indicate that when the sites were occupied the sand-dunes were stable, had a topsoil, and were covered in vegetation.

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