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SITE DISTRIBUTION, ENVIRONMENTAL POTENTIAL, AND FRONTIERS
IN THE MANUKAU LOWLANDS

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The archaeology of the Manukau lowlands has assumed a wider significance for an understanding of New Zealand publishing because of recent claims that the site distribution pattern is anomalous. Such claims began with Gorbey's (1970) work on the distribution of pa in the North Island. Gorbey concluded that environmental potential did not provide an adequate explanation of the distribution and density of pa. One of the areas identified as anomalous was the Manukau lowlands (Gorbey, 1970:92,125) - an area of high environmental potential which contained few sites.

Clarke (1983) has suggested that the rarity of evidence of occupation in the Manukau lowlands may be because the area served as a buffer zone between the powerful tribes of the Tamaki Isthmus, Hauraki Gulf, and the Waikato. This idea has been around for some time (see, for example, Cassels, 1972) but Clarke's paper is the first time the argument has been set out in any detail. In this paper these ideas about the role of the Manukau lowlands are re-examined.

Background

Clarke (1983:249) defines the Manukau lowlands as that area between the Waiuku and Awaroa Rivers in the west and the Hunua Ranges in the east, and between the Waikato River in the south and the Manukau harbour in the north.

The region contains "favoured" soil types and is "endowed with a wide range of resource zones in close proximity". The resources include fish and shellfish in the Manukau Harbour, the eels and waterfowl of the Aka Aka wetlands, the berries and birds of the forest that covered much of the area down into historical times, and the resources of the Waikato River. Clarke acknowledges Gorbey's earlier analysis of the potential of the area and, in particular, its soils but does not attempt to reconstruct the prehistoric environment in any detail.

Gorbey (1970) was interested in the distribution of pa and the relationship of that distribution to "gross environmental resources". Environments were graded according to their potential, and fertile soils on level to rolling country were given the highest rating. The soils were ranked as fertile or infertile on the basis of the assessment given in New

Zealand Soil Bureau Bulletin 5 (1954). Given the scale at which Gorbey was working some such procedure was clearly necessary. However such a method can be almost guaranteed to produce some spurious results because the classification is so gross that important differences in the environment are masked. Gorbey (1970:123) was aware of the difficulties with his data and methods but nevertheless felt justified in rejecting the postulated close relationship between the distribution and density of pa and environmental potential. This contentious conclusion has been ignored and his work is often quoted, correctly in my view, as showing a close relationship does exist between environmental potential and the occurrence of pa. Many of Gorbey's 'anomalies' (e.g. Raglan-Aotea-Kawhia harbours) have disappeared with more intensive site recording while others (e.g. Rotorua and neighbouring lakes) were always a result of the crude classification of environmental potential.

The archaeological data on the Manukau lowlands available now is very much better than that available to Gorbey. Gorbey knew of few pa sites in the area (only about seven) but since then the identification of pa along the Manukau Harbour, Waiuku estuary, and in the Bald Hill area has radically altered the picture. Clarke was able to identify three to four times the number of pa known to Gorbey. Even so, Clarke's paper understates the number of pa as there are at least five pa visible on air photos taken in 1942 and 1960 that are apparently not known to him. The five are N46-7/283 at 315305 (recorded as a midden but early air photos show it to have been a pa), N46-7/259237, N46-7/259153, N46-7/344110, and N46-7/240176.

In the light of archaeological data now available, and doubts about whether the environmental potential is as high as Gorbey suggests, it is questionable whether the Manukau lowlands should still be considered an anomaly. Clarke, however, redefines the anomaly. The ample evidence of occupation on the peripheries of the area is put aside. The anomaly is redefined as the lack of evidence of occupation in the "interior Manukau lowlands" and, in particular, the lack of evidence of occupation on the fertile soils that form a belt across the southern half of the lowlands. This is a significant change.

Frontiers

The presence of an open frontier of unoccupied land separating land once held by one group from that held by another is a feature of many areas where inter-tribal relations were characterised by a state of uneasy peace punctuated by raids. A useful discussion is Brookfield and Brown's (1963) characterisation of the nature of frontiers among the Chimbu in Papua-New Guinea. Brookfield and Brown point out that frontiers were

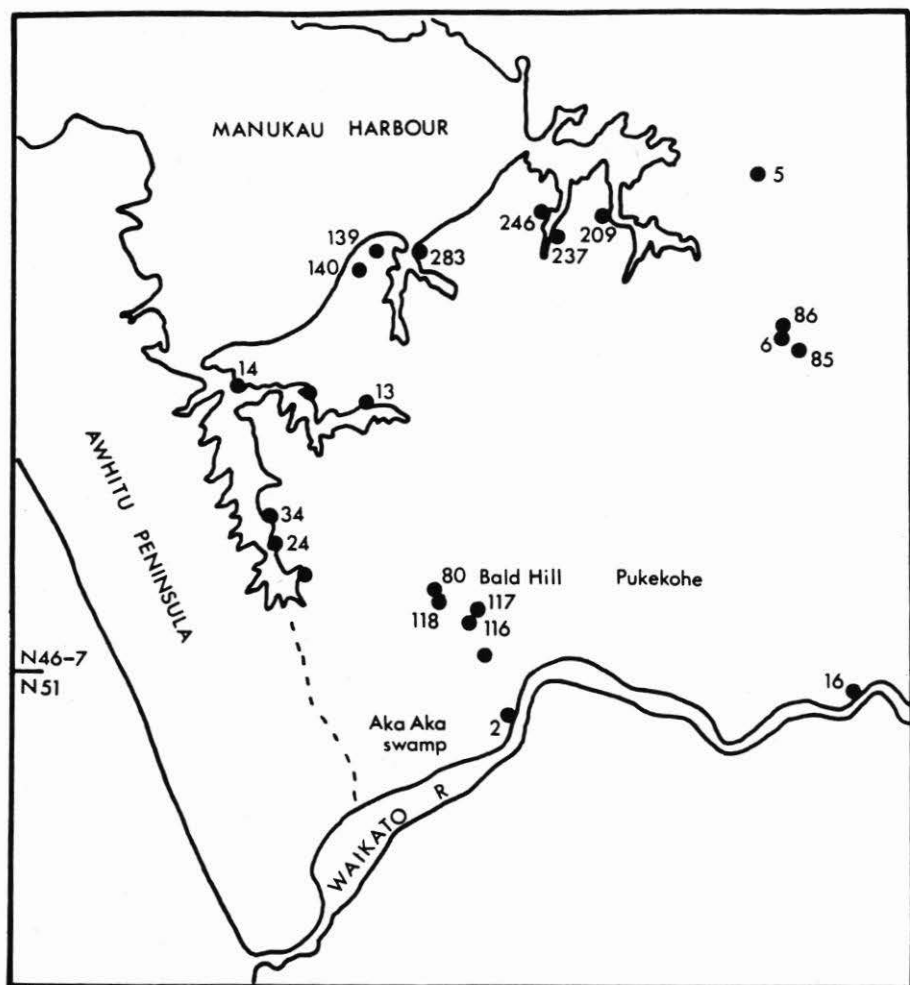


FIGURE 1. Distribution of pa in the Manukau lowlands. Only definite pa are shown. Pa known to Gorbey were N46-7/5, 6, 13, 14 and 24 and two other reported pa (N46-7/8 and 11) which have not been confirmed. Clarke's N46-7/137 has not been identified.

often natural boundaries or land of poor quality. Only in densely settled areas did some boundaries run through good land and there the boundary was more closely defined. The land was used whenever inter-tribal relations allowed. The situation in New Zealand could reasonably be expected to have been similar. Shortland (1851:49-50) noted the presence of frontiers - 'debateable lands' - in New Zealand and reported that they were occupied whenever the conditions allowed and Cassels (1972) has argued that precision with which boundaries were defined was related to the density of resources.

Oral traditions indicate the expected ebb and flow in the fortunes of the various tribes in the Auckland and Waikato areas in the 18th and early 19th centuries (Clark, 1983). In the early 18th century Ngati Kahukoka, a branch of the Waiohua of Auckland, occupied parts of the Awhitu peninsula and the Manukau lowlands. When Waiohua were defeated by Ngati Whatua, Ngati Kahukoka were supplanted and absorbed by Ngati Te Ata, Ngati Tamaoho, and Ngati Pou of Waikato. The area was deserted from the early 1820s to the mid 1830s as a result of raids by Ngapuhi who, with their muskets, had temporarily upset the balance of power throughout New Zealand. In the 1830s, however, the threat receded and the Waikato tribes began to re-occupy the Manukau lowlands. Waitete pa (N46-47/14) was constructed or re-occupied in 1835 in order to reassert and protect fishing grounds in the Manukau Harbour which were also claimed by Ngati Paoa. The pa was soon after attacked and burnt but was re-occupied the following year and this sort of response, occupying ground to protect an interest in that land or in an adjacent resource, was a common one (for a further example involving Manukau tribes in 1845 see Ashwell Journal; The New Zealander, 21 March 1846).

Assuming for the moment that the interior had reasonable environmental potential, then the area should conform to the sort of pattern described by Shortland: occupation when circumstances allowed. The summary of oral traditions given above indicates that there is every reason to believe such circumstances did arise. Why then is there so little evidence of occupation?

The interior was in bush in the 1840s and large scale clearance had only recently begun. This resulted from the practise of shifting cultivation for the growing of the white potato. This may indicate that it was the introduction of the white potato, and not the advent of more peaceful conditions, that made more permanent settlement possible in the interior.

Environmental potential

Brookfield and Brown's model of settlement in frontier areas suggests that environmental factors play a crucial role. The

better the quality of the land the more closely defined is the boundary. If the interior Manukau lowlands had high environmental potential then occupation would be expected regardless of frontiers. In fact the environmental potential of the Manukau lowlands is exaggerated.

The rich resources of the Manukau lowlands are mostly on the peripheries of the area. In these areas there is ample evidence of occupation. The belt of fertile soils is the exception. But why the Manukau lowlands is treated as if it were a meaningful entity in terms of prehistoric subsistence and settlement patterns is never explained. Ngati Kahukoka, for example, appear to have occupied the Awhitu peninsula, the Waiuku estuary, and the Bald Hill area.

The belt of fertile soils are Patumahoe clay loam (classified as a brown granular loam or clay), and small areas of red and brown loams derived from outcrops of basalt lava and scoria, e.g. Pukekohe Hill (N.Z. Soil Bureau, 1954; Orbell, 1977). Modern evaluations of soils are difficult to translate into assessments of their usefulness in the past. Present day evaluations assume an entirely different technological base. Orbell (1977) describes Patumahoe clay loam as a very versatile soil but notes that it is "more easily tilled with rotary implements". One of the other reasons why it is considered a valuable soil is because it characteristically occurs on easy rolling to rolling country and thus poses few problems for the use of machinery. Large acreages of field crops such as potatoes and onions are grown on these soils today. Whether such soils were attractive for gardening in prehistoric times is another question. The answer needs to incorporate not only the suitability of the soil but also the location of the soils in relation to other resources that were exploited.

The brown granular loams of the Manukau lowlands are derived from old deposits of andesitic and rhyolitic ashes (Hamilton ash beds). Brown granular loams are sticky when wet as a result of their relatively high content of kaolinic clays, though the less well developed soils, of which Patumahoe clay loam is one, still contain appreciable amounts of allophane and are, therefore, more friable than some others (Orbell, 1977). The soil would seem, however, to have some disadvantages for people equipped only with a simple technology.

Hooker (1974) refers to the lack of archaeological evidence on the smaller area of red and brown loams of Pukekohe Hill as 'apparent enigma' but notes that the lack of intensive field-work, archaeologically destructive agricultural practices, and the unsuitable nature of the terrain for defensive purposes may all be factors in the site distribution pattern as it is known at present.

The Bald Hill-Puni area is very different. There were good defensive positions and the resources of the Aka Aka wetlands were adjacent. There is a patch of soil formed in basaltic tuff (Bald Hill sandy loam - N.Z. Soil Bureau 1954), and there are at least five pa and some pit sites. This must be considered prima facie evidence that environmental factors underlie the distribution of sites in the Manukau lowlands. If so then the notion of a buffer zone may be superfluous as an explanation of the lack of occupation in some areas.

There is another possibility. This is that the lack of occupation reflects the limited environmental potential of the area. As an area of limited environmental potential it may have served as a natural frontier. This possibility is almost trivial in its implications. There are also few ways in which the idea could be tested.

Conclusion

The site distribution pattern in the Manukau lowlands is not anomalous. It can be satisfactorily accounted for by environmental factors without the need to invoke the presence of a frontier. Moreover, Clarke's argument is not consistent with what is known about the nature of occupation in frontier areas as even the presence of a frontier would not discourage occupation of land with good potential.

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