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TE AHUA, WAITAKERE COAST, WEST AUCKLAND: THE FIRST PĀ? AN 'ARCHAIC' ASSEMBLAGE IN A 'CLASSIC' CONTEXT

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Introduction

In October 2009, a small excavation was undertaken on the edge of a high cliff face at Te Ahua pā (Q11/61) on the Waitakere coast, West Auckland. The excavated archaeological materials were unexpected in being characteristic of early or 'Archaic' assemblages. Preliminary analyses show a diverse faunal range including fish, sea mammals, birds including moa, dogs and rocky shore shellfish. Artefacts include one-piece fish hooks and flakes from the manufacture and reworking of early types of adzes. Radiocarbon dates suggest a mid to late 15th century occupation for this part of the site (Appendix A). In this paper we provide a more detailed description of the site, the excavation, and the cultural materials recovered. We conclude with some possible explanations for this evidence.

Background

Te Ahua pā is located on the west coast at Te Ahua Point, approximately 10 km north of the Manukau Harbour mouth (Figure 1). This coastline consists of cliffs exceeding 300 m in height, interspersed infrequently with sandy open beaches. The rugged upstanding topography is formed from erosion-resistant

Archaeology in New Zealand 53(3): 195–216, 2010

ancient volcanic conglomerate and lava flows laid down in eruptions from the submarine Waitakere volcano 12-25 million years ago.

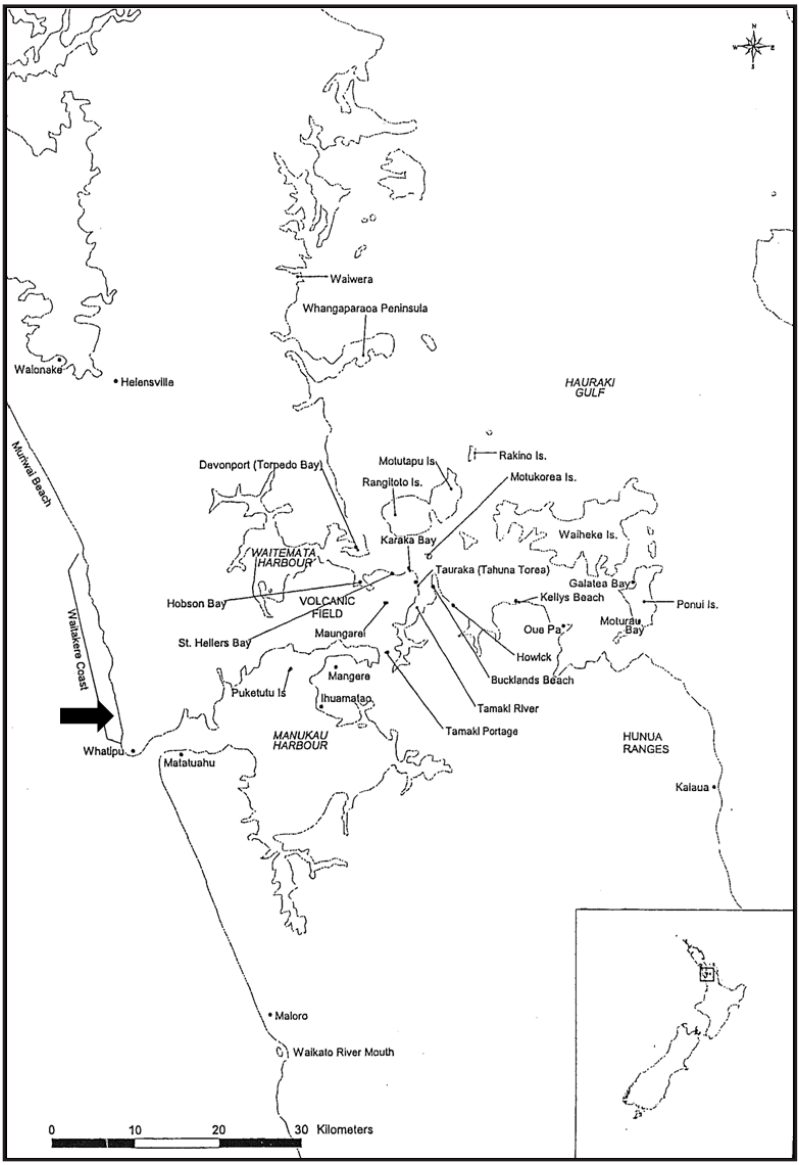

Figure 1. Location of Te Ahua pā (Q11/61).

Te Ahua Point is a dramatic headland at the western end of a spur descending south west from Hikurangi Point (also a pā) and forms the northern backdrop to Mercer Bay (Figure 2). The headland is characterised by precipitous cliffs on the north, south and western sides with a narrow saddle from the eastern approach (Phillips 2009).

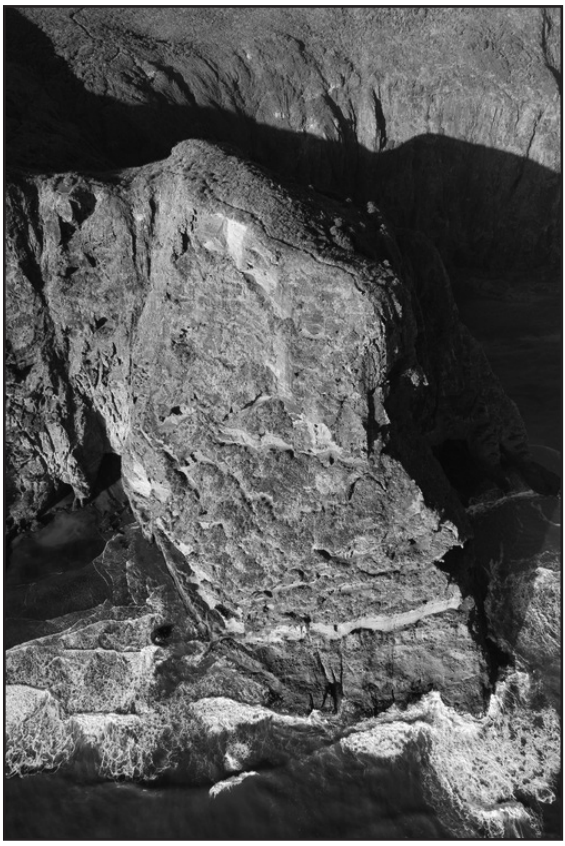

Figure 2. Te Ahua Point (Alastair Jamieson, Wild Earth Media).

There are approximately 500 recorded archaeological sites along the Waitakere coastline and in the Waitakere ranges behind it (Figure 3). The majority of these, including Te Ahua pā, were recorded by Hayward and Diamond in 1977. Extensive archaeological evidence of settlements, cultivations, rock shelters and associated urupā have been identified within the beach catchments at Muriwai, Piha, Karekare and Whatipu with many pā on the intervening

headlands. The rock shelters in particular have produced rich artefact assemblages (Lawrence 1989). The majority of artefacts found along the Waitakere coastline, however, are characteristic of late post-1500 A.D. assemblages. The exceptions are those found at Muriwai Beach and Whatipu where finds of early 'Archaic' adzes and bone artefacts signify early occupation (Lawrence 1989; Turner 2000). The most well known early site in the general area is Matatuahu (Figure 1), on the south side of the Manukau Harbour (Prickett 1987).

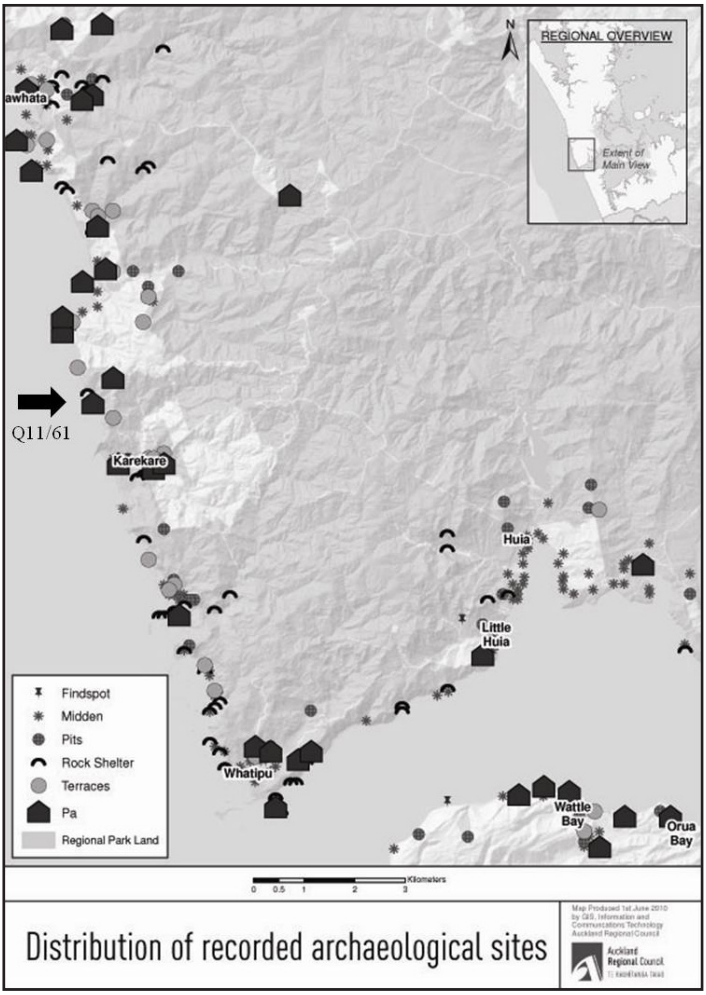

Figure 3. Distribution of recorded archaeological sites.

Te Ahua pā is located on the flat top of Te Ahua Point, an area approximately 100 x 30 m and 175 m above sea level. The archaeological features were first noted by Diamond in the 1960s. Even at that time vegetation reduced the visibility of these and by 1977 the dense flax and shrub cover had increased. Figure 4 shows the sketch map of the pā made by Hayward and Diamond in 1977 based on Diamond's earlier observations. Recorded archaeological features included five terraces, a storage pit and "a 0.2 m thick layer of shell and fish bone midden (that) occurs beneath 0.2 m of soil over much of the large western terrace" (Hayward and Diamond 1977). Sheer cliffs form the north, south and west sides of the pā with a possible artificially scarped short steep slope leading up to the pā from the northeast. Due to dense vegetation, none of these features were visible in 2009 (Phillips 2009).

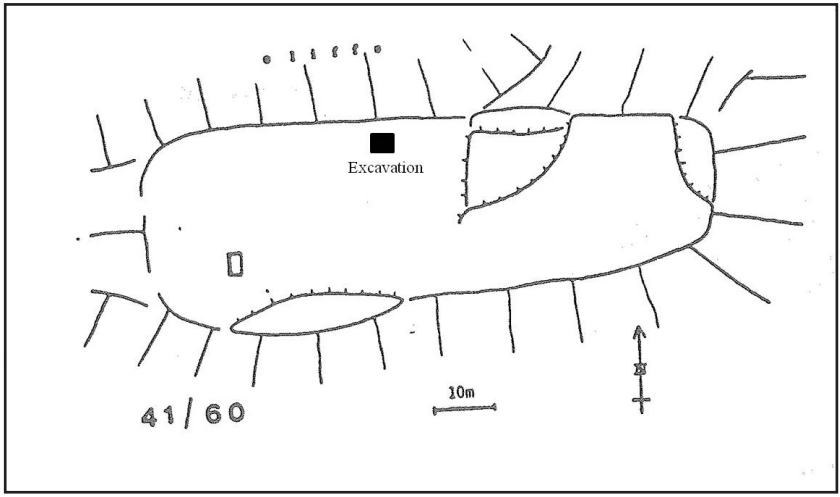

Figure 4. Hayward and Diamond map of Te Ahua pā, 1977.

A stream to the eastern side of Te Ahua Point drains out at Mercer Bay, a small sandy beach to the south.

The excavation

The location and extent of the excavation area were determined by the Auckland Regional Council's proposed upgrade of existing walking tracks and observation platforms. The approximate location of the excavated area on the Hayward and Diamond sketch plan can be seen in Figure 4.

The excavated area comprised 16 square metres, of which only 12 squares had cultural material. Predictably the deposit petered out toward the cliff face several metres to the north, and thickened to the south. There was only one cultural layer ranging from 10-25 cm in depth directly under a thin layer of topsoil (Figure 5). Beneath a thin layer of subsoil was bedrock, some of which can be seen in Figure 6. The cultural deposit was well preserved with no intrusive elements.

Figure 5. Stratigraphy – looking south.

The cultural deposit in the 12 southern squares was the edge of a dense midden. There were only three features. These were all piles of fire-fractured rocks associated with a dense charcoal stained greasy soil (Figure 7). These were probably cooking fires though they had no scoop. Faunal remains were particularly thick around these features. Artefacts were scattered throughout the midden forming no particular distribution pattern, though they were more abundant in the southwest squares.

The artefact assemblage

Seventy-five artefacts were recovered from the excavation (Table 1). The majority are stone flakes representing a variety of different source materials.

Detailed analysis is not yet complete. For example, geochemical analysis to properly identify some of the stone sources has yet to be undertaken.

Figure 6. Excavation at Te Ahua pā - looking east.

Figure 7. Cooking feature.

	Basalt	MGW	NWA	Chert	Obsid	Sand stone	Other stone	Moa bone	Sea mam.
adze making	45								
flakes									
ground adze	2	3	1						
flakes				8	3				
drill point				2					
sinker							2		
file						1			
hammer-stones							1		
1-pce FH fin								3	
1-pce FH unfin								2	2
Total	47	3	1	10	3	1	3	5	2

Table 1. Te Ahua artefacts.

Stone artefacts (N = 68)

Adze flakes (N = 51)

All but four of these flakes are basalt. This basalt is likely to be local, possibly from Maori Bay near Muriwai (Lawrence 1989; personal observation). The Te Ahua basalt flakes are very fine-grained and strongly magnetic. They are very similar to Tahanga basalt in this respect. However, this material differs from Tahanga basalt in the way the material has weathered. Whether in the ground or on the surface, Tahanga basalt commonly weathers to a grey/brown to grey/blue colour (Turner 1992). The Te Ahua flakes are a very dark grey. Three other flakes are identical to the very fine-grained dark green material known as 'Motutapu greywacke' (MGW) found on a number of the Hauraki Gulf islands. Another flake was of Nelson/Marlborough argillite (NMA).

Almost all the basalt flakes relate to adze manufacture; only two of these flakes had evidence of grinding. In contrast the Motutapu greywacke and Nelson/Marlborough argillite flakes all had grinding evidence. Two of the Motutapu greywacke flakes were struck from the corners of rectangular

adzes (probably Type 2). These ground flakes were probably produced from the reworking of damaged or broken finished adzes, not their manufacture.

Apart from these flakes, the rest represent the final trimming stage of adze manufacture, generally being small, thin and with multiple scarring on their dorsal surfaces (Turner and Bonica 1994). One flake had been snapped to create a small flake adze which had snapped transversely during this brief process. Fifteen flakes had also been used. Both point and edge tools were identified suggesting a range of activities involving cutting, scraping, sawing and reaming of materials like fibre (flax), bone and wood. While tougher, adze flakes are generally not as sharp as more brittle materials like obsidian and chert, and thus would be more suited for working on hard materials like bone. Two of the larger more robust basalt flakes had slightly ground edges, indicating the shaping of sandstone artefacts, possibly files for fish hook making.

All the flakes indicate that flaking was the primary method of manufacture and that the adzes being made and reworked were typical early forms. Two Motutapu greywacke flakes came from rectangular Type 2 adzes, possibly the same one though they do not refit.

Chert (N = 10)

All the chert artefacts appear to be from a similar source. The material is high quality with little evidence of flaws. The shades of orange/brown/tan/yellow/mustard are similar to those found in early sites and sources in the Kaipara Harbour to the north (Turner 2000). There were two used and damaged drillpoints, a reaming tool, and several flakes with serrated edges. The drillpoints were probably used in one-piece fish hook manufacture. The reaming tool and flakes with serrated edges were probably also used for working bone.

Obsidian (N = 3)

All three flakes were Mayor Island obsidian. All had evidence of use-wear with the two largest flakes having damaged edges characteristic of a scraping action on hard materials like wood (Turner 2005).

Other stone artefacts (N = 4)

One small broken sandstone file was probably also used for one-piece fish hook manufacture. There were two small sinkers, one broken, of the common kind with a groove around the centre. One small hammerstone may have been a multipurpose tool suitable for adze manufacture and the making

of flake tools. The sinkers and hammerstone were made of coarse-grained sedimentary materials.

Bone artefacts (N = 7)

There were seven fish hook pieces. All are, or were intended to be, one-piece U-shaped hooks. Four were unfinished, including two complete well-shaped tabs, one of moa bone, one of sea mammal. A thick core from a large hook and a shank broken at a late stage of manufacture were also made of sea mammal bone. The three finished pieces were two shanks and one hook, all of moa bone.

One unusual feature on the two shanks is that they appear to have been reworked into two-piece hooks by notching the outer curve for point attachment (Figure 8). The larger of the notched shanks (52 mm) is almost identical in size, shape and style to a complete moa bone fish hook from Houhora, except for the notches (Furey 2002: 59, Figure 117). The breaks of both shanks show remnants of the original rough broken surface which was partially ground smooth for secure hook attachment. This feature is discussed further below.

Figure 8. Notched fish hook shanks from Te Ahua (Tim Mackrell).

Additionally, there were several pieces of unidentified mammal bone that had cut marks relating to industrial use, one a possible broken fish hook tab (McPherson 2010: 4-5).

The faunal assemblage

The midden comprised whole and fragmentary shell, bone, charcoal and rock in a dark brown charcoal stained loamy soil matrix.

Shellfish

Some preliminary analysis of the shellfish has been completed for one 10 litre bulk sample from Square C0. The results are shown in Table 2. All but tuatua are rocky shore species and could have been collected from the rocks immediately below Te Ahua Point. Tuatua can be found on the open sandy beaches between rocky areas. The limpet and dog's foot cockle were tiny and probably incidental catches.

Many of the tuatua fragments had a worn appearance as if slightly water-rolled and the edges in particular were smooth and blunt. Some have also been snapped into triangular or rectangular shapes. Whether this was by a human or natural agent is unclear at this point.

Generally the shells were in good condition and were whole or near complete. The exception was green mussel which was very fragmented. Excluding the incidental catch, green mussel and white rock shell make up over 95% of the MNI. The white rock shells were quite standardised in size (6-7 cm long). The mussel hinge fragments suggest a medium to large size range.

Species	**Common Name**	**MNI**	**MNI %**
Perna canaliculus	green mussel	156	49
Thais orbita	white rock shell	142	45
Turbo smaragdus	cat's eye	7	2
Cellana radians	radiate limpet	5	2
Paphies subtriangulata	tuatua	3	1
Nerita atramentosa mel.	black nerita	2	1
Cardita aoteana	dog's foot cockle	2	1
Cooksia sulcata	Cook's turban	1	0
Total		**318**	**100**

Table 2. Shell species in the assemblage.

Bone

The midden was bone-rich; 3.4 kg of bone was recovered by hand selection and sieving during excavation and from five 10 litre bulk samples. Table 3

shows the range of bone and relative proportions. Table 3 illustrates that while a variety of protein was being consumed the diet was dominated by fish.

Bone	Weight (g)	%
fish	2675	80
sea mammal	91	3
moa	60	2
other bird	269	8
dog	160	5
human	92	3
rat	15	0
Total	**3362**	**100**

Table 3. Proportional weight of bone material recovered from the excavation.

Fish

Fish was by far the most abundant type of bone in the midden, making up 80% of the weight of the bone recovered from the excavation. To date, a third of the fish bone has been analysed. The results are presented in Table 4.

Fish	MNI	MNI %
blue moki	10	13
kahawai	2	3
Labridae sp.	2	3
Latrididae sp.	8	10
snapper	43	56
spotty	2	3
tarakihi	1	1
trevally	9	12
Total	**77**	**100**

Table 4. Preliminary MNI results and relative percentages of fish present.

There are at least eight species of fish present, but a number of *Labridae* and *Latrididae* diagnostic bones could not be identified to species. As can be expected, snapper makes up the majority of fish caught. However, for a North Island site snapper representing only 56% of fish caught is considered relatively low. The fish represented are common on the North Island's west coast

and rocky shore environment. The presence of demersal species in quite high numbers reflects inshore fishing activity.

Bird

The second most prevalent kind of bone present in the assemblage is bird. The majority of the birds represented are sea bird species with a small quantity of forest birds present (Table 5).

Bird	**MNI**	**MNI %**
bellbird	1	3
coastal moa	1	3
common diving petrel	3	8
flesh footed shearwater	1	3
fluttering shearwater	13	35
New Zealand pigeon	1	3
pūkeko	1	3
red crowned parakeet	1	3
song bird	1	3
spotted shag	12	32
tui	2	5
waders, gulls, turns, auks	1	3
Total	**38**	**100**

Table 5. MNI and relative percentages of identified bird species.

A total of 11 species of bird were identified. The coastal cliff and cliff face-dwelling species of shearwater and shag dominate. The spotted shag and fluttering shearwater make up 67% of the MNI. In comparison, very few forest birds are represented. This could suggest specialised sea bird fowling as both sea and forest birds would have been equally as accessible from Te Ahua.

There is also evidence in the form of both unfused and porous bones from both shearwater and spotted shag to suggest that juveniles and sub adults were being targeted (Hawkins 2010). Immediately prior to fledging chicks must lose a great deal of their weight. For ease of predation and protein value the optimal time to catch these species would be at the sub-adult stage where both of these species would have been roosting on the cliffs of Te Ahua Point and been easily accessible to people. In addition there is evidence to suggest that muttonbirding was taking place. The results presented in Figure 9 depict the percent Minimal Animal Units (MAU) for the fluttering shearwater and spot-

ted shag. Figure 9 shows that there are considerably more fluttering shearwater skeletal elements missing when compared with the spotted shag. The fluttering shearwater is represented by a predominance of butchery waste bones where as the spotted shag is represented by more meaty elements including the coracoids, pelvis and femora. From this one might argue that spotted shags were eaten on the site and fluttering shearwaters were more likely to be preserved and consumed elsewhere (Hawkins 2010).

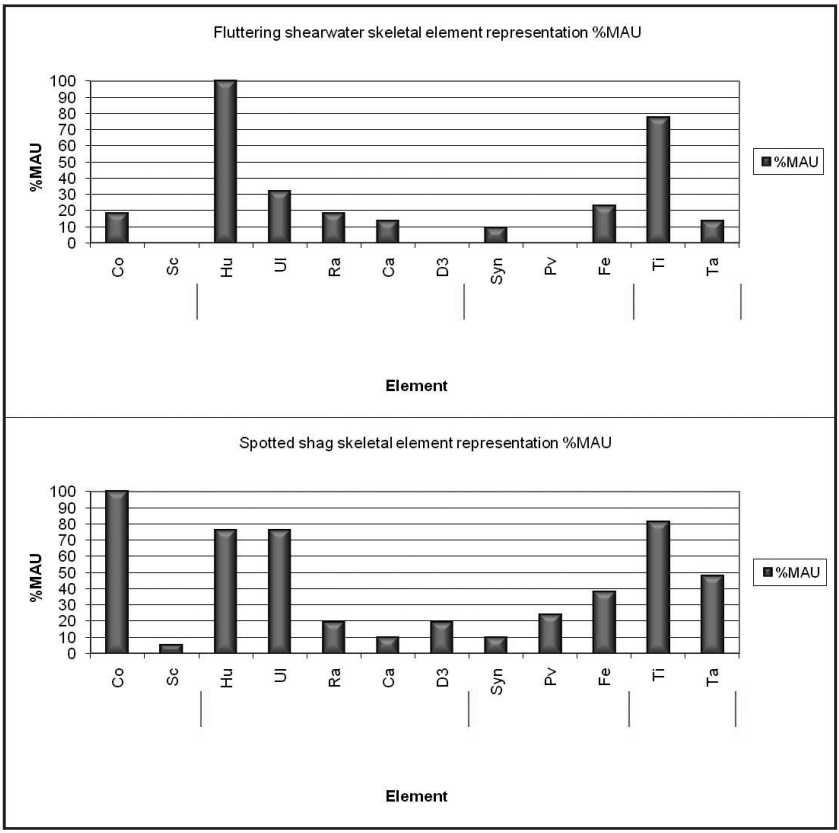

Figure 9. Skeletal element representation for fluttering shearwater and spotted shag.

While there is evidence to suggest that specialised seabird fowling and muttonbirding were occurring at Te Ahua the evidence does not necessarily support a seasonal exploitation of these resources for several reasons. Firstly,

the predominance of fish in the midden suggests that seabird fowling was not a primary food procurement activity. Secondly, the presence in the assemblage of species that roost and fledge at various times throughout the year. Thirdly, and worthy of note, is the absence of the grey-faced petrel which is the most common North Island muttonbird today as it produces larger chicks than muttonbirds like the fluttering shearwater. The grey-faced petrel could have been cohabiting with the fluttering shearwater but its absence from the midden suggests that it was not. In any case, the grey-faced petrel would have been roosting in close proximity to Te Ahua Point and would have been easily accessible to human predation (Taylor pers. comm. 31/05/2010). The evidence therefore suggests the utilisation of a resource that was occurring in the immediate vicinity of the habitation site rather than organised seasonal activity.

Sixty grams of moa bone was recovered from the excavation, one bone was identified as *Eurypteryx curtus* (Scofield pers. comm. 24/06/2010). The coastal moa *Eurypteryx curtus* was endemic to the North Island and had a predominantly coastal distribution (Worthy 1991). The moa bone may all represent industrial material; however, the activity appears somewhat wasteful as several potentially workable pieces were discarded.

Mammal

Twenty-four small pieces of human bone were identified. These included parts of ribs, vertebrae, phalanges and long bones. The bones were generally very fragmentary and none of the remains were diagnostic enough to reveal whether they belonged to one individual or several or reveal anything about sex or age at death, although they all appear to be adult (Dickson 2010: 1). There are indications that the bones have been processed in some way as several bones exhibit cut marks which may indicate that they had been defleshed (Dickson 2010: 1).

There were at least two dogs, aged between six and 18 months, represented in the midden. The dog bone has been interpreted as butchery waste as the elements were mostly head and neck bones but there were also a number of fore and hind limb elements with very few vertebrae, suggesting that these dogs were exploited for meat (Hawkins 2010). A number of the dog bones showed cut marks. None of the dog bone appeared to be utilised in the manufacture of artefacts.

Sixteen additional mammal bones were recovered from the excavation. These were thought to be sea mammal, however, the majority of the bone was too weathered or fragmentary to identify as land or sea mammal, let alone to species. Four of the bones, however, were identified as representing one dolphin and one possible sea lion (McPherson 2010). At least one of the bones

represents a large mammal, possibly a whale (Dickson 2010). Five of the bones exhibited advanced stages of weathering from solar bleaching and sand blasting. This may have been beach material that was opportunistically collected for industrial purposes.

Charcoal

Charcoal analysis (Table 6) suggests that, at the time Te Ahua was occupied, the vegetation was not dissimilar to that seen in the environment today. This is one of regenerating shrub land with pōhutukawa fringing the coastal margins.

Species	Pieces	Plant Type	Percentage
fernroot	1	fern	0.5%
Monocotyledon	1	monocot	0.5%
tutu	1	shrubs	48%
Hebe	2		
Coprosma	30		
Pseudopanax	49		
Pittosporum	1		
Olearia	4		
ngaio	4		
patē	3		
hangehange	2		
pōhutukawa	83	broadleaf trees	50%
kohekohe	4		
kōwhai	12		
kauri	4	conifer	2%
Total	**201**		**100**

Table 6. Summary of Te Ahua charcoal results (Source: Wallace 2009).

Dating

Materials suitable for radiocarbon dating were limited. The amount of tuatua that did not show water-rolling or other types of wear was small but enough was available for dating purposes (Wk 27056). Rod Wallace selected a suitable charcoal sample (Wk 27057). The results are shown in Appendix

A. After faunal analysis is completed, further samples will be submitted for dating.

Discussion

One of the major themes in New Zealand prehistory is understanding change through time (Holdaway 2004). Archaeological sites that represent an interface between an early or 'Archaic' phase (c.1250-1500 A.D.) and the late or 'Classic' one (c.1500 – 1769 A.D.) are rare. That significant cultural change occurred as an outcome of local development is clear. We can broadly describe the characteristics of each phase, but how change came about, what it was responsive to, the rate at which it occurred and how regional variation may have influenced this, is still poorly understood. Against this background what can the evidence at Te Ahua tell us?

We examine this question via the three main lines of evidence at Te Ahua: material culture, faunal remains and context.

Material culture

The material culture at Te Ahua shows almost no signs of change and is typical of other early 'Archaic' sites in the northern half of the North Island and beyond. People were still using the early flaking technology to make and rework early forms of adzes from both local (basalt) and imported materials (Motutapu greywacke, Nelson/Marlborough argillite). Other stone materials appear to be imported high quality materials (Kaipara chert, Mayor Island obsidian). There is a typical array of stone materials from a variety of places both near and far. This evidence suggests similar modes of relatively free-roving interaction as seen in earlier times. There are, for example, multiple distance connections, east to the Hauraki Gulf and Bay of Plenty, as well as to the southwest and northwest, similar to what was seen at Matatuahu just inside the Manukau Harbour South Head (Prickett 1987; Turner 2000).

The early technology for making fishing gear and catching fish also prevails. One-piece fish hooks made of moa bone and sea mammal bone were being made and used at Te Ahua. The unusual notching seen on two broken one-piece fish hook shanks may represent the reworking of broken one-piece hooks into two-piece ones. This type of curation might be seen as a response to a shortage of suitable raw material like moa and sea-mammal. However, this feature was also seen on hooks found in one of the lowest layers of the early Pig Bay site on Motutapu Island, and at least one is recorded from Wairau

Bar (Davidson 1978). These, then, cannot be seen reliably as a 'Late Archaic' signature indicating resource scarcity.

Additionally there appears to be little curation of these valuable raw materials. Both the fish hook tabs had potential to become fish hooks, yet they ended up in the rubbish. It is possible they were accidently lost but this does not suggest much effort invested in safeguarding against such losses, or in their recovery when this occurs. A number of moa bone and sea mammal 'offcuts', of a size, shape and quality to be turned into artefacts, were also discarded. Another interesting observation is that none of the dog bone (including jaw bone) shows any evidence of industrial working.

The general impression from this evidence is that at this point in time, the people at Te Ahua do not appear to have wanted or needed to change their old ways of making and doing things (apart from shifting upwards).

Faunal remains

The faunal remains appear to tell a similar story. Aside from the moa and sea mammal bone which may have been present largely for industrial purposes, the faunal material appears to represent the discarded remains of food. Typical of 'Archaic' middens, bone was abundant and the shellfish were predominantly large rocky shore species. The usual wide variety of protein sources was evident among the bone material, though fish were dominant, again consistent with early sites in the northern part of the North Island.

Several observations signal a slight departure from the 'Archaic' norm, however. Apart from moa, there were no extinct birds. There was a preference for sea birds over forest birds even though the latter would have equally accessible. The sea birds were probably easier to catch and yielded more meat weight per unit. This data may speak more to the influence of regional variation than anything else. The cliff faces in the immediate vicinity are still used for roosting by sea birds today. The shellfish, likewise, would have been found on the rock platforms that fringe much of the local coastline below the site.

Also, the meat of at least one human was eaten. The practice does not appear to be a common feature of early middens (Davidson 1984). This evidence may suggest the existence of enemies and that eating them when they lost the fight or were captured was being practiced, particularly given the context of this material. However, this is difficult to evaluate on the basis of one sample.

What is apparent is that the people living or staying at Te Ahua in this part of the site were mainly exploiting sources of protein from marine

and coastal environments nearby, and there appear to be no problems with availability.

Context

The artefacts and the faunal remains do not give the impression of a group of people under economic or social pressure (the one eaten human notwithstanding). Yet they have placed themselves in an elevated location distant from the main resources they were exploiting, from their canoes and the sea, and from sources of fresh water. This situation contrasts with the selection for low coastal platforms by river and stream mouths characteristic of other 'Archaic' sites in the region (Turner 2000). The location seems to be a disadvantage, requiring considerably more effort and time to be invested in day-to-day activities whether the occupation was long term or short lived. It follows that there must be a good reason for such a choice. The obvious one is defendability. As seen in the discussion above, it is not clear what this might have been in response to. Economic and political reasons do not appear to be significant influences. A second issue is relevant here. Did Te Ahua actually function as a pā at this time, a time slightly earlier than current evidence for pā construction indicates (1500 A.D; Schmidt 1996)? The excavated portion of the site does lie within the area shown on the Hayward and Diamond sketch (1977) as artificially terraced and scarped, and the sheer cliff faces on three sides work as formidable natural defences. People were likely to be there for some of the same reasons that people occupied pā in later times, for safety and refuge. We possibly should not, however, assume that other people were always the main protagonists. In the case of Te Ahua it might have been a response to an environmental hazard.

From palaeoenvironmental data with corroborating archaeological evidence, McFadgen suggests that the west coast of the North Island experienced at least one tsunami in the 15th century (2007: 159). The east coast was similarly affected. It is unlikely that people living on low coastal margins in places like Muriwai, Whatipu and Matatuahu escaped such an event unscathed. This certainly provides one major incentive to move to higher ground. Indeed, McFadgen argues that during the 15th century a series of tsunamis affected New Zealand nationwide, precipitating the abandonment of low-lying coastal settlements. Furthermore, other tsunami outcomes, such as food shortages, may have quite suddenly initiated changes in cultural behaviour that had far-reaching effects (2007: 233-237). The evidence at Te Ahua, however, does not suggest any difficulties in acquiring food, perhaps because the types of food available in the immediate environment were not so adversely affected by tsunami events. Perhaps this is precisely why people were there, having fled the

ruins of low-lying settlements. During fieldwork it was noted that the plateau of Te Ahua Point was far more sheltered and also warmer than the high points on either side; it may have been a suitable and safer place for gardening. Of note is that Rangitoto Island in the Hauraki Gulf erupted c.1450 A.D. for the final time, adding to an impression of an unstable environment, especially for those living on the lowlands at this time.

In summary, Te Ahua may represent an occupation event that was a localised response to a possibly sudden environmentally-induced problem. Such a situation may have happened before but from this time onwards, occupation at elevated locations became the norm for much of the North Island. Changes in Maori culture during the critical period leading up to and around 1500 A.D, may have been, like the period following initial settlement, very rapid.

Acknowledgments

Thanks to Mica Plowman, Simon Best and Auckland Regional Council (ARC) park rangers Simon Stoddard and Dan Real for fieldwork assistance; Michael Dickson, Judith Littleton (University of Auckland), Stuart Hawkins, Sheryl McPherson (Faunal Solutions), Paul Scofield (Canterbury Museum), Graeme Taylor (Department of Conservation), Rosalie Stamp (ARC) and Tim Lovegrove (ARC) for bird and mammal bone analysis; Rebecca Stanley (ARC) and Rod Wallace (University of Auckland) for palaeoenvironmental analysis; Tim Mackrell (University of Auckland), Natasha Barrett (ARC) and Alastair Jamieson (Wild Earth Media Ltd) for photographs; Alan Hogg of the University of Waikato Radiocarbon Dating Laboratory; and Ben Thorne for mapping.

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Appendix A: Radiocarbon dating