

SCIENCE AND RESEARCH INTERNAL REPORT NO. 71

**ARCHAEOLOGICAL SITE SURVEY OF COMPARTMENTS
237, 228, 227, 72, 71, 65, 63, 50, 1001 AND 1002
AUPOURI FOREST**

by

Leigh Johnson

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Historic Investigation Team,
Auckland
for

Science and Research Division
Department of Conservation
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Wellington, New Zealand

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ABSTRACT

This report details the results of an archaeological assessment of 10 compartments in the Aupouri Forest. The compartments were planted prior to initial archaeological involvement in the Aupouri Forest programme.

The assessment established the archaeological status of the compartments through the identification of a total of 81 archaeological sites. Recommendations for the management of these sites are made.

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INTRODUCTION

This report results from an archaeological survey and assessment of 10 compartments in the Aupouri Forest, Timberlands Northland District. The survey was carried out over a period of eight days, 16 -24 May 1988, by the author and Clayton Fredericksen of the Regional Archaeology Unit, Department of Conservation. The work was carried out with the consent of the Management Committee of the Parengarenga A & B Incorporation.

Following concerns raised that the thinning programme might affect archaeological sites, a proposal for an archaeological assessment of the area involved in the thinning programme was formulated (Maingay 1988). The area affected by the programme covered compartments planted in *Pinus radiata* prior to 1976, before sites were protected by the Historic Places Act and before such areas were surveyed for archaeological sites by archaeologists employed by the former NZ Forest Service.

Given existing conditions, select areas within the compartments to be thinned were identified that could provide information that would contrast or be complementary to areas both inside and outside the Forest that had been studied previously. This strategy was designed in consultation with John Coster, (former NZ Forest Service archaeologist based at Aupouri), to create a data base for future research in the area. The 10 compartments selected straddled the length of the Aupouri Peninsula and consisted of compartments 237, 228 and 227 in the vicinity of Te Wakatehaua Bluff, compartments 65, 63, 50, in the vicinity of Hukatere Hill, compartments 71 and 72 adjoining Motutangi Swamp, and compartments 1001 and 1002 in the Community Forest to south of the Waipapakauri Ramp (Fig. 1).

On appraisal of the selected compartments it was decided that the chance of locating deflated sites under the litter of mature pine forest would not justify the time or effort involved. Consequently it was considered that the assessment should consist of a detailed survey of remaining clear areas within the respective compartments. This had the effect, with the exception of the Bluff compartments, of providing a reasonably complete record of the archaeological landscape for only the areas immediately inside the coastal macrocarpa shelter belt. The sites recorded within the mature forest were only those known to exist to Forestry staff or those identified on the internal road network within the respective compartments.

Owing to delays in initiating the archaeological assessment of the selected areas involved in the thinning programme, caused largely by the restructuring of thinning was already in progress during the survey. Consequently recommendations made for the management of archaeological sites relate to future forest developments in those compartments where thinning is completed.

PHYSICAL BACKGROUND

With the exception of compartments 71 and 72 adjoining the Motutangi Swamp, all remaining surveyed compartments are in foreshore locations on Ninety Mile Beach. The geomorphology of the areas consists of the now stabilised, unweathered sands of the

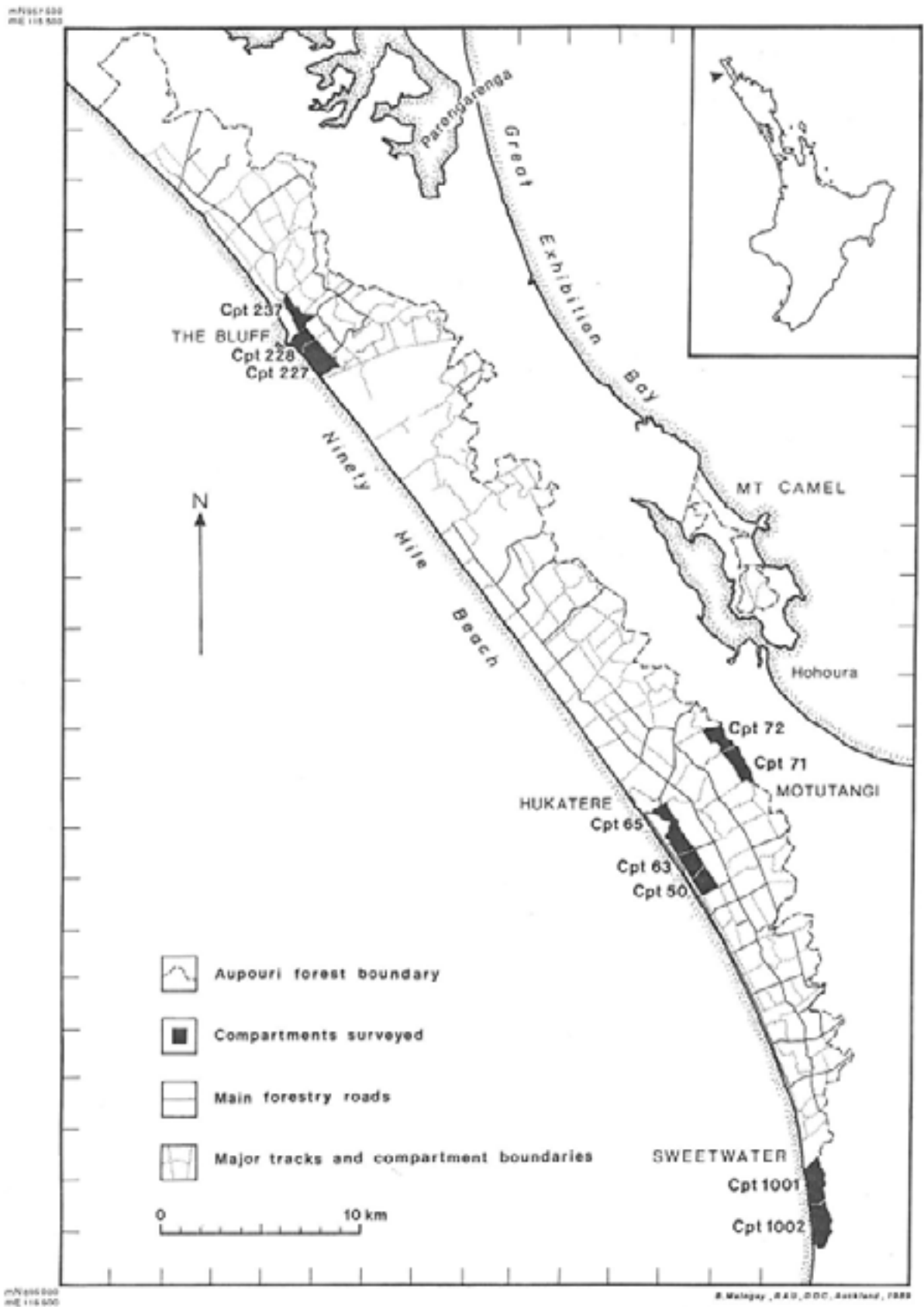


Figure 1. AUPOURI FOREST SURVEY LOCATION AP SHOWING COMPARTMENTS INVESTIGATED.

shifting mobile dune and complex. These are generally derived from beach sand and the breakdown of the older dunes. These dunes extend throughout the surveyed foreshore areas and exist predominantly as transverse dunes with the occasional sand sheets (Coster 1988:3-4).

Interspersed amongst the mobile dune complex are areas of older pleistocene and early holocene sands, leached, weathered and podzolised to varying degrees and whose form cemented iron silica and 'clay' hardpans and flat-topped mesas. These comprise the Te Kopura, Tangitiki and Houhora yellow/brown sands. These hard pans dominate the ground surface of the northern section of compartment 237, occur commonly through compartments 227 and 228 and more sparsely through the remaining compartments at Hukatere and Sweetwater.

Compartments 71 and 72, situated on the eastern boundary of the Aupouri Forest, consist of later Holocene sands, weakly weathered and loosely consolidated and classified as Pinaki sands (Sutherland, Cox, Taylor and Wright 1979). These sands are directly related to the adjacent Motutangi Swamp that exists as a wet phase equivalent.

All the compartments are randomly dissected by occasional permanent streams, though more often by semi-permanent water courses that flow only during the winter months or following periods of heavy rain. In some places small wetlands have formed in the beds of some water courses. No major lakes occur within the surveyed compartments though a small lake did occur on the western boundary of compartment 1001.

As previously stated, all the surveyed compartments were planted prior to 1976, the earliest planting occurring in compartments 227 and 228 in 1972. The trees now range between 13 -17 years in age, with a thick ground and floor cover. However, breaks occur within the forest in each compartment. These have resulted from either the non-planting of 'clay' hardpan areas or a high tree mortality in the vicinity of the coastal windbreak. The 'clay' hardpan areas are still clear of any vegetation except for clumps of pampas (*Cortaderia selloana*) where sand sheets have recently accumulated on the hard pan. The remaining clear areas combine exposed sand surfaces and a mixture of grasses.

PREVIOUS ARCHAEOLOGICAL RESEARCH

Following the establishment of the Aupouri Forest by the New Zealand Forest Service in 1962, the initial and principal focus on the archaeology of the Aupouri forest began with a report on the middens of Ninety Mile Beach presented to the New Zealand Forest Service in 1967 by J. Davidson (Davidson 1967). Almost a decade later in 1976, after the Historic Places Act (1975) was passed protecting archaeological sites, the New Zealand Forest Service commissioned annual archaeological surveys of planting areas. These surveys were conducted by Coster and Johnston between the years 1976 -1980. In 1980, the Forest Service approved a programme of investigation to gather detailed data on the chronology, environment, and economics of prehistoric Maori occupation on the peninsula. This project, known as the "Aupouri Sand Dunes Archaeological Study", was conducted by J. Coster over a total period of two and a half years to be completed in 1983. By the end of the project study over 12,000 ha of the forest, in two blocks to the north and south of the Bluff, had been surveyed and nearly 400 archaeological sites identified and recorded.

Preliminary results of the study indicate a long sequence of prehistoric occupation on the peninsula. The identification of surface wood remnants and archaeological charcoals throughout the study area and analysis of landsnails extracted from 24 middens, indicated that the western side of the peninsula contained vegetation types ranging from coastal scrub to a light, closed-canopy, coastal, broadleaf growing on the dunes in the prehistoric period (Coster 1983: 183). The implication is that widespread deforestation occurred in prehistory, resulting in the now apparent mobile dune encroachment over older pinaki sand formations. This episode of deforestation is widely attributed as anthropogenic in origin, though perhaps more cautiously, should also be assessed against the information that afforestation and deforestation has occurred on the peninsula a number of times over the last 100,000 years (Hicks 1975).

However, numerous artefacts diagnostic of early prehistoric occupation have been recovered from the coastal dunes within the forest (Coster 1983:183, 1988:1). While it is questionable whether the western coastal margin of the peninsula was ever a major focus of early occupation, it is likely that a number of early, seasonal or temporary occupation sites, perhaps comparable to site N 1 and 2/976 at adjacent Twilight Beach (Taylor 1984) existed in this area. The fact that such sites have not yet been recorded beyond their larger and more easily identifiable components can be explained through the widespread inherent instability of landform.

Significantly, the archaeology of the Aupouri dune system is dominated by a high percentage of shell middens. Two shellfish species, tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*) form the greatest percentage of midden content with inland sites also containing shellfish species sourced to the east coast. Coster (1983:184) maintains that there is an apparent bi-modal distribution between 'coastal' and 'inland' locations. The intermediate zone, lying between 350 m and 1000 m inland contains relatively few sites and in part correlates with a zone of coastal deflation. This could raise difficulties as to whether this distribution pattern relates to functional or temporal parameters, or to differential rates of accumulation/deflation within the overall dune system.

Coster (1983: 184) argues that there are differences in the range of activities presented between the two designated groups of sites. The 'coastal' sites typically contain large quantities of burnt crushed shell, while the 'inland' middens were characterised by more varied midden contents, ovens, occasional structures, and numerous artefacts. On this basis he interprets the inland sites as resulting from more permanent occupation and the coastal sites as short term shellfish gathering and processing sites. A question that could be addressed in future is how this permanent/temporary settlement system, operating within the one complex, integrates with the more typical pa-based settlement, evident immediately outside the eastern forest boundary at Reporoa, Rotoroa, Motutangi, Onepu and Te Kao, for example.

In an attempt to provide a chronological context for the recorded archaeological landscape Coster submitted some 31 radiocarbon samples from 20 sites. The collection of samples was biased toward 'inland' sites as it was these that were threatened by proposed afforestation of the dunes. Consequently no dates are provided for any sites within 300 m of the coast (Coster 1988). The results of this study concluded that the coastal sites

were younger than any of the inland sites by nearly 150 years and that within the 'inland' group there appeared to be a general decrease in age from north to south. However, it may pay to remember that when these dates are combined with dates from other sites on the peninsula it appears that the coastal sites span the entire period of prehistory while the inland sites are restricted to an intermediate period.

THE SURVEY AREAS

The survey areas were selected to provide information in contrast or complementary to areas previously surveyed both within and outside the boundaries of the forest. This strategy was selected over the conventional blanket survey which would have been time-consuming and costly and the results may not have justified the expenditure. On this basis the Bluff compartments 237, 228 and 227 were selected for their association with the Bluff landmark which figures largely in local oral history and from which a number of archaic artefacts have been collected. The Hukutere compartments 60, 63 and 65 were selected to provide a contrast between the middens of Ninety Mile Beach on the west coast and a previous survey of East Beach (Douglas and Fredericksen 1985). This would provide substantial information for future research on site patterns right across the Tombolo. Similarly both the Motutangi compartments 71 and 72 and the Sweetwater compartments 1001 and 1002 were selected to assist in the understanding of archaeological landscapes outside, though adjacent to, the boundary of the forest. In both cases these landscapes consisted of prehistoric intensive wetland garden systems.

The compartments are situated in both foreshore and inland locations; though all occur within the overall sand dune complex. Sites within sand dunes present particular problems that relate to their concealment through landform mobility. This makes the archaeological landscape within the respective compartments difficult to survey and assess. Further problems relate to the re-exposure of sites which has led to their deflation and often complete destruction.

SURVEY RESULTS

During this survey a total of 81 sites were recorded in the compartments surveyed. As discussed in the Introduction, only limited areas of the selected compartments were able to be surveyed in detail, restricted mainly to the coastal strip and areas of hard pan. However, the results of the survey indicate the distribution of sites, in very general terms, was similar to that predicted on the basis of the more extensive pre-planting surveys undertaken elsewhere in the forest.

The bulk of sites recorded are shell middens, probably related to the processing of fish and shellfish from the west coast. There was also limited evidence of small seasonal occupation sites and the use of stone resources imported into the area.

Given the wide geographical distribution of the surveyed compartments, this section discusses the survey results in four general areas, the Bluff, Hukatere, Motutangi and Sweetwater. Within each of these subsections each compartment is described, the

recorded archaeological sites are described and discussed and recommendations for the future management of the sites are made.

THE BLUFF COMPARTMENTS

Compartment 237

Description

Compartment 237 is situated in the immediate vicinity of Te Wakatehaua Bluff and covers an area in excess of 54 ha (Fig. 1). The compartment is bordered to the south by the Oromanga Road access to the Bluff and to the east by Arterial Road No. 2 (Fig. 2). To the west, compartment 238 divides compartment 237 from the Ninety Mile 'Beach. The compartment occurs in an elevated section of podsolised hard pan and intermittent dunes and overlooks the Bluff and a section of the beach to the north. The compartment was planted in 1974 and planting was restricted to areas of stabilised sand dunes, leaving a considerable area of hard pan clear within the compartment. However, ground preparation appears to have included the ripping of small sections of the clay pan. At present approximately 60% of the compartment is covered in pines with the remaining 40% correlating directly with the hard pan areas. These areas are clear of any colonising vegetation.

Survey method

Previously no archaeological sites have been recorded within the compartment. Due to the difficulty of locating archaeological sites within the now semi-mature forest, the survey of the compartment was restricted to open areas, essentially the hard clay pans. The sites were located on foot, recorded, described and marked on the aerial half tone photograph supplied by Timberlands Northland District. Where appropriate surface collections were made.

Survey results -Archaeological sites

A total of 27 archaeological sites were identified within the compartment (Fig. 2). These consisted of:

Midden	18
Occupation sites	2
Stone scatters	6
Find Spot	1

Site descriptions

N03/698 Grid reference 012 264.5 Midden

The site consists of a small surface scatter of tuatua (*Paphies subtriangulata*) over an area of 5 m by 3 m at the edge of a blow out. The site is deflated.

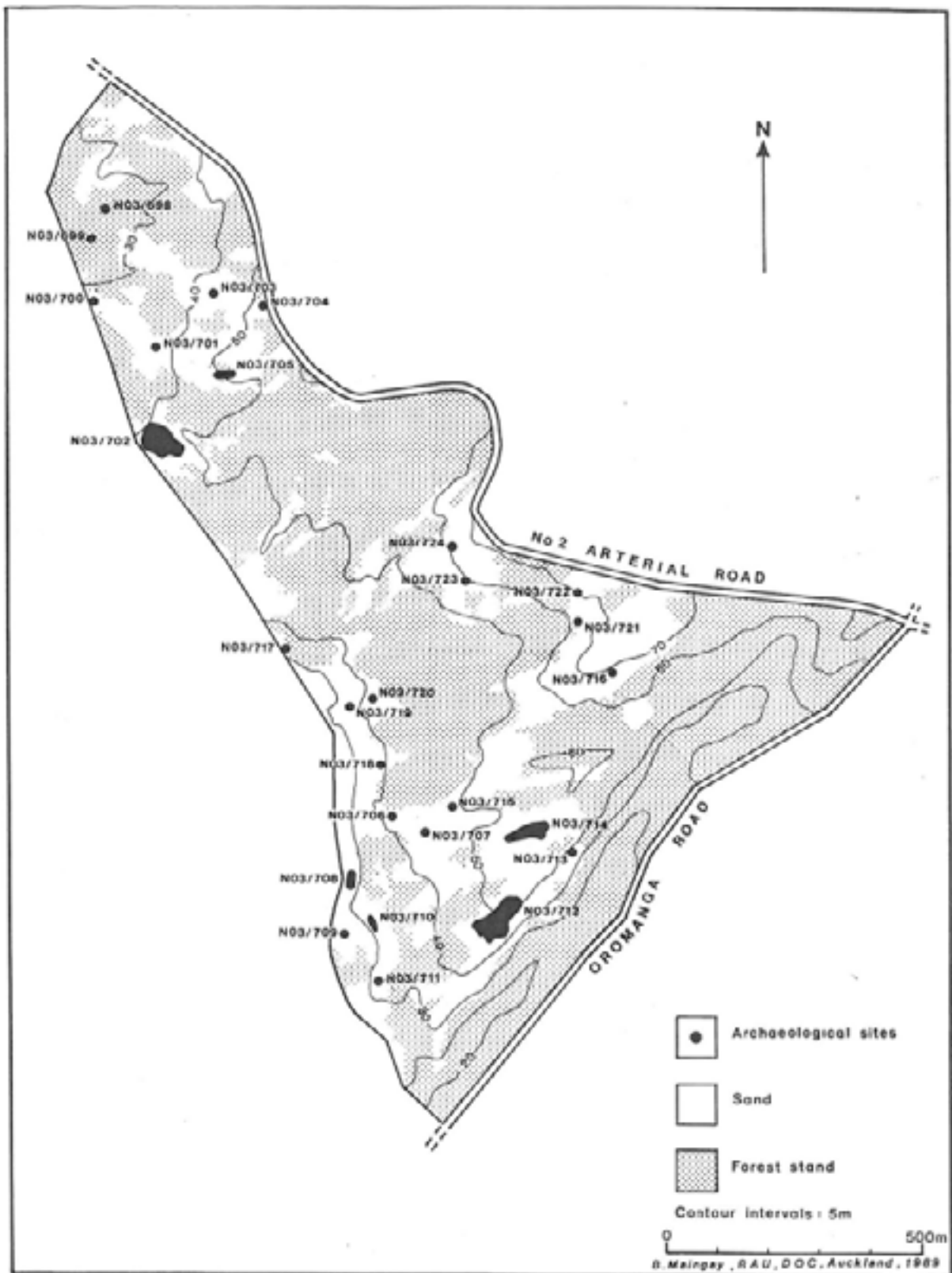


Figure 2. AUPOURI FOREST SURVEY -COMPARTMENT 237.

N03/699 Grid reference 011.5 263.5 Midden

The site consists of a small surface scatter of tuatua (*Paphies subtriangulata*) over an area of 6 m by 3 m on the northern edge of a small blow out. The site is badly deflated.

N03/700 Grid reference 015 262.5 Midden

The site consists of a surface midden deposit scattered over an area of 40 by 50 m though concentrated in a small area 15 m north-west of a water eroded channel. Shellfish species represented include ringed dosinia (*Dosinia anus*), toheroa (*Paphies ventricosa*) and tuatua (*Paphies subtriangulata*). A number of obsidian flakes were also recovered from this site. The site is deflated and badly affected by water erosion.

N0/701 Grid reference 013 261 Midden

The site consists of surface midden scatter of tuatua (*Paphies subtriangulata*) over an area of 30 by 50 m. A single fish vertebrae was also identified amongst the shell. The site is badly deflated.

N03/702 Grid reference 013 259 Midden

The site consists of a sparse midden scattered over an area of 60 m by 40 m. The midden consists of tuatua (*Paphies subtriangulata*) with a number of small polished stones and a flake of obsidian. The site is badly deflated.

N03/703 Grid reference 01 3.5 262 Midden

The site consists of a small surface scatter of tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*) together with a small quantity of imported stone material spread over an area of 12 m by 10 m. The site is badly deflated.

N03/704 Grid reference 014.7 261.5

The site consists of a findspot at which a large obsidian flake was recovered. The flake may have been bulldozed from an unrecorded midden in an adjacent compartment on the opposite side of the road.

N03/705 Grid reference 01 4.5 260.5 Midden

The site consists of two sparse midden scatterings. The first of these occurs at the end of a track and consists of a few tuatua (*Paphies subtriangulata*) shells scattered over an area of 5m by 6m. Approximately 40m south-east of this site is another small surface scatter of tuatua with a small quantity of stone. Both sites are badly deflated.

N03/706 Grid reference 017 252 Stone scatter

The site consists of a small imported stone scatter over an area of 2 m by 3 m. No sign of working is evident on the stone material. The site is badly deflated.

N03/707 Grid reference 01 7.5 251.5 Midden

The site consists of a sparse surface scatter of tuatua (*Paphies subtriangulata*) over an area of 6 m by 5 m. The site is in poor condition having sustained both erosion and deflation.

N03/708 Grid reference 016 251 Midden

The site consists of a sparse surface scatter of tuatua (*Paphies subtriangulata*) over an area of 2 m by 1 m on the clay scarp approximately 10 m north of the track up the scarp. Approximately 10 m south of the track on the scarp is another small surface scatter of tuatua shell. The site has sustained both water erosion and deflation.

N03/709 Grid reference 016 249.5 Midden

The site consists of a sparse scatter of tuatua (*Paphies subtriangulata*) over the surface of an area of approximately 20 m by 20 m. The shell is scattered over the summit of the knoll and down the scarp on the eastern side. The site has deflated and is badly eroded.

N03/710 Grid reference 017 249.5 Midden

The site consists of a very sparse scatter of tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*) in the base of a small blow out. The site covers an area of approximately 6 m by 3 m. The site has deflated and is in poor condition.

N03/711 Grid reference 017 249 Occupation site

The site consists of a scatter of tuatua (*Paphies subtriangulata*), toheroa (*Paphies ventricosa*), rock shell (*Thais orbita*), and cats eye (*Turbo smaragdus*) over an area of 20 m by 6 m. A small number of obsidian, chert and other stone flakes were scattered through the shell. A small deposit of burnt oven stones is located on the western edge of the slope. The site subsequently appears to have been re-covered by shifting sand that has then eroded and now only partially covers the site. The site itself would appear to represent short term occupation.

N03/712 Grid reference 018.5 249 Occupation site

The site consists of a large dispersed scatter of small stones mixed with a small quantity of tuatua (*Paphies subtriangulata*), toheroa (*Paphies ventricosa*) and rock shell (*Thais orbita*) over an area 50 m by 30 m. The site also contains occasional obsidian and chert

flakes. The site appears to have deflated, is eroded at the south-western end and is covered by small sand mounds on its north-eastern margin.

N03/713 Grid reference 020 251.3 Midden

The site consists of a midden scattered over an area of 10 m by 5 m on sand covering the clay pan. Contents of the midden are predominantly rock shell (*Neothais scalaris*) with the occasional tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*). A small quantity of burnt stone appears on the site and a single obsidian flake was recovered. The site is deflated.

N03/714 Grid reference 018.5 252.5 Midden

The site consists of a scatter of small the clay pan mixed with the occasional tuatua (*Paphies subtriangulata*) shell. The site covers an area of 60 m by 40 m around a small clump of pines. A single obsidian flake was recovered from the site. The site is deflated.

N03/715 Grid reference 017.5 252 Stone scatter

The site consists of a small scatter of small, round smooth stones at the base of a deep blow out over an area of 3 m by 3 m. No shell is evident. The site is deflated.

N03/716 Grid reference 021.2545 Midden

The site consists of a scatter of fragmentary tuatua (*Paphies subtriangulata*) and rock shell (*Thais orbita*) mixed with a quantity of small stones and fire fractured rock. It occurs over an area of 12 m by 4 m. The site is badly deflated.

N03/716 Grid reference 0155 254 Midden

The site consists of a few fragments of tuatua (*Paphies subtriangulata*), and a number of fire fractured stones. The extant is approximately 1 m by 1 m. The site is exposed by wind eroding sand from clay pan ridge in forest. The site is deflated.

N03/718 Grid-reference 016 252.5 Midden

The site consists of a few fragments of tuatua (*Paphies subtriangulata*) shell scattered over an area of 5 m by 5 m in a dune blow out. Some fragments of possibly fire-fractured stone are also evident. The scatter of material is sparse and contains less than a dozen shells. Both large and small tuatua shells are present. The site is badly deflated.

N03/719 Grid reference 016 254 Midden

The site consists of a scatter of tuatua (*Paphies subtriangulata*) mixed with a quantity of fire-fractured rock. The site covers an area of 2 m by 2 m and is deflated. Approximately 20 m east of the dune blow out is a small scatter of water rolled pebbles over an area 2 m x 1 m.

N03/720 Grid reference 016 253 Stone scatter

The site consists of a cluster of burnt stones exposed by drifting sand. It covers an area of 2 m by 1 m. No faunal material or charcoal is evident. The site is badly deflated.

N03/721 Grid reference 020 255 stone scatter

The site consists of a scatter of shattered stone lying on the clay pan adjacent to the old vehicle track. The site is approximately 5 by 5 m in extent. Some of the stone appears heated and fire-cracked. The site is deflated.

N03/722 Grid reference 020 256 Stone scatter

The site consists of a stone scatter an area of 10 m by 10 m. The scatter is sparse with only a small amount of stone present. At least one piece of obsidian was present. Most of the stone is shattered and lying on the clay pan. The site is deflated.

N03/723 Grid reference 018.5 256 Stone scatter

The site consists of a stone scatter over an area of 5 m by 5 m, lying on the clay pan. Much of the stone is shattered. Some, of the scattered stone in the vicinity of this concentration is quite large, approximately 20 cm by 20 cm.

N03/724 Grid reference 018 256.5 Midden

The site consists of a surface scatter of tuatua (*Paphies subtriangulata*) and stone over an area of 10 m by 10 m. Some of the stone is shattered a small amount of stone and shell is present.

Discussion

The archaeology of the surveyed sections of the compartment consists predominantly of middens. Characteristically these comprise single shellfish species, are small in nature and are widely scattered. In all cases the original depositional context, against which the surviving contents should be judged, has been destroyed. The problem of site context is further compounded in that, in some cases, the sites have not only been subject to deflation but have subsequently been subject to water erosion. It is not uncommon

within the compartment to find sites dissected by water channels up to 3 m deep and 6 m wide.

A substantial number of the middens recorded consisted of only a handful of shells, mainly tuatua, scattered on the sand or clay pan. Occasionally other species are present such as dosinia, toheroa and rock shell. In some cases such as site N03/713 the midden contents are predominantly rock shell. The contents clearly represent localised shellfish gathering from the Bluff rock platform and the adjacent intertidal beach zones.

If the components recorded are in their entirety the majority of the middens would appear to represent single archaeological events. Other middens, however, appear more substantial. Site N03/700 contains shellfish species mixed with obsidian flakes and shatter in a range of shape sizes that suggests *in situ* obsidian knapping. Site displays a similar range of obsidian flakes and shatter though also contains stone, quartz and chert flakes, a chert drill point (Plate 1), a polished adze flake and a deflated deposit of burnt oven stones. Further, site N03/712 while containing a range of evidence, displays a deflated deposit of water worn stones over a large area estimated at several tons in weight. These sites also contain waste from industrial activity such as tool manufacture and food remains in the form of local shellfish species and locally obtained rock material for cooking. These sites are likely to represent seasonal, short-term fishing camps associated with activities around the Bluff rock platform.

None of the sites recorded displayed any diagnostic material that could provide information on the chronology of settlement in the compartment.

Conclusion

The sites recorded during the survey do not occur within the plantation areas within the compartment and are therefore not directly affected by the thinning programme. The most likely potential damage to these sites will occur in the provision of vehicle and machinery access across the unplanted sections of the compartment or from one planted section another.

Recommendations

In order to ensure the efficient management of the archaeological resources within the compartment it is recommended that:

1. Sites N03/700, 711 and 712 remain unmodified and undisturbed both through the duration of the thinning programme and any subsequent development within the compartment.
2. Sites N03/700, 711 and 712 are marked on the ground with white painted tanalised posts and aluminium tags incorporating a 15 m buffer zone around each site. This work, funded by Timberlands, should be completed by archaeologists.

3. The location of sites N03/700, 711 and 712 is entered on to the computerised Forest Stands Record system.
4. The location of sites N03/700, 711 and 712 is shown on compartment maps.
5. Timberlands Northland District apply for an Authority to Modify sites N03/698 and 699, N03/701-10 and N03/713-724 from The Director, NZ Historic Places Trust, P O Box 2629, Wellington.

Compartment 228

Description

Compartment 228 is situated in the immediate vicinity of Te Wakatehau Bluff (Fig. compartment is bordered to the north by Oromanga Road, to the east and south by internal forest tracks, and in the west by the foredunes and rock outcrops on the Ninety Mile beach (Fig. The total area is in excess of 56.7 ha. This compartment comprises the same elevated landform that continues north into compartment 237 consisting of the inland flows of now consolidated dunes and outcrops of podzolised hard pan. The compartment was planted in 1972 with the exception of small isolated outcrops of hard pan that occur randomly in the northern and eastern sections of the block. At present the compartment is 95% covered in mature pine forest. At the date of the survey thinning was in progress and has now been completed.

Survey method

No archaeological sites had been recorded within the compartment previously. Initially forestry tracks were driven to establish the boundaries to the compartment and it was noted that no unplanted fringe areas occurred in the compartment. The survey then consisted of using the areal half tone photographs to locate the unplanted hard pan areas within the compartment. Once located, these were surveyed on foot and described in detail, located on the aerial half tone photographs and where appropriate surface collections made.

Survey results -Archaeological Sites

A total of 12 sites were recorded within the compartment (Fig. 3). These consisted of:

Midden	2
Stone scatter	6
Stone and shell scatter	3
Findspot	1

Site descriptions

N03/735 Grid reference 017.9 239 -Midden

The site consists of a small surface scatter of tuatua (*Paphies subtriangulata*) over an

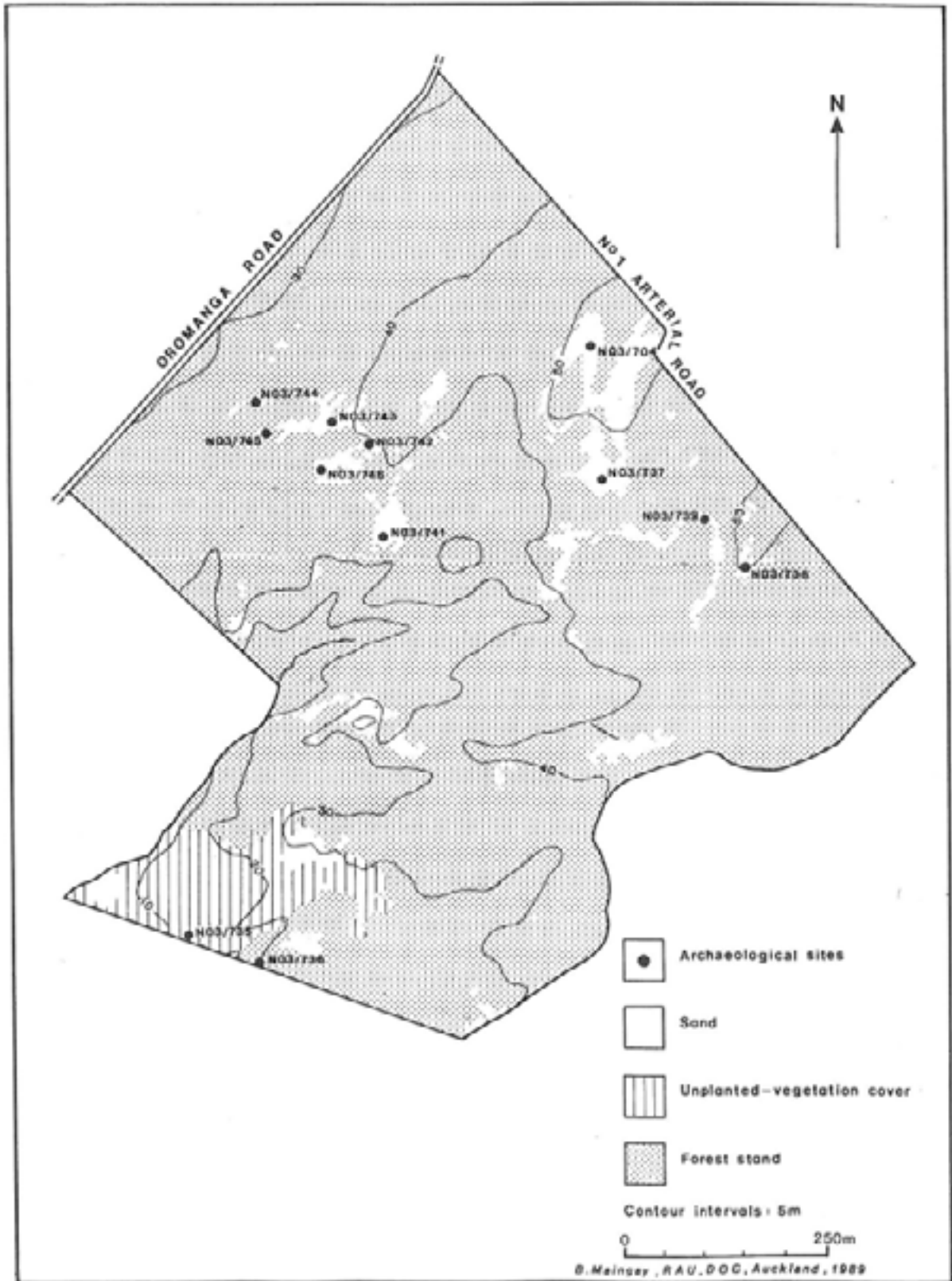


Figure 3. AUPOURI FOREST SURVEY -COMPARTMENT 228.

area 5 m by 1 m. The site extends from under the macrocarpa windbreak into the coastal strip for approximately 4 m. The shell scatter is sparse and deflated.

N03/736 Grid reference 019 2393 -Midden

The site consists of a surface scatter of tuatua (*Paphies subtriangulata*) along 12 m of the macrocarpa windbreak. The shell is both whole and fragmentary and the scatter is sparse. No stone or burnt shell is evident.

N03/738 Grid reference 021.9 246.1 - Stone scatter

The site consists of a large area of loose stone scattered over the clay pan covering an area of 30 m by 30 m. Within the scatter is the occasional obsidian flake with a concentration of obsidian flakes in the south-west corner of the site. The clay pan is interspersed with patches of grey podsol that indicate a forest remnant at this location during prehistory. The site has been disturbed by forestry.

N03/738 Grid reference 244.2 - Findspot

The site consists of a findspot of a single stone flake. The material appears as a green silicified sandstone from the Northland Waipapa series.

N03/740 Grid reference 073.3 244.9 - Stone scatter

The site consists of a stone scatter 2 m by 2 m in extent. The stones are heat fractured and appear as cooking stones. No faunal material is apparent.

N03/740 Grid reference 021.6 246.9 -Stone scatter

The site consists of a stone scatter covering an area of 30 m by 30 m. A range of stone types are apparent. Some stones are reddened and may have been heated. Some also appear heat shattered. The size of the stones range from 10 by 10 cm down to very small fragments. A few pieces of obsidian and a poor quality chert material are evident. No associated faunal material is apparent except for a single tuatua (*Paphies subtriangulata*) shell.

N03/741 Grid reference 020.2 246 -Stone and shell scatter

The site consists of a small surface scatter of tuatua (*Paphies subtriangulata*) over an area of 1 m by 1 m. The shell is sparse and occurs with a small quantity of heat shattered stone.

N03/742 Grid reference 020.2 246 - Stone and shell scatter

The site consists of a scatter of small stones across the pan and crust over an area of 6 m by 3 m. The site is partially water eroded.

A small number of obsidian flakes were scattered over the site in conjunction with three or four tuatua (*Paphies subtriangulata*) shells.

N03/743 Grid reference 010.9 246 -Stone and shell scatter

The site consists of a small scatter of stone and tuatua (*Paphies subtriangulata*) shell over an area of 5 m by 1 m. A small number of obsidian fragments were scattered across the site. The site is partially eroded by water.

N03/744 Grid reference 019.4 246.3 - Stone scatter

The consists of a stone scatter over an area of 3 m by 2 m in extent. Some stones show evidence of firing and heat shattering. The stones range from 3 cm to 12 cm in size. Approximately 10 m east of the site further along the sandstone ridge are more stones of a similar nature.

N03/746 Grid reference 019.5 245.8-Stone scatter

The site consists of a stone scatter over an area of 2 m by 2 m in extent. The site contains approximately 20 stones, most of which are heat shattered. The size of the stones ranges from 3 to 10 cm. No associated faunal material is evident.

N03/746 Grid reference 019.6 245.2 -Stone scatter

The site consists of a sparse scatter of fire fractured stone over an area of 3 m by 3 m. The scatter includes three or four tuatua (*Paphies subtriangulata*) shells and a single piece of obsidian.

Discussion

With the exception of two sites N03/735 and 736 all sites recorded during the survey of the compartment occurred in the hard pan clearings. These sites generally consisted of deflated scatters of beach-rolled stone. In some cases the stone is heat shattered and occasionally flaked. The sites themselves differed in composition from those recorded in the hard pan clearings, in compartment 237, differed in that they contained little or no shell. The only shell species identified consisted of tuatua.

The majority of stone material evident at the sites appears derived from the Wangakea and can be readily sourced to the adjacent Bluff rock platform. Imported industrial materials are also present including green silicified chert and white silicified sandstone. These are most likely to have been derived from the geological structures of the southern end of the peninsula. Also present are clear and opaque quartz pebbles and obsidian. The latter were present at five of the ten sites recorded where they occurred as deflated flake scatters at sites N03/740, 742, 743 and 746 and as a reduced core at site N03/737. The

obsidian flakes are generally badly sandblasted. However, considering both the cortex displayed and the range of transmitted colours - grey to olive green - it is likely that most of this material is derived from Mayor Island sources (Moore 1987). A single core from N03/731 displays a mat surface with a cortex that is corroded in appearance and can be sourced with reasonable accuracy to the Kao area (Brassey pers. comm.).

Another unusual obsidian flake recovered from site transmits a bright silver reflected light when viewed from certain angles. From microscopic examination this appears to result from rod like crystals contained within medium flow banding. The piece is grey - olive green in colour and contains sparse fine quartz inclusions. This material has been recovered from other sites in the far northern region though at present its source is uncertain.

From the recorded evidence it is difficult to provide a clear indication of the function for sites situated on the hard pan. In some cases, specifically in the vicinity of site N03/737, paleoenvironmental indications were present. This consisted of remnant soil podsolization and podsolization in conjunction with decaying stumps and roots of a former coastal podocarp/broadleaf forest (species unidentified). This would suggest that the original environmental context for the sites recorded was a cover of coastal forest. The activities represented at these sites would appear to include the processing of shellfish though there is little shell left; obsidian flake tool manufacture, and from a single stone flake found at site N03/738, stone tool manufacture, within the context of short term occupation.

The two midden sites N03/735 and 736 located on the consolidated foredunes of the compartment, consist of small deflated scatters of tuatua under the macrocarpa windbreak above a small unnamed stream at the southern end of the Bluff. These shell scatters appear as remnants of what may have been larger deposits of waste shell from the processing of shellfish at these locations. No evidence from any of the sites recorded during the survey of the compartment provided any indication of the chronology of settlement within the compartment.

Conclusion

Generally the sites recorded in the compartment are deflated, dispersed, and in poor condition and are of limited public or scientific value. However, sites N03/737 and 740 consisting of extensive stone scatters and stone working areas, are representative in some aspects of the archaeological record in the compartment yet also contain unusual components and are considered to warrant permanent preservation.

At the time of the survey, thinning of the compartment was in progress and has now been completed. Consequently the following recommendations relate only to all future stages of forest development.

Recommendations

For the efficient management of the archaeology of the compartment it is recommended that:

1. Sites N03/737 and 740 remain unmodified and undisturbed through any future forest development within the compartment.
2. That sites N03/737 and 740 are marked on the ground with white painted tanalised posts and aluminium tags incorporating a 15 m buffer zone around each site. This work, funded by Timberlands, should be undertaken by archaeologists.
3. The location of sites N03/737 and 740 is entered on the computerised Forest Stands record system.
4. The location of sites N03/737 and 740 is shown on compartment maps.
5. Timberlands Northland District apply for an Authority to Modify sites N03/735-736, N03/738-749, N03/741-746 from the Director, NZ Historic Places Trust, P O Box 2629, Wellington.

Compartment 227

Description

Compartment 227 is located on the foreshore south of Te Wakatehau Bluff (Fig. 1). The compartment is bordered by compartment 228 to the north, by an arterial road to the east, and by Island Road to the south (Fig. 4). The total area is in excess of 126 ha. The compartment comprises low lying dune country 2 m to 3 m a.s.l. bounded at the seaward edge by the foredunes and rises to the east, to elevated consolidated dunes of 60 m a.s.l. The compartment is dissected by two permanent streams that flow east/west discharge onto the beach. The compartment was planted in *Pinus radiata* in 1972 with the exception of a few small hard pan eastern boundary. Plantings on the low lying dune country behind the foreshore have not attained the same rates of growth as those towards the back of the compartment and this includes a macrocarpa shelter belt, parts of which have died. Consequently the coastal side of the compartment is characterised by patchy stunted pines, erosion, small sand drifts and areas of sand colonising vegetation including spinifex (?), muehlenbeckia (*Complexa*) and wiwi (*Leptocarpus similis/Scirpoides nodosa*).

Survey method

Initially the foreshore area was walked from north to south and sites identified were recorded along and inside the windbreak. This also included walking up the stream beds and through the areas of patchy *Pinus radiata* between the streams. The recording of sites on the foreshore was then by driving the boundary roads to the east and south to locate the clear hard pan areas within the compartment. Once located these areas were then surveyed in detail. All sites located were then described and marked on the aerial half tone photographs.

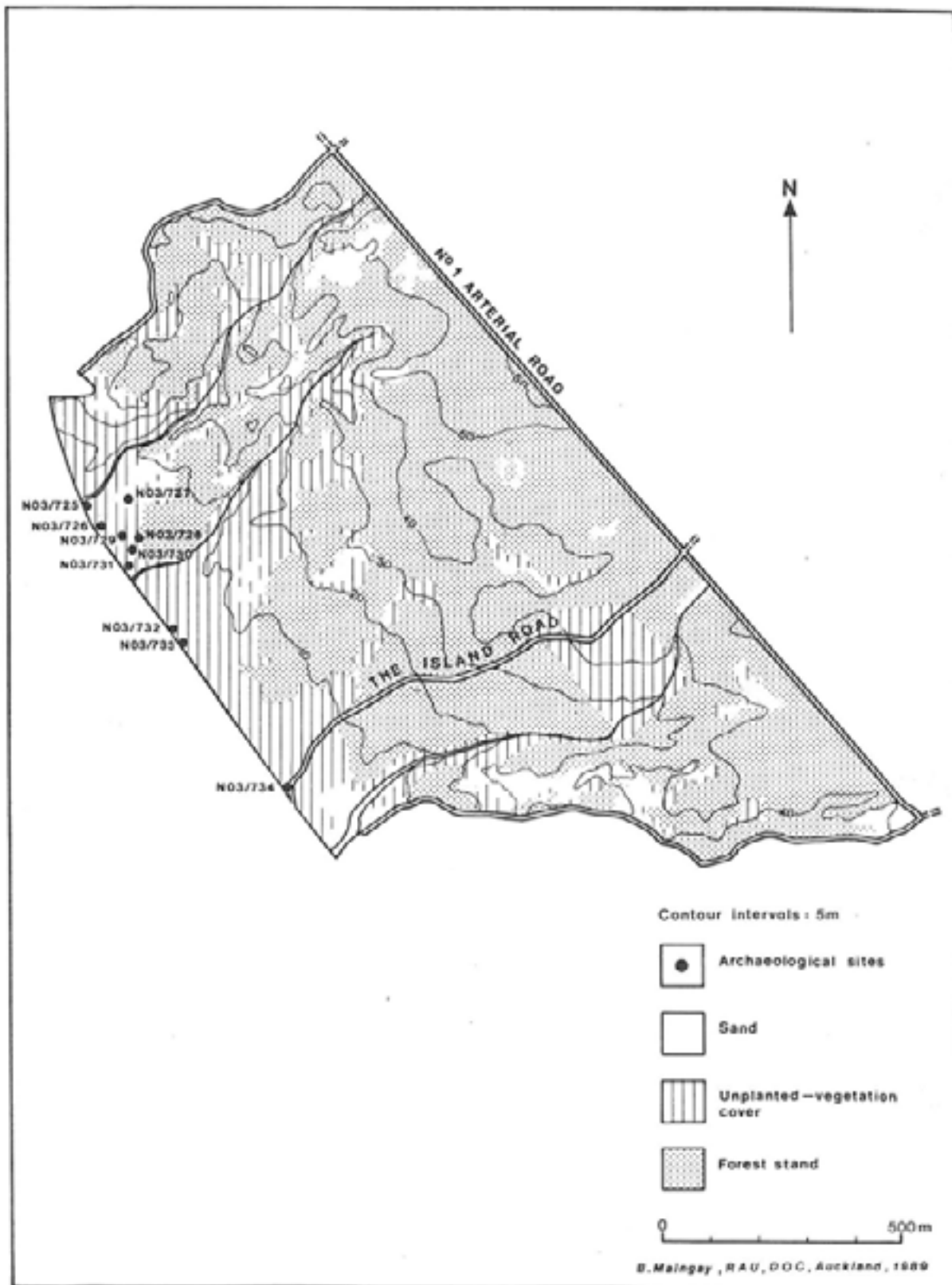


Figure 4. AUPOURI FOREST SURVEY -COMPARTMENT 227.

Survey results -Archaeological Sites

A total of 10 archaeological sites were identified within the compartment (Fig. 4). These consisted of:

Occupation sites	2
Midden	8

Site description

N03/725 Grid reference 022 235.5 -Midden

The site is the only site recorded in the Bluff compartments that is still partially *in situ*. The site consists of a midden of predominantly crushed tuatua (*Paphies subtriangulata*), rock shell (*Thais orbita*) and a single cetacean vertebrae (unidentified). Fishbone and heat-shattered stone were also in the midden. Some of the shell appeared to be burnt. The midden is exposed on the surface for 3 m along the stream bank.

N03/726 Grid reference 023 235.2 -Midden

The site consists of a surface scatter of medium to large size tuatua (*Paphies subtriangulata*). Some of the shell is burnt and is mixed with fire-fractured rock. The site covers an area of 4 m by 3 m and is deflated.

N03/726 Grid reference 022.6 235.7 -Occupation site

The site consists of an extensive surface scatter of midden over an area of 20 m by 15 m. The dominant shell species is tuatua (*Paphies subtriangulata*) but also include toheroa (*Paphies ventricosa*) and rock shell (*Thais orbita*). The shells range in size but many are large. Many of the shells also burnt. A number of scatters of shattered and burnt stone are evident within the site. Some stone is quite large (150 mm). Approximately 10 m south of the midden is a stone and shell scatter of 10 by 5 m that contained three pieces of whalebone.

N03/728 Grid reference 023 235 -Midden

The site consists of a small surface scatter of tuatua (*Paphies subtriangulata*) over an area of 5 by 5 m. The shell is whole and fragmentary and partially burnt and is mixed with a small quantity of fire fractured rock. The site is covered in pine needles and will be difficult to relocate.

N03/729 Grid reference 022.8 234.9 -Midden

The site consists of a deflated shell cap over 15 m from north to south. Contents include whole and fragmentary tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*) mixed with some burnt shell and a small quantity of cooking stones. The site has been disturbed by forestry. The site covers an area of 15 m by 7 m.

N03/730 Grid reference 023.3 234.5 - Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 6 m by 5 m. A small quantity of cooking stone also occurs at this site.

N03/731 Grid reference 022.9 234.1 - Occupation site

The site consists of an extensive surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*), toheroa (*Paphies ventricosa*) and rock shell (*Thais orbita*) over an area of 50 m by 50 m. Some of the shell is burnt and is mixed with a quantity of fire fractured rock. While some sections of the midden appear intact most is badly deflated. Four pieces of obsidian were recovered from the site.

N03/732 Grid reference 024 233 -Midden

The site consists of a small surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 3 m by 3 m. The site appears partially damaged by cattle grazing.

N03/733 Grid reference 024.6 232.1 -Midden

The site consists of a small surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 4 m by 3 m. The site appears badly deflated.

N03/734 Grid reference 926.5 229.3 -Midden

The site consists of a surface scatter across the end of the access track of small to medium size tuatua (*Paphies subtriangulata*). Most of the shell is in a fragmentary condition. Small fragments of shattered stone are present throughout the midden.

Discussion

All the sites recorded in the compartment occur on the western boundary behind the foredunes. The majority of the sites are spread between two streams in the northern half of the compartment and within these there is a distinct clustering of sites in the immediate area to the south of the northern stream. A single site occurs on the northern bank of another stream on the southern boundary of the compartment. This distribution indicates that the availability of water at these locations is the principal determinant in the location of these sites.

The low lying coastal flats behind the foredunes are prone to wind erosion and consequently the majority of sites in this area are entirely deflated. Only a single site, N03/725, itself badly eroded by the course of the stream, remains in situ. This site consists of a 3 m long surface midden exposure and occurs from the surface to an unknown depth. Contents of the midden are predominantly tuatua (*Paphies*

subtriangulata) with the occasional rock shell (*Thais orbita*). These species that are typical of the middens in this area, indicate a shellfishing strategy based primarily on the exposed hard and soft shores in the immediate vicinity of the Bluff.

A single bone (Plate 2) recovered from the midden has been tentatively identified from the flipper of a small to medium size whale (I.W.G. Smith pers. comm.). Cetacean bone is also evident at adjacent site (Plate 2) and during the period of survey was also recorded in compartment 1002 (Plate 2) and eroding from a midden at Scotts Point. The extensive presence of whale bone in middens on the Ninety Mile beach has been recorded in the past and is generally considered to be derived from sporadic seasonal whale strandings (Coster 1983b:9).

Of the deflated middens, sites N03/727 and N03/731 appear the more substantial. Site N03/727 also located on the southern bank of the northern stream, consists of a large shell cap predominantly of surface tuatua and scatters of shattered burnt stone and fragile whalebone.

Generally the sites recorded would appear to represent short term occupation involved with the processing and preservation of shellfish and supplemented by rocky shore shellfish species from the Bluff platform and the occasional butchering of stranded whale carcasses.

Conclusion

All the sites recorded within the compartment appear to derive from late prehistory. The sites would appear to represent short term occupation involved processing and preservation of soft and hard shore shellfish supplemented by the butchering of the occasional stranded whale carcass.

All the sites within the compartment are deflated and of these only N03/725 remains partially in situ. It is considered appropriate to retain a representative selection of these sites as a record of prehistoric shellfishing activities in the vicinity of the Bluff rock platform.

Recommendations

As with Compartment 227, this compartment was being thinned during the time of the survey and has subsequently been completed. Consequently the following recommendations relate to all future stages of forest development.

1. Sites N03/725, 727 and 731 remain unmodified through any future forest development within the compartment.
2. Sites N03/725, 727 and 731 are marked on the ground with white painted tanalised posts and aluminium tags incorporating a 15 m buffer zone around each site. This work, funded by Timberlands, should be undertaken by archaeologists.



Plate 1. A FRACTURED DRILL POINT, RECOVERED FROM SITE NO3/711, COMPARTMENT 237.



Plate 2. CETACEAN BONE FROM SITES NO3/725, NO3/727, N43/22.

3. The location of sites N03/725, 727 and 731 is entered on to the computerised Forest Stands Record system.
4. The location of sites N03/725, 727 and 731 is shown on compartment maps.
5. Timberlands Northland District apply for an Authority to Modify sites N03/726, N03/728-730 and N03/732/734 from The Director, NZ Historic Places Trust, P O Box 2629, Wellington.

THE MOTUTANGI COMPARTMENTS

Compartments 71 and 72

These two adjoining compartments occur on the eastern boundary of the Aupouri Forest in the vicinity of the Motutangi swamp (Fig. 1). The existence of prehistoric wetland garden systems and settlements at this locality (Barber 1984) provided the basis for the detailed archaeological assessment of these two compartments.

The two blocks of 121 ha and 68 ha respectively were planted in 1971 and are now entirely covered in mature pines. The ground surface is also covered in a thick mat of defoliation and in parts by understory vegetation. This effectively prevented any detailed ground survey. The survey of the two compartments consisted of driving the boundary and internal forest tracks, paying careful attention to the eastern boundary bordering the western arms of the former wetland. No archaeological sites were identified on the route of the tracks or in areas in the vicinity of the wetland where assessments were made on the forest floor.

In order to ascertain whether the prehistoric evidence associated with the Motutangi swamp extended into the two compartments an assessment of the neighbouring properties was made. This included the property from which most of the wetland evidence has been recorded (Barber 1984). At the time of this assessment rechannelling of farm drainage had just been completed on the Beazley property and a broken section of the blade of a prehistoric weeder was found in the spoil (Plate 3). However, the surviving wetland garden systems did not extend into the western half of the property and seemed to cluster in the vicinity of a pa on the opposite side of the main road. The impression gained was that the two blocks were at a sufficient distance from the previously recorded settlements and wetland garden system not to have significantly affected the archaeological features in this area.

THE HUKATERE COMPARTMENTS

Compartments 50 and 63

These compartments are located on the beach front of the Ninety Mile beach between 2 and 4 kilometres south of Hukatere Hill and are bordered on the east by Arterial Road No. 1 (Fig. 1). The two compartments cover areas of 97 ha and 104 ha respectively. These compartments were planted in 1972 and are now covered in mature forest. There were no unplanted areas within the compartments and at the time of the survey the forest floor was covered with thinnings. As with the Motutangi Compartments the survey of these blocks consisted of riding the boundary and internal tracks paying particular attention to the foreshore boundary. No archaeological sites were identified within either of the compartments. As Coster and Johnston (1977:12) previously noted, a large number of middens occur on route and on the western side of the Coast Road in front of these compartments, indicating that the distribution of coastal middens may extend into the forest at this location.

Compartment 65

Description

Compartment 65 is located on the foreshore immediately south of the Hukatere Hill and Hukatere Road No. 16. The compartment is bordered by Arterial Road No. 2 to the east and by Six Truck Road to the south, and covers an area of 204 ha. The front boundary is situated some distance from the area leaving a buffer zone of approximately 1 km of partially stabilised dunes. The compartment itself was planted in 1972 over an extension of this area of low lying dune country, and is now almost entirely covered in mature pine forest. Only a few small areas of unplanted exposed dune occur on the western edge of the compartment.

Survey method

The assessment of this compartment consisted of riding the boundary and internal tracks to gain an overall impression of the compartment. This was then followed by a detailed foot survey of parts of the coastal buffer zone, the front edge of the compartment, and the exposed dunes immediately inside the shelter belt. The single site located was then marked on the aerial half tone photograph of this section of the compartment.

Survey results -Archaeological Sites

A single archaeological site was identified within the compartment (Fig. 5) consisting of:

Midden	1
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Site description

N04/10 Grid reference 198.3 991.9 -Midden

The site consists of a sparse surface of three or four tuatua (*Paphies subtriangulata*) shells and a single large round cooking stone. The recorded material is likely to represent only a fraction of this badly deflated site.

Discussion

Site N04/10 reduced to its basic durable components, represents good example of extreme deflation sustained by many sites on the Aupouri dune system. The two remaining activities reflected by these components are the gathering of shellfish from the tidal zone of the adjacent Ninety Mile beach and the importation of stone for domestic cooking purposes, the latter being a widely recorded phenomenon for sites on the Aupouri peninsula. Coster made a collection of cooking stones from over 30 sites on the peninsula for analysis and considered that they could be "expected to be derived from no more than five or six identifiable sources" (Coster 1983: 9). In the case of site N04/10 the single cooking stone consists of a medium sized water rolled beach cobble in a material

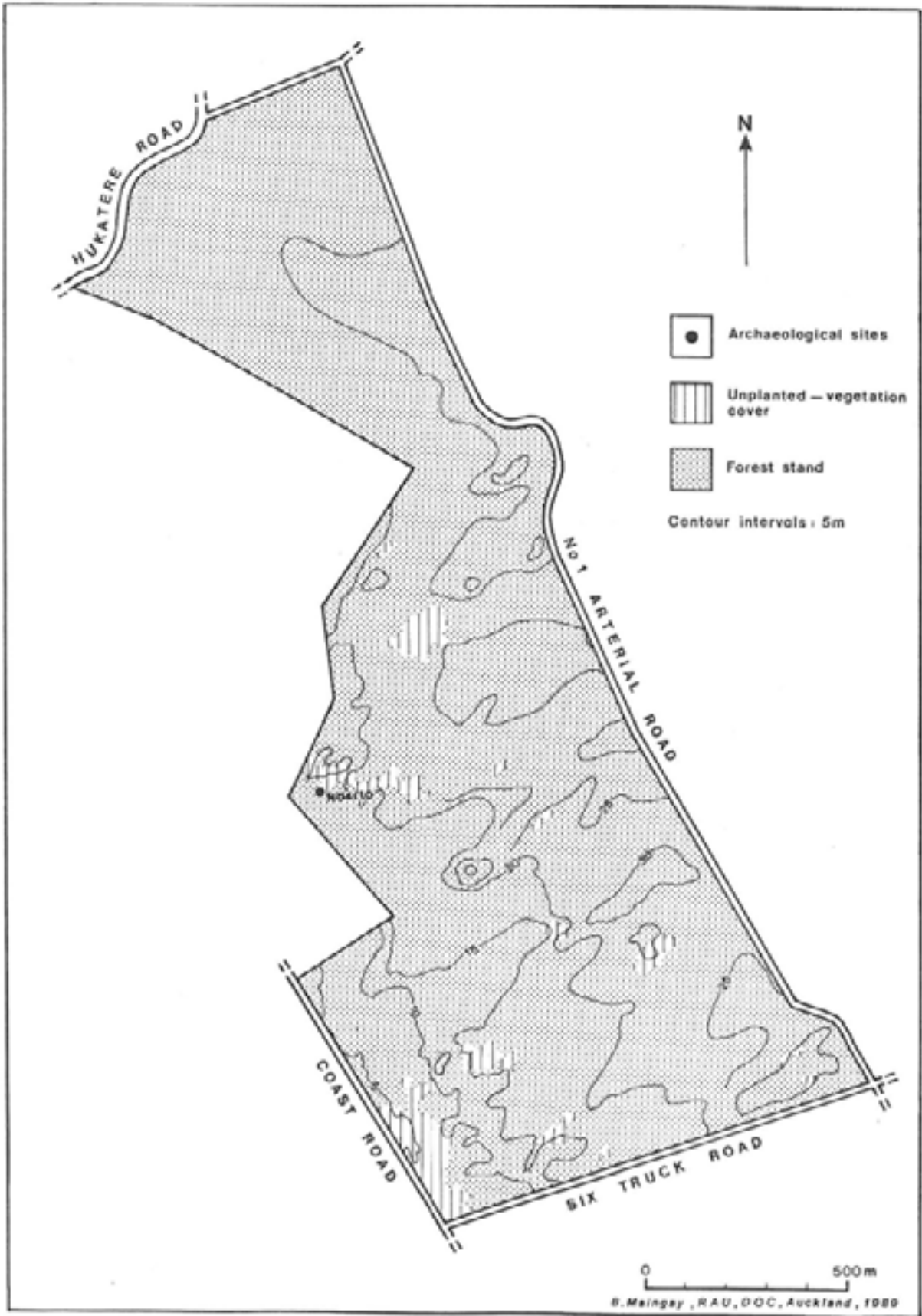


Figure 5. AUPOURI FOREST SURVEY - COMPARTMENT 65.

of usually volcanic origin. The closest source of suitable beach cobbles of this nature on the far northern west coast is at Scotts Point. Other outcrops of beach cobbles occur at Mokorau on the reef point coastline to the south, but consist of a distinctive poor quality material that is unlikely to have been suitable for traditional cooking methods. It is perhaps more likely that cooking stones evident at sites on the mid and southern sections of the peninsula were derived from either the opposite coast at the Mt Camel volcanic outcrop or from the rock bound habit of streams on the Kaitaia-Pukepoto-Ahipara interflues.

Conclusion

The single site recorded in the compartment is not in sufficient condition to warrant its preservation for public or scientific purposes.

Recommendation

At the time of the survey, thinning of the compartment was in progress and has now been completed. Consequently the following recommendation relates only to all future stages of forest development.

Timberlands Northland District apply for permission to modify site N42/10 from The Director, NZ Historic Places Trust, P O Box 2629, Wellington.

SWEETWATER COMPARTMENTS

The selection of the two Sweetwater compartments 1001 and 1002 from the thinning programme for survey and assessment was based on their proximity to the Kaitaia swamp and the possibility that they may contain evidence of occupation associated with the Kaitaia swamp's extensive drainage systems. The presence of historic gumdigging sites was also considered a possibility.

Compartment 1001

Description

At the southern end of the Aupouri Forest the extent of the band of now consolidated dunes is at its narrowest and gives way 1.5 km inland to the broad alluvial-peat Kaitaia swamp that forms the base of the Aupouri peninsula. Consequently the forest boundary narrows to single compartments that have foredune locations and whose back boundaries occur at a mid point in the band of consolidated dunes. Compartment 1001 is the second to last compartment in the forest and is situated on the foreshore approximately 2 km south of the West Coast Road and Waipapakauri ramp (Fig. 1). The compartment covers an area of 135 ha and forms a part of the Sweetwater block situated in an area collectively known as the Community lease. The compartment is dissected from north to south by the Coast Road and is the main access route (Fig. 2). Originally the area appears to have

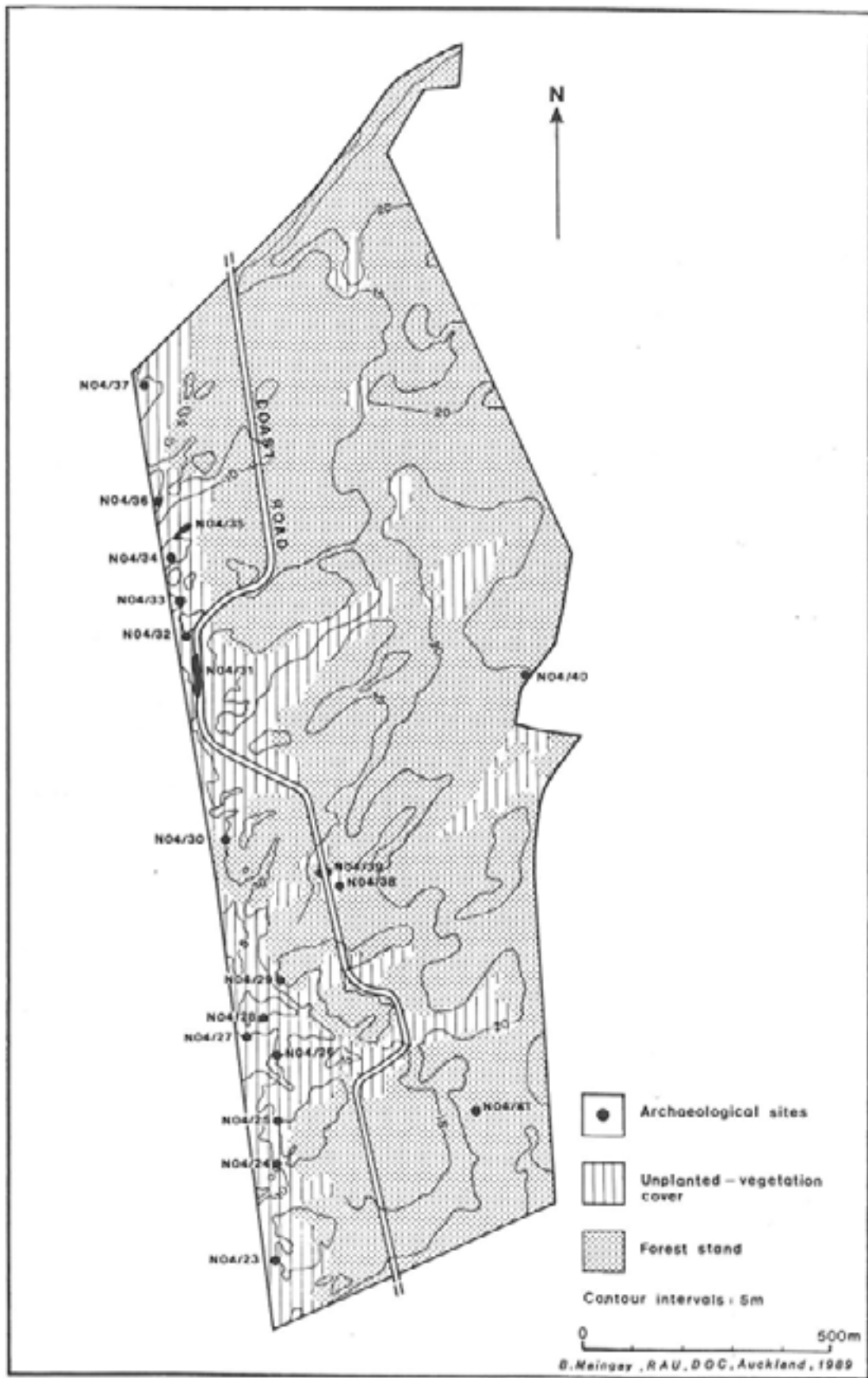


Figure 6. AUPOURI FOREST SURVEY - COMPARTMENT 1001.

consisted of mobile dunes interspersed with "hard pan" exposures, the latter occurring at the front of the compartment where they have been exposed by intermittent streams with no beach outlet.

The compartment was planted in 1973. However, several large areas extending across the compartment were not planted and are now under pasture. The remainder of the compartment, with the exception of a band of exposed and stunted trees behind the macrocarpa shelter belt, is now under mature forest.

Survey method

All clear areas within the compartment were surveyed on foot. Particular attention was paid to the foreshore area, hard pan exposures and clearings within the forest. The back boundary was driven and a range of archaeological sites lying on farmland to the east of the forest was assessed. All sites located were then recorded in detail and marked on an aerial half tone photograph of the compartment.

Survey results -Archaeological Sites

A total of 19 archaeological sites identified within the compartment (Fig. 6). These consisted of:

Historic midden	1
Midden	18

Site descriptions

N04/23 Grid reference 269.2 806.8 -Midden

The site consists of a sparse surface scatter of fragmentary tuatua (*Paphies subtriangulata*) over an area of 1 m by 1 m. The contents amount only to four or five shells. These are scattered on the sand amongst colonising vegetation.

N04/24 Grid reference 263.3 808.8 -Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*). The shell is small to medium size and much of it is burnt. The scatter is spread over an area of 7 m by 3 m and is partially eroding down the scarp to the west. A single ringed dosinia (*Dosinia anus*) was also identified at the site.

N04/25 Grid reference 263.8 8199.2 - Midden

The site consists of a few fragments of tuatua (*Paphies subtriangulata*) scattered over an area of 3 m by 1 m. The shell appears to have eroded from the pan in a grassed area and may indicate a larger site. No stone, charcoal or burnt shell is evident.

N04/26 Grid reference 269.4 810.6 -Midden

The site consists of a small surface scatter of a few fragments of tuatua (*Paphies subtriangulata*) with only one whole shell. The site covers an area of 3 m by 1 m and is visible eroding through grass on the western face of a clay pan exposure. The site may be more extensive than apparent.

N04/27 Grid reference 261 810.9 -Midden

The site consists of an in situ lens of whole and fragmentary tuatua (*Paphies subtriangulata*). The lens is situated eroding from a recently dune. It is approximately 4 m in length and occurs at a depth from the surface of 30 cm. The depth of the lens deposit could not be determined. The shell is medium to large in size and much of it is burnt.

N04/28 Grid reference 269.3 811.6 -Historic midden

The site consists of a large area of shell midden over an area of 12 m by 6 m in extent. The shell occurs in a dune cap, eroding down the sides of the cap. Near the top of the shell cap is an intact lens from which the scatter originates. The shell is tuatua (*Paphies subtriangulata*) of medium size and is both whole and fragmentary. Some of the shell is articulated, much of it is crushed and burnt and occurs with a small quantity of fire-fractured stone. A single unidentified green glass bottle fragment was recovered eroding from the midden. Approximately 15 m north-west is another shell cap of whole and fragmentary tuatua - over an area of 4 m x 3 m.

N04/30 Grid-reference 269.3 812.7 -Midden

The site consists of a few fragments of tuatua (*Paphies subtriangulata*) eroding down the southern side of an old dune. The shell been exposed by cattle eroding grass away from scrub end smell pines on the side of the dune. The shell covers an area of 4 m by 3 m.

N04/31 Grid reference 815.4 -Midden

The site consists of a midden scatter of 2 m by 1 m. The midden consists of very fragmentary pieces of tuatua (*Paphies subtriangulata*). This site is likely to have been exposed during the planting of the macrocarpa windbreak. No charcoal or stone is evident.

N04/31 Grid reference 269 818.8 - Midden

The site consists of a band of disturbed midden extending approximately 100 m along both sides of the Sweetwater Block Road. The midden has been heaped on either side of the road. Contents of the midden are almost entirely tuatua (*Paphies subtriangulata*) of medium to large size. Shell is both whole and fragmentary. Much of the fragmentary shell

appears burnt. Some small pieces of charcoal are present but no cooking stones. Approximately 10 m north of this site is another scatter of disturbed midden on the roadside. This extends for 30 m on both sides of the road. Contents are similar to above but include a single large toheroa (*Paphies ventricosa*) shell.

N04/32 Grid reference 268.9 819.7 -Midden

The site consists of a surface scatter of predominantly whole and fragmentary tuatua (*Paphies subtriangulata*) with some morning star (*Tawera spissa*) over an area of 3 m by 3 m. Some of the shell is beech rolled and much of it is burnt. No stone or charcoal is evident however.

N04/33 Grid reference 268.8 820.3 -Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*). A considerable quantity of the shell is burnt and is eroding down the southern side of the level dune area. No stone or charcoal was evident. The site covers an area of 7 m by 3 m.

N04/34 Grid reference 268 821 - Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 7 m by 5 m. The shell is small to medium in size and much of it is burnt. The shell may have originated from a substrata deposit in the dune. No charcoal or stone is evident.

N04/35 Grid reference 268 821.6 - Midden

The site consists of a large surface scatter of predominantly whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 40 m by 20 m. The shell is of medium to large size and a considerable proportion is burnt. A few shells of ringed dosinia (*Dosinia anus*), a quantity of beach rolled shell and a small number of fire-fractured stones are also evident. Approximately 30 m north-east is another sparse scatter of whole and fragmentary tuatua. The area of the whole site is approximately 60 m by 70 m. The site is largely deflated and partially covered by colonising vegetation.

N04/36 Grid reference 297.9 822 -Midden

The site consists of a surface scatter of predominantly whole and fragmentary tuatua (*Paphies subtriangulata*) mixed with burnt and beach rolled shell and a small quantity of fire fractured stone. The site covers an area of 25 m by 12m.

Grid reference 267.6 824.3 -Midden

The site consists of a sparse surface scatter of tuatua (*Paphies subtriangulata*) over an

area of 1 m by 1 m. The shell is both whole and fragmentary and a small quantity is burnt. No stone or charcoal is evident.

N04/38 Grid reference 271.1 814.5 - Midden

The site consists of a lens of whole and fragmentary tuatua (*Paphies subtriangulata*) buried beneath spoil at the eastern side of the road. The lens appears as the remains of a deflated site, is approximately 5 m in length and 10 cm in depth. Some of the shell appears beach rolled. No stone or charcoal is evident.

N04/39 Grid reference 271 5 -Midden

The site consists of a midden disturbed in road construction. On the east side of the road the midden is approximately 1.5 m in length and 10 cm deep and is sitting on the clay pan under 40 cm of accumulated sand. Contents include whale bone, fragmentary and burnt tuatua (*Paphies subtriangulata*). On the west side of the road the site is 1 m in length and 5 cm in depth and is sitting on the clay pan under 90 cm of sand.

N04/40 Grid reference 275.1 817 -Midden

The site consists of a sparse surface scatter of three or four tuatua (*Paphies subtriangulata*) shells across the access track. Little context is evident for this site.

N04/41 Grid reference 274.5 810.4 - Midden

The site consists of four deflated shell caps within an area of 20 m by 20 m. The shell caps are approximately 1 m in height and are largely covered in pine needles. The middens are largely comprised of tuatua (*Paphies subtriangulata*). Much of the shell is burnt and crushed. One of the shell caps contains fire-fractured stone.

Discussion

All the sites recorded within compartment 1001 consist of deflated middens. The majority of sites occur within 200 m of the coast and the majority of these occur on the first dune face behind the deflation area. Two midden sites were located towards the middle and back sections of the compartment. The main shellfish species represented in these sites occurring in each of the middens recorded in the compartment. In a number of the middens the shell is fragmentary and burnt and occurs with fire fractured stone and occasional scatters of charcoal. As with the other compartments surveyed the principal activities represented by these sites consist of the procurement and processing of tuatua from the intertidal of the Ninety Mile beach. The presence of whale bone at site N04/39 also indicates the expedient butchering of stranded whales for food and bone for industrial purposes. The middens tend to be small and deflated and are likely to have resulted only from short term episodes of shellfishing at each location.

During the survey of the eastern boundary of the compartment a number of sites were observed lying immediately outside the forest on Crown land. These included a pa at the southern end of Lake Rotoroa and an open settlement at the end of a peninsula extending into an unnamed swamp. The existence of these sites 2 km inland from the coast, may provide some context for both the prehistoric coastal middens and middens situated in the middle and rear of the compartment.

A single historic midden, N04/28, was identified at the edge of a clearing at the western boundary of the compartment. The site consisted of a large shell cap incorporating a remnant of an intact lens on its summit. Initially there appeared little to distinguish the site from the number of prehistoric middens in the area. However, a broken pale green glass fragment consisting of the shoulder, neck and top of a bottle and incorporating the letter "U" was recovered eroding from the midden (Plate 4). This has been identified as a small size aromatic Schnapps bottle manufactured by Udolpho Wolfe, Schiedam, Holland, dating from the period 1860-1910 (Brassey pers. comm.). Historic middens within the forest on the Aupouri Peninsula have been previously recorded (Coster and Johnston 1980:5; Olsen and Hurst 1986:3).

The area in the vicinity of compartments 1001 and 1002 was visited by a missionary party under the direction of William Williams in December 1832 who described the mobile shifting dune complex as completely barren. However, he described a large settlement on the Kaitaia plain behind the dune complex and another settlement at Waro (Ahipara) (Williams in Mathews 1961:32). Dieffenbach, who visited the region in 1840, recorded that select areas on the eastern margin of the consolidated dune complex to the north of Ahipara, were favoured areas for the cultivation of kumara (Dieffenbach Vol. I 1843:217). While these two accounts derive only from brief visits, it would appear likely that the historic middens and probably the prehistoric middens in this area of the beach resulted from seasonal shellfish gathering activities by the communities living either within the consolidated dune complex or on the Kaitaia plain.

Conclusion

The majority of the sites recorded in the compartment occur under the macrocarpa windbreak or in clear areas in the front of the compartment and are unlikely to be directly affected by the thinning programme. Many of the sites consist only of sparse deflated scatters of fragmentary tuatua shell and are of limited scientific value. However, there are sites within the compartment that are in better condition and are more of a unique statement of the archaeology in this area of the dune system.

Recommendations

Compartment 1001

1. Sites N04/27 and 28 remain unmodified through any future forest development within the compartment.



Plate 3. A WEEDER RECOVERED FROM FARM DRAIN SPOIL,
BEAZLEY PROPERTY, MOTUTANGI.

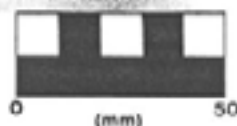


Plate 4. AN AROMATIC SCHNAPPS BOTTLE FROM SITE NO4/28,
COMPARTMENT 1001.

2. Sites N04/27 and 28 are marked on the ground with white painted tanalised posts and aluminium tags incorporating a 15 m buffer zone around each site. This work, funded by Timberlands, should be undertaken by archaeologists.
3. The location of sites N04/27 and 28 is entered on to the computerised Forest Stands Record system.
4. The location of sites No4/27 and 28 is shown on compartment maps.
5. Timberlands Northland District apply for an Authority to Modify sites N04/23-26 and N04/29-41 from The Director, NZ Historic Places Trust, P O Box 2629, Wellington.

Compartment 1002

Description

Compartment 1002 is situated on the foreshore approximately 2 km south of the West Coast Road and Waipapakauri ramp and is the southern most compartment in the Aupouri Forest (Fig. 1). The area on which the compartment was planted was a narrow mobile dune complex. Judging from the network of decaying fencelines along the foreshore component, it would appear that the area was farmed prior to its incorporation into the forest. Areas of pasture are still evident within the compartment, but for an unknown reason were not planted in pines. The compartment was planted over a two year period, 1974-75, and consequently the trees are now approaching maturity. However, considerable areas of stunted pines occur on the western margin of the compartment inside the macrocarpa shelter belt. Most of the clear areas within the compartment are under pasture. However, some areas contain a thick mat of coastal vegetation.

Survey method

The forest cover in this compartment amounted to approximately 95%. The clear areas were all restricted to the foreshore area of the compartment, apart from a single patch at the rear of the compartment. Consequently the survey of the compartment was restricted to walking the areas in the vicinity of the shelter belt and the clear areas along the coast road. Ultimately only some 5% of the compartment was surveyed in detail. All sites identified were described and their locations marked on the aerial half tone photographs.

Survey results - Archaeological Sites

A total of 12 archaeological sites were identified within the compartment (Fig. 7). These consisted of:

Midden	12
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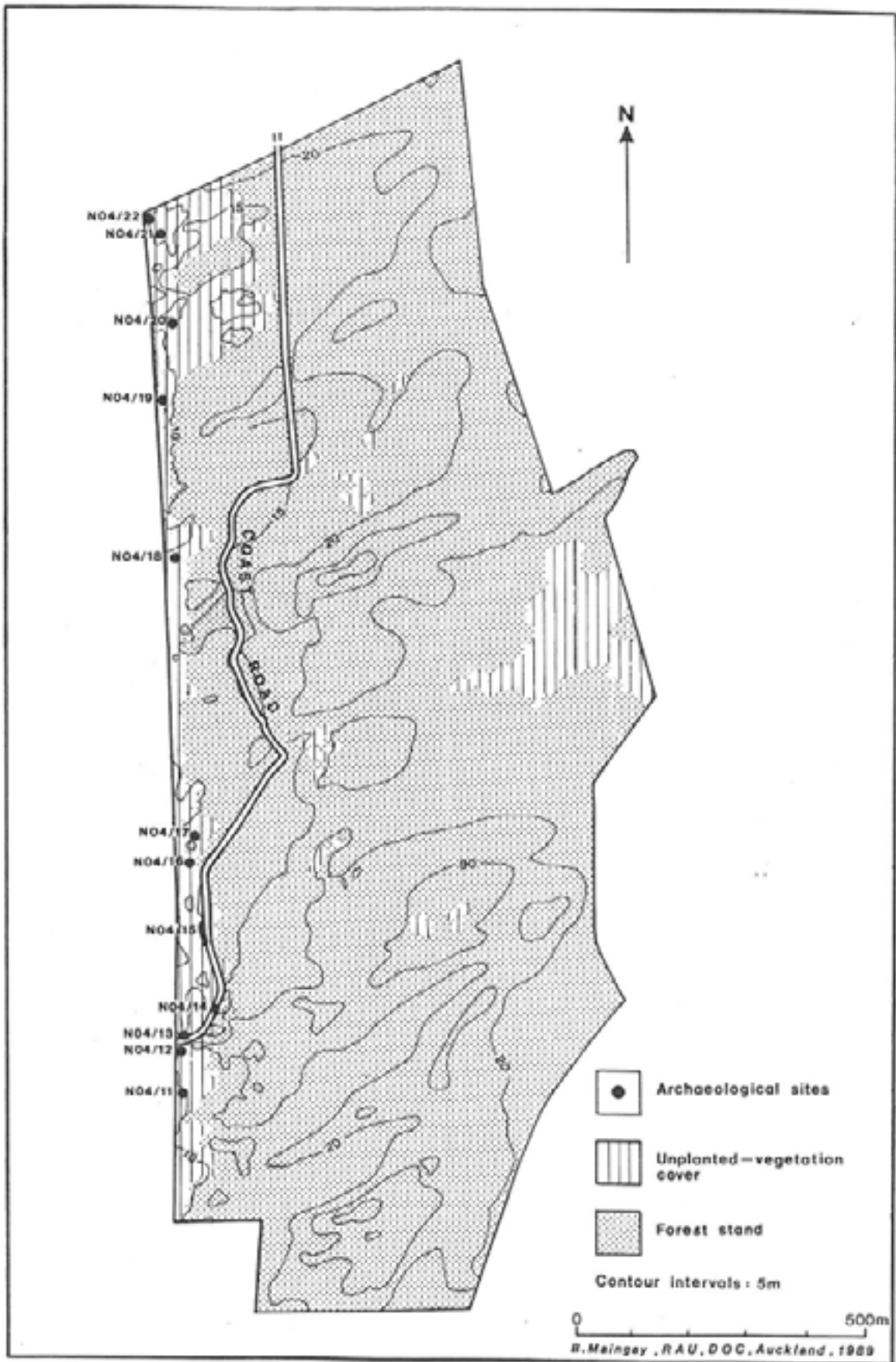


Figure 7. AUPOURI FOREST SURVEY - COMPARTMENT 1002.

Site Description

N04/11 Grid reference 269.9 790.9 -Midden

The site consists of a surface scatter of fragmentary tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*) scattered over an area of 6 m by 8 m underneath the macrocarpas. No stone, charcoal or burnt shell is evident. The site is deflated and eroded downslope.

N04/12 Grid reference 270 791.5 -Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 6 m by 6 m under the macrocarpas. A small quantity of burnt shell is also scattered over the site. No stone or charcoal was evident.

N04/13 Grid reference 269.8 791.9 -Midden

The site consists of a small surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) on the track over an area of 3 m by 4 m. The site is deflated and further disturbed by road construction.

N04/14 Grid reference 270.4 792.9 -Midden

The site consists of a lens of whole and fragmentary tuatua (*Paphies subtriangulata*) approximately 4 m in length and over 20 cm in depth. (Depth difficult to establish as lens is covered at base). The site is exposed in the eastern road cutting. Much of the shell is whole and appears to be burnt. A small quantity of charcoal is present though no stone.

N04/15 Grid reference 270.7 794 -Midden

The site consists of a scatter of tuatua (*Paphies subtriangulata*) extending for approximately 50 m along the Sweetwater Block Road. The shell is sparsely dispersed along the track. Much of the shell is in a fragmentary condition.

N04/16 Grid reference 270 795.1 -Midden

The site consists of a surface scatter of partially burnt tuatua (*Paphies subtriangulata*) spread over and along the sides of the road intersection over an area 30 m by 20 m in extent. The site appears concentrated on the southern side of the intersection. A few small cooking stones are scattered across the site and a single obsidian flake was recovered from the road surface.

N04/17 Grid reference 269.9 795.7 -Midden

The site consists of a lens of midden eroding from the edge of a stabilised sand dune within the macrocarpa windbreak. The lens is approximately 3 m in length and 30 cm

deep. The midden consists almost entirely of fragmentary medium size tuatua (*Paphies subtriangulata*). A considerable quantity of the shell is burnt and is mixed with the occasional cooking stone. While some shell has eroded from the site, much of the midden is still *in situ*.

N04/18 Grid reference 269.7 800.2 -Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) over an area of 3 m by 3 m. The shell is sparsely scattered and is visible eroding through the grass. No stone or charcoal is evident.

N04/19 Grid reference 269.6 802.8 -Midden

The site consists of a surface scatter of tuatua (*Paphies subtriangulata*) mixed with a small quantity of fire fractured rock. The site extends south to approximately 15 m past an old fence line that extends at right angles to the shelter belt towards the beach. The shell is sparse and widely scattered over an area 40 m by 10 m.

N04/20 Grid reference 269.3 803.9 -Midden

The site consists of a surface scatter of whole and fragmentary tuatua (*Paphies subtriangulata*) and toheroa (*Paphies ventricosa*) over an area of 10 m by 8 m. Some of the shell appears burnt. The site is eroding and is partially covered in low coastal vegetation. No stone or charcoal is visible though is likely to be present.

N04/21 Grid reference 269.5 805.7-Midden

The site consists of an extensive surface scatter of tuatua (*Paphies subtriangulata*) in the base of an extended blow out over an area of 40 m by 30 m. The shell is mainly fragmentary though some is whole. Approximately 40% of the shell is burnt. The site is extensive and a further small quantity of shell is eroding down the scarp at the front of the blow out through the windbreak.

N04/22 Grid reference 269.1 806 -Midden

The site consists of a small lens of midden exposed in the eastern face of a dune blow out. The lens is approximately 50 cm in length and 40 cm in depth. The lens is eroded down the side of the blow out over an extensive scatter of shell at the base. Contents of the midden include tuatua (*Paphies subtriangulata*), toheroa (*Paphies ventricosa*) and a single dolphin (*Delphinus dephis*) vertebra. A number of cooking stones and a large beach cobble were also evident at the site.

Discussion

All sites recorded within the compartment consist of middens and all occur on the western boundary within 100 m from the coast. All the middens are deflated. However

three sites, N04/14, 17 and 22, retain partially *in situ* lenses from which the associated shell scatters originated. Tuatua shell in either whole, fragmentary or burnt condition, comprises the entire contents of nine of the twelve recorded sites and is mixed with small quantities of toheroa at three other sites, N43/11, 20 and 22, and at the latter also with a single dolphin vertebra (Plate 2) (Smith pers. comm.). Fire-fractured rock and charcoal is evident at some sites and two large beach cobbles similar to that identified at site N04/10 in compartment 65 were recorded at site N04/21.

The sites contained very little in the way of artefacts. Only a single obsidian flake was recovered from N04/16. No sites recorded within the compartment exhibited any evidence to suggest that occupation at each location was anything other than short term.

Site situated in the eastern wall of a blow out, provided an interesting insight into the possible context for many of the seemingly extensive surface shell scatters. Wind erosion on the front surface of the blow out had naturally half sectioned a single small firescoop approximately 50 cm in length and 30-40 cm deep. The eroded material from the firescoop had fanned out below the feature to cover an area in the base of the blow out of approximately 20 by m. In this case the extensive shell scatter had originated from a single episode and many of the other midden sites may have resulted from similar prehistoric events.

Conclusion

The sites recorded recorded within the compartment are generally in poor condition and, as with the majority of middens recorded during the survey, are of limited public or scientific value. Only a single site within the compartment contains elements that are still in their original depositional context, an attribute made more significant through the fact that so few *in situ* middens were recorded during the survey.

Recommendations

Compartment 1002

1. Site N04/17 remains unmodified through any future forest development within the compartment.
2. Site N04/17 is marked on the ground with white painted tanalised posts and aluminium incorporating a 15 m buffer zone around each site. This work, funded by Timberlands, should be undertaken by archaeologists.
3. The location of site N04/17 is entered on to the computerised Forest Stands Record system.
4. The location of site N04/17 is shown on compartment maps.
5. Timberlands Northland District apply for an Authority to Modify sites N04/43 and N04/18-22 from The Director, NZ Historic Places Trust, P O Box 2629, Wellington.

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