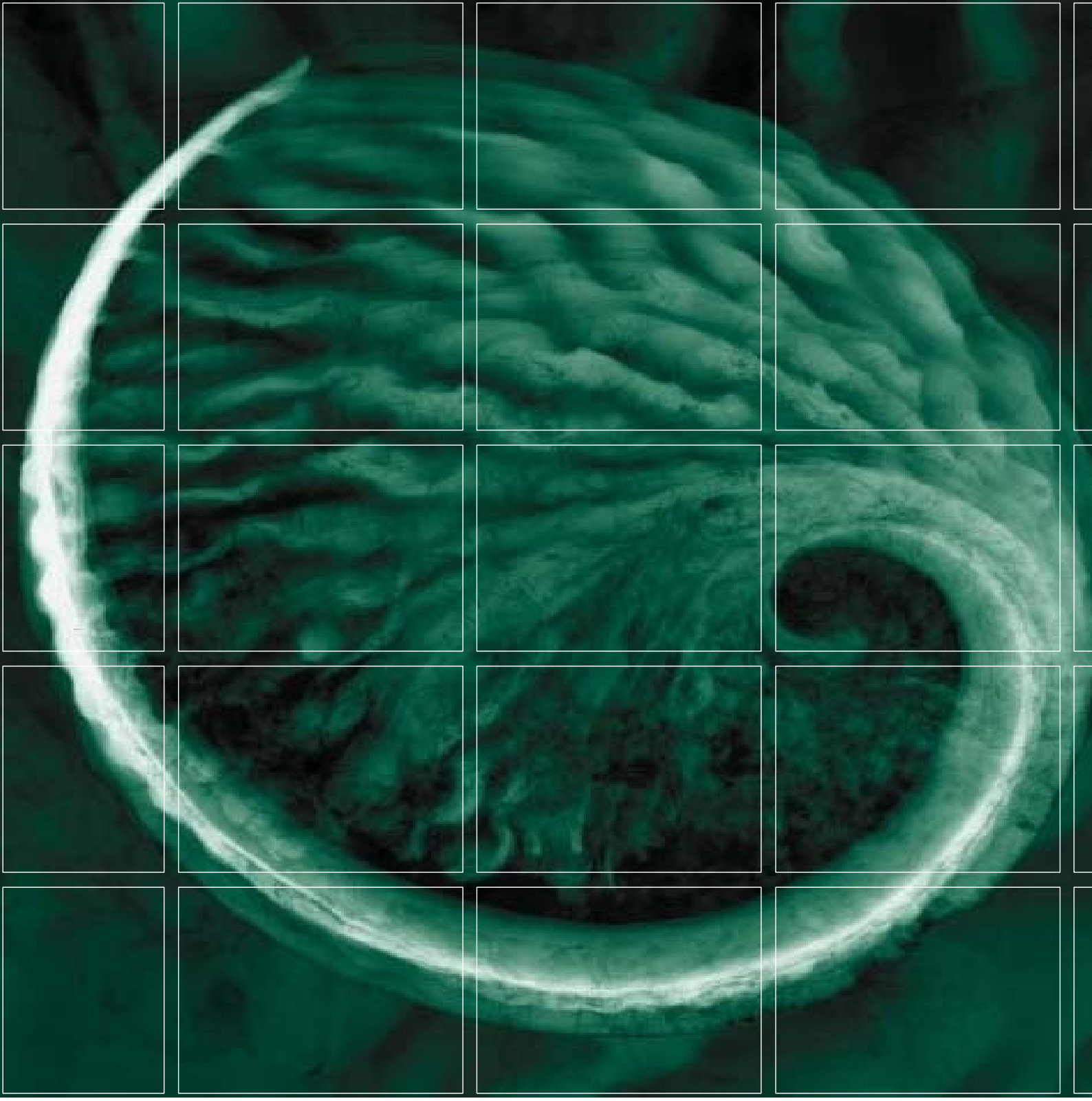


Riverside at Tea Gardens

Aboriginal Heritage Assessment

For Crighton Properties Pty Ltd

August 2008

0043707 Final

www.erm.com.

Delivering sustainable solutions in a more competitive world

ERM

Riverside at Tea Gardens

Aboriginal Heritage Assessment

For Crighton Properties Pty Ltd

August 2008

0043707Final

www.erm.com.

Approved by:	*Steve O'Connor*
Position:	Principal Consultant
Signed:	
Date:	*25 August 2008*

Environmental Resources Management Australia Pty Ltd Quality System

CONTENTS

CONTENTS

LIST OF ANNEXES

LIST OF FIGURES

1 INTRODUCTION

Environmental Resources Management Australia (ERM) was commissioned by Crighton Properties Pty Ltd to prepare an environmental assessment to accompany an application under Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) for the proposed Riverside mixed use development at Tea Gardens NSW. This report provides an assessment of the potential impacts to Aboriginal heritage arising from the proposed development.

1.1 ASSESSMENT AIM AND OBJECTIVES

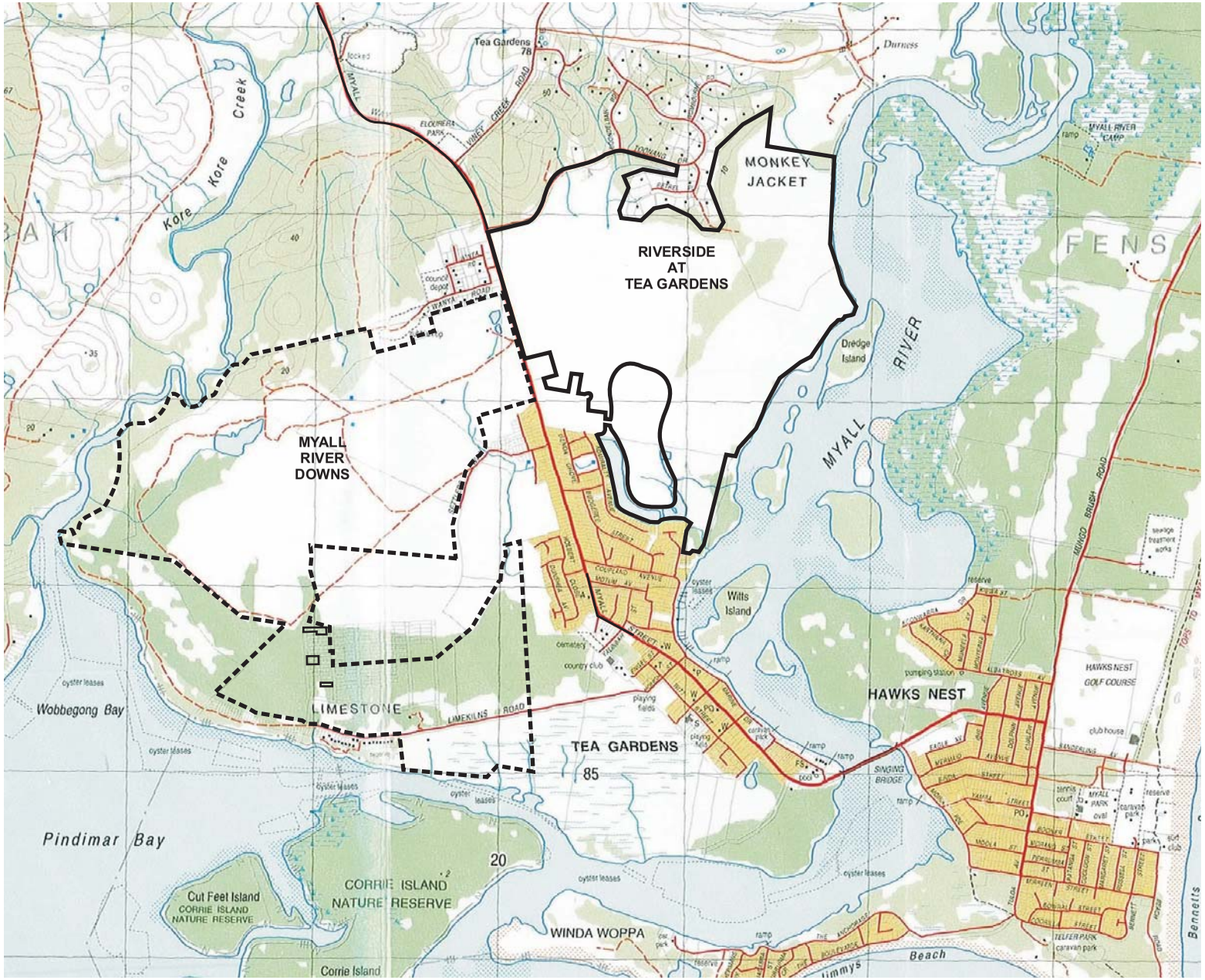
The overall aim of this assessment was to identify whether there are any Aboriginal heritage constraints to the proposed development. In order to achieve this aim, the following objectives were established:

- to review the environmental, historical and archaeological context of the study area;
- to ascertain the history of disturbance in the study area;
- to undertake a search for recorded Aboriginal sites in the local area;
- to consult with the Aboriginal community in regard to the social significance of the study area and any Aboriginal sites/objects incorporated within its boundaries;
- to undertake a field investigation of the survey area in conjunction with members of the Aboriginal community in order to identify and record any Aboriginal sites/objects present;
- to assess the impact of the proposed development on known Aboriginal sites; and
- to prepare recommendations on the management of Aboriginal heritage sites in consultation with the local Aboriginal community.

1.2 STUDY AREA AND PROJECT BACKGROUND

The Riverside study area is located within the Great Lakes local government area (LGA) on the Mid North Coast and incorporates Lot 1 DP 270100, Lot 10 DP 270100, Lot 19 DP 270100, Lot 30 DP 270100 and Lot 38 DP 270100.

It is approximately 229 hectares in area and has approximately a one kilometre frontage to Myall Street and a two kilometre frontage to the Myall River (see *Figure 1.1*). The Shearwater Residential Estate lies to the north of the study area and residential development of Tea Gardens is to the south.



Legend

Riverside at Tea Gardens
Site Boundary

Figure 1.1

Locality Plan

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Archaeology Assessment		
Drawing No:	0043707hv_EA_river_arch_01		
Date:	02/07/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	JW
Source:	1:25,000 Topo Series Port Stephens Sheet		
Scale:	Refer to Scale Bar		

N

0 250 500 750m

Environmental Resources Management Australia Pty Ltd
53 Bonville Avenue, Thornton, NSW 2322
Telephone +61 2 4964 2150

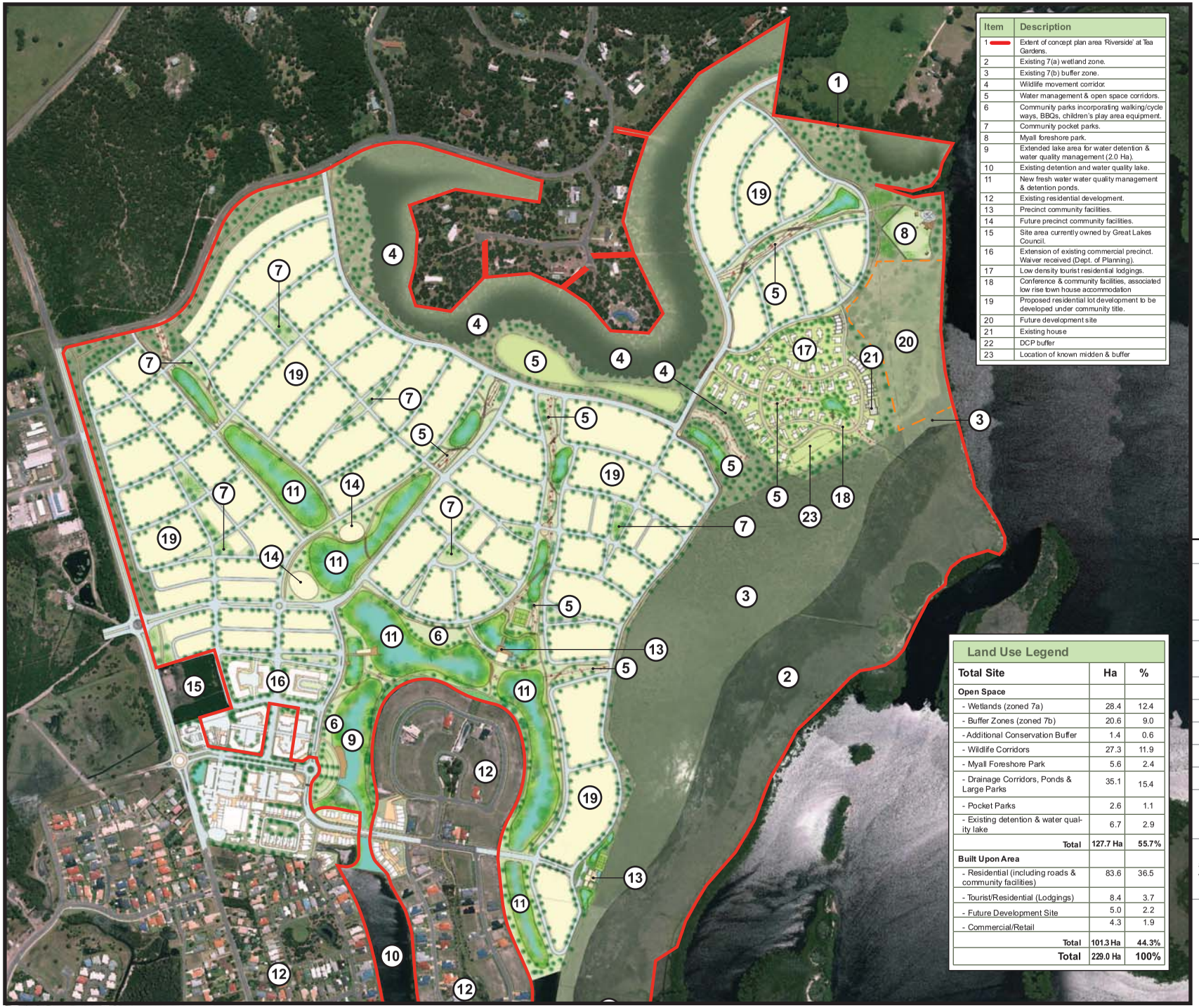
ERM

State Environmental Planning Policy No. 14 – Coastal Wetlands (SEPP 14) applies to wetlands within the eastern section of the study area adjacent to the Myall River. These wetlands, together with a significant buffer were clearly identified and zoned for environment protection when the site was rezoned in 2000 and will be conserved within the proposed development. The remainder of the study area is zoned for mixed-use urban development.

The proposed development consists of a mixed use over the majority of the site (see *Figure 1.2*). Concept Plan approval is sought for the following:

- residential development of the site (covering approximately 85 hectares), which will include the potential to create 1045 dwellings;
- an extension of the existing town centre on the north side of Shoreline Drive to accommodate a range of uses including additional retail and commercial uses, a child care and a motel (approximately 4 hectares);
- water sensitive urban design (WSUD) measures including a two hectare extension of the existing detention lake, the creation of three new freshwater detention ponds and numerous additional basins surrounded by parklands and the widening of the existing drainage channel between the detention lake and the Myall River to facilitate water quality management;
- an open space network comprising approximately 127 hectares in total which provides for public recreation, stormwater management and a wildlife corridor, and clubhouse and community facilities;
- an 8 hectare tourist/residential precinct (including a conference centre and accommodation) in the north east portion of the site and a foreshore park of 7.6 hectares;
- substantial areas (approximately 27 hectares) of the Residential 2(f) zoned land are proposed to be protected and enhanced as open space / wildlife movement corridors, over and above those already protected within the Environmental Protection 7(a) and 7(b) zones (which comprise approximately 28 and 20 hectares respectively);
- approximately 35 hectares of drainage reserves and large parks are also proposed;
- upgrading of intersections and associated road works and other construction works (such as cycleways) external to the site;
- access from Toonang Drive and Myall Street;
- an internal road network; and
- associated landscaping and infrastructure works.

Project approval is sought for Stages 1 to 9 and relates to Lot 1 DP 270100, Lot 19 DP 270100, Lot 30 DP 270100 and part of Lot 38 DP 270100.



Item	Description
1	Extent of concept plan area 'Riverside' at Tea Gardens.
2	Existing 7(a) wetland zone.
3	Existing 7(b) buffer zone.
4	Wildlife movement corridor.
5	Water management & open space corridors.
6	Community parks incorporating walking/cycle ways, BBQs, children's play area equipment.
7	Community pocket parks.
8	Myall foreshore park.
9	Extended lake area for water detention & water quality management (2.0 Ha).
10	Existing detention and water quality lake.
11	New fresh water water quality management & detention ponds.
12	Existing residential development.
13	Precinct community facilities.
14	Future precinct community facilities.
15	Site area currently owned by Great Lakes Council.
16	Extension of existing commercial precinct. Waiver received (Dept. of Planning).
17	Low density tourist residential lodgings.
18	Conference & community facilities, associated low rise town house accommodation
19	Proposed residential lot development to be developed under community title.
20	Future development site
21	Existing house
22	DCP buffer
23	Location of known midden & buffer

Land Use Legend

Total Site	Ha	%
Open Space		
- Wetlands (zoned 7a)	28.4	12.4
- Buffer Zones (zoned 7b)	20.6	9.0
- Additional Conservation Buffer	1.4	0.6
- Wildlife Corridors	27.3	11.9
- Myall Foreshore Park	5.6	2.4
- Drainage Corridors, Ponds & Large Parks	35.1	15.4
- Pocket Parks	2.6	1.1
- Existing detention & water quality lake	6.7	2.9
Total	**127.7 Ha**	**55.7%**
Built Upon Area		
- Residential (including roads & community facilities)	83.6	36.5
- Tourist/Residential (Lodgings)	8.4	3.7
- Future Development Site	5.0	2.2
- Commercial/Retail	4.3	1.9
Total	**101.3 Ha**	**44.3%**
Total	**229.0 Ha**	**100%**

Legend

Riverside at Tea Gardens Site Boundary

Figure 1.2

Concept Plan for Riverside at Tea Gardens

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Archaeology Assessment		
Drawing No:	0043707hv_EA_arch_02		
Date:	02/07/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	JW
Source:	Crighton Properties Concept Plan		
Scale:	Refer to Scale Bar		

N

0 200 400m

Environmental Resources Management Australia Pty Ltd
53 Bonville Avenue, Thornton, NSW 2322
Telephone +61 2 4964 2150

ERM

1.3 PROJECT TEAM

Jenna Lamb and Joanne Woodhouse (ERM Archaeologists) conducted the Aboriginal consultation and authored the report. Dr Diana Neuweger and Guadalupe Cincuinnegi (ERM Archaeologists) completed the field surveys and Oona Nicolson (ERM Principal Heritage Consultant) completed the technical review of the background research and predictive model.

2 *RELEVANT LEGISLATION*

Aboriginal cultural heritage in NSW is protected by the *National Parks and Wildlife Act 1974*. Land managers are required to consider the effects of their activities or proposed development on the environment under several pieces of legislation, principally the *Environmental Planning & Assessment Act 1979*. Cultural heritage, which includes Aboriginal heritage, is subsumed within the definition of "environment". Commonwealth legislation protecting Aboriginal heritage may also apply to Aboriginal heritage places in NSW in certain circumstances. Key legislation is summarised below.

2.1 *NATIONAL PARKS AND WILDLIFE ACT 1974 (NSW)*

All Aboriginal objects within the state of New South Wales are protected under Section 90 of the *National Parks and Wildlife Act 1974* (NPW Act).

Under Section 5 of the Act, "Aboriginal Object" means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

Sites of traditional significance that do not necessarily contain archaeological materials may be gazetted as "Aboriginal places" and are protected under Section 84 of the Act. This protection applies to all sites, regardless of their significance or land tenure. Under Section 90, a person who, without first obtaining the consent of the Director-General, knowingly destroys, defaces or damages, or knowingly causes or permits the destruction or defacement of or damage to, an Aboriginal object or Aboriginal place is guilty of an offence.

Amendments introduced by the *National Parks & Wildlife Amendment Act 2001* which strengthen the provisions of Section 90 have yet to commence.

The Department of Environment and Climate Change (DECC) is the statutory authority for the protection of Aboriginal objects and places within NSW, with the Director-General of that department the consent authority.

2.2 *ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 (NSW)*

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires that environmental impacts are considered in land-use planning, including impacts on Aboriginal and historical heritage. Various planning instruments prepared under the Act identify permissible land use and development constraints.

The NSW NPWS (now DECC) provide guidelines for Aboriginal heritage assessment, including those conducted under the EP&A Act 1979. Where

Aboriginal heritage assessment is conducted under the Integrated Development Approval process, a more detailed set of NPWS guidelines applies.

Where a development is approved under Part 3A of the Act, further approvals under the *National Parks & Wildlife Act 1974* and *Heritage Act 1977* are not required. In those instances management of heritage sites must follow the statement of commitments included in the Environmental Assessment.

2.3 ABORIGINAL AND TORRES STRAIT ISLANDER HERITAGE PROTECTION ACT 1984 (COMMONWEALTH)

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* protects areas and/or objects which are of significance to Aboriginal people and which are under threat of destruction. The Act can, in certain circumstances override state and territory provisions, or it can be implemented in circumstances where state or territory provisions are lacking or are not enforced. A significant area or object is defined as one that is of particular importance to Aboriginal people according to Aboriginal tradition. The Act must be invoked by or on behalf of an Aboriginal or Torres Strait Islander or organisation.

3 BACKGROUND

3.1 ENVIRONMENTAL CONTEXT

The purpose of this section is to provide environmental contextual information for use in developing a predictive model of site location for the study area.

Interactions between people and their surroundings are of integral importance in both the initial formation and the subsequent preservation of the archaeological record. Although social networks and cultural factors inevitably underpin all human behaviour, the nature and availability of resources including water, flora and fauna and suitable raw materials for the manufacture of stone tools and other items had (and continues to have) a significant influence over the way in which people utilise the landscape. Alterations to the natural environment also impact upon the preservation and integrity of any cultural materials that may have been deposited whilst current vegetation and erosional regimes affect the visibility and detectability of sites and relics. For these reasons, it is essential to consider the environmental context as a component of any heritage assessment.

3.1.1 *Geomorphology and Landforms*

Speight (1990) describes categories of landform divisions, including ten morphological types of landform element units. For archaeological investigations they divide the landscape into standardised elements that can be used for comparative purposes and predictive modelling. A number of landform units were identified within the study area, being slopes, ridges, flats, dunes and gullies/creeks. Site types most likely to occur on these landforms are shell middens and stone artefact sites (scatters and isolated finds; see *Table 3.1*). The study area is predominantly flat and low-lying within the southern portion, with a number of beach ridges and creek lines present in the north. The landscape drains down to the south and to the Myall River estuary to the east.

3.1.2 *Geology and Soils*

The study area predominantly overlies Quaternary sands comprising gravel, sand, silt and clay, with a small section in the north west overlying Carboniferous bedrock of the Wooton Beds, including sandstone, siltstone, claystone, shale, limestone and lavas (Newcastle 1:250,000 geological series). No stone outcrops appear tooccur in the study area. Axe grinding grooves are often located on sandstone where it occurs in association with water, but the lack of such outcrops indicates that this type of site will not occur in the study area. Stone art/engraving sites and shelter sites will also not occur, given the lack of outcrops.

Table 3.1 Aboriginal Archaeological Site Types

Site types	Definition
Stone artefact scatters	Stone artefact scatter sites, also known as open campsites, are usually indicated by surface scatters of stone artefacts and sometimes fire blackened stones and charcoal. Where such sites are buried by sediment they may not be noticeable unless exposed by erosion or disturbed by recent activities. The term campsite is used as a convenient label which, in the case of open sites, does not necessarily imply that Aboriginal people actually camped on the sites; rather it indicates only that some type of activity was carried out there.
Isolated finds	Sites consisting of only one identified stone artefact, isolated from any other artefacts or archaeological evidence. They are generally indicative of sporadic past Aboriginal use of an area.
Shell middens	Middens consist of accumulations of shell that represent the exploitation and consumption of shellfish by Aboriginal people. Shell species may be marine, estuarine or freshwater depending on the environmental context and middens may also include other faunal remains, stone artefacts, hearths and charcoal.
Shelter sites	Sandstone shelters and overhangs were used by Aboriginal people to provide campsites sheltered from the rain and sun. The deposits in such sites are commonly very important because they often contain clearly stratified material in a good state of preservation.
Grinding grooves	Grooves resulting from the grinding of stone axes or other implements are found on flat areas of suitable sandstone. They are often located near waterholes or creek beds as water is necessary in the sharpening process. In areas where suitable outcrops of rock were not available, transportable pieces of sandstone were used.
Quarries	These are areas where stone was obtained for flaked artefacts or ground-edge artefacts, or where ochre was obtained for rock paintings, body decoration or decorating wooden artefacts.
Art sites	Aboriginal paintings, drawings and stencils are commonly found where suitable surfaces occur in sandstone shelters and overhangs. These sites are often referred to as rock shelters with painted art. Rock engravings, carvings or peckings are also found on sandstone surfaces both in the open and in shelters. These are referred to as rock engraving sites.
Scarred trees	Scarred trees bear the marks of bark and wood removal for utilisation such as canoes, shields, boomerangs or containers. It is often difficult to confidently distinguish between Aboriginal scars and natural scars or those made by Europeans.
Burial sites	Burials may be of isolated individuals, or they may form complex burial grounds.
Stone arrangements, carved trees and ceremonial grounds	These site types are often interrelated. Stone arrangements range from simple cairns or piles of rocks to more elaborate arrangements; patterns of stone laid out to form circles and other designs, or standing slabs of rock held upright by stones around the base. Carved trees are trees with intricate geometric or linear patterns or representations of animals carved into their trunks. Ceremonial grounds and graves were often marked by such trees. Bora grounds are a common type of ceremonial site and they are generally associated with initiation ceremonies. They comprise two circles, generally edged with low banks of earth but sometimes of stone, a short distance apart and connected by a path.

Stone from the Nerong Volcanics group outcrops in the area surrounding Port Stephens. The Nerong Volcanics include a range of stone types that are not typically used to manufacture artefacts but have been reported as being utilised and have been found in archaeological sites some distance from their source (Dean-Jones 1990:116; Umwelt 2000:7.8; Dyall 2004:144). To the northwest of Port Stephens, outcrops of various igneous and sedimentary rocks suitable for stone tool manufacture (including tuff) are present (Dean-Jones 1990:18). No cobbles of suitable raw material for stone artefact manufacture appear to occur naturally within the study area. Therefore, stone quarry sites are not expected to occur.

The soils identified within the study area are alluvium, siliceous sand, leached sand, structured plastic clay, salt marsh/heath sands, sand podzols, brown and yellow podzolics and organic sands/muds (Gardner Browne et. al. 1991:30). In the wetland area, salt marsh soils are present, with a number of areas of sand podzols/siliceous sands throughout the study area, including one in the wetlands. Lacustrine structured plastic clays occurred in the north west of the site, with bedrock soils in the central north. The remainder of the study area comprised inner barrier/organic sands/muds. Of particular interest are the salt marsh soils, which were noted to be strongly acid and consist of a dark grey black humate rich quartz sand surface up to 30 cm deep, underlain by a lighter grey sand, with a minor amount of shell material in the sand (Gardner Browne et. al. 1991:31). This type of soil (with black organic sand and shell material noted) occurs in the eastern portion of the study area and appears likely to contain shell midden material.

3.1.3 Drainage

The availability of water has significant implications for the range of resources available and the suitability of an area for human occupation. The study area is located in the Port Stephens catchment, and is bounded to the east by the Myall River estuary. Although the estuary is unsuitable for drinking it would have attracted a wide variety of animals and supported a range of plant species and shellfish/marine species, which are likely to have been used by Aboriginal people in the past.

A small intermittent creek is present in the north eastern corner of the study area, draining into the Myall River. Several indefinite intermittent drainage lines are present in the north, draining down the slope to the low-lying part of the study area. It has also been noted that the study area drains to a basin excavated at its southern end, with a drain providing an outlet to the Myall River (Gardner Browne et. al. 1991:2; see also *Section 3.1.4*).

The location of the estuary indicates that shell middens are likely to be present in the study area. The presence of small creeks indicates that stone artefact sites may occur, however the lack of large creeks in the study area suggests that large stone artefact sites are unlikely to occur. Stone artefacts are most likely to occur in the context of middens, being scattered in very low numbers throughout the remainder of the study area.

3.1.4 Land Use and Disturbance

Apart from a strip of the wetlands and a small area in the north eastern corner, the study area was cleared in 1932 for a pine plantation which has heavily disturbed the area. Large areas of the plantation were burned out in 1979 and it was not maintained after this time.

The Local Environmental Study (LES) undertaken in 1991 (Gardner Browne et. al. 1991:2) also noted the following disturbance to the study area:

- evidence of a former settlement at the northern end of the study area, with associated clearing;
- a gravel track extending into the study area from the Shearwater Estate to the north, where sand had been removed and soil dumped; and
- a basin excavated at the south eastern end of the study area adjoining residential development, with a drain providing an outlet to the Myall River, and associated vegetation clearance.

3.1.5 Flora and Fauna

Vegetation in the study area comprises immature pines and coastal scrub regrowth including Eucalypts, Angophora, Allocasuarina, Blackbutt, Banksia, Acacia, Bottlebrush, Paperbark and ferns (Brayshaw 1988:2; Gardner Browne et. al. 1991:42-3). The wetlands are covered with reeds, swamp grasses and other littoral species, with some stands of *Casuarina glauca* (Swamp Oak). Mangroves fringe the river bank.

As mentioned above, the majority of the study area was cleared in 1932 for a pine plantation, however the north eastern corner was not cleared and contains some large trees in an area of Open Forest and Wet/Swamp Schlerophyll Forest. Despite targeted surveys Brayshaw did not locate any scarred or carved trees in this area during her survey in 1988.

The study area is located adjacent to the Myall River estuary, which supports an extensive seagrass and mangrove habitat as well as providing shellfish such as cockles and oysters. It is likely that shell middens may be present within the study area.

3.2 ARCHAEOLOGICAL CONTEXT

The purpose of this section is to provide archaeological background information for use in developing a predictive model of site location for the study area.

3.2.1 AHIMS Results

A search of the Aboriginal Heritage Information Management System (AHIMS) Aboriginal Sites Database at DECC was undertaken on 21 May 2007, for a 12 km x 13 km area centred on the study area. A total of 31 recorded sites were identified within this search area (see *Figure 3.1*), which comprised 18 middens (one of which is associated with axe grinding grooves and one of which is associated with burials at North Head), eight stone artefact scatters (one of which is associated with a Potential Archaeological Deposit [PAD]), three burials (on the beach at North Head and Providence Bay, and at Winda Woppa), one set of axe grinding grooves and one natural mythological (ritual) site at Tomaree Headland.

This search of the local area shows that middens are the main Aboriginal site type recorded in the area, and these are predominantly located on the beach and bays of Port Stephens, and along the estuaries and rivers of the area (including the Myall River).

One midden site (38-5-0148) has been recorded in the eastern portion of the study area, but is not located in the proposed development area (see *Section 3.2.2*). Two other middens (38-5-0076 and 38-5-0147) are located within 300 m to the south of the study area. No other sites are located within 1.5 km.

3.2.2 Previous Local Studies

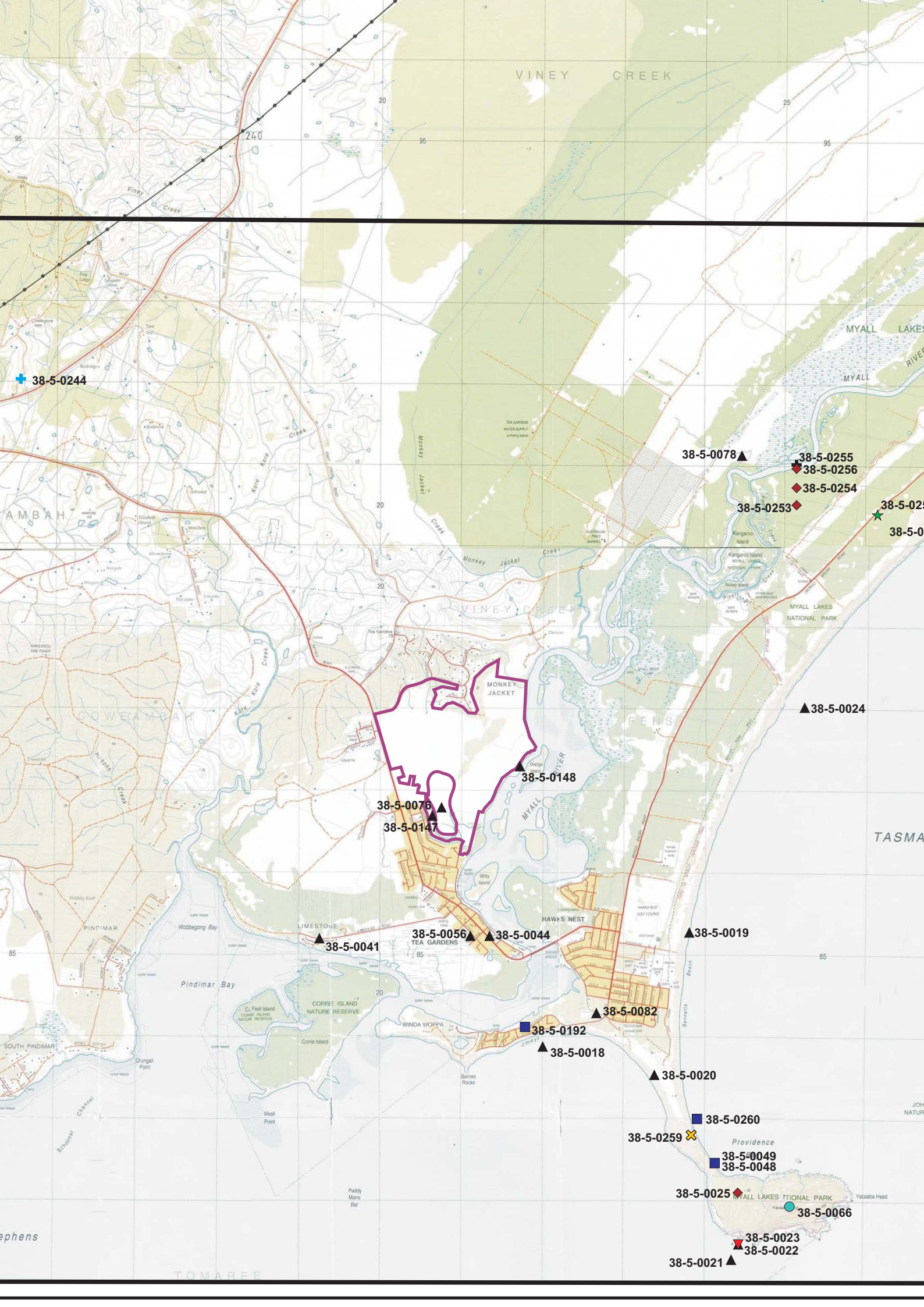
A number of archaeological investigations have been undertaken within and adjacent to the study area. These are outlined in the following pages, to establish a basis on which the predictive model for the study area may be formulated.

Previous Archaeological Work in the Study Area – Site 38-5-0148

The study area has been previously surveyed by Brayshaw (1988), who traversed the entire area on foot, focussing on areas of ground surface exposure, mature trees, and environmental features which may have formed a focus for Aboriginal occupation (refer to *Annex A*). During this survey, Brayshaw located one site, a shell midden comprising four exposures within a 220 m x 40 m strip along the bank of the Myall River opposite the southern part of Dredge Island (AHIMS site 38-5-0148; see *Figure 3.1*).

All of the exposures occurred on sandy elevations vegetated by stands of Swamp Oak, ferns and grasses. No stone artefacts or charcoal was identified within the site.

A number of factors including increasing population pressure on the North Coast has impacted on many sites including shell middens, meaning that the remaining shell middens have become more significant, especially those that by their nature or location mean they are likely to continue to survive. Given


38-5-0244
38-5-0078
38-5-0255
38-5-0256
38-5-0254
38-5-0253
38-5-0024
38-5-0148
38-5-0076
38-5-0147
38-5-0056
38-5-0044
38-5-0041
38-5-0019
38-5-0082
38-5-0192
38-5-0018
38-5-0020
38-5-0260
38-5-0259
38-5-0049
38-5-0048
38-5-0025
38-5-0066
38-5-0023
38-5-0022
38-5-0021
MONKEY JACKET
MYALL LAKES NATIONAL PARK
TEA GARDENS
HAWKS NEST
CORRIE ISLAND NATURE RESERVE
WINDA WOPPA
PINDIMAR
LIMESTONE
Pindimar Bay
Wobbegong Bay
Providence
TOMAREE
TASMA

the lack of disturbance to this midden, the potential depth of deposit and the range of shell species represented (cockle, oyster, whelk and pipi), Brayshaw assessed the site as having high archaeological significance, and recommended that it be preserved (refer to *Annex A*).

Previous Archaeological Work to the South of the Study Area

The area immediately south of the study area was surveyed by Dallas (1982), who located a disturbed shell midden (AHIMS site 38-5-0076; see *Figure 3.1*) on a sandy elevation above a swamp adjoining the Myall River. The shell species represented were whelk, cockle and oyster. Flaked stone artefacts were also present. Given the shallow deposit and high level of disturbance, the site was assessed as having low archaeological significance. A Consent to Destroy (S.90) permit for this site was issued in 1982, however the permit lapsed and was not finalised until 1994.

The site was reinvestigated by Kinhill Engineers (1994), at which time a new midden exposure was recorded approximately 100 m to the south west (AHIMS site 38-5-0147; see *Figure 3.1*). Kinhill Engineers conducted a program of test excavation (under a S.87 permit) on this new site, and assessed the site as being of moderate to low archaeological significance, with further excavation work unlikely to add to an understanding of the site. Whelk, oyster and some cockle were recovered at this site, as were stone artefacts.

A small area proposed for a caravan park on the southern edge of Tea Gardens was surveyed by Dean-Jones (1989), and no archaeological evidence was found.

Land at the mouth of the Myall River, on the southern edge of Hawks Nest, was surveyed by Byrne (1985). Four occurrences of oyster shell were located over several hundred metres along a vehicle track on the edge of a mangrove swamp, and one stone artefact was located. The site was identified as a short-stay camp with limited extent, depth and shell species, and had been heavily disturbed by the vehicle track. It was assessed as being of low archaeological significance.

Previous Archaeological Work to the West of the Study Area

The area immediately to the west of the study area was surveyed by Silcox (1998). One stone artefact scatter (comprising two artefacts) and one isolated find were located during the survey, and these were both assessed as having low archaeological significance.

Previous Archaeological Work to the North of the Study Area

An area proposed for residential development at Monkey Jacket was surveyed by Rich and Brayshaw (1983), and no archaeological evidence was found.

Summary

The above-mentioned studies demonstrate that the study area and its immediate surroundings have been previously surveyed. The methodologies for these surveys appear to have been adequate, and no sites have been located within the current proposed development area (the midden site 38-5-0148 is located in protected SEPP 14 wetlands and surrounded by a buffer zone).

3.2.3 Regional Archaeological Context

By far the bulk of the archaeological investigations in the Port Stephens catchment have been carried out in relation to development projects. Consequently, the locations of previous studies are generally linked to the primary areas of development, rather than reflecting a cohesive research design. Shell middens are the most common site type along the coast, and tend to occur most frequently in association with beach dunes or estuaries, and to a lesser extent with rock platforms/headlands, particularly in close proximity to fresh water (Sullivan 1982). While shell middens are the most common type of site on the coast, other sites recorded include stone artefact scatters, scarred trees and axe grinding grooves, and burials may be located in soft dune sand either alone or in association with middens.

Sites on the NSW North Coast have been dated predominantly to the last 6,000 years, which corresponds to the time when sea levels rose to their present level (Lampert and Hughes 1974). During the period of lower sea level, the NSW coast would have been located a great distance to the east. Archaeological sites on that ancient coastline would have been submerged below the rising sea levels following the last glacial maximum when sea levels were at their lowest (approximately 18,000 BP).

Most middens on the NSW North Coast date to the last 1,000 years, with many dating to from 300-500 years Before Present (BP) and later (Sullivan 1982:124). However, it is argued that evidence of late Pleistocene occupation in the nearby Hunter region has been identified at a number of sites, namely Warkworth West, Fal Brook and Lemington (AMBS 2002; ERM 2004:15; Koettig 1987; Kuskie 2000). Whilst the representation of Pleistocene sites in the region is limited, it should not be assumed that this apparent paucity of dated sites reflects a lack of human activity. Based on the current models for the peopling of Australia and the evidence from surrounding regions, it seems likely that the Hunter region was initially occupied at some time between 20,000 and 40,000 years ago (ERM 2004:68).

Previous archaeological work undertaken in the region and enthnohistorical information are used as the basis of a series of predictions about the location and content of archaeological sites in the area. The most relevant and useful of these predictions (albeit very general) are as follows (Sullivan 1982):

- beaches, rivers and estuaries were important sources of food, particularly fish and shellfish (especially pipi);
- the exploitation of estuaries was also commonly associated with exploitation of terrestrial resources;
- the use of rocky shorelines was of minor importance;
- short-stay camps commonly occur along beaches and consist of a thin layer of shell (often pipi) and hearthstones, although flaked stone artefacts are rare; and
- longer-stay camps are usually located on the margins of several environmental zones, eg. near the edges of lagoons or estuaries with access to beaches or floodplains, and apart from shell and hearthstones they may also contain bone and flaked stone artefacts.

3.3 PREDICTIVE MODEL OF SITE LOCATION

Based on the archaeological and environmental context outlined above, it is predicted that shell middens are the type of site most likely to be found in the study area, particularly on the eastern boundary adjacent to the Myall River, with its rich resources. Stone artefacts are more likely to be found in association with middens, rather than being represented by individual sites.

Scarred or carved trees may be present in the north eastern corner of the study area in the area of remnant vegetation. Based on the high levels of disturbance that has occurred over the majority of the study area from the pine plantation, no stone arrangements or ceremonial grounds would be likely, and a lack of stone outcrops and cobbles within the study area indicates that stone quarry sites, shelter sites, rock art/engravings and axe grinding grooves will not occur.

Recorded burials in the vicinity indicate that burials are more likely to occur in middens in the soft sand of the beach and the bays of Port Stephens, rather than in the estuaries. There is no indication that burials are more likely to occur in the study area than in any of the surrounding localities.

4 CONSULTATION

Aboriginal consultation is required for any assessment of Aboriginal heritage. The Department of Environment and Climate Change (DECC) has released the Interim Community Consultation Requirements guideline (2004) for Aboriginal consultation in relation to any study that might eventually be used to support an application under Part 6 of the National Parks and Wildlife Act 1974 (ie. Section 90 consents to destroy sites and Section 87 permits to collect/investigate). The interim guideline sets out a process of inviting Aboriginal groups to register interest as a party to consultation (including local press advertisement), seeking responses on proposed assessment methodology, and seeking comment on proposed assessments and recommendations. The interim guideline requires proponents to allow 10 working days for Aboriginal groups to respond to invitations to register, and then 21 days for registered Aboriginal parties to respond to a proposed assessment methodology. An additional ten days are allowed for groups to review a draft report and comment on the results and management recommendations made.

The consultation for the proposed development of the Riverside site has been carried in accordance with the DECC guideline.

Letters requesting advice on Aboriginal organisations to consult and any known heritage issues to be taken into consideration in the area were faxed on 4 May 2007 to:

- The former NSW Department of Environment & Conservation (now DECC);
- Registrar, Aboriginal Land Rights Act 1983 (NSW);
- Great Lakes Council; and
- Karuah Local Aboriginal Land Council (KLALC).

A local press advertisement requesting Aboriginal individuals and groups interested in being consulted on this project to write to ERM, was placed in the Myall Coast Nota newspaper on 10 May 2007. One response to this advertisement was received, from Jan Webb.

DECC identified one additional Aboriginal party to be contacted:

- Guiwain Elder Group.

The Registrar identified one additional Aboriginal party to be contacted:

- Interim Board of Management for Worimi Conservation Lands.

The Interim Board of Management for Worimi Conservation Lands identified one additional Aboriginal party to be contacted:

- Maaiangal Cultural & Heritage.

These parties were contacted about whether they wished to be consulted on this project. In addition, each party was asked to identify any further individuals or groups who would be interested in being consulted regarding this project. Three responses to these letters have been received, from KLALC, Jan Webb and Interim Board of Management for Worimi Conservation Lands. Maaiangal Cultural & Heritage identified the study area as being outside their area of interest.

The three parties that registered an interest were provided with a proposed desktop assessment methodology in June 2007 and a survey methodology in March 2008. Verbal responses to these methodologies were received from KLALC and Jan Webb, each indicating their agreement. Field survey was undertaken in accordance with the agreed methodology on Monday 21 April 2008 with two representatives of the KLALC.

No further Aboriginal parties have been identified through this process. Details of the Aboriginal consultation are provided in *Annex B* and results of the field survey have been detailed in *Chapter 6*.

A search of the National Native Title Tribunal website undertaken on 4 May 2007 and 28 April 2008 failed to reveal any active claimant applications in the study area.

Draft copies of this report were sent to the registered Aboriginal parties, so that they may comment on its content and recommendations. The comments of these parties have been included in *Annex C*.

5 METHODOLOGY

In order to determine the validity of a field survey, it is necessary to describe the fieldwork methodology. This section describes the survey strategy, the criteria used to identify artefacts and the means by which survey coverage was calculated.

5.1 SURVEY STRATEGY

An archaeological survey was undertaken on Monday 21 April 2008. Two representatives of the Karuah Local Aboriginal Land Council, Ron Tisdell and Joshua Simms, and two ERM archaeologists Dr Diana Neuweger and Guadalupe Cincuinnegi conducted the targeted survey.

The survey was designed to target the area of the previously recorded midden (38-5-0148) and attempted to look at areas of archaeological sensitivity and ground exposure.

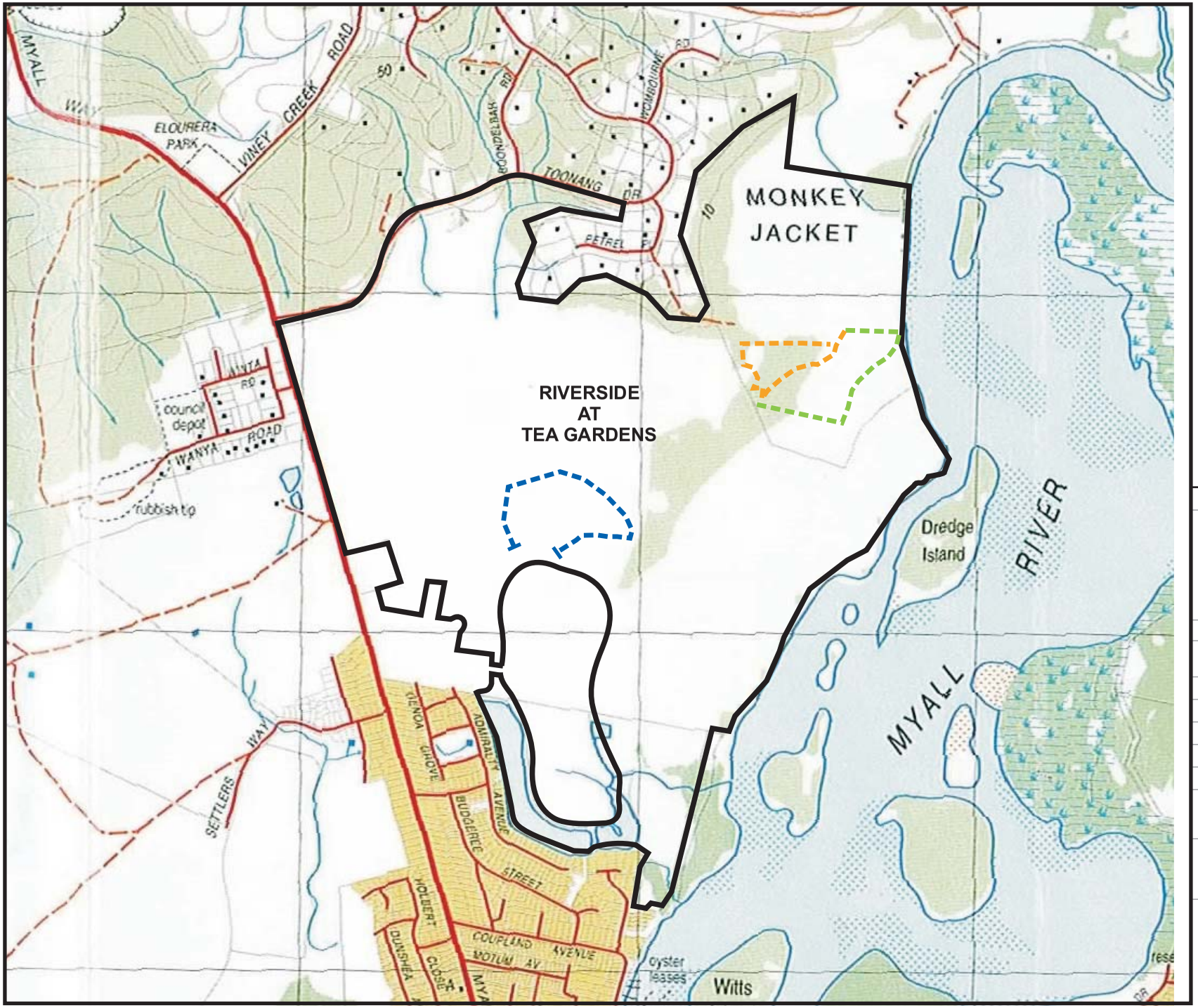
Transect 1 was located within the swamp along the edge of the Myall River within the wetland landscape unit (refer to *Figure 5.1*). Transect 2 adjoined the swamp and followed a low sand dune system in the north east of the study area. Transect 3 was located in the southern part of the study area on flat land, characterised by high grass and scattered native trees.

The visibility in the study area was very low and the areas surrounding the previously recorded midden inaccessible due to inundation.

5.2 SURVEY COVERAGE

In accordance with NSW NPWS (1997:18), the description of survey coverage includes the landform, survey unit area and a quantification of the level of exposure and visibility. The survey units were mapped using a combination of hand-held GPS and visible landmarks.

Visibility refers to the amount of ground upon which artefacts could be sighted and is expressed as a percentage of the survey unit (NSW NPWS 1997:18). The presence of vegetation, leaf litter and other variables can obscure visibility. Exposure is defined as areas in which erosional processes result in the removal of soils and permit the detection of archaeological material that was formerly subsurface. Exposure is also expressed as a percentage of the survey unit (NSW NPWS 1997:18).



Legend

- Riverside at Tea Gardens Site Boundary
- Transect 1
- Transect 2
- Transect 3

Figure 5.1

Survey Locations

Client:	Crighton Properties Pty Ltd		
Project:	Environmental Assessment Riverside at Tea Gardens - Archaeology Assessment		
Drawing No:	0043707hv_EA_river_arch_05		
Date:	08/07/08	Drawing size:	A4
Drawn by:	JD	Reviewed by:	JW
Source:	1:25,000 Topo Series Port Stephens Sheet		
Scale:	Refer to Scale Bar		

N

0 250 500m

Environmental Resources Management Australia Pty Ltd
53 Bonville Avenue, Thornton, NSW 2322
Telephone +61 2 4964 2150

ERM

5.3 SURVEY LIMITATIONS

There were several limiting factors that did not allow for complete survey of the development area.

A long period of rain had made the wetland area difficult to traverse, with much of the area being ankle deep (and knee deep in some places) with water. This not only made traversing the area difficult but also removed any possibility of locating Aboriginal archaeology on the ground.

Whilst the remaining areas of the study area were better drained, the vegetation in the north western portion was extremely dense and the southern and central parts were not readily accessible due to the presence of electric fences. A visual inspection was made where possible which confirmed that ground visibility in these areas was close to 0%.

While the access and water issues have limited the survey coverage of the study area, the limited visibility would not have allowed for identification of Aboriginal archaeology, and further survey of the study area is not recommended.

6 SURVEY RESULTS

6.1 SURVEY COVERAGE

The calculation of effective coverage provides a means to describe the proportion of the study area in which it was possible to assess the presence or absence of artefacts. Due to the limited archaeological visibility and exposure, effective coverage was very low at one percent (refer to *Table 6.1*). Of the three landscape types surveyed the sand dune landform had the greatest visibility (5%), although with only 35% exposure the effective coverage was still only 2%.

Table 6.1 Effective Coverage

Transect	Landform	Area (m^2)	Visibility	Exposure	Visible area (m^2)	Area available for detection (m^2)	% Effective coverage
1	Wetland	4405	1%	5%	44.05	2.2	0%
2	Sandune	98850	5%	35%	4942.5	1729.9	2%
3	Flat	150000	3%	25%	4500	1125.0	1%

6.2 MIDDEN SITE – 38-5-0148

Site 38-5-0148 was not relocated during the survey as the wetland areas were inundated and could not be accessed. It was confirmed during the survey that this area is located within the SEPP 14 Wetland and will be protected. As development will not occur within 100m of this site, no further investigations are recommended.

6.3 MIDDEN SITE - RIVERSIDE01

AGM: 56 E 421423; N 6387509

One additional midden site was recorded during the survey (refer to *Figure 6.1*). The midden is located on a sand dune close to the swamp/wetland area. The midden is currently overgrown with grass and the full extent and nature of the deposit could not be fully determined. The sand in the area of the midden is a pale grey and the midden shows several species of edible shellfish, most predominantly cockle and whelks, as well as pieces of charcoal up to 10cm in size. The midden is not dense and most of what could be seen showed an ephemeral scattering of shell on the surface. The shell is mostly of a small size and appears to be broken as a result of the current land use (cattle grazing).

Photograph 6.1 Location of Midden (Riverside_01) showing extent of grass cover.

Photograph 6.2 Exposure of Midden (Riverside_01)

Photograph 6.3 Detail of the shell in the midden showing a cockle and broken whelk.

The midden is spread along the south east edge of the sand dune ridge with commanding views of the Myall River. The dune system is currently stabilised by non-native grasses. While this is stopping deflation of the dune system and midden, it also obscured an accurate assessment of the midden size. The maximum extent recorded during this survey was 80 metres in length (south westerly to north easterly direction) by 17 metres wide (north westerly to south easterly direction).

There is currently one major threat to the midden due to its location within a cow paddock. The midden is open and exposed to trampling which has the potential to seriously damage and create deflation of the midden and its contents.

In regards to the location of this midden within the development area, the concept plan has been amended to ensure that this site is protected.

6.4 POTENTIAL ARCHAEOLOGICAL DEPOSIT

It is essential to consider the potential for archaeological material to be present in areas of poor visibility and/or in a subsurface context. In relation to the management of the archaeological resource and legislative requirements, the likelihood that subsurface archaeological deposits may be present within an area has implications for any proposed development activity.

In terms of archaeological assessment, not all potential deposits necessarily contribute to our understanding of past human activities. The primary scientific importance of subsurface deposits lies in their potential to provide information that will assist in interpretation of the archaeological record through time and space. For this reason, areas described as potential archaeological deposits should satisfy one or more of the following criteria.

- be likely to contain sufficiently high numbers of artefacts to allow for statistically viable detailed analysis and intra- and inter-site comparison of artefact assemblages;
- exhibit minimal disturbance and a high level of integrity; and/or
- have the potential to contain dateable materials, either in chronological or absolute terms.

As discussed previously, midden material was identified only in areas of exposure within the sand dune and wetland landscape units. Based on the predictive modelling and confirmed by field survey it is likely that a consistent low-density scatter of midden material is likely to occur within the eastern portion of the study area and should be considered as a potential archaeological deposit.

In regards to the proposed development of the study area, these landscape units will be largely protected within the SEPP 14 Wetland and associated buffer zones. The remainder of the study area is proposed for low-density development and has been further considered in *Chapter 8* in regards to ongoing management and mitigation measures.

6.5 IMPACT ASSESSMENT

The midden site 38-5-0148 was not relocated during the current survey due to access limitations and very low visibility (refer to *Chapter 5.3*). This site has been previously recorded (Brayshaw 1988) within the SEPP 14 Wetland and associated buffer zones. No development will occur within 100 metres of this site. Whilst the exact location and context of this site could not be confirmed within the current survey, it was confirmed that this area is within the SEPP 14 Wetland and the large buffer area will ensure that it is not directly impacted.

The newly recorded midden (Riverside_01) is located within the proposed tourist precinct and the concept plan has been amended to ensure that it is protected by a minimum 10 metre buffer on all sides (refer to *Figure 6.2*).

Neither of these middens will be directly impacted by the proposed development, however ancillary impacts may be possible. Alterations to drainage patterns could accelerate erosion of the deposits and greater visitation (on foot and vehicular) may cause damage or erosion.

To address the potential impacts to the SEPP 14 Wetlands, midden sites and associated buffer zones, an Integrated Water Management Strategy has been developed to manage the groundwater and surface water flows. Water management at the site, including the extension of the existing detention lake and the construction of a number of ancillary water quality control ponds to create a 'treatment train' for runoff prior to discharge, together with erosion and sediment control measures, will minimise the potential impact of sedimentation and erosion.

To ensure that indirect impacts do not damage the middens (in particular Riverside_01 which is located within the development area), it is recommended that:

- Riverside_01 is protected on all sides by a minimum 10 metre buffer. No construction/excavation works, including the storage of machinery can impinge on this buffer zone;

- a management plan should be developed in consultation with the local Aboriginal community to ensure the long-term protection of the middens. This management plan should consider the use of fencing, designated walkways and interpretive signage at Riverside_01 as an educational resource; and

- if the current development plan is amended, further subsurface investigation may be required to further assess the significance of the sites.

7 SIGNIFICANCE ASSESSMENT

7.1 ASSESSMENT OF ABORIGINAL ARCHAEOLOGICAL SIGNIFICANCE

Heritage sites, objects and places hold value for communities in many different ways. The nature of those heritage values is an important consideration when deciding how to manage a heritage site, object or place and balance competing land-use options. The many heritage values are summed up in an assessment of "Cultural Significance".

The primary guide to management of heritage places is the Australia ICOMOS Burra Charter 1999. The Burra Charter defines cultural significance as:

Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects.

Places may have a range of values for different individuals or groups.

This assessment has attempted to identify heritage objects and sites within the study area and obtain enough information to allow the values of those objects and sites to be determined.

Research and consultation with the Aboriginal community was also conducted to determine whether any heritage value relates specifically to the study area regardless of the archaeological evidence. While it is accepted that the Port Stephens landscape is of significance to Aboriginal people, this study sought to identify whether the study area held specific values either in itself, or as part of a specific local area of particular significance. To date, no information has been received that identifies specific heritage value unrelated to the Aboriginal sites.

Aboriginal heritage sites with archaeological evidence are all of value to the Aboriginal community through the tangible connection they represent to pre-European Aboriginal land use.

Scientific value is assessed according to the research potential of a site. Rarity and representativeness are also related concepts taken into account. Research potential or demonstrated research importance is considered according to the contribution that a heritage site can make to present understanding of human society and the human past. Those heritage sites, objects or places of high scientific significance are those which provide an uncommon opportunity to inform us about the specific age of people in an area, or provide a rare glimpse of artistic endeavour or a rare chronological record of changing life through deep archaeological stratigraphy.

The comparative rarity of a site is a consideration in assessing scientific significance. A certain site type may be "one of a kind" in one region, but very common in another. Artefacts of a particular type may be common in one region, but outside the known distribution in another.

The integrity of a site is also a consideration in determining scientific significance. While disturbance of a topsoil deposit with artefacts does not entirely diminish research value, it may limit the types of questions that may be addressed. A heavily cultivated paddock may be unsuited to addressing research questions of small-scale site structure, but it may still be suitable for answering more general questions of implement distribution in a region and raw material logistics.

The capacity of a site to address research questions is predicated on a definition of what the key research issues are for a region. In the Port Stephens/North Coast area the key research issues centre on the antiquity and content of middens, and to a lesser extent on stone artefact manufacturing technology and raw material sources. While there is a general pattern in Australian archaeology of stone artefact sites concentrated along watercourses, this appears to be less pronounced along the coast. Sites not conforming to this pattern may be of interest for research potential. Well preserved, mounded or stratified midden sites would also be significant for answering research questions.

A number of factors including increasing population pressure on the North Coast has impacted on many sites including shell middens, meaning that the remaining shell middens have become more significant, especially those that by their nature or location mean they are likely to continue to survive.

Given the potential depth of deposit and the range of shell species represented (cockle, oyster, whelk and pipi) within site 38-05-0148, the site is recognised as having high archaeological significance (Brayshaw 1988). Given its location within a protected SEPP 14 wetland it is likely to continue to survive with only minimal disturbance, which further emphasises its significance within the region.

The newly recorded midden site (Riverside_01) is located within a cow paddock and shows signs of disturbance (broken shells on the surface). Given this level of disturbance, and the fact that it is unlikely to survive in its current situation, this midden is considered to have moderate significance only. Further investigations would be required to confirm the extent, depth and contents of this site should development be proposed within 10 metres of its recorded extent.

8 MANAGEMENT MITIGATION MEASUREMENTS

8.1 IMMEDIATE ACTION (RIVERSIDE_01)

The midden needs to be protected from the cattle. A small electric fence (like that around the nearby house) could be used. The area of the visible midden plus a 10 metre buffer should be fenced off so the cattle cannot damage the site.

8.2 OTHER RECOMMENDATIONS (AGREED WITH KARUAH LALC)

The following recommendations are made in light of the predictive modelling, field survey, input of the Aboriginal stakeholders and the relevant legislation protecting Aboriginal heritage in NSW, bearing in mind that the proposed development is being assessed under Part 3A of the EP&A Act:

- Riverside_01 should be protected on all sides by a minimum 10 metre buffer. No construction/excavation works, including the storage of machinery should impinge on this buffer zone;

- a management plan should be developed in consultation with the local Aboriginal community to ensure the long-term protection of the middens. This management plan should consider the use of fencing, designated walkways and interpretive signage at Riverside_01 as an educational resource. No development or excavation works should be undertaken within the tourist precinct until this management plan has been finalised and approved by the Karuah LALC and DECC;

- based on the location of site 38-05-0148 within the protected SEPP 14 Wetland and associated buffer zones, no further protection measures are required;

- while there was limited visibility over the whole site, no further survey work is recommended. However, if the Concept Plan (as shown in *Figure 1.2*) is amended, subsurface investigation may be required to further assess the significance of the recorded sites;

- based on the predictive modelling and confirmed by field survey it is likely that a consistent low-density scatter of midden material is likely to occur within the eastern portion of the study area. This area will be protected within the SEPP 14 Wetland and associated buffer zones and no specific management measures or monitoring is recommended;

- the remainder of the study area has limited potential for additional sites to be recorded and no specific management measures or monitoring is recommended from an archaeological perspective. Following consultation with the local Aboriginal community, monitoring of clearing and initial excavation works has been recommended by the Karuah LALC. This would not be undertaken as an archaeological activity;

- if during clearing or construction works Aboriginal artefacts are recovered a qualified archaeologist should at this time be contacted and the site recorded in consultation with the Aboriginal community. Once recording has occurred and a Care and Control Permit approved under Section 85a of the NP&W Act (if required), any salvage can be undertaken and works (with minimal disruption) can continue;

- a suitable area should be set aside for the possible containment of any cultural heritage material that is uncovered during the construction works. This dedicated 'keeping place' would only be required in the event that material is uncovered and would be under the care and control of the local Aboriginal community; and

- in the event of discovery of skeletal material all works should cease, and the police, relevant local Aboriginal community groups and a suitably experienced archaeologist or physical anthropologist should be contacted to assess the material before determining the correct management action. Works should not resume until the Police and/or DECC have given authority in writing and approved a management plan.

REFERENCES

Australian Museum Business Services (AMBS) 2002 **Extension of Warkworth Coal Mine: Archaeological Assessment of Aboriginal Heritage** Consultancy report to Coal & Allied Pty Ltd.

Brayshaw H (1988) **Archaeological Survey at Tea Gardens, NSW** Consultancy report to Planning Workshop on behalf of Condux Development.

Byrne D (1985) **Archaeological Survey at Hawks Nest, NSW** Consultancy report to Department of Local Government and Lands.

Dallas M (1982) **Waterview Estate Canal Subdivision, Tea Gardens: Survey for Archaeological Sites** Consultancy report to Frost & Associates.

Dean-Jones P (1989) **Report of an Archaeological Survey of a Caravan Park Site at Tea Gardens, Port Stephens, NSW** Consultancy report to Envirosciences.

Dean-Jones P (1990) **Newcastle Bight Aboriginal Sites Study** Consultancy report to NSW National Parks and Wildlife Service and National Estate Grants Committee.

Dyall L K (2004) **The Aboriginal Middens at Birubi: An Account of Surface Collections (1964-1977) on the Aboriginal Site at Birubi, near Port Stephens, New South Wales, and its Subsequent Excavation in 1978 and 1979** Consultancy report.

Environmental Resources Management Australia Pty Ltd (ERM) (2004) **Gap Analysis – Archaeology, History and Landscape: Upper Hunter Valley Aboriginal Heritage Baseline Study** Consultancy report to the Upper Hunter Aboriginal Heritage Trust.

Gardner Browne Planning Consultants, Resource Planning Pty Ltd and Patterson Britton & Partners Pty Ltd (1991) **Local Environmental Study: Lot 10 DP 733241 and Lot 31 DP 808202 Myall Road, Tea Gardens** LES report to Great Lakes Shire Council.

Kinhill Engineers (1994) **An Archaeological Assessment of the Shell Midden Site No. 38-5-0147, Myall Quays, Tea Gardens, NSW** Consultancy report to Crighton Properties.

Koettig M (1987) **Monitoring Excavations at Three Locations along the Singleton to Glennies Creek Pipeline Route, Hunter Valley, NSW** Consultancy report to Public Works Department.

Kuskie P J (2000) **Salvage of Aboriginal Heritage Sites at South Lemington** Consultancy report to Lemington Coal Mines Ltd.

Lampert, R J and Hughes P J (1974) Sea level change and Aboriginal coastal adaptations in southern NSW **Archaeology and Physical Anthropology in Oceania 9**(3).

Rich E and Brayshaw H (1983) **Archaeological Investigation of Proposed Rural Residential Development Site at Tea Gardens NSW** Consultancy report to Resource Planning.

Silcox R (1998) **Archaeological Assessment for Proposed Rezoning of Part Lot 1 DP834986 and Part Lot 2 DP233635, Myall River Downs, Tea Gardens** Consultancy report to Crighton Properties.

Sullivan M E (1982) **Aboriginal Shell Middens in the Coastal Landscape of NSW** PhD thesis: Australian National University.

Umwelt (2000) **Aboriginal Assessment of Proposed Mineral Sand Mine at Stockton Bight** Consultancy report to Mineral Deposits (Operations) Pty Ltd.

Annex A

Archaeological Survey at Tea Gardens NSW, Brayshaw 1988

C-1374

ARCHAEOLOGICAL SURVEY AT TEA GARDENS, NSW

by

Helen Brayshaw

February 1988

Prepared for Condux Development Pty Ltd
through Planning Workshop

Brayshaw McDonald Pty Ltd
Consultant Archaeologists
51 Thompson St
DRUMMOYNE 2047 02/8197962

1 INTRODUCTION

A survey has been carried out for archaeological sites within an area adjoining the Myall River which drains into Port Stephens near Tea Gardens. Condux Development Pty Ltd is proposing to develop the area for residential, recreational and tourism purposes with a riverine theme. The environmental impact is being assessed by Planning Workshop, who commissioned the survey.

This is the first stage of the investigation, representing a feasibility study, and the purpose of the archaeological survey was to identify any archaeological deposits existing on the site, and to assess the extent to which such deposits [if any] would be a constraint to development of the site.

Most of the study area, as far as visibility would allow, was found to be free of archaeological sites. Midden deposits, for recording purposes representing one composite site, were identified in four occurrences within a 220x40m strip along the bank of the Myall River adjacent to the southern half of Dredge Island. If it is likely that these deposits will be affected by the proposed development, their content and significance would have to be established by means of subsurface testing. If their significance were found to be high it is very likely that both the National Parks & Wildlife Service and the Karuah Local Aboriginal Land Council would require that they be preserved without further disturbance.

Disturbance could come in the form of greater destructive wave activity resulting from increased traffic of speed boats, and also increased visitation. These factors might also affect Dredge Island, at this point only about 60m from the midden on the shore, in which case it has been recommended that the island also be investigated for archaeological sites.

2 ENVIRONMENTAL SETTING

The study area is within 1km of the township of Tea Gardens on the northern side of Port Stephens. The eastern boundary, over 1.6km long, fronts the Myall River estuary, and the western boundary is along the Tea Gardens - Pacific Highway road. The northern boundary adjoins a Condux semi-rural subdivision currently being developed.

The study area is largely located on Quaternary sands except where the northern perimeter up the lower slopes of a ridge where bedrock is composed of folded and faulted Carboniferous strata, including sandstones, conglomerates, mudstone and interbedded volcanics. Soils appear to be a mixture of sand and clay.

In 1932 Australian Pines and Products Pty Ltd cleared and planted most of the survey area except for a 1200 strip of wetlands adjacent to the Myall River and a small section in the north between a creek and Monkey Jacket. In 1979 large areas of the pine plantation were burned out and it is no longer maintained. The north eastern corner, not planted with pine, contains some large trees. The remainder is covered with secondary regrowth characterised by a very dense understorey which made the area very difficult to traverse and amongst which ground visibility is largely non-existent. Species observed in regenerating areas include include Blackbutt saplings [**Eucalyptus pilularis**], **Banksia serrata**, Bottlebrush, Paperbark [**Melaleuca quinquinervia**], **Hakea sp**, **Acacia sp** and ferns [incl **Pteridium esculentum**].

Mangroves [**Avicennia marina**] fringe the river bank, and in the northern half of the river frontage dense vegetation extends right to the river. Wetlands some 300m wide extend along the southern half of the river frontage and these are covered by dense growths of reeds, swamp grasses and other littoral species including **Sarcocornia quinqueflora.** Opposite Dredge Island stands of **Casuarina glauca** occur on elevated sandy deposits.

3 ARCHAEOLOGICAL CONTEXT

Some archaeological work has been undertaken in the general area of the Myall River and Tea Gardens and it is therefore possible to make predictive statements regarding site location. The predominant site types in the area are coastal and estuarine middens, while carved trees, burials and campsites are also known.

As a result of clearing activities associated with the pine plantation mature trees are confined to the north eastern corner. Scarred trees, the result of the removal of bark or wood for the manufacture of canoes, containers or shelter, could be expected to occur as there is evidence of Aborigines in the area using bark for all these purposes in historic times [Dawson 1830, Ebsworth 1826]. However scarring, or carving, on a tree is unlikely to be of Aboriginal origin if the tree is less than 150 years old.

Burials may occur collectively in burial grounds or individually almost anywhere. They can be in association with middens, and are usually in areas where there are soft sediments with some depth, and are not likely to be visible unless there has been surface disturbance exposing sections.

While surface campsites are known in the region, they are few, dense vegetation inhibiting their visibility. There is little archaeological information about inland land use, as most archaeological investigations have been in coastal areas. A survey of an earlier component of the Condux development on the ridge and south facing hill slopes immediately adjoining the northern boundary of the present study area resulted in the location of no archaeological sites [Rich & Brayshaw 1983].

Sullivan [1982] carried out a computer analysis and assessment of coastal middens which indicated that coastal occupation sites on the north coast of New South Wales tended to be of two kinds:

1. short-stay "dinner-time" camps; these commonly occur along the beaches. They have a thin layer of shell [often pipi] and hearthstones. Flaked artefacts are rare or absent.

2. longer-stay or more frequented campsites; these tend to be

located on the margins of a number of environmental zones, such as near the edges of lagoons with access to beach or floodplain. As well as shell and hearthstones these middens may also contain bone and flaked artefacts.

In the Tea Gardens - Myall River area a number of sites have been recorded. These sites are associated with islands, headlands and beaches around the Port Stephens estuary and along the Myall River. Except for two in the Dark Point area [NPWS Site Nos 38-5-50 and 38-5-77] the beach middens all appear to be "dinner-time" camps.

In the Tea Gardens township sites 38-5-56 and 38-5-44 are estuarine middens one of which contains stone artefacts. Both now grossly disturbed, they are located on rises above swamps adjoining the Myall River. Another midden [38-5-76], located by Dallas [1982] some 400m south of the present study area, was also situated on a sandy elevation above the swamp. Although containing stone artefacts as well as shell, they were very few, and the site, which had been disturbed by vehicle traffic and erosion, is a "dinner-time" camp, as are those within the township.

Site 38-5-78 was located about 3.5km north of the study area by Villiers [1981] during her survey of the Tea Gardens - Hawks Nest water supply augmentation scheme. A midden consisting of a light scatter of fragmentary **Crassostrea** and **Ostrea** shells with some stone flakes, this site probably also represented a "dinner-time" camp. The midden was located at the base of a ridge of sandstone, some 600m from a swamp west of the Myall River near Kangaroo Island. The site was already grossly disturbed and in 1982 the National Parks & Wildlife Service issued the Public Works Department with consent to its destruction.

The Dark Point headland has a site complex [38-5-52] which has been investigated by Dyall [1977]. Behind the headland is a series of dunes which drops away to low country which is marshy in places. The Myall River is 3km to the west. The site complex, located within the dunes, includes an extensive artefact "workshop" and faunal evidence of 15 species of fish, and shellfish, as well as dog, wallaby and small marsupials. The

evidence indicates exploitation of rocky coast, beach, estuarine/mudflat and swamp areas. The contents of the nearby middens 38-5-50 and 38-5-77 point to the use of similar resource zones. The Dark Point area is obviously a major camping place.

North along the Myall River, some 9.5km beyond the study area, site 38-5-73 was recorded by Dyall at Chinaman's Knob. Here a low sand ridge rises above the swampy marshes and adjoins a rocky outcrop which Dyall commented was the only such outcrop between Port Stephens and the Broadwater along the Myall River. The site comprises a surface scatter of shells and a range of stone artefacts on a 180m strip of sand between 30 and 40m from the river bank. Beach and rock platform shellfish were brought inland 2.5km; oysters may have come from the Myall River. This would have been another camping place.

Thus within the Tea Gardens - Myall River area there appears to have been a number of focal points for campsites: at the Dark Point Headland and associated dunes, near rocky outcrops and on sandy elevations above the low-lying swamps. The larger campsites [rather than "dinner-time" sites] are associated with distinctive landscape features.

From the foregoing it is apparent that scarred or carved trees could be encountered only in the north eastern corner of the study area; that middens were likely to be encountered near the river but, given the absence of distinctive landscape features, they would probably be smaller "dinner-time" camps rather than large longer duration campsites; burials could be present in soft sandy deposits wherever they occur, but would be unlikely to be exposed except accidentally by erosion or during excavation.

4 THE SURVEY

4.1 Procedure

The NSW National Parks & Wildlife Service Register of Sites, associated documents, and archaeological survey reports on the area and the region were inspected prior to the field survey. This was to enable site prediction within the study area and to provide a basis for assessment of any sites found.

The survey was performed by archaeologists Helen Brayshaw and David Crew. The Port Stephens 1:25,000 map was used in the field.

All but 200m of the river frontage was traversed on foot, the section omitted being south of the creek in the north eastern corner, over which the pine plantation had extended: it was therefore covered in very dense vegetation and was known to have been disturbed. Samples of wetland back from the river were traversed, as were sections of the plantation beyond the wetland towards the hillslopes, and the apparently less disturbed north eastern corner.

Everywhere ground exposure was minimal due to vegetation cover, but where encountered it was investigated for midden material and stone artefacts; environmental features which might form the focus for occupation were looked for, as were mature trees which might bear signs of Aboriginal carving or scarring.

4.2 Aboriginal Consultation

The land falls within the area cared for by the Karuah Local Aboriginal Land Council. Sites within this area have contemporary significance for local Aborigines in terms of an identifiable connection with prehistoric occupation and as future Aboriginal education resources.

Prior to the survey being undertaken Ms Colleen Perry, Coordinator of the Karuah LALC, was informed of the proposed development and associated archaeological survey. Unfortunately no representative of the Council was free to participate in the

survey. Ms Perry has been informed of the results, and expressed the view that if the proposed development was likely to affect the midden deposits, they should be investigated further and, if found to be significant, preserved without further disturbance.

A copy of the archaeological report should be forwarded to her for the information of Council members.

4.3 Results

Shell midden deposits were identified in four occurrences within a 220x40m strip along the bank of the Myall River adjacent to the southern half of Dredge Island. Separated by intervals of less than 30m, they can be classified for recording purposes as one site.

All occur on sandy elevations vegetated by stands of swamp oak, ferns and grasses. At locations 1-3 the shells were evident on the slope around these elevations, on the river side and also away from the river. At location 3 compacted shells right at the water's edge are being eroded away by wave action. Occasional areas of visibility occurred on top of the elevations and away from the edges, for example towards the rear of locations 2 and 3, and in a burrow at location 1. At location 4 the shells were only visible in the centre of the elevation within a clearing surrounded by oaks, at a number of small exposures apparently created by animals.

The food sources occurring at all four locations are those most commonly found on Aboriginal middens on this section of the coast: pipi [**Plebidonax deltoides**], cockle [**Anadara trapezia**], whelk [**Pyrazus ebeninus**] and drift or mud oyster [**Ostrea** sp]. The habitat of all of these species is sand and mud flats and amongst mangroves, so all could have been obtained from the Myall River estuary, close to the midden deposits. Access could have been along the river bank or by canoe.

Location 1
Position: 15m from HWM, SW of Dredge Island
Dimensions: 24[NS]x12[EW]x0.3m
Edible species observed: Drift Oyster 30%
Cockle 60%
Whelk 5%
Pipi 5%
Maximum shell density: 600 fragments/m^2
Matrix: Yellow sand

Location 2
Position: 20m N of location 1
Dimensions: 25[NS]x35[EW]x0.2m
Edible species observed: Drift Oyster 20%
Cockle 75%
Whelk 5%
Maximum shell density: 750 fragments/m^2
Matrix: Yellow/grey sand

Location 3
Position: 20m N of location 2
Dimensions: 63[NS]x37[EW]x0.7m
Edible species observed: Drift Oyster 30%
Cockle 65%
Whelk 5%
Maximum shell density: 120 fragments/m^2 [not including very tiny fragments - shell less dense and much more fragmented than at locations 1 and 2]
Matrix: Yellow/grey sand

Location 4
Position: 15m N of location 3
Dimensions: approx 60[NS]x35[EW]x0.5m
Edible species observed: Drift Oyster 30%
Cockle 65%
Whelk 5%
Maximum shell density: 120 fragments/m^2 [much less fragmented than at location 3]
Matrix: Grey sand

No stone artefacts were identified at any of the locations, nor was any charcoal observed. The sandy deposits were generally yellow with only slight grey coloration except for the northernmost location 4 where the sand was noticably greyer. The shells themselves appeared fresh, with little indication of corrosion or structural disintegration, although fragmentation was apparent, especially at location 3.

4.4 Discussion

The records for most of the midden sites known in the Tea Gardens area are minimal. However useful comparison can be made with a site comprised of four occurrences of shell midden exposed along a vehicle track at Hawks Nest, which was evaluated by Byrne [1985]. They were in a sand matrix noticably darker than the adjacent surface, but appeared to contain no charcoal. Nor was there any evidence of any food type other than oyster. Only one stone artefact was located: a flaked piece of a dark-grey siliceous material. The depth of deposit appeared to be no more than 10cm. Shell densities were recorded as between 400 and 1200 fragments per square metre. Byrne concluded that the site represented a series of "dinner-time" occupations, particularly in view of the single food type represented and the absence of numbers of stone artefacts.

While the deposits opposite Dredge Island contained several species of shellfish, they are the types most commonly occurring in middens and all are available in the immediate vicinity. No bones of fish or other sources of food were observed. No stone artefacts were identified, and the deposits appeared to contain no charcoal, even the darker matrix of location 4. The deposits cover a similar area but they are deeper - 30cm as opposed to 10cm at Hawks Nest.

Surface assessment therefore suggests that the midden deposits located during this investigation more closely resemble the "dinner-time" camps represented by Byrne's Hawks Nest site than the larger campsites represented by Dyall's sites at Dark Point and Chinaman's Knob.

However, in view of the undisturbed nature of the midden, the presence of several species, the apparent depth of the deposits and the dark colour of the deposit at location 4, only a very

small area of which was exposed, it is suggested that the site does have potential for greater significance, both scientific and to Aborigines, than that at Hawks Nest. Surface assessment is insufficient to determine the status of the deposits; spade probing would be required at all locations with conversion to test excavation in the case of stratification becoming apparent and additional cultural material such as hearths and faunal or human bones being encountered.

Because so many of the middens in the Tea Gardens area have been disturbed or even destroyed, a site which has not been disturbed should be given high priority for investigation or preservation.

5 RECOMMENDATIONS

The shell midden was the only archaeological site identified within the study area, and it provides the only archaeological constraint to the proposed development. The following recommendations for management of the midden are made on the basis of legal requirements regarding the protection of relics within the state and discussion with the Coordinator of the Karuah Local Aboriginal Land Council.

It is understood by the consultant that the midden occurs within a section of the river frontage protected by State Environmental Planning Policy No 14, which relates to wetlands, and therefore development of the actual site is unlikely. However, the overall proposed development for residential, recreation and tourism based on the river will involve much greater public use of the land and the waterway. The midden site could be exposed to indirect effects of the development, for example:

* the site is likely to be subjected to much greater visitation than at present;
* alterations to drainage patterns may accelerate erosion of the deposits;
* the increased use of motorised watercraft, in particular speed boats, would accelerate erosion of the deposits.

It is suggested therefore that:

1 If the site is considered to be at risk of either direct or indirect impact from the proposed development, the developer should make an application for Consent to Destroy from the National Parks & Wildlife Service in order that the site can be assessed, by means of spade probing or if necessary test excavation, to determine its cultural and scientific significance.

Subsurface testing would enable determination of site formation processes, including whether the site was originally one large deposit since separated by erosion, and at the same time stabilisation requirements could be assessed. Significance should be assessed on the basis of comparison with other sites in the region.

Even if the scientific significance of the site is assessed after further investigation as being minimal, the site will have very good educational value. As such it could be incorporated within the development with a sign designating it as an Aboriginal site and an important element of local cultural heritage. Advice as to the appropriate wording should be sought from the National Parks & Wildlife Service.

2 In the event of this significance warranting preservation of the site consideration would have to be given to the maintenance of low visitation levels, speed restrictions on water traffic, and/or the erection of physical barriers to protect the site.

Suggested management procedures include:

a] jetties could be constructed to attract boats away from the site and guide visitation to less sensitive areas in a controlled manner. At present, being the only dry land elevated above the swamp and mangroves, the midden is at risk to casual beaching of boats for picnics and fishing.

b] if preservation by stabilisation is required on part or all of the site, it could be covered with vegetation bearing material which facilitates rapid growth without interfering with the deposit, such as "Environmat, or any other material regarded as suitable by the National Parks & Wildlife Service.

c] the Shire Council could arrange for the stabilising to be monitored on a routine and regular basis, perhaps once a year, by a Council representative, suitably qualified to assess environmental impact, together with a representative of the Local Aboriginal Land Council, with concomitant reporting to the National Parks & Wildlife Service.

3 Since Dredge Island is as little as 60m from the mainland it too is likely to be indirectly impacted upon by the development. If this is the case it should be investigated for archaeological sites.

4 The Karuah Local Aboriginal Land Council should be invited to participate in any further investigations, either of the midden site or of Dredge Island.

Under the provisions of the National Parks & Wildlife Act of 1974 [as amended] it is illegal to damage, deface or destroy a relic without written permission of the Director. Such consent must be sought in relation to this site if the development proposed is likely to affect the midden deposits. Applications for consent should be directed to the Regional Archaeologist in the Central Region Office of NPWS at Parramatta.

Should any other relics be uncovered during the course of development, the National Parks & Wildlife Service should be informed. This may apply particularly to burials, which may occur any where in coastal sandy areas.

* Five copies of this report should be forwarded to

Ms Bronwyn Conyers,
Regional Archaeologist,
National Parks & Wildlife Service,
PO Box 95,
PARRAMATTA, 2150.

* One copy of this report should be forwarded to

Ms Colleen Perry,
Coordinator,
Karuah Local Aboriginal Land Council,
12 Mustons Rd ,
KARUAH, 2324.

6 REFERENCES

Byrne D. 1985 Archaeological survey at Hawks Nest, NSW. Report to Department of Local Government and Lands.

Dallas M. 1982 Waterview Estate canal subdivision, Tea Gardens: survey for archaeological sites. Report to Frost & Associates Pty Ltd.

Dawson R. 1830 **The present state of Australia.** London.

Dyall L.K. 1977 Archaeological report on Dark Point [38-5-52]. Report to NSW National Parks & Wildlife Service.

Ebsworth W.J. 1826 A letter book, kept at Sydney and Port Stephens. Mitchell Library, MS B852.

Haigh C. 1983? Wetlands. In **Parks & Wildlife.** NSW National Parks & Wildlife Service.

Poiner G. 1980 Coastal Aborigines of NSW. In Haigh C. & Goldstein W. [eds] The Aborigines of New South Wales. **Parks & Wildlife** 2, 5:14-24.

Rich E. & Brayshaw H. 1983 Archaeological investigation of proposed rural residential development site at Tea Gardens, NSW. Report to Condux Development Pty Ltd through Resource Planning.

Rich E. & Brayshaw H. 1984 Archaeological survey near the Myall River, NSW. Report to Northern Rivers Rutile Pty Ltd through R.W. Corkery Pty Ltd.

Starling J.A. 1971 A survey of Aboriginal sites on the north coast of NSW, 1970-71. Report to NSW National Parks & Wildlife Service.

Sullivan M.E. 1982 Aboriginal shell middens in the coastal landscape. Unpublished PhD thesis, Australian National University.

Villiers L.E. 1981 Tea Gardens - Hawks Nest water supply augmentation: report on survey for Aboriginal sites. Report to Department of Public Works.

Fig 1: Location Map

Newcastle 1:250,000

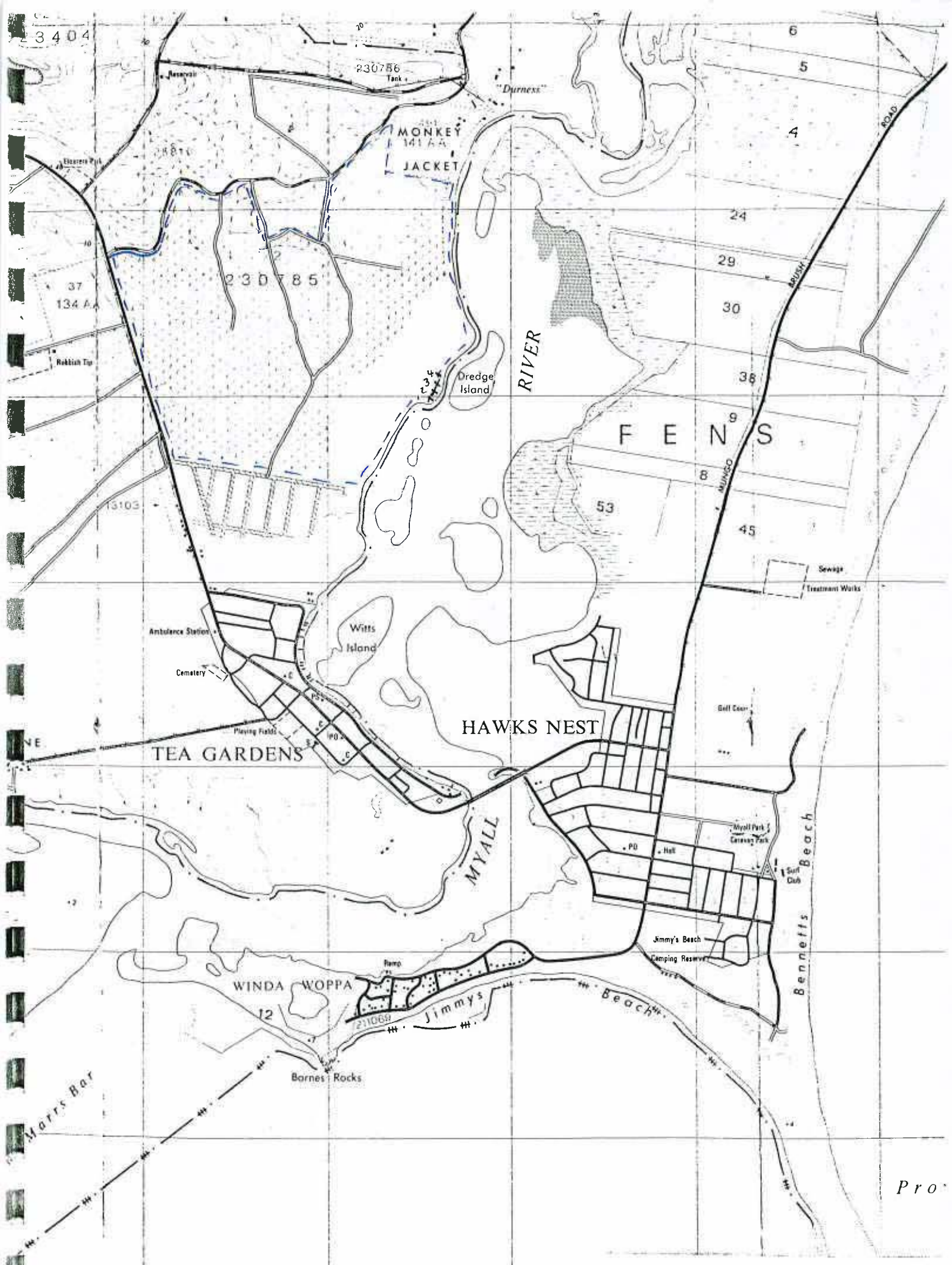


Fig 2: Site Location Map
Port Stephens 1:25,000

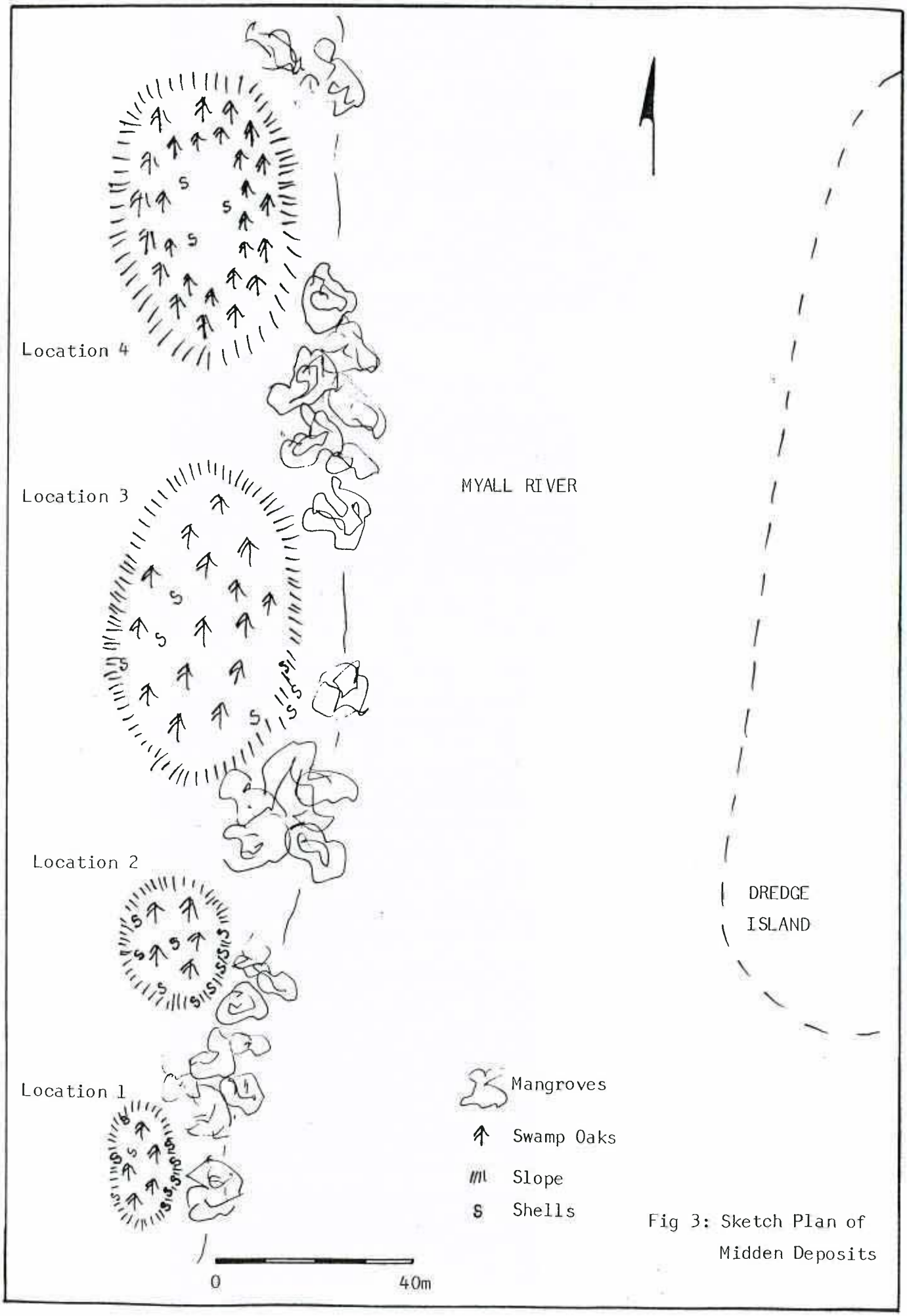
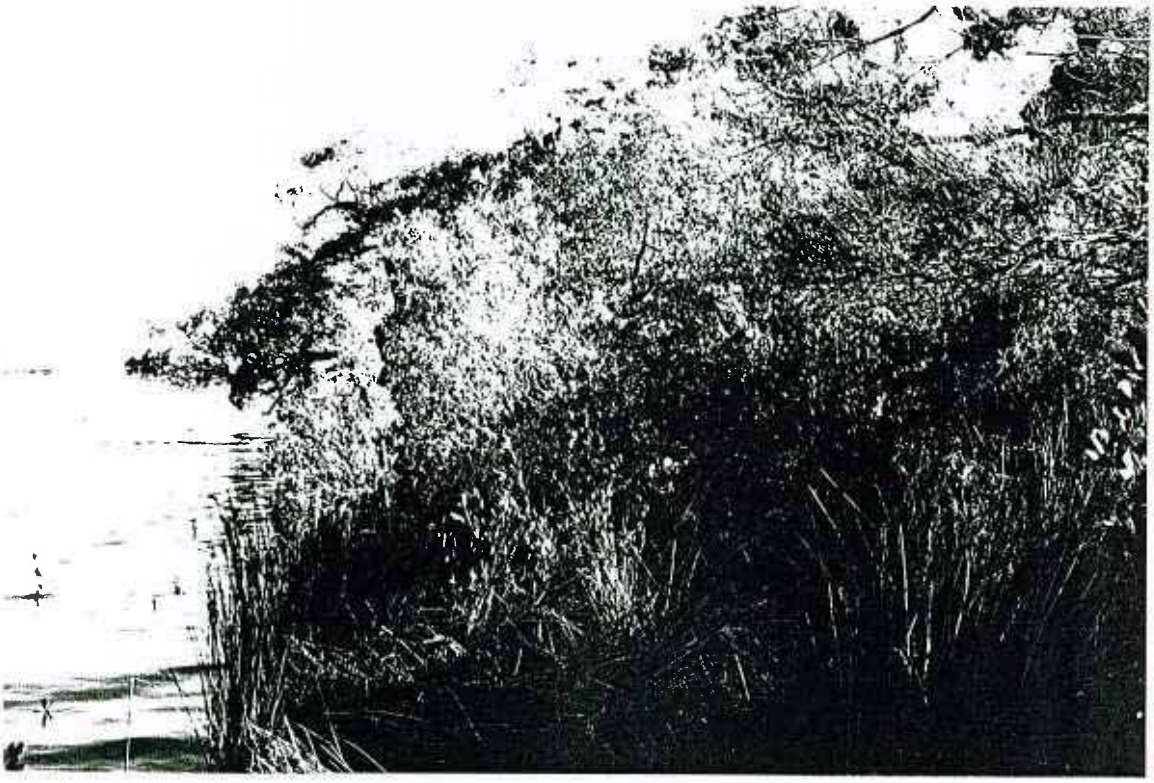


Fig 3: Sketch Plan of Midden Deposits

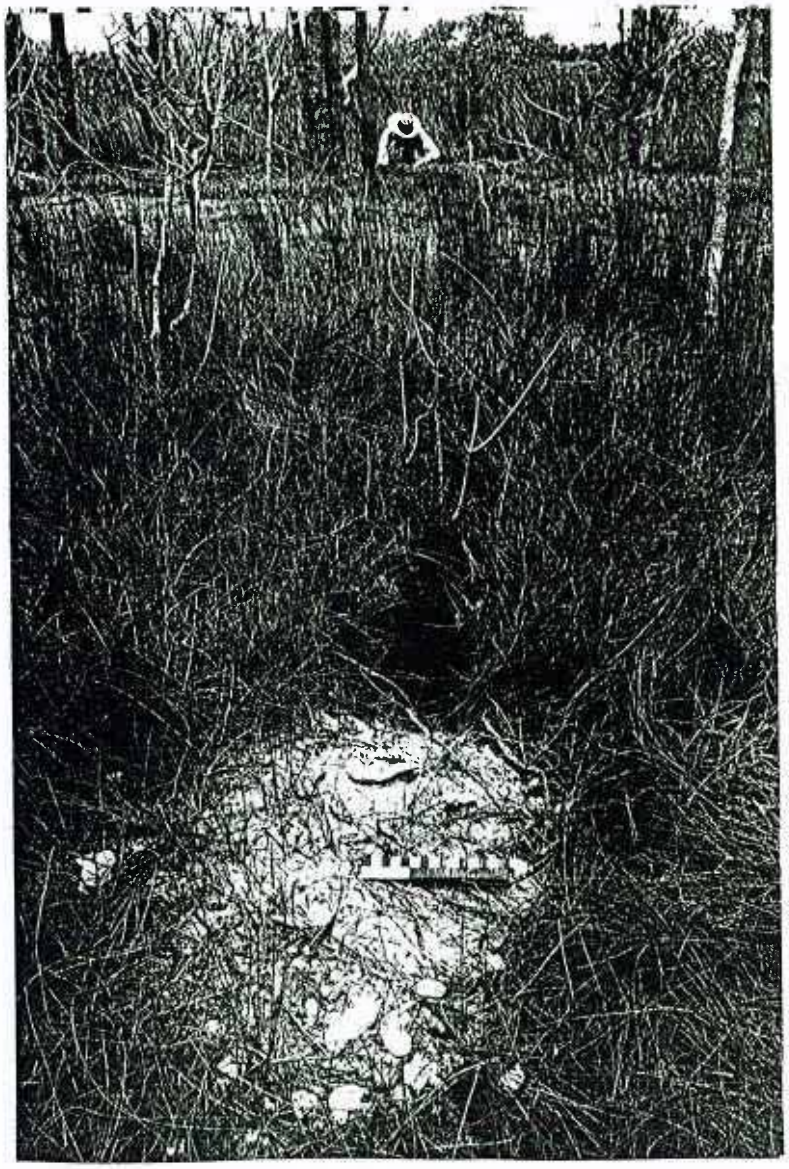
Pl.1: View over wetlands towards ridge north of study area.

Pl.2: View north towards Monkey Jacket from near Location 4.



Pl.3: South of Monkey Jacket dense vegetation continues to the water's edge.

Pl.4: Shell Midden - Location 1, camera facing south.

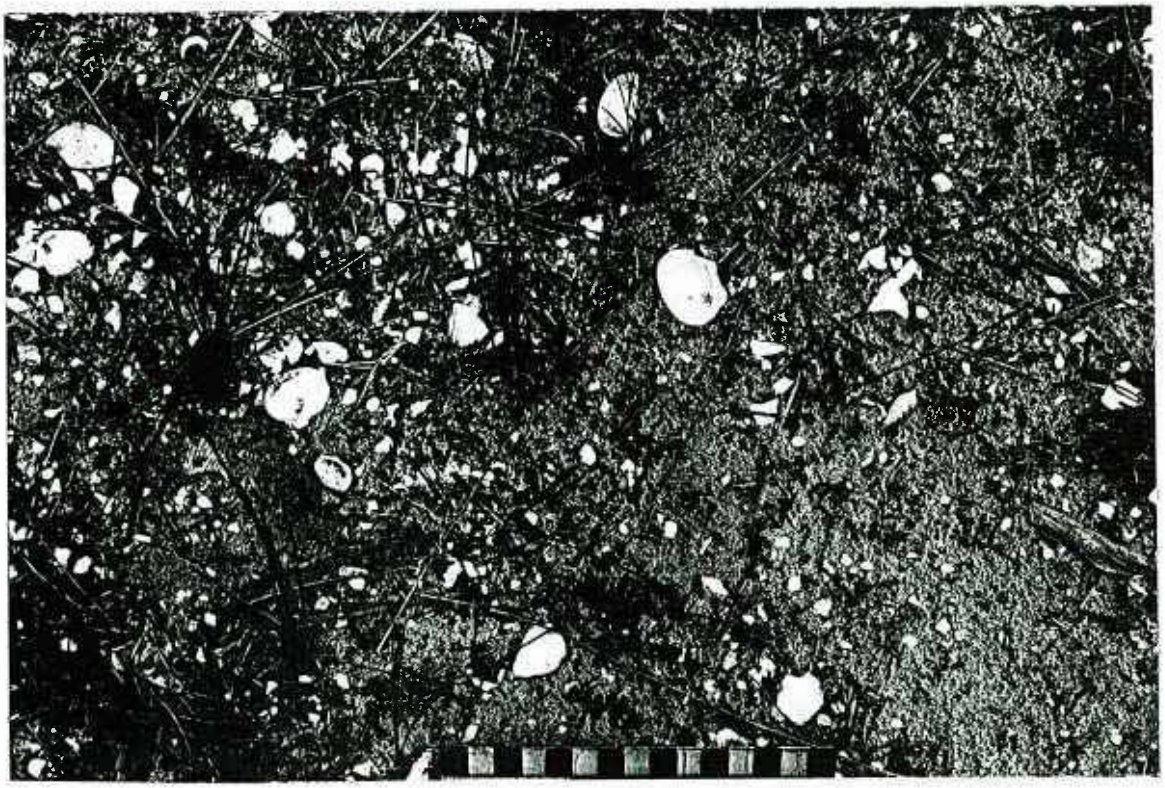


Pl.5: Location 1 shells exposed 30cm deep in burrow, camera facing east.

Pl.6: Shell Midden - Location 2, camera facing north.

Pl.7: Location 2 - detail.

Pl.8: View south east from Location 3 - Dredge Island on left.



Pl.9: Location 3 - detail.

Pl.10: Shell Midden - Location 4, view south east of grassy area surrounded by Swamp Oaks.

Pl.11: Location 4 - small shell exposure.

Annex B

Consultation Log

Table B.1 Consultation Stage 1: Advisory Requests

Date	Organisation/group/individual	Contact Name	Details
04-May-07	Myall Coast Nota	N/A	Ad to appear on Thursday 10th May 2007, given response date of 24 May 2007. Response from Jan Webb.
04-May-07	Native Title Services	N/A	Search of NNTT website of Great Lakes LGA shows 9 non-claimant application (one of which was for the Forster LALC and was full-approved), and one claimant application, which is active. This was for Mrs Mirinda Avery-Slater and Ors, but it is for the area of Forster-Tuncurry.
04-May-07	DECC	Brendan Diacono	Email requesting groups to consult. Letter received 15/05/07 identifying 1 Aboriginal party who may be interested in being consulted.
04-May-07	Registrar of Aboriginal Owners	Megan Mebberson/ Adam Black	Email requesting groups to consult. Email received 10/5/07 with list of two Local Aboriginal Land Councils (Worimi and Karuah) and Ms Jackie Henderson. As the area is only within the Karuah LALC area, no further consultation was undertaken with Worimi LALC.
04-May-07	Great Lakes Council	Alex Caras	Email requesting groups to consult. Email received 7/5/07 with list of four Local Aboriginal Land Councils (Worimi, Purfleet-Taree, Karuah and Forster). As the area is only within the Karuah LALC area, no further consultation was undertaken with the other three LALCs. Email also suggested checking for cultural values in the Local Environmental Study for the Myall River Downs opposite, however this did not identify any relevant cultural values.
04-May-07	Karuah LALC	N/A	Email requesting groups to consult.
10-May-07	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Email requesting groups to consult.
16-May-07	Guiwain Elder Group	N/A	Letter requesting groups to consult. (NB. In a previous job, ERM tried to post this group a letter to the address given by DECC but it came back marked Return To Sender. Looked on whitepages, yellowpages, blackpages, ORAC and google but could not find any mention of them so posted to the address given by DECC.)
24-May-07	Guiwain Elder Group	N/A	Letter requesting groups to consult returned to sender as "wrong box number".
07-Jun-07	Maaiangal Cultural & Heritage	N/A	Phone call to see whether they are interested in being consulted.
15-Jun-07	Maaiangal Cultural & Heritage	N/A	Phone call to see whether they are interested in being consulted. They said that the study area is not within their area of interest.

Table B.2 Consultation Stage 1: Aboriginal Group Registrations Received

Date	Organisation/group/individual	Contact Name	Details
15-May-07	Karuah LALC	Priscilla Mason	Email expressing interesting in being consulted on the project.
18-May-07	N/A	Jan Webb	Fax in response to newspaper article, expressing interesting in being consulted on the project.
07-Jun-07	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Email with list of two Local Aboriginal Land Councils (Worimi and Karuah) and Maaiangal Cultural & Heritage. As the area is only within the Karuah LALC area, no further consultation was undertaken with Worimi LALC.

Table B.3 Consultation Stage 2: Briefing and Desktop Methodology Advice Sent

Date	Organisation/group/individual	Contact Name	Details
14-Jun-07	Karuah LALC	Priscilla Mason	Email of proposed methodology with response date of 5 July 2007. Rang and left message, and emailed, on 23/07/2007 to see if they had any further comments.
14-Jun-07	N/A	Jan Webb	Fax of proposed methodology with response date of 5 July 2007. Rang 23/07/2007 to see if she had a response, but she said she hadn't received it, so I resent it and confirmed that it had arrived.
14-Jun-07	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Email of proposed methodology with response date of 5 July 2007.

Table B.4 Consultation Stage 2: Aboriginal Comments Received

Date	Organisation/group/individual	Contact Name	Details
15-Jun-07	Hunter region Aboriginal heritage officer	Steve Braerton	Phone call saying Jackie Henderson had been in touch with him about my recent correspondence. He said I should contact Karuah LALC and DECC in Coffs Harbour, which we had already done.
25-Jul-07	N/A	Jan Webb	Jan said she was happy with the methodology and that the midden wouldn't be disturbed. She said that she was a member of the Land Council and knew that they were also aware of the midden and that it wouldn't be disturbed.
25-Jul-07	Karuah LALC	Priscilla Mason	Priscilla said they were happy with that methodology, as the midden material wasn't to be disturbed.

Table B.5 Consultation Stage 2: Briefing and Survey Methodology Advice Sent

Date	Organisation/group/individual	Contact Name	Details
18-Mar-08	KLALC	Margaret Wright-Wilson	Spoke to Margaret and gave her a very brief background on the history of the project and the requirement for an updated field survey and assessment. KLAC only opened Tuesday and Wednesday so I will ensure that the methodology is emailed before Tuesday. Confirmed email address.
18-Mar-08	N/a	Jan Webb	Spoke to Jan and informed her that the project was ongoing and that DECC had requested further survey worked as the original survey was 20 years old. Jan indicated that she may be able to attend the survey. If not she would still like to review the draft report. She is in contact with the LALC in the event that she is unable to attend the survey due to work commitments. Noted new postal address.
18-Mar-08	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Left message and contact details for Jackie.
20/03/2008	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Called Jackie. She has passed on the ERM contacts details to the liaison officer but as yet have not heard from them. Will send the proposed methodology to Jackie and she will pass it on. Noted new postal address.
20/03/2008	Karuah LALC	Margaret Wright-Wilson	Email of proposed methodology with response date of 5 July 2007. Rang and left message, and emailed, on 23/07/2007 to see if they had any further comments.
20/03/2008	N/A	Jan Webb	Fax of proposed methodology with response date of 5 July 2007. Rang 23/07/2007 to see if she had a response, but she said she hadn't received it, so I resent it and confirmed that it had arrived.
20/03/2008	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Email of proposed methodology with response date of 5 July 2007.

Table B.6 Consultation Stage 2: Aboriginal Comments Received

Date	Organisation/group/individual	Contact Name	Details
8/04/2008	KLAC	Margaret Wright-Wilson	Phoned Margaret to see if they had any comments on the proposed methodology. They will not be able to respond until next Tuesday 15 April 2008 as she has not been able to get anyone in to the office until then.
15/04/2008	KLALC	Margaret Wright-Wilson	Phoned Margaret to see if they had any comments and to confirm survey details. Priscilla will give me a call to organise the fieldwork for next week.
16/04/2008	KLALC	Priscilla Mason	Phoned Priscilla. Two people from the LALC will attend the survey next week. I will send her all of the meeting details and she will pass it on. Any day next week is fine. Told her that it is expected to take one day, however if it requires more we will continue until it is complete.
17/04/2008		Priscilla Mason	Sent email confirming survey for Monday 21/04/08 at 9.30am.
18/04/2008	KLALC	Priscilla Mason	Phoned Priscilla to confirm that she received the survey details.
18/04/2008	N/a	Jan Webb	Phoned Jan to see if she had any comments on the proposed methodology and to confirm the surveys date/time. Jan did not receive the methodology but would like to attend the survey. Confirmed details.
18/04/2008	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Left message and contact details for Jackie. Confirmed that LALC and Jan Webb would be undertaking the survey on Monday and that she could call me to confirm the details if they wanted to attend. If not, I will send draft copies of the report for their review and comment.

Table B.7 Consultation Stage 3: Draft Report Sent

Date	Organisation/group/individual	Contact Name	Details
31/07/2008	Karuah LALC	Priscilla Mason	Posted hardcopy of draft report requesting feedback within two weeks.
31/07/2008	N/A	Jan Webb	Posted hardcopy of draft report requesting feedback within two weeks.
31/07/2008	Interim Board of Management for Worimi Conservation Lands	Jackie Henderson	Posted hardcopy of draft report requesting feedback within two weeks.

Table B.8 Consultation Stage 3: Aboriginal Comments Received

Date	Organisation/group/individual	Contact Name	Details
5/08/2008	KLAC	Margaret Wright-Wilson	Response received via fax (as attached). KLALC agrees with the recommendations although they would like to see more thorough investigation of known sites if the concept plan is amended. They also recommended that a keeping place is set aside.
5/08/2008	DECC Cultural and Heritage Division Northern	Lennie Anderson	Response received via email (draft report forwarded to DECC for comment by Jackie Henderson).

Table B.9 Consultation Stage 3: Follow up on Aboriginal Comments Received

Date	Organisation/group/individual	Contact Name	Details
20/08/2008	KLAC	Margaret Wright-Wilson	Spoke to Margaret to clarify their recommendations. KLALC agree with the recommendations contained in the report including the provision of a minimum 10m buffer around the midden site, the preparation of a management plan prior to development commencing in the tourist precinct. KLALC also request the monitoring of all excavations works within the development area. In addition to the original recommendations, as requested by KLALC, the developer will set aside an area for the containment of any cultural material if it is uncovered during the monitoring works. It is also recognised that further surface/sub surface investigations may be required if the concept plan is amended to further assess the significance of the recorded sites. No further surveys are recommended by the KLALC in regards to the current proposal.
22/08/2008	DECC Cultural and Heritage Division Northern	Lennie Anderson	Spoke to Lennie to clarify the recommendations provided by DECC. Confirmed that KLALC agree with the recommendations contained in the report and the developer will set aside an area for the containment of any cultural material if it is uncovered during the monitoring works, as recommended. DECC indicated that the recommended 10m buffer and management plan as agreed with the KLALC would be sufficient to protect the recorded site. As the concept plan provides a large buffer to the SEPP14 wetland and does not include any marinas or other shoreline activities, the need for a management plan to minimise impact on inter-tidal aquatic habitat and coastal processes is not a requirement. This was followed up by email to confirm that follow up consultation had been undertaken and that the KLALC was happy with the recommendations contained in the report.

Annex C

Consultation Responses

Karuah Local Aboriginal Land Council
ABN 17 304 066 465

Ph: (02) 49 975733
Fax: (02) 49 975750
Email: klalc@optusnet.com.au

PO Box 30
16 Mustons Rd
KARUAH NSW 2324

Environmental Resources Management Australia
53 Bonville Avenue (PO Box 71)
Thornton NSW 2322

August 5, 2008

Dear Joanne

Re: Riverside Aboriginal Cultural Heritage Assessment at Tea Gardens

We agree with the recommendations in the survey report however we also feel that there should be a more thorough investigation of the known areas. This should include mapping and monitoring and would require extensive surveying. We recommend that Karuah Local Aboriginal Land Council be involved in further surface surveys.

Further to our recommendation and area should be set aside as a keeping place for community assessment of any artefacts.

Yours faithfully

M Wright-Wilson.

Margaret Wright-Wilson
For Karuah Local Aboriginal Land Council

FAXED

Joanne Woodhouse

From: Anderson Lennie [Lennie.Anderson@environment.nsw.gov.au]
Sent: Tuesday, 5 August 2008 1:06 PM
To: Joanne Woodhouse
Cc: Dunn Ciaron; Naden Hilton; klalc@optusnet.com.au; beatle4864@bigpond.com
Subject: Draft Report Aboriginal Heritage Assessment at Tea Gardens NSW REF: 0043707 ARCH_LO2 WCL.DOC

Dear Joanne

After reviewing the documentation (as offered) and in the realisation of the recommendations put forward I would like to offer these subject matters from Culture and Heritage Division (Northern).

They are:

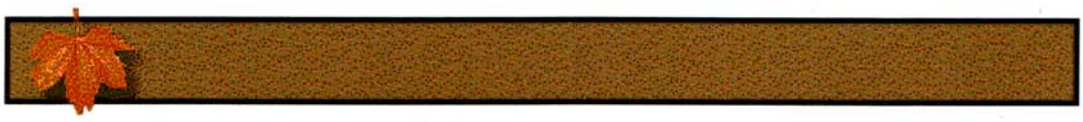
- The recommendation to conduct a Management Plan which will minimise impact on inter-tidal aquatic habitat and existing Coastal processes.
- The Karuah Land Council has identified a number of areas within the development (as well as adjacent areas) which are of particular Cultural significance. Protective "buffer zones" were consequently identified and must be constructed under the direction of the Karuah LALC
- A suitable area is set aside for the containment of any Cultural Material that is uncovered/discovered, so as to maintain spiritual contact. This could be a dedicated "Keeping Place" that would be under care and control of the Aboriginal Community.
- Culture and Heritage Division (Northern) can assist the community in the CCHMP and provide "Incident Response" formats.
- In recognition of the physical aspects as noted in this study, CHD would also consider it applicable to view an "Intellectual and Spiritual" Property Rights Report or Cultural Heritage Report that has been undertaken by the Aboriginal Community (Karuah LALC) before any further processes are undertaken.

Hoping this information has been of help to this proposal, and please call the nominated Office or my mobile 0429-605-309 if I can be of any further assistance

Regards

Lennie Anderson
Aboriginal Liaison Officer
Cultural and Heritage Division Northern

Phone 4984 8257
Fax 4981 5913



ERM consulting services worldwide **www.erm.com**

Environmental Resources Management Australia
53 Bonville Ave
Thornton NSW 2322
Telephone (02) 4964 2150
Facsimile (02) 4964 2152