



Myall Coast Archaeological Services

"Tall Pines"

Phone: 49971011

Mobile: 0403071922

Tea Gardens. 2324 Email: archaeology@myallcoast.net.au ACN: 002 992 430

Aboriginal Heritage and Archaeological Assessment

**Abalone Farm
Pindimar NSW**



**Report to
CITY PLAN STRATEGY & DEVELOPMENT
NEWCASTLE NSW 2300**

Friday 1st March, 2013

*By Len Roberts B.A. (Arch/Hist); Grad. Dip. Comp; Dip. Sp. Ed;
("Tall Pines", Tea Gardens. 2324 Ph: 49 971011)*

Myall Coast Archaeological Services

Aboriginal Heritage Assessment

Table of Contents

1. Introduction	page 2
2. The Assessment Process	page 10
3. Step 1 Preliminary Assessment	page 16
4. Step 2A Desktop Study	page 19
5. Step 2B Visual Inspection	page 34
6. Step 3 Integration of Heritage Values	page 47
7. Step 4 Information regarding proposal	page 50
8. Step 5 Integration of assessment with proposal	page 52
9. Management Strategies	page 54
10. Certification	page 55
11. References	page 56
12. Glossary	page 59
13. Appendix	page 63
A. Aboriginal Community Consultation	
B. Aboriginal Community Report	
C. AHIMS Results	
D. 2002 Report	

1. Introduction

1.1 Background

This report has been prepared at the request of City Plan Services, Newcastle, to assess the possible impact the proposed “Abalone Farm” Development may have on Aboriginal Cultural Heritage at Pindimar on the northern shore of Port Stephens, NSW.

In 2004 a Development Application for an Abalone farm was granted consent by Great Lakes Council for the study area. This meant numerous scientific studies were conducted over the study area along with public consultation, exhibition and feedback as part of the approval process. The studies, including Aboriginal Heritage (Worth), formed a body of work that was accepted as a solid framework resulting in the approval of the proposal but was not implemented because the proponents withdrew the consent following an appeal application by a third party to the Land and Environment Court.

In late 2007 the proposal was declared a part 3A project and a Major Project application was submitted in late 2010. Information from the original studies was used to support this application. This included the Aboriginal Heritage assessment which was conducted under best practice at the time.

This assessment and report is a continuation of the process first established in 2004 and is also an update of that work in light of recent legislative changes to Aboriginal heritage protection. The initial Cultural Heritage assessment was assessed by the then DECCW, (now OEH) without concerns, however, as some time has lapsed since that assessment a fresh assessment has been undertaken with the initial assessment used as a baseline study.

Although this assessment deals with a linear proposal in particular, a wider study area was considered. This is necessary as any Aboriginal heritage management options need to be addressed in context of the wider landscape. Similarly any assessment of Aboriginal archaeology and heritage cannot be undertaken over individual pockets of land but potential impacts of the proposal on Aboriginal heritage of the entire project must be assessed in a local and regional context.

Figure 1 illustrates the regional location of the study area, Figure 2 shows the entire study area and Figure 3 depicts the initial proposal. (It must be noted that this proposal was subsequently amended to reflect the recommendations of this report and the amended version is shown at Figure 16.).

References in this document to the “study area” refer to the larger area, whilst “proposal” refers to that portion of the study area shown at Figure 3.



Figure 1 Regional Location



Figure 2 Study Area

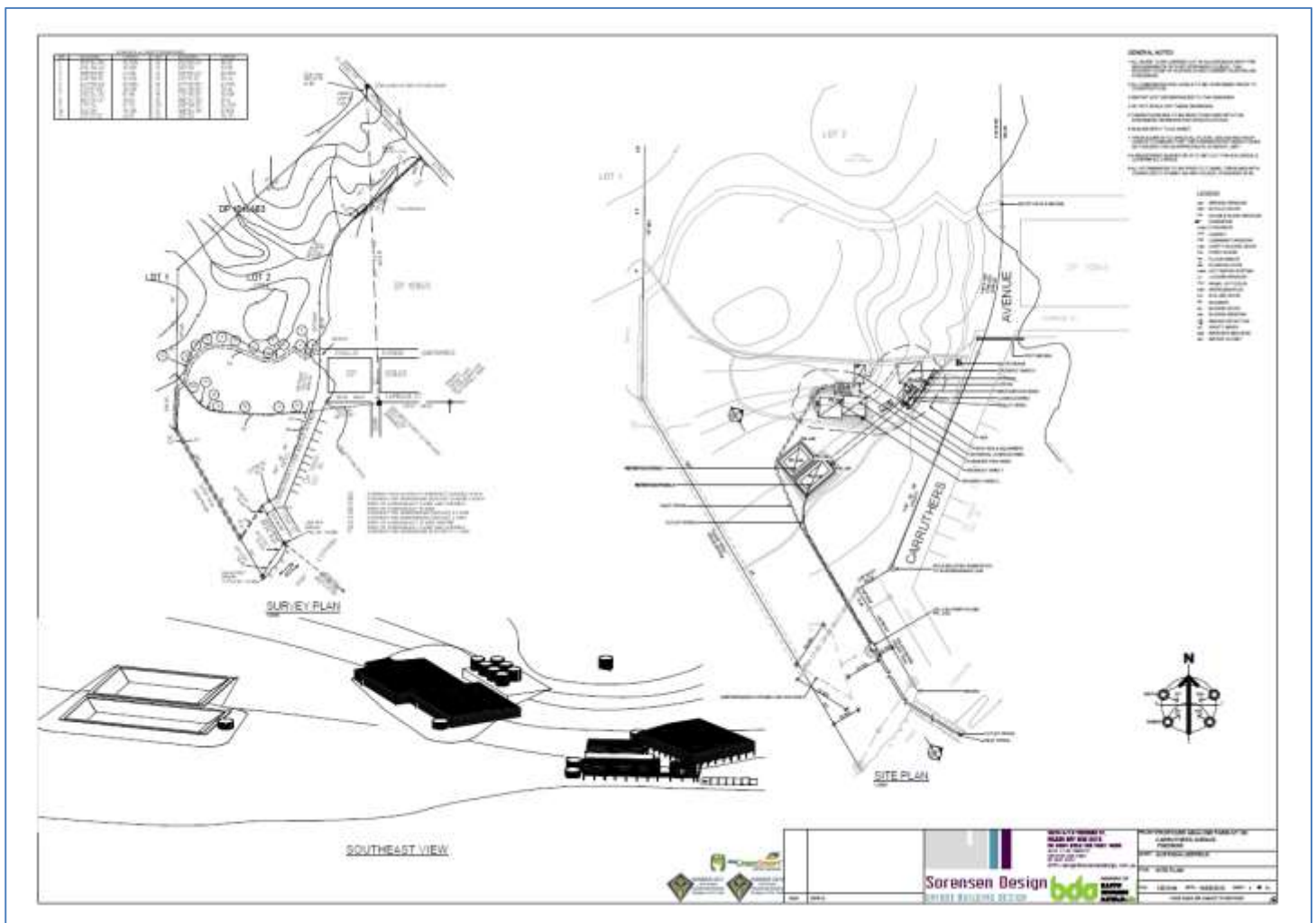


Figure 3 The Proposal

1.2 Legislative Context

The *National Parks and Wildlife Act 1974*, (NPW Act) administered by the Office of Environment and Heritage (OEH), is the primary legislation for the protection of some aspects of Aboriginal cultural heritage in NSW. Section 86 of that Act has been amended (2010) and deals with harming and desecrating Aboriginal objects.

'*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.'

Under section 86 of the NPW Act, it is an offence to 'harm' an Aboriginal object. 'Harm' means any act or omission that:

- Destroys, defaces, damages or desecrates the object
- Moves the object from the land on which it had been situated, or
- Causes or permits the object to be harmed.

The NPW Act provides several defences to prosecution for an offence. Where a person either knows or does not know they are harming an Aboriginal object, a person has a defence under section 87 where:

- The harm or desecration concerned was authorised by an Aboriginal heritage impact permit (AHIP), and the conditions to which that Aboriginal heritage impact permit was subject were not contravened.
- Due diligence was undertaken and it was reasonably determined that no Aboriginal object would be harmed.
- Was work on land that has been disturbed for maintenance of existing roads, fire and other trails and tracks, maintenance of existing utilities and other similar services
- Land is disturbed if it has been the subject of human activity that has changed the land's surface, being changes that remain clear and observable.

Harm does not include something that is trivial or negligible.

The regulations under the Act set out a generic "Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales" for initial assessment, as well as, a "Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales" to assess the significance and extent of archaeological evidence (in order to apply for an AHIP), identified as a result of a Due Diligence Assessment.

The regulated code links to other planning processes under the EP&A Act and the applicable section in the code referring to the EP&A Act is as follows:

4.1 Development under Part 4 EP&A Act and activities under Part 5 EP&A Act

Consideration of the potential impacts of development on Aboriginal heritage is a key part of the environmental impact assessment process under the Environmental Planning and

Assessment Act 1979 (EP&A Act). The standards in this code can be used or adapted by proponents to inform the initial assessment of the environmental impacts of an activity on Aboriginal heritage. An environmental impact assessment which meets all of the requirements of this code will satisfy the due diligence test. Alternatively, you could adapt the requirements of this code, provided it still meets the ordinary meaning of exercising due diligence (see section 7.7).

If it is found through this initial assessment process that Aboriginal objects will or are likely to be harmed, then further investigation and impact assessment will be required to prepare information about the types of objects and the nature of the harm. This is further explained at step 5 in section 8. If you are going to harm a known Aboriginal object you will need to apply for an AHIP. In this situation, the need to obtain the AHIP is in addition to any approval under the EP&A Act (unless the project is subject to Part 3A EP&A Act).

4.2 Major projects under Part 3A EP&A Act

If your activity is a declared Part 3A project under s.75B of the EP&A Act you should refer to the 2005 (draft) Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (as amended from time to time). These guidelines are available from the Department of Planning (see section 7).

As the proposal is a project to which Part 3A applies the 2005 draft DOP guidelines for projects should be considered. The 2005 draft guidelines recognise the importance of a preliminary assessment which is consistent with consideration under Part 4 and 5 of the EP&A Act. The following Figures 4 and 5 outline the two processes in flowchart form.

1 Do you need to use this due diligence code?

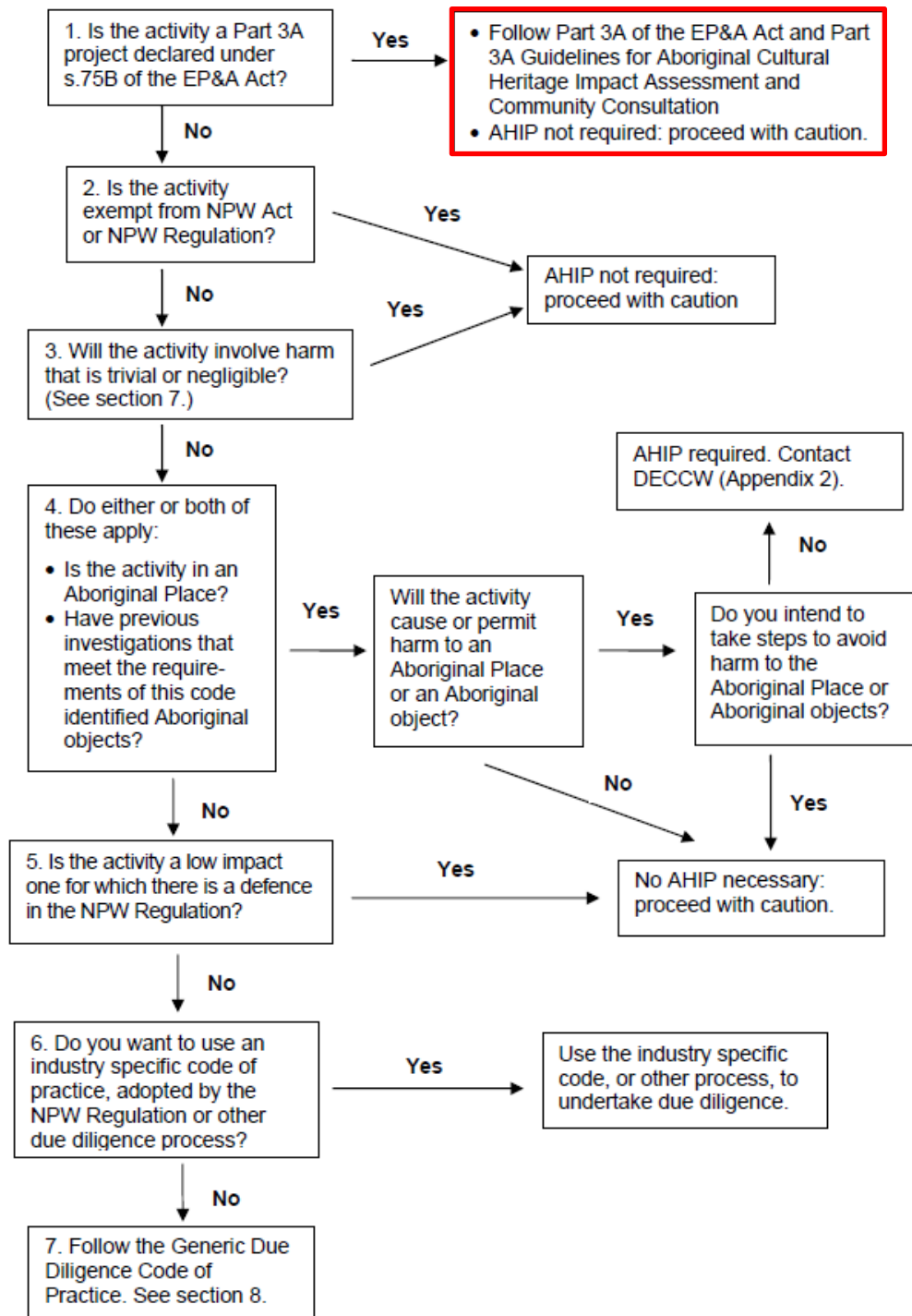


Figure 4 Due Diligence Process Flowchart from Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, published by OEH in September 2010, page 1

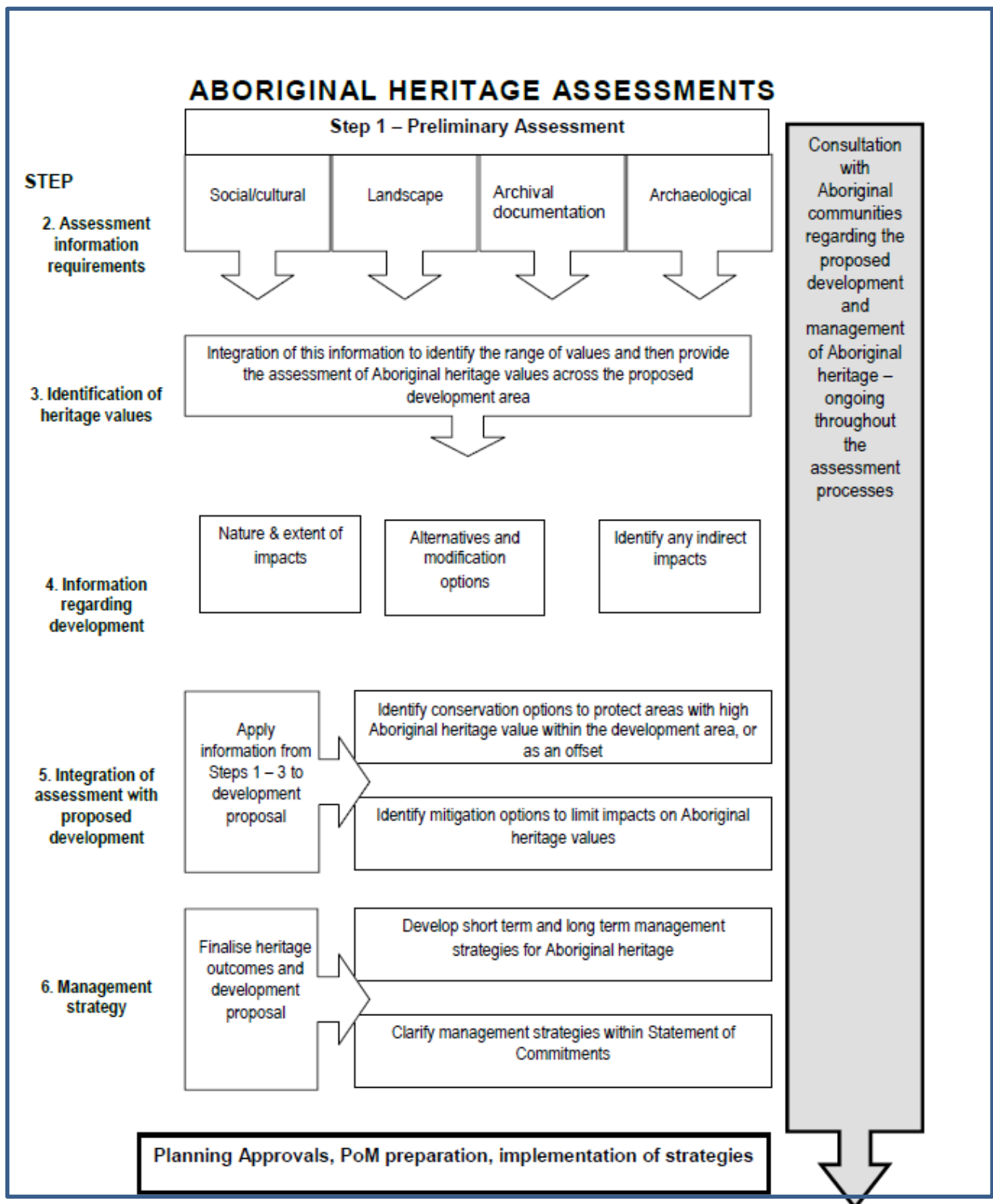


Figure 5 Part 3A Assessment Flowchart (Draft 2005 Guidelines for Aboriginal Cultural Heritage Impact Assessment and community Consultation, page 6)

This Archaeological Assessment follows the 2005 (draft) Part 3A EP&A Act Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation.

In addition to ensure consistency and standardisation across legislation the Due Diligence Generic Code (OEH) will be used as the basis for the preliminary assessment component under the 2005 draft guidelines.

Rather than only attempting to identify individual sites across the study area, the assessment also takes a landscaped approach to determine any potential Aboriginal archaeological evidence. This will require the identification of the range of landscape units, which are likely to contain Aboriginal archaeological evidence. This will ensure that the landscape context is assessed for significance. The landscape approach as well as previous archaeological work in the area will determine a predictive model of Aboriginal occupation of the study area.

2.0 Assessment Process

The aim of this assessment is to identify the Aboriginal heritage and archaeological values of the proposal site area in particular and the entire study area in totality and the potential impacts on those values as a result of the proposal. This will be achieved through Aboriginal stakeholder consultation, surveys and literature. This assessment also provides recommendations on the management and mitigation of impacts on such heritage and values that are potentially impacted by the proposal.

2.1 Assessment Personnel

The research, visual assessment and report were undertaken by Len Roberts, (BA [Arch.], Grad. Dip. Comp., Dip Sp. Ed.,) who also holds a certificate in Archaeological fieldwork, from Tel Aviv University, Israel. Len has worked on archaeological projects in Australia and overseas. Len is a member (since 1990) and was Deputy Chairperson (2007 -2011) of Karuah Local Aboriginal Land Council. He was appointed, in 1977, (under S32AV of the Local government Act 1919) as a part time, non- judicial expert (having, special knowledge of and experience in law, local government administration or town planning administration) member of the Local Government Appeals Tribunal from 1977 until it was replaced by the Land and Environment Court in 1980. He has been an expert witness before the Land and Environment court on Aboriginal heritage matters. Len has also taught English and Society (Australiana) at Beifang University, Yinchuan, China as an invited lecturer in second semester 2011.

Len is currently undertaking a Masters in Indigenous Knowledge through Charles Darwin University (traditional Aboriginal law, society and practices).

Len has undertaken archaeological work for various planning and surveying companies, as well as large organizations such as AMP, Department of Public Works, RTA, Local Government Authorities, Energy Australia, Australian Rail and Track Corporation, Rio Tinto, Woolworths and numerous other clients. The projects have ranged from small aquaculture (at sea), industrial and residential projects to large rezoning proposals, as well as linear surveys for sewerage treatment upgrades, pipelines, transmission lines, wind farms, rail line upgrades and highways.

The assessments have included Due Diligence assessments, gateway determinations, as well as assessments under, Parts 3A, 4 and 5 of the EP & A Act

Len has completed various S90 applications, as well as identifying and recording in excess of 1,000 Aboriginal objects and has authored in excess of 120 reports in the last 15 years.

The visual inspection component of this assessment was undertaken on 23/7/2012 by this archaeologist in conjunction with Ron Tisdell and Fiona Manton representing KLALC, Jamie Merrick and Johnathon Lilley representing WLALC, Chris Collison representing Anthony and Rebecca Anderson, as well as Len Anderson. All are very experienced field officers having worked on and had oversight of many field assessments. Each has authority from the Aboriginal community to speak on Country but not necessarily all of the study area.

2.2 Aboriginal Community Consultation

In accordance with the then DECCW requirements in 2002 Aboriginal community consultation was undertaken to advise, consult and oversee the Aboriginal Cultural Heritage Assessment for the project. The establishment and the determination of the appropriate stakeholders are well documented in the original report. It was believed at the time that the appropriate Land Council was the Worimi. However, whilst some of the proposal did lie within their boundaries (water's edge) Karuah LALC should also have been involved as the majority of the study area was within Karuah LALC boundaries. KLALC made no objection to the error as they work with WLALC across boundaries.

For this assessment the OEH Consultation Guidelines (2010) were followed. Karuah and Worimi Local Aboriginal Land Councils as well as the various agencies were contacted as per the consultation requirements. The consultation log and correspondence is annexed at Appendix A.

In summary the following occurred:

- An advertisement was placed in the Myall Coast Nota (Fig. 6) which covers the Pindimar and adjacent areas on the 24/5/2012 (p.13). This paper was chosen as it has had coverage of the Abalone proposal in the past and often runs stories regarding the Pindimar area. The NOTA not only published the advertisement but ran a front page story regarding the proposal in the same edition based on the submission of the advertisement.
- Letters written to Aboriginal people and organisations identified through agency response and NOTA and seeking an expression of interest in the project.
- Worimi LALC, Karuah LALC, Anthony Anderson, Rebecca Anderson and Len Anderson responded and were registered as stakeholders for the project.
- Initial meeting held with the stakeholders at Karuah LALC on 3/7/2012 to explain the project and seek information from the stakeholders
- Visual inspection of the study area was conducted with representatives of the stake holders on 26/7/2012
- Draft report forwarded to stakeholders for comment and feedback on 26/9/2012
- Cultural report received from stakeholders 23/2/2013

The Aboriginal Community response consultation logs are attached at Appendix A.

Place and see your classified at www.myallcoastnota.com.au

Caravan Repairs
 10000 Highway 100, Suite 100
 Houston, TX 77055
 (713) 465-1111
 Fax: (713) 465-1112
 Email: info@caravanrepairs.com
 Website: www.caravanrepairs.com

- 12 -

2.3 Assessment Methodology

Various models have been proposed by archaeologists to explain Aboriginal occupation and use of the landscape environments in NSW.

The predictive or contextual model for the archaeological assessment of the site forms the basis for developing a picture of Aboriginal occupation.

The assessment of the data enables a prediction of what form of Aboriginal occupation was likely to have existed on the study area and would show the potential for finding Aboriginal Sites. A field survey is then able to evaluate the prediction and to extrapolate reasons as to why the survey did or did not match the prediction.

The study methodology was based on data research, field survey of the site and report compilation. The analysis and assessment of the study area's archaeological potential and the impact of the proposal required the completion of the following;

- Research

This involved a review of primary and secondary sources including written material, maps, plans, AHIMS database and other reports as outlined in the reference section (10) of this report.

- Predictive modelling;

This involved an analysis of the research to produce a model of possible archaeological deposits within the study area. In order to conduct the analysis of the research material in an effective and consistent manner the following aspects were examined:

1. Aboriginal heritage values
2. Archaeological record
3. Previous Studies
4. Landscape
5. Soils
6. Geological Features
7. Past land use

- Visual Inspection

This involved the "ground truthing" of the above research with the study area's potential to reveal/conceal archaeological evidence. The visual inspection was generally conducted in accordance with the Archaeological Code of Practice, even though the Code is specifically used to undertake test excavations and to apply for an AHIP. The details of the visual inspection are contained within section 4 of this report.

The Part 3A Assessment guidelines set out a series of 6 steps to be followed:

STEP 1 Preliminary assessment

The main purpose of a preliminary assessment is to identify whether there are Aboriginal cultural heritage values associated with the subject site.

This study will use the OEH Due Diligence process for the preliminary assessment. The due diligence process is a standardised process which enables transparency and can be used for all activities across all environments.

The code sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

identify whether or not Aboriginal objects are, or are likely to be, present in an area and determine whether or not their activities are likely to harm Aboriginal objects (if present).

STEP 2 Information Requirements

Aboriginal heritage assessment requires a “multi-value” approach which includes a range of methods to satisfy data/information/reporting needs. The information required for understanding Cultural Landscape includes a range of data sets detailing the physical setting (landscape); the history of the peoples living on that land (documentation from archival and oral sources, as well as archaeological information)

STEP 3 Integration of information and identification of heritage values

The synthesis and integration of the information collected will provide the description of the Cultural Landscape to provide the basis for identifying the range of heritage values present. It will also provide the basis for development of criteria to clearly support the identification of areas/places/landscapes/features and sites of high heritage value to be considered as candidates for conservation/protection and/or the consideration of suitable off-set strategies eg community enhancement projects. This assessment will then also support the decisions regarding which areas/places/landscapes/features and sites will be impacted and any appropriate short and long-term mitigation requirements.

STEP 4 Information regarding the proposed development

This step will identify the nature and extent of the development and impacts on the Aboriginal heritage values across the development area. The extent of impact will include both direct and indirect impacts and their effect on Aboriginal heritage needs to be quantified to ensure that appropriate management in the context of the assessed values can be determined. Indirect impacts may affect sites or features located immediately beyond the development area or within the development area.

STEP 5 Integration of assessment with proposed development

This involves using the above information as the basis for assessing the cultural values against the impacts from any proposed development to identify specific outcomes.

This will include consideration of the following:

- justification for any likely impact(s), including any alternatives considered for the proposal;

- Any measures which will be implemented to avoid, mitigate or offset the likely impact(s).
 - demonstration that the input by affected Aboriginal communities has been considered when determining and assessing impacts, developing options, and making final recommendations to ensure that Aboriginal cultural heritage outcomes can be met by the proposed development.

STEP 6 Management strategy for Aboriginal heritage

This section will set out the specific management outcomes arising from the above assessment stages agreed to by the developer for management of the Aboriginal heritage values. This is to include identification of the final development impacts and the places, sites and landscape areas to be avoided and protected or conserved.

It is also to include the nature of and location of any offsets, requirements for further work such as archaeological salvage or community collection for objects of high archaeological or community value; specific on-going management protocols for both physical conservation outcomes and specific Aboriginal community requirements. This would include a contingency plan that details the measures to be taken in the event that Aboriginal objects of significance or a nature not anticipated, such as burials or ceremonial items are discovered during the course of works on the development site.

These measures as negotiated with the Aboriginal community are to be included in the Statement of Commitments as part of the Environmental Assessment Report.

3.0 Step 1 Preliminary Assessment

The preliminary assessment follows the numerical sequencing and headings of the OEH Due Diligence Code.

3.1 Description of Land and Activity

The study area can generally be described as the land Lot 2 DP1014683 Carruthers Avenue, South Pindimar, NSW as the proposed location for the development of a land based Abalone Farm.

The study area is approximately 5ha and is located to the west of the village of South Pindimar, on the northern shores of Port Stephens, NSW. The site is accessed via Challis Avenue (unformed) and is bounded by Carruthers Avenue (unformed) to the south and south-east and privately owned rural land on the west and north, with the shores of Port Stephens as the boundary on the south.

The proposal involves the construction of a commercial Abalone Farm (Figure 3) and includes the following land-based facilities:

- Cultivation and breeding facilities;
- Water circulation and treatment facilities including ponds, pumping and reticulation facilities;
- Waste management facilities;
- Access roads and an internal road network including parking areas, and loading facilities;
- Small pedestrian footbridge access to Cambage Street (which is outside lot 2)
- Administration, maintenance and workshop facilities;
- Landscaping for visual amenity; and
- Storage facilities;

In addition to the above land based facilities, two intake pipes of 500mm diameter and two water release pipes of 500mm diameter are proposed to extend into Port Stephens (Figure 3). The polypropylene pipes will be laid side by side. The pipes will be predominately over the land surface, from the header tanks to the pumping station site. From the pumping station, the pipes will be buried beneath the ground surface and covered with soil so the natural ground level is re-instated.

It is proposed that the above ground portions of the pipeline will not necessitate any tree removal as the polypropylene material is flexible and can be manipulated around the trunks and roots which lie in its path.

The Due Diligence code generally requires the same information outlined in the 2005 (draft) Part 3A EP&A Act Guidelines but not necessarily in the same order. Before commencing the preliminary assessment it is important to show the relationship between the 2 documents by identifying the requirements of the 2005 Draft Guidelines and where the information is found in the Due Diligence Assessment.

The 2005 Draft Guidelines preliminary assessment should include:

- a description of the location and nature of the proposed development (**DD 3.1 – 3.4 and 3.7**)

- a description of any social and cultural values including the spiritual, traditional, historical or contemporary associations and attachments which the place or area has for the present-day Aboriginal community (DD 3.11)
- an assessment of which of the Aboriginal cultural heritage objects and places of significance that are known or likely to occur on or near the site that are likely to be directly or indirectly affected by the proposal (DD 3.5 and 3.7 - 3.11)
- a description of previous land uses and any previous development on the site(DD 3.1 – 3.2)
- a search of existing data bases such as the Aboriginal Heritage Information Management System (AHIMS), Commonwealth and state heritage registers. (DD 3.8)

It is also noted in the 2005 Draft Guidelines that there may be situations where an Aboriginal heritage Assessment is not required or can be modified to account for past land uses. The Due Diligence Code has been used to determine the likelihood of heritage values and the further assessment required.

3.2 Is the Land defined as “Disturbed Land” or an exempt or complying development?

Probably the greater proportion of the study area cannot be classified as disturbed in that *there have been clear and observable changes to the land surface*. However, this is not the case for the proposal as the land upon which it will be situated is mostly disturbed. The Sheds will be located on an existing cut and filled area that was an approved house site but never built upon, additional sheds will be located within an old quarry and the settlement tanks within an old sand quarry.

3.3 Is the activity exempt?

No

3.4 Will the activity involve harm that is trivial or negligible?

No

3.5 Is the activity in an Aboriginal Place or are you already aware of Aboriginal objects on the land?

Yes, an Aboriginal object (midden) has been identified on the land during the initial study and the proposal was relocated to avoid the midden.

3.6 Is the activity a low impact activity for which there is a defence in the regulation?

No

3.7 Will the activity disturb the ground surface?

Not the proposal per se as the clearing, infrastructure works and erection of buildings for the proposal generally occur on disturbed land. However although most of the activity is limited to the disturbed areas of the study area or areas considered to have no or extremely low likelihood of archaeological evidence, the final pipeline to the sea will be buried and therefore disturb the ground surface

3.8 Does the Aboriginal Heritage Information Management System suggest potential?

Yes, for the area along the shoreline.

3.9 Is there archaeological potential because the proposal is:

- **within 200m of waters;**
Yes, parts of the study area are on the shoreline of Port Stephens
- **located within a sand dune;**
No, but the study area contains sand dunes
- **located on a ridge top, ridge line, or headland;**
No
- **located within 200m below or above a cliff face;**
No
- **within 20m of or in a cave, rock shelter, or a cave mouth;**
No

3.10 Can harm be avoided to the object or disturbance of the landscape feature?

Yes, the proposal has been relocated as far as practically possible from the midden to avoid harm to known objects and potential areas of archaeological and cultural sensitivity.

3.11 Is Desktop assessment and visual inspection required?

Yes. Desktop assessment and visual inspection is within sections 4.0 and 5.0 (Step 2)

3.12 Are Further investigations and impact assessment required?

No. Discussion and reasons are contained within section 6. (Step 3)

4.0 STEP 2A Information Requirements (desktop study)

An understanding of environmental factors within the local landscape provides a context for analysing past human occupation and history of an area. The analysis of environmental factors contributes to the development of the predictive modelling of archaeological sites, as well as providing a basis to contextualise the archaeological material and to interpret patterns of past human behaviour.

In particular, the nature of the local landscape including topography, geology, soils, hydrology and vegetation are factors which affect patterns of past human occupation.

Aboriginal occupation of the landscape and land use practices changed over time. Landuse has the potential to affect the visibility of archaeological material; they may obscure, or expose archaeological sites. In addition, previous disturbances may have exposed archaeological material, such as excavation for dams or other ground disturbing works. It is important that such factors are also considered when making assessments of archaeological resources in an area and understanding the distribution of observed sites.

Whilst this report is primarily focussed on the archaeological aspects of Aboriginal heritage, it is important to acknowledge and assess the importance of Aboriginal cultural context regarding places and landscapes.

4.1 Aboriginal Cultural Context

The estimated minimum viable population of about five hundred was the average size of a so-called tribe in Australia. Several anthropologists feel that 'tribe' does not accurately reflect the interaction and make-up of Aboriginal Australia, preferring the term 'band' to be the most appropriate term to describe the basic social and economic unit of Aboriginal society. It is described as a small-scale population, comprising between 2 to 6 extended family units, who together occupied and exploited a specific area.

The band was by no means a social or cultural isolate but, rather, interacted with other bands in a variety of ways. Typically these interactions involved visits, marriage, ceremonies and trade. As a result of these interactions, clusters of bands were formed; wherein there was a sense of collective identity, often expressed in terms of common and distinctive language.

In recent times the territories of Aboriginal bands generally encompassed the drainage basin of one river and stretched from the shoreline up to the top of an escarpment, another river or prominent landform feature.

The bands developed into regional groupings or cultural areas of interacting Aboriginal societies possessing broadly similar languages, social organisation and customs, material culture and art styles, ways of life and environment. According to the work by Peterson (1986), there is a general correlation between culture areas and major drainage basins, which has been explained on the grounds that a drainage basin is unified by its river system and bounded by its catchment. Water

supply determines plant cover and therefore the availability of food and consequently, Aboriginal population density.

According to Horton (1994) Fig 7, the Band that would be of interest to this survey, would be the family groupings of the Worimi, although early accounts mention other various names all of whom may have been a family grouping of the Wonnaruah. Bennet (1926) described the band as the Gringai. The earliest inhabitants were members of the Gringai tribe, hunters and gatherers living off the abundant wildlife. The varied environment - terrestrial, rivers and estuaries, sand dunes and mountains provided a diet of oysters, fish, turtles, kangaroos, wallabies, possums, pigeons, bats, wild fruits and roots.

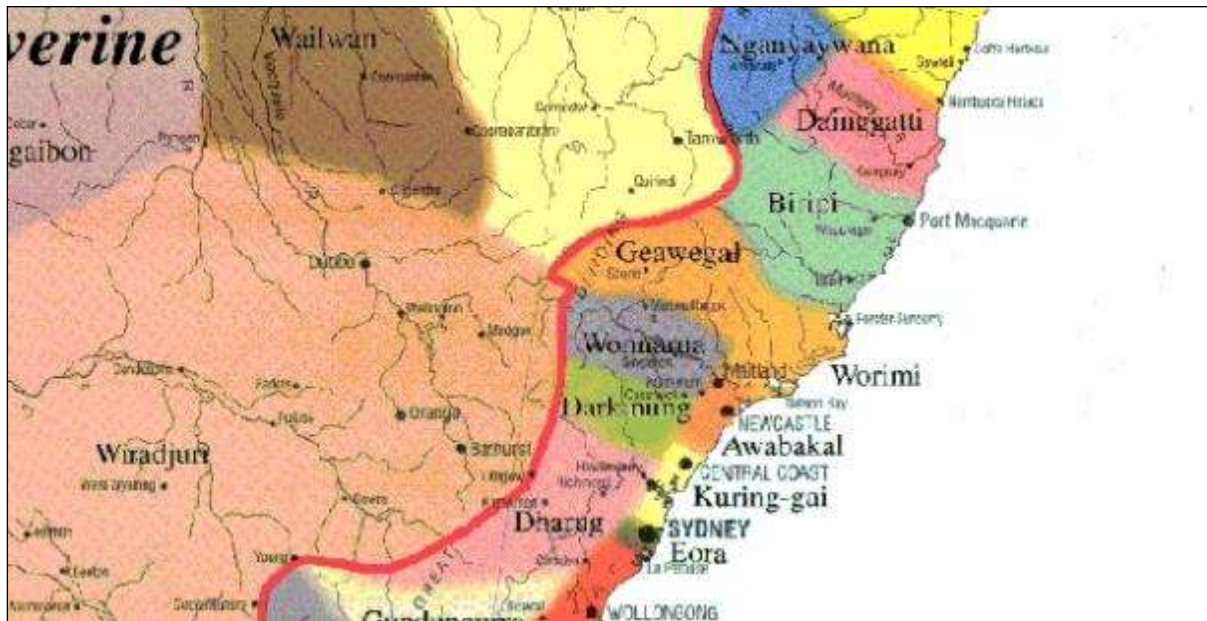


Figure 7 Horton's Map of Aboriginal Territorial Organisation

JW Fawcett (1898, p.152), stated of the Wonnaruah "in choosing their site [camp] proximity to freshwater was one essential, some food supply a second, whilst a vantage ground in case of attack from an enemy was a third. Pearson (1981), made similar observations of the Wiradjuri (Western Plains, NSW) for suitable camp site location: accessibility to water; Level ground with good drainage; Elevation above cold air currents and lingering frost prone valley systems often with good views of the river flats and water courses; Sheltered from cold winter winds and with adequate summer cooling breezes; and, Adequate fuel supplies.

Each family grouping of the Gringai would be about 8 miles (12-15km) apart (Bennett, 1926). They were not nomadic in the clinical sense, however they did move from campsite to campsite on a rotational basis, mainly for reasons of hygiene (Bennett, 1926). Extensive use was made of fire as a hunting tool, modifying the Australian vegetation. There was regular contact with other bands for social and economic purposes. Many of the paths followed would be along watercourses or from one water source to another.

There is an assumption that prior to European settlement the land was heavily forested. However, according to early settler's accounts and the Aboriginal oral history, this was not so as regular, light burning was the pattern all over Australia at the time of first European contact. The fires were of low

intensity, which meant that they consumed the litter of leaves and branches on the forest floors but did not burn down the trees. Walsh, (p26), cites extracts from the accounts of early explorers,

"The extracts from letters, diaries and journals of early European settlers, explorers and government officials describe a parklike landscape of grasslands and grassed open forest lands with very few areas of thick forest. The cessation of regular burning following European settlement allowed a growth of thick forest of young trees that, together with an increasing understorey, choked out the grasses."

Other uses of fire were for longer term hunting strategies. After firing, the Bush would regenerate; new grass would spring up and attract kangaroos and other animals, on which the hunters could prey. Likewise, fire encouraged the regrowth of eucalyptus trees and of edible plant roots. The ashes acted like manure, and sweet, new green shoots would spring up after the first hard rain following the burn.

The term 'fire-stick farming' has been applied to this aspect of hunting. Aborigines never put out their fires. Campfires were left burning, as were signal fires, including those lit in a sequence to indicate the direction of travel of humans or game.

The food resources available controlled the Aboriginal population, which in turn were related to water resources: the areas with the highest rainfall were generally richest in food. When food was difficult to obtain, the food quest simply required more time and effort rather than new strategies. Thus when times were hard, the people could simply move more often and further afield.

The typical Australian Bands economy is flexible with a wide variety of foods being sought and advantages being taken of seasonal abundance or chance events, such as the stranding of a whale. Aboriginal Australia was not vulnerable to famine through the failure of one crop.

The simplicity and self-sufficiency of Aboriginal society was observed by Captain Cook in 1770, and cited in Beaglehole, 1955 (p.399).

"From what I have said of the natives of New Holland they may appear to some to be the most wretched people on earth, but in reality they are far more happier than we Europeans. They live in a tranquillity which is not disturbed by the inequality of condition: the air and sea of their own accord furnishes them with all things necessary for life, they covet not magnificent houses, household stuff etc., they lie in a warm and fine climate and enjoy a very wholesome air, so that they have very little need of clothing and this may seem to be fully sensible of, for many to whom we gave cloth etc. to, left it carelessly upon the sea beach and in the Woods as a thing they had no matter of use for. In short they seemed to set no value upon any thing we gave them, nor would they ever part with anything of their own for any one article we could offer them; this in my opinion argues that they think themselves provided with all the necessary's of life and that they have no superfluities."

The above comment is probably the first recorded by a European with respect to Aboriginal society and culture. It sets the background or the context in which to assess the cultural significance of an area. From a first contact European perspective it appears that items of value were carried and kept whereas, items of little value discarded. Permanent dwellings were of no interest, nor European

belongings. They were not wretched but happy and content. The environment and landscape provided for their needs.

According to the Aboriginal knowledge holders, many of the artefacts found across the landscape today were generally discards and of little importance, yet they are protected by law, whilst the real value lies in the landscape and the sense of place which provided “all the necessary’s of life” is not.

It is important in assessing the cultural significance of a place that one does not focus on the discards but on the connection to land. Whilst all land and all objects are significant to the Aboriginal community as they tell a story of place; past and present, not all objects are seen as “valuable”. According to the Aboriginal knowledge holders, stone flakes (for instance) in Aboriginal society are superfluous but grinding grooves, hearths, rock shelters, carved trees and ceremonial grounds indicate a sense of connection to the past and present and valued. Cultural assessment should be seen in the context of “home” not through the nebulous value of stone discards that are generally found at the lowest point in a landscape and from not whence they originated.

The social structure, land use and occupation as outlined above are supported by the Aboriginal stakeholders in their report at Appendix B.

4.2 Archaeological Record

There are 14 individual Object sites listed on the AHIMS database search area centred on a 10km radius of the study area. The AHIMS search area is shown at Figure 8. There are 2 Aboriginal Places within 20km of the study area. The AHIMS database search area places the study area in a very broad archaeological context in which to assess archaeological potential. These individual sites may contain 1 or many artefacts. The search results of the Aboriginal Heritage Management System are found at Appendix C.

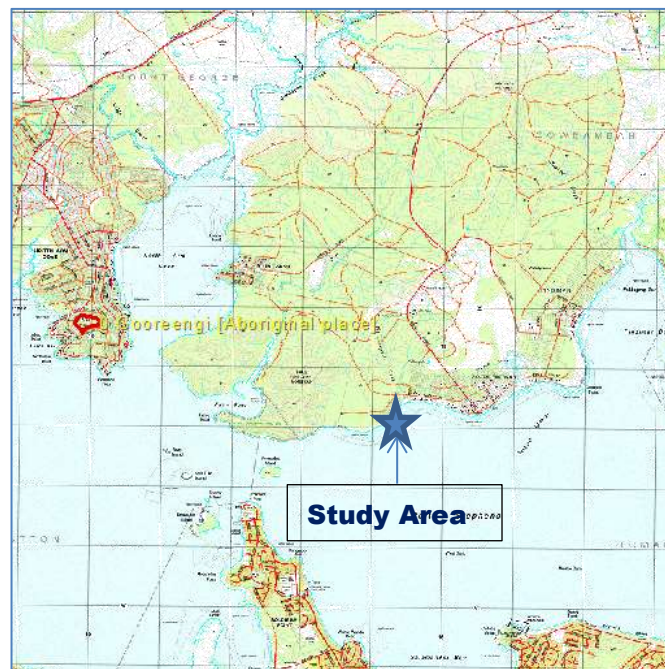


Figure 8 AHIMS Search Area (within red border as downloaded from AHIMS)

The following figure illustrates the approximate location of the known Aboriginal Objects within the vicinity of the study area plotted onto the map from the coordinates supplied from the AHIMS search results. The majority of objects were located during specific cultural assessments and tend to skew results to only that land which has been investigated. However patterns of Aboriginal land use can be postulated from that information. The majority of which are middens.



Figure 9 Aboriginal Objects plotted onto topographical map

Without segregating the individual sites into the number of artefacts contained within each site but aggregating them into artefact type the following is revealed;

- 7 middens and associated artefacts
- 4 ceremonial/scarred trees
- 3 Isolated stone artefacts
- And grinding grooves associated with a PAD

An examination of the location of the landscape context of the artefacts reveals that they are generally associated with a water or food source.

4.3 Previous Studies

Locally, several archaeological surveys have been conducted on the northern shore of Port Stephens, but only 1 at Pindimar. The closest survey was at Bundabah (Fame Cove Land) some 1.5km to the west of the study area. Many of the Aboriginal Objects identified at Figure 9 were observed during those surveys and discussed below.

Aboriginal Heritage Assessment for a proposed Abalone Farm, South Pindimar, NSW. (Worth 2002)
Current Study Area

An unassessed midden on the foreshore of Port Stephens was observed. Worth's description is as follows:

*The headwall (area A1) rises from the sandy beach to form a low beach ridge extending approximately 12m in width before gently sloping away to swampy lowland. Shell deposits were located on the top of the eroding headwall towards the beach. These deposits were observed in surface exposures and amongst vegetation on the beach ridge. On the face of the headwall, a layer of shell comprising *Pyrazus ebeninus* (Hercules club whelk) and *Anadara trapezia* (Sydney Cockle) and *Ostrea sinuate* (mud oyster) was exposed amongst the brownish black, loamy sand and vegetation roots.*

The layer of shell was found on the surface to a depth of approximately 30cm in some places. Further down from this layer, another thin layer of the same species of shells was noted at a depth of approximately 0.56m from the surface, particularly around the base of the trees which straddle the sandy beach front and the headwall. Erosion, through water action and wind, has undermined the headwall and allowed the shell layers to be exposed to natural dispositioning affects.

The inland extent of the shell midden could not be quantified due to it being covered by sand and grassy vegetation. Inspection of the face of the headwall showed only the extent of the shell deposits in one horizontal direction.

Archaeological Survey at Carrington, Port Stephens, NSW (Brayshaw 1984)

This report covered an area of approximately 225ha located north east of the present village of Carrington, on the shores of Port Stephens about 6km west of the study area. The report noted examples of coastal occupation sites on the north coast of NSW, identifying two kinds of coastal middens present in the Port Stephens area. Carrington foreshore and the Corrigan Creek estuary were investigated and during the study, two areas of midden deposit were located. Shell deposits in long bands were found on the high black loamy sand banks and mainly consisted of cockles, whelks, rock and drift oysters. The middens were approximately 200m apart and Brayshaw suggested that they may have been a continuation of the same midden; however wave action over many decades may have eroded the middle section away. A scarred tree was identified (Iron Bark) and recorded. Stone structures (poombit/bora rings) were observed in various stages of disrepair and others had been bulldozed. As this was a preliminary survey these potential sites were not registered (Brayshaw 1984). This report indicated an intensive use of the area by the Gringai people in the past, as a base for "day camping", fishing and ceremonial (initiation) purposes.

Archaeological Survey "Karuah Holdings" North Arm Cove (Roberts, 2000)

This report was commissioned to assess an area of approximately 350 hectares in the Carrington/North Arm Cove (ex-Booral land) area on the north western shore of Port Stephens. It notes the past land use and regional ethno history of the area. The report notes that local knowledge suggests that there are rock shelters with artwork, scarred and ceremonial trees, various artefacts, burial sites and campsites as well as European Heritage in the study area vicinity, many known to the Karuah LALC but not recorded. According to Roberts, An RTA survey in 1999 recognised Bulga Creek as having possible archaeological significance (Roberts 2000). Scarred trees

were identified along Bulga Creek during the survey and it was suggested that this represents significant use of Bulga Creek by the Gringai people. There was no other archaeological evidence uncovered during the survey.

On a state wide basis, several studies have been undertaken which have proven to be definitive works for understanding the correlation of landscape and archaeological potential.

- **Importance of wetlands**

Archaeological investigations by Kuskie (1994), Ruig (1995) and Effenberger and Baker (1996) on margins of various wetlands indicate that artefacts could be found on all types of landscapes abutting wetlands with density in direct correlation to distance from the margin.

- **Relationship of landform type and ceremonial areas**

Work by Klaver and Heffernan (1991) which was an assessment of sites in the Greater Taree Council area, identified landscape attributes for ceremonial sites. Citing an earlier work by Fitzpatrick (1986), they stated, "Ceremonial grounds were said to comprise two rings, one on top of a low ridge and the other in a level place below. The latter was..."established in a roomy place, so that all the gins could camp there close to the ring." This aligns with this author's findings at North Arm Cove and Kings Hill, Raymond Terrace.

- **Relationship between Object type and landscape**

Brayshaw, in 1986 conducted a Study of Colonial Records of the Aborigines of the Hunter Valley and was able to present an account of the environment and way of life of the Aborigines at the time of colonial settlement. Her study also indicated areas and landforms of Aboriginal use and occupation. Dean-Jones and Mitchell (1993) conducted a similar assessment of archaeological sites in the Hunter Valley.

The above studies indicated:

- Open campsites would be near water holes
- Grinding grooves are more likely to be found in rocky outcrops exposed by erosion or in creek beds.
- Scarred trees may be present in any type of landscape, but this would depend on the age and type of tree.
- Artefacts are more likely to be found along creek and drainage lines
- Stone arrangements and ceremonial artefacts are more likely to be found in significant landscape aspects such as caves and hills.
- Artefacts can be found in any landscape in proximity to an abundant food/water source.
- Archaeological evidence is more likely to occur in undisturbed areas.

- **Relationship of Objects and Distance from Water /Song trails**

A report for the Brigalow country was undertaken by the Resource and Assessment Council titled Aboriginal cultural heritage assessment NSW western regional assessments final report September 2002 – Brigalow Belt South Stage 2. This large scale landmark study analysed the finding of separate independent studies and was able to establish an information base that highlighted Aboriginal association with forests, travelling stock routes (early roads), rural properties and towns.

The study showed that of the sites recorded, 50% were within 200 metres of water and Aboriginal occupation may have occurred for prolonged periods under the right conditions, made possible by a different array of water features (chains of ponds) that existed prior to European usage of the forests.

- **Burials**

With respect to burials, work by Donlon (1990), where she analysed skeletons uncovered on beaches on the Central Coast of NSW, ethnographic reports by Bennett 1929, along with other research cited by Mulvaney and Kamminga (1999), has tended to indicate that whilst burials could be found almost anywhere and diverse in practice, intentional or formal burials, generally in Eastern NSW, consisted of isolated burials being placed in sandy type soil, near the high water mark, and sufficient soil depth to bury the person vertically in a sitting position and with various belongings. In the Central west of NSW according to Garnsey (1942: p.23ff), the body was placed in a squatting position; with the elbows placed on the knees and the head between the hands. In this position, the body was placed at the foot of a Coolabah tree facing east. In the burial of an important individual, a strip of bark about five foot long and two foot wide was stripped from the eastern side of the tree and placed in a slanting position over the corpse. The blaze on the tree was also carved in tribal markings to show the man's status. These carved trees were apparently only associated with the graves of the spiritual leaders. For the period of mourning, the body remained out of the ground. The only recorded cemeteries are within the Murray River corridor or at Broadbeach in Queensland. Most burials are discovered by accident.

- **Relationship between Stream Order and occupation pattern**

A survey by Jo McDonald 1988 was an east west survey from Dubbo to Tamworth. The report found stream order influenced occupation pattern. Her analysis concluded that;

"The size (density and complexity) of archaeological features will vary according to the permanence of water (i.e. stream order), landscape unit and proximity to lithic resources in that density and complexity are greater in 4th order (major creeklines and rivers)."

- **Occupation Pattern**

A general pattern is emerging that more concentrated remains of Aboriginal occupation are associated with wetland or swamp resources along the principal rivers of the region and/or where resources suitable for the manufacture of tools are present.

The pattern of Aboriginal occupation was underpinned by 2 tenets:

- Aboriginal camping areas were always situated in areas of good shelter and good resources
- Base campsites would be near reliable water.

Comment:

The archaeological evidence suggests that base camps were located close to freshwater and food sources. The campsites were in favourable climactic conditions, safe, not only from intruders but also for young children. Campsites were therefore not near fast, flowing rivers, dangerous swampy areas or steep cliffs. (Many Dreamtime stories were developed to keep children away from

dangerous areas). Trails from campsites and to other clans were generally along creek lines or ridgelines.

Prior to European settlement the area was inhabited by Aboriginal people who roamed freely across the river flats and through the timbered hill country. They also adopted burning off practices as the new shoots which emerged after fire attracted kangaroos which they surrounded and killed with clubs and spears) barbed with sharp stones.

Although archaeological evidence is generally associated with creeks because they are the lowest elevation and natural depositional areas, it is more likely that camping occurred on higher ground. The intensity of evidence within creek areas suggests broader occupation of a creek catchment rather than just the creek itself.

4.4 Landscape

The differing landscape creates different land use. For instance swampy or poorly drained land would not be conducive to campsites or burial grounds. Whereas, caves and rock shelters would give rise to artwork, and practical purposes such as shelter or women's birthing areas. Early roads, stock routes and river crossings during European settlement often followed Aboriginal Song Trails (walking trails) and natural features adjacent to such trails were of significance for various reasons. Over the years, the main highways and roads have been realigned and adjusted, but initially the roads between settlements which were generally established around Aboriginal camping grounds, followed the Aboriginal trails.

The landscape survey and classification followed in this report is that formulated by Speight and others in the Australian Soil and Land Survey, Field Handbook, Second Edition.

Landform is basically divided into 2 classifications, the classification covering a larger area is known as Landform Pattern, which can then subdivided into smaller areas known as Landform Elements. About 40 types of landform pattern are defined and include, for example, floodplain, dunefield and hills. Whereas, about 70 of the smaller landform elements are defined, including cliff, footslopes and valley flat. Relative elevation classes have been standardised and used throughout Australia. The landscape is divided into the following classes:

Landform	Relative Elevation
Plains	0-9 m
Rises	9-30 m
Low hills	30-90 m
Hills	90-300 m
Mountains	>300 m

Landforms as well as having morphological characteristics (surface dimensions) have been formed by processes. The formation processes can interact to produce an array of landforms. For example, plains can be separated into depositional plains of various kinds or erosional surfaces (peneplain). The formation process contributes to the concealing/revealing and the preserving/destroying of

archaeological evidence. The identification of landform is paramount in predicting areas that have the potential to contain archaeological evidence.

Comment:

Topography, hydrology and drainage are important for understanding how accessible an area was for Aboriginal occupation, as well as providing information on available water resources vital to the sustainability of any population.

The study area landform pattern is generally part of the coastal floodplain, with an AHD at sea level on the southern boundary and most of the area until the northern boundary where it elevates to 15m AHD

The following Figure 10 (the NSW 25k east topographical map in 3D) shows the relative landform/landscape profile of the floodplain, slopes and surrounding hills.



Figure 10 Landscape Context

4.5 Soils

Where an archaeological survey is only a surface investigation, any information relating to subsurface information is important, in that it indicates:

- The possibility of archaeological evidence beneath the surface.
- The possibility of archaeological evidence destroyed through erosion or other natural phenomena.
- The possibility of archaeological evidence preserved through soil/sand deposition.

The main soil features of interest are the depth of deposits, stability of the soil composition and the depositional age of the soil groups. Detailed analysis of the effects of different soils on the burial process of archaeological remains can only be carried out during an excavation.

The susceptibility of land to sheet and rill erosion is governed largely by the topsoil texture, slope of the land, length of slope and the probability of intense summer rainfalls. The topsoil or A horizon is

where most nutrients, organic matter, seed and macroporosity so desirable for a seedbed exists. If this is stripped away through soil loss the fertility of the soil is lost and productivity reduced. The first few centimetres of soil also generally contain artefacts.

The following map details the soil profile. It shows the soil in the study area classified as CD1 which contains sand soils with hardpans usually in the upper subsoil but also in the lower subsurface soil. The surface soils are highly permeable but the hardpans only slowly permeable. This results in seasonally perched water in the subsurface sand, which may become fluid. Duration depends on rainfall incidence and site.



Figure 11 Soil Classification

Comment:

Generally, the study area soil is sandy loam. Parts of the study area would hold water seasonally and it may, at times, be a simple matter to dig to obtain freshwater. This creates opportunistic camping on a seasonal basis. Unfortunately the sandy composition of the soils is not permanently stable being subjected to storm, wind and erosional changes which is not conducive to in situ surface archaeological evidence. The implication for the study area is that there could be potential for subsurface archaeological deposits within sand dunes and aeolian depositions provided the soil profile has not been disturbed.

4.6 Geological Features

The geological data allows for analysis of the landscape to determine any special features that may contribute to historical Aboriginal occupation. There may be particular outcrops or features that would suggest significant Aboriginal use. The following map shows the geological composition of the study area. It shows the study area lies mainly on carboniferous volcanic bedrock which may tend to stabilise the land from coastal erosion. There may be occasional outcrops which may help establish dunes and sandy hills.

Comment:

Although there is no indication of a geological abnormality or feature that would suggest special significance to the landscape based on the geological mapping, however there is the possibility rock outcrops could occur that could have been used for grinding grooves and shelter.

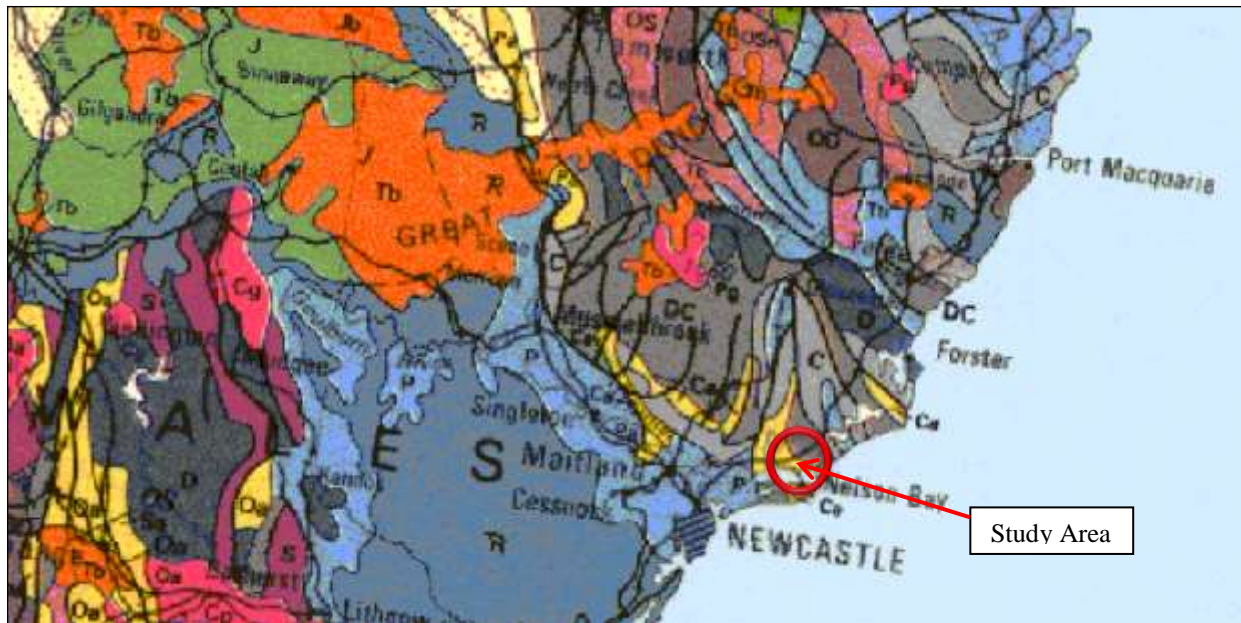


Figure 12 Geological Classification

4.7 Past Land Use

Past Aboriginal activities are not well manifested by archaeological record because many activities did not leave material evidence or because the material evidence was not durable. Many of the implements were organic material, such as wood and bone and readily decayed when exposed to the elements. Even burials, are subject to the acidic condition of the soil.

Durable evidence, such as stone and rock implements, is affected by European land use. Easily recognisable implements such as stone axes, have found their way into many private collections, well before it became illegal to do so, with no record of the location of the find. Cultivation, with the associated stick raking and stone gathering also tended to destroy surface evidence. However cultivation and pastoral land use also helped preserve the archaeological record. In some cases cultivation would expose evidence in others, cover the evidence.

In general, the archaeological record is dependent on the exposure of sites through erosion, weathering, fire, drought and anthropogenic activities.

The vegetation within the study area is predominantly Open Forest dominated by various species. The majority of the trees appear to be of a similar age and would probably be less than 20 years of age.

The current vegetation does not give a good indication of the archaeological potential as it is basically regrowth or introduced grasses and pasture and is not necessarily indicative of what was there over 200 years ago.

The variety of vegetation that was probably on the subject site at European contact would also have lent itself to the fostering of animal food resource. Many of the current animal and bird species found on the subject site most probably existed on the site at European occupation although as to the abundance is speculative but probably more intense and greater variety.

- *European*

The history of Pindimar is associated with the development and history of the AA Company. Since occupation by the A.A. Company, the land has been used for agricultural purposes, from sheep farming to cattle grazing and since the 1900's development associated with the fishing industry. In the vicinity the land has been used for forestry, dairy farming, viticulture and the occasional prospecting. During the depression years several tent cities arose throughout the area, but it is difficult to assess to what extent the subject land was affected. Pindimar itself was once a village with a school, post office, general store and service station.

2.2.3 Implications

The land in the study area has been disturbed by European Activities since 1820. The land has been used for various pursuits. Evidence of Aboriginal occupation within study area except for middens scarred trees and the ethnographic record appears remote.

- *Aboriginal*

There are conflicting accounts as to the tribal relationships of these clans, but there was a definite relationship between the clans from the Williams River and Gloucester area through to Port Stephens. They were known as the Gringai Clan and probably part of the Worimi or the Wonnarua Band (Figure 7). According to Walsh, (p25) "The Gringai clan of the Wonnarua had a well-developed kinship structure and lived in extended family groups."

"The Aboriginal population was controlled by the food resources available, which in turn was related to water resources." (Flood, p265)

This would mean that Port Stephens could sustain a large and healthy population.

The area was well known for marine life and abundance of other wildlife. The early historical records even dating back to Captain James Cook, notes the vitality and healthy appearance of the natives.

In the 1820's records indicate that a large number of Aboriginals died from introduced diseases from which they had no immunity.

From the recollections of William Scott who was born at Carrington, his father being employed by The A.A. Company, it is obvious that the Aboriginal population was quite large, but declined rapidly in the years since white settlement. It seems by 1890 the local tribes had been virtually wiped out.

Extraordinary Aboriginal heritage unfolds. Sites of significance are still abundant due to the undisturbed nature of the area. They had various base camps along tributaries of the Port Stephens, the Karuah and Myall Rivers. The camps would have been near reliable watercourses. The pathways to other bands or to food, shelter or ceremonial resources were generally along creeks and associated watercourses or ridgelines. The Gringai had extensive relationships with the Awabakal, Wonnaruah, Darkinjung and Worimi and particular travel routes are obvious from the landscape in the Hunter valley.

4.8 Predictive Model

According to Orton (2000: 77), "In archaeology, predictive modelling refers to a process that considers variables that may influence the location, distribution and density of sites, features or artefacts across the landscape. As well as a review of the results of previous archaeological work and available ethnographic information (to make judgements about past Aboriginal settlement of the landscape), the variables often included in a predictive model are environmental and topographic variables such as soils, distance from landscape features, slope, landform elements, and cultural resources."

A predictive model of Aboriginal object location is constructed to identify areas of high archaeological sensitivity (i.e. locations where there is a high probability of an archaeological site occurring), so it can be used as a basis for the planning and management of Aboriginal sites. Predictive modelling involves reviewing existing literature to determine basic patterns of site distribution. These patterns are then modified according to the specific environment of the study area to form a predictive model of site location. A sampling strategy is employed to test the predictive model and the results of the survey used to confirm refute or modify aspects of the model.

The use of land systems and environmental factors in predictive modelling is based upon the assumption that they provide distinctive sets of constraints, which influenced Aboriginal land use patterns. Following from this is the expectation that land use patterns may differ between each zone, because of differing environmental constraints and that this may result in the physical manifestation of different spatial distributions and forms of archaeological remains.

The predictive model is based on information from the following sources:

- Identification of land systems and landform units
- Previous archaeological surveys conducted within the region
- Distribution of recorded sites and known site density
- Traditional Aboriginal landuse patterns
- Known importance of any part of the study area to the local Aboriginal community

The types, contents and distribution of sites within the study area can be predicted using such modelling.

The following raw materials have been identified in the region (in order of frequency) silcrete, indurated mudstone, silicified tuff, chert, quartz and other materials. Artefacts types identified in order of frequency are flakes, cores and tools.

An analysis of the density of distribution, site type and landscape context shows that any archaeological evidence will tend to be middens, scarred trees, stone artefacts associated with a watercourse or midden and occasional ceremonial Objects such as grinding grooves will be dependent on a sandstone outcrop associated with a water course. It is not likely that burials or ceremonial areas will be found given the ethnographic and historical record shows them to be elsewhere. Ceremonial areas like churches tended to serve a wider area.

Where there is a potential for sub-surface deposit with artefacts (such as flaked stone) it is identified as a PAD. Sub-surface deposits are important as they have the potential to contain intact in-situ archaeological material. In some cases, they may contain material that can be placed in chronological sequence. PADs are significant because they may contain new scientific and cultural information and have the potential to further our understanding of past Aboriginal occupation of the region. Generally PADs in the area are associated with middens.

The recorded archaeological data suggests that there is a correlation between watercourses and the presence of Aboriginal sites. There is higher potential for sites to be identified within 200m of a water course, than further away. Sites are likely to occur within flat, open depression, simple slope and crest formations.

Based on adjacent recorded average data density of artefacts will be low and generally in the order of less than 3 artefacts per hectare.

5.0 STEP 2B Information Requirements (Visual Inspection)

The integration of the information consists of checking the predictive modelling against the on ground reality. The developed predictive modelling indicated that any archaeological evidence would be found in the non- disturbed areas of creek catchments and would generally consist of artefacts and maybe grinding grooves.

Although the entire study area was considered in this assessment, it must be noted that only the proposed development footprint and 50m buffer area was intensively surveyed on foot and is shown at Figure 13.as the rest of the area was not impacted by the development proposal..

5.1 Strategy

The following was used to inform the visual inspection of the proposal.

- Vehicle traverse used for reconnaissance observations of the proposal area to inform and design a pedestrian survey strategy for the area and any other areas adjacent to the proposal considered not to be disturbed under the NPWS Act.

5.2 Method

- As the proposal is basically linear the entire land area of the proposal to be inspected and not sampled.
- Survey on foot, for the purposes of discovering Aboriginal objects
- Re assess the midden
- Accurately define and name survey units
- Include representative photographs of survey units and landforms where informative
- Record landform and general soil information for each survey unit
- Record the land surface and vegetation conditions encountered during the survey and how these impact on the visibility of objects
- Record any Aboriginal objects (including those already registered on AHIMS or otherwise known) observed during the survey
- Record survey coverage and calculate survey effectiveness

As the proposed development footprint was the only part of the study area to impact the land surface and that it was confined to one landform unit coastal flat, the development footprint was broken into 5 survey units based on development type. Each survey unit was investigated separately. The midden Unit 6 was also examined

Unit 1 Shed and main infrastructure area

Unit 2 Settlement Pond area

Unit 3 Surface pipeline area

Unit 4 Pump station area

Unit 5 sub-surface pipeline area

Unit 6 Known midden and shoreline

The survey units were then specifically and exhaustively examined on foot, paying particular attention to the watercourses, bare ground and erosion features. The margins of the dam were

particularly examined. At the conclusion of the examination of the various survey units, adjacent individual trees that were considered to be of appropriate age and size were examined.

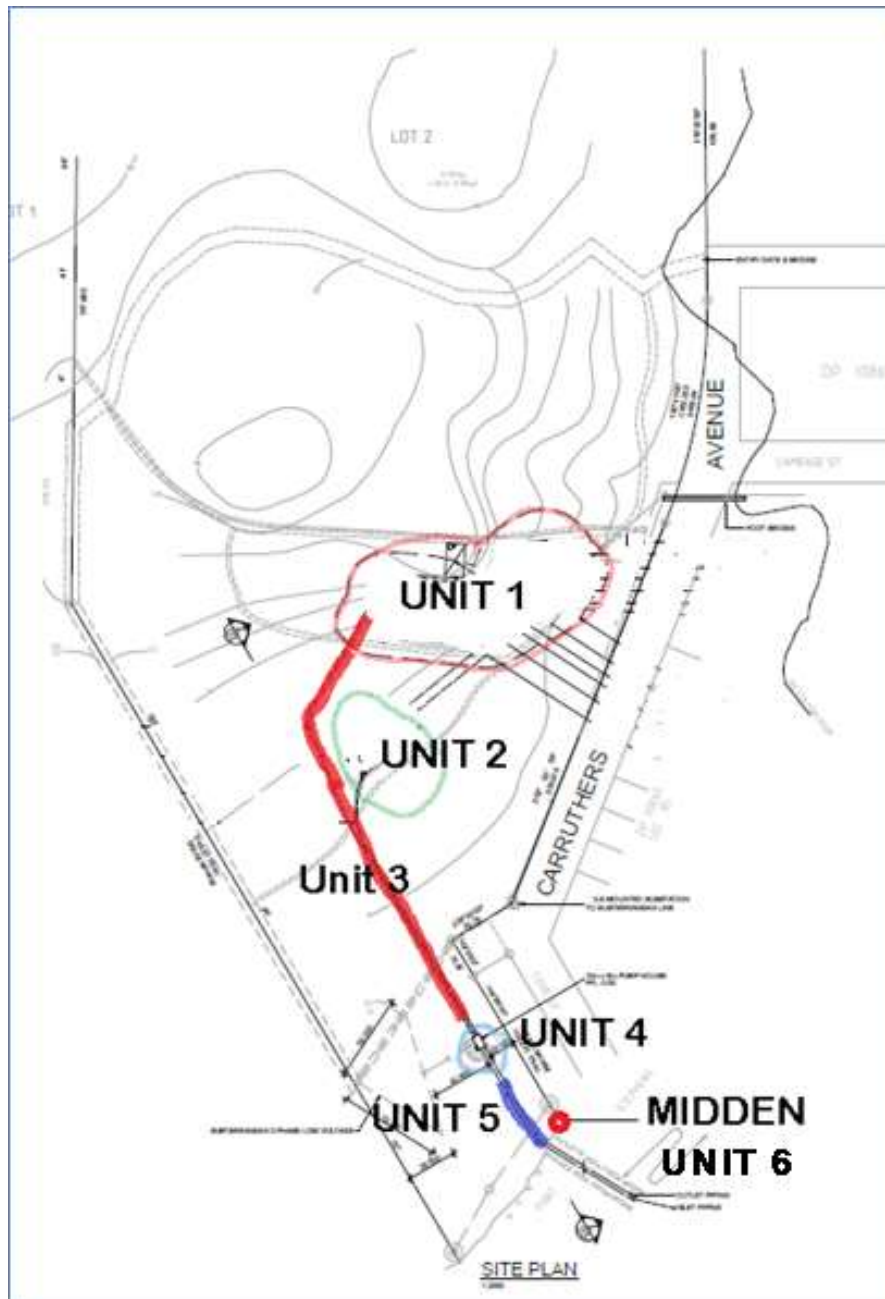


Figure 13 Survey Units

5.3 Coverage Data

The effectiveness of archaeological field survey is to a large degree related to the degree of ground surface visibility. The dominant factor affecting the ground surface visibility was the disturbed and modified nature of the ground.

Although the total amount of exposure was limited, it is believed there was sufficient landform type and exposure to indicate any potential archaeological material that may be present.

The characteristics of each unit and effective survey coverage are as follows:

Unit 1

Unit 1 consists of two parts. One part is a cut and filled area that was created for a former house, sheds and associated infrastructure as well as a former gravel quarry. The house site has been cut, filled and levelled. It has a regrown grass cover.

The gravel quarry has been dug out with a large hole or dam containing water.

Whilst visibility is somewhat constrained, nonetheless there is sufficient exposure to observe archaeological evidence.

However the exposure in this area is completely irrelevant as the land meets the definition of disturbed land under the NPW Act in that there has been “human activity that has changed the land’s surface, being changes that remain clear and observable.”

It is the considered view that this Unit would not contain any archaeological evidence or potential.



Plate 1 House site



Plate 2 Rock quarry

Unit 2

Unit 2 is a former sand Quarry and has good exposure. The depth of the sand and its profile can be seen on the margins of the quarried area and does not indicate potential. The sand that was quarried occurred over a long period of time and was probably used for fill for the nearby residential developments over 50 years ago. Any evidence that may have existed in this area has been completely obliterated. This land meets the definition of disturbed land under the NPW Act.

It is the considered view that this Unit would not contain any archaeological evidence or potential.



Plate 3 Former sand quarry

Unit 3

This unit consists of the coastal flat with various degrees of grass pasture. Exposure was generally good and did not contain any evidence. Subsurface potential was considered unlikely. The areas of the undulating Open Eucalypt Woodland area which the pipeline may traverse, is cleared and comprised a low understorey regrowth mainly of fern and grass species.

It is the considered view that this Unit would not contain any archaeological evidence or potential.

Unit 4

The pump station area is a slight depression and was holding minute covering of water at the time of inspection. It mainly consisted of leaf litter and fern. It appeared disturbed and although containing water and leaf litter, exposure was very good. There was not any evidence or potential observed.

It is the considered view that this Unit would not contain any archaeological evidence or potential.



Plate 4 Pump station area

Unit 5

This unit was similar to unit 4 and the generally disturbed nature of the land. However part of the area had regrowth trees, but the proposed pipeline would not interfere with the trees and would follow a cleared course. However, closer to the beach, the land rose and formed a rise which led to the midden. This rise could actually be part of the midden. It is not possible to determine if the rise was in fact part of the midden without invasive investigation. Such investigation would require a permit as midden investigation is not covered by the archaeological code. Burials can be associated with middens and it is possible, albeit unlikely, that the rise could contain a burial.

The orientation and the landform suggest that the rise is a natural formation and the lowland adjacent to it may have been an inlet that has been filled over time through natural processes.

It is the considered view that this Unit may contain archaeological evidence and/or potential.



Plate 5 Proposed pipeline path and rise leading to midden

Unit 6

This unit is the beachfront and suffers from natural aggradation and erosional processes. It actually has two distinct landform units. An older more established rise in which the shell deposit has been exposed and a lower more gradual beach front which has been subjected to storm events and wave action. The rise contains a blacker sandy loam whereas the beachfront consists entirely of white beach sand.



Plate 6 Beachfront



Plate 7 Beachfront showing extent of wave damage



Plate 8 Midden

The examination of the midden showed that it had been affected by natural beach processes over the past 10 years. It was not in the same condition and some of the midden and sand had been eroded. However, shell deposit is still readily visible in stratified layers, which indicated that the shell deposit continued further inland than from what had been originally observed. It is highly likely that the shell deposit continues throughout the rise and could be larger than initially suspected.

Shell deposits may be natural or as a result of anthropogenic feasting. Most middens are generally accompanied by charcoal, bone or stone artefacts. According to the 2002, report this shell deposit did not contain any of the additional features.

An assessment undertaken by this archaeologist, in conjunction with OEH officers and the Karuah Aboriginal Land Council (Roberts 2011) into a nominated midden at Tea Gardens, developed a table of criteria against which shell deposits could be assessed to determine if it was cultural. This table was based on individual and distinct works undertaken by Attenbrow, Dean-Jones, Sullivan and Alexander. The assessment revealed that the shell deposit was not a midden and reinforced the view of Alexander That *“One archaeologist’s midden is another’s shell mound.”*

The above authors cautioned against determining shell deposits as middens without diligent assessment.

The table used by Roberts was:

<ul style="list-style-type: none"> the range and number of shellfish species present
<ul style="list-style-type: none"> the percentage frequency (proportion) of each shellfish species
<ul style="list-style-type: none"> the source or habitat of shellfish species
<ul style="list-style-type: none"> the size of shells within individual shellfish species (
<ul style="list-style-type: none"> the presence or absence of:
non-edible (non-economic) species
articulated shells
water-worn/rolled and unbroken shells
fracture patterns in shells
burnt or blackened shells
non-molluscan fauna -
charcoal, burnt wood, hearth stones
pumice and marine shell grit
forms of life not used by Aboriginals
stones with pitted or corroded surfaces
stratification
<ul style="list-style-type: none"> location of the shell deposit in the soil profile and in the landscape
<ul style="list-style-type: none"> recent non-Aboriginal activities likely to have occurred in the vicinity of the shell deposits
<ul style="list-style-type: none"> a radiocarbon date.

The difficulty with the assessment of the extent and condition of the shell deposit is that any reliable assessment would require excavation. This is only beneficial if there is a need to determine the size, extent of the shell deposit or if was indeed going to be harmed by development.

This shell deposit has been previously classified as a midden. It exists within a landscape profile that was favourable to the establishment of a midden. The soil composition is different to the sand around it. Precaution suggests that if the development can avoid the shell deposit then it should.

Whilst it is not possible to establish with certainty that the shell deposit is a midden the preliminary assessment suggests that it is and that it may be a very old one and quite extensive.

It would be in the opinion of all present at the visual inspection that it would be counterproductive to assess the shell deposit any further as excavation would be invasive.

It would be wiser and as a precautionary measure to move the pipeline as far away from the rise and shell deposit as possible.

Survey unit	Topography	Surface slopes	Visibility	Area available for detection	finds	Archaeological Survey constraints
Unit 1	Levelled , cut and fill, stone quarry	<5%	good	80%	nil	Highly disturbed land
Unit 2	Sand quarry	<5%	Very good	100%	nil	Soil integrity highly disturbed
Unit 3	Coastal flat	<5%	Good to very good	75%	nil	Grass and ferns
Unit 4	Sand depression	flat	Very good	90%	nil	Surface water
Unit 5	Coastal flat and small rise	<5%	fair	60%	Potential to be part of shell deposit	Vegetation and fern/grass cover
Unit 6	Sandy rise, beachfront and shell deposit	n/a	Very good	85%	Extensive shell deposit	Vegetation and subsurface information

Table1 Survey Effectiveness

5.4 Findings

There was no additional archaeological evidence during the re-survey of proposed development. However the potential extent of the shell deposit was considered to be larger. The findings of the 2002 survey were verified by this assessment.

The findings of the 2002 report have been confirmed and are used as data for analysis of significance of the total study area and the remainder of the proposal area.

The significance of the evidence was assessed at the time of the original surveys and is not discussed here. All evidence is considered significant to the Aboriginal community and the preference is to leave evidence in-situ. The evidence was accepted as significant and warranted protection by being left in-situ and a management plan developed in consultation with the Aboriginal community post approval.

It was considered by all present that the proposed pipeline route was too close to the midden. This was particularly so, as this leg of the pipeline was to be buried; and given the changes to the beachfront through natural processes the burying of the pipeline may contribute to the erosion process which may in turn impact upon the midden. Therefore the pipeline needed to be moved. An analysis of the land was undertaken and a route found which would move the pipe further away from the midden. This route would be along an existing disturbed path. The following plate illustrates the preferred relocation of the pipeline.



Plate 9 Approximate Location of new preferred pipeline route

The midden would not be impacted or potentially impacted with the relocated pipeline route.

Figure 15 following, identifies the nature and extent of the total development in relation to the midden. Figure 16 shows the amended route of the pipeline to avoid any real or potential impact of the development on the midden and potential cultural sensitivity.

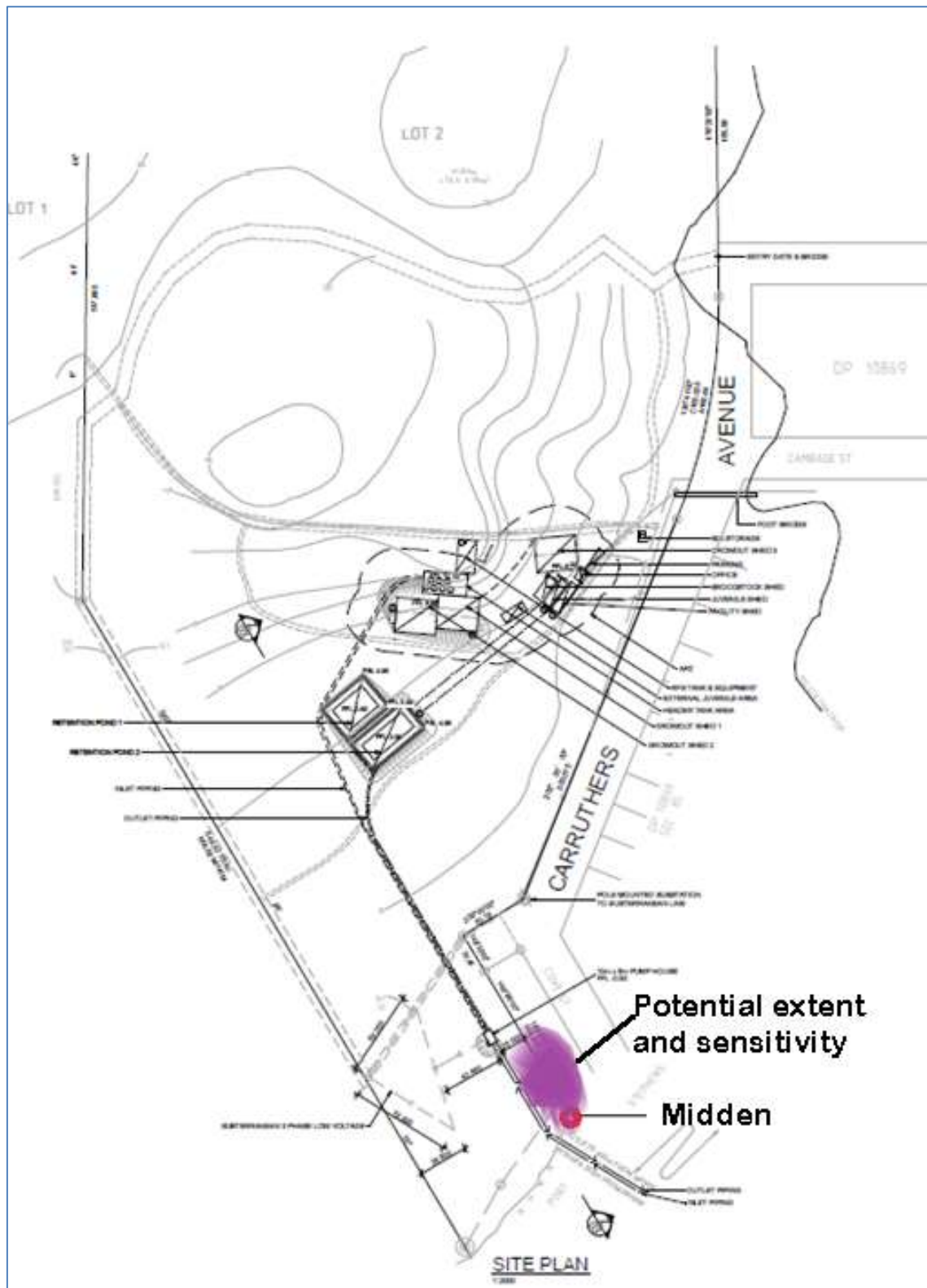


Figure 15 Aboriginal Objects in relation to the proposed development footprint

6.0 Step 3 Integration of information and identification of heritage values

The integration of the information consists of checking the predictive modelling against the on ground reality. The developed predictive modelling indicated that any archaeological evidence would be found in the non- disturbed areas of creek catchments and would generally consist of artefacts and maybe grinding grooves.

6.1 Key principles in determining Occupation Pattern

Roberts, 2009 formulated 7 key principles to determine probable Aboriginal land use of a particular area.

Using those principles it is possible to place the study area into Aboriginal occupation context and use.

1. Proximity to water

The study area has a boundary with Port Stephens. This in itself suggests the area has potential to be a resource. However, potable or drinking water is not readily available. However, seasonally such water would have been available.

2. Food resource

The study area does not appear to contain any unusual food resource that would not be found within the region but seasonally, oysters, shellfish and other marine delicacies would be available as special food resources.

3. Geological features

There is no unusual, unique and prominent geological attributes within the study area.

4. Ease of access

The study area is easily accessible on foot for all age groups

5. Connectivity

The study area does appear to link other areas. The coastline was a favoured travel route at least seasonally.

6. Safety

The study area is not dangerous or close to dangerous or unhealthy landscapes. There does appear to be natural protection from harsh and extreme weather. There are no commanding views from various parts of the study area.

7. Archaeological evidence

Whilst there is a midden identified within the study area, the spatial distribution is probably more indicative of the occupation of the total area landscape rather than just the immediate area itself. The overall lack of evidence probably also suffers from the highly disturbed nature of much of the land. Nonetheless there is sufficient evidence to attribute Aboriginal occupation to the study area and its environs.

Comment

Although the majority of the study area has been disturbed, it is still possible to suggest the occupation context and landuse. The information from the above 7 principles indicate:

- The study area was occupied by the Aboriginal community. Water and food resources were available and there are no access constraints. However there are no indications that any of the study area was intensively or extensively used on a permanent basis. The lack of areas such as grinding grooves and low density of archaeological evidence suggest occasional or less intensive use. The landscape and archaeological evidence not too distant from the study area indicate more favourable areas for occasional and more intensive camping.

All in all the occupation of the study area appears to be cantered on the abundance of special and substantial seasonal marine delicacies. It was probably used as a resource and rest area on the way to more permanent or intensive occupation sites. There does not appear to be any landscape attributes that would suggest more than occasional use.

6.2 Landscape Significance Assessment

It is important to stress that the significance of a cultural landscape is not dependent on archaeological evidence being significant in itself but the interrelatedness of the individual objects to the cultural landscape as a whole. Through understanding the cultural landscape in an holistic manner one may be able to appreciate the associations that may exist between Aboriginal objects and other features within the landscape.

Using the criteria outlined earlier the significance of the study area in an Aboriginal cultural heritage context can be assessed as follows:

- *Social value*

Much of the oral tradition and knowledge has been lost to the Aboriginal communities today. However as research and surveys discover and reveal greater understanding of the past, communities are rediscovering and appreciating what has gone before. At the present time, there does not appear to be spiritual, traditional, historical or contemporary associations and attachments which the place or area has for the present-day Aboriginal community. Similarly there does not appear to be associations with tragic or warmly remembered experiences, periods or events. However that is not to say that discovery of evidence or knowledge of past spiritual connection to the place will not rekindle such association.

- *Historic value*

At this time, there does not appear to be an association of the study area with a person, event, phase or activity of importance to the history of the Aboriginal community.

- *Scientific value*

There is scientific value to the study area particularly along the foreshore of Port Stephens

- *Aesthetic value*

The sensory, scenic, and creative milieu of various parts of the landscape evokes feelings of a sense of place and its past use. There are commanding views from various parts of the study area.

Comment

Aboriginal Heritage is centred on the landscape of Port Stephens, its tributaries and seasonal resource features. Proximity to the shores of Port Stephens suggests significance in context of clan connectivity rather than any long term intensive occupation.

There are no areas of archaeological or cultural value within the relocated development footprint.

7.0 STEP 4 Information regarding the proposed development

The extent of impact both direct and on Aboriginal heritage is discussed to ensure that appropriate management in the context of the assessed values can be implemented.

The proposal is basically sheds tanks and pipelines and associated infrastructure. The sheds, tanks and associated infrastructure will be located on disturbed land as defined in the NP&W Act as amended. The majority of the pipeline will generally not disturb the land as it will be on the surface and ipso facto, have absolutely no impact on Aboriginal values. However, the last stage of the pipeline to the waters of Port Stephens will be located under the ground and was originally planned to be in close proximity to the midden. However after the initial assessment in 2002, the proposed route was moved further away from the midden.

This assessment concluded that the proposed route is still probably too close to the midden and in order to completely avoid any likely impact whatsoever, should be moved even further to the west, along a disturbed track.

This management measure of moving the last stage of the pipeline further west ensures the protection of the assessed heritage values.

All new development has the potential in the future to alter water use, water flows and soil erosion outside the proposal area.

It is not possible to predict with any certainty the level of such indirect impact, if any, however it is possible, through appropriate management strategies of the conservation area such as via an Aboriginal Heritage Management Plan to alleviate or minimise any accidental harm. It is never possible to alleviate deliberate harm and this remains a risk with or without the proposed development proceeding. It is important to note that whilst all landscape is significant to the Aboriginal community, the majority of the landscape within the proposal area is considered to be disturbed and any cultural value to or likely evidence within the proposal area is lacks integrity and likely to be obliterated. This is in stark contrast to the landscape of the foreshore of Port Stephens surrounding the midden.

The midden area is highly valued by the Aboriginal community to day and was in the past. Its outlook, landscape, features and resource attributes readily evoke a sense of use, purpose attachment and place. The midden area is such a special place to the Aboriginal Community that it puts into perspective the probable comparative lack of use of the proposed development footprint.

Figure 16 following is the indicative location for the final stage of pipeline to avoid all potential impact upon the midden.



Figure 16 New route of pipeline to avoid any potential impact

8.0 STEP 5 Integration of assessment with proposed development

This step involves using the above information as the basis for assessing the cultural values against the impacts from any proposed development to identify specific outcomes.

- *justification for any likely impact(s), including any alternatives considered for the proposal;*
As discussed previously there are no impacts from the proposal development directly or indirectly on Aboriginal heritage as all known Objects and landscapes that may have archaeological potential are outside the proposal area and will be left in situ and covered by a management plan.
- *any measures which will be implemented to avoid, mitigate or offset the likely impact(s).*
Given that the Aboriginal heritage values will not be impacted by the proposal there are no measures required to mitigate, avoid or offset likely impacts. However, A management plan will be implemented to protect the known midden within the study area as well as mitigating any impacts (albeit unlikely) to any unknown objects that may be discovered in the course of the development construction.
- *demonstration that the input by affected Aboriginal communities has been considered when determining and assessing impacts, developing options, and making final recommendations to ensure that acceptable Aboriginal cultural heritage outcomes can be met by the proposed development.*

The affected Aboriginal community represented by the stakeholders (which was established through the application of the OEH consultation requirements) has been consulted throughout this assessment and has had input into the assessment as follows:

- All relevant Aboriginal people or Aboriginal organisations were given the opportunity to express an interest in being consulted and involved in the assessment. Appendix A contains the consultation log.
- On the 26/7/2012 registered stakeholders met with this archaeologist for presentation of the proposal, discuss concerns and knowledge and develop procedures for the visual inspection.
- Undertook visual inspection and made recommendations to be included in the report for consideration. Invited this archaeologist to compile a draft Cultural Heritage Report for their consideration to be included in this assessment.
- Met with Dave Feeney on 14/11/2012 to discuss the draft report and to confirm agreed pipeline relocation path.
- Reviewed and responded to Cultural report.

It was the unanimous recommendation that all the known Objects and areas that were likely to be of significance to the Aboriginal community should be set aside and not destroyed. It was further recommended that archaeological subsurface work was not warranted as it was intrusive and destroyed rather than protected Aboriginal heritage.

With the above in mind, and after due and deliberate consideration with the registered Aboriginal stakeholders, the following recommendations are made:

With respect to Aboriginal heritage the proposed development's impacts on Aboriginal values are avoided as the development will occur well away from known Objects. In addition the following measures will be implemented to avoid any future (unlikely) impact(s):

- To further mitigate potential indirect impacts, the proponent should continue to consult with the Stakeholders during all phases of development to ensure enhanced and achievable options for benefit to the Aboriginal community is accrued. These options may include work programs, cultural heritage enhancement options and business partnership opportunities.

The registered stakeholders concurred with the findings and recommendations of the report and endorsed the Aboriginal Cultural report.

The attached correspondence from the Aboriginal community in Appendix A demonstrates that the input of the registered Aboriginal stakeholders has been considered when determining and assessing the impacts, developing options, and making final recommendations to ensure that Aboriginal cultural heritage outcomes can be met by the proposed development.

It must be noted that the Aboriginal Stakeholders have no objection from a cultural heritage perspective for the proposal proceeding as all known areas, objects and features of value to the Aboriginal community have been left in situ outside of the proposed development.

9.0 STEP 6 Management strategy for Aboriginal heritage

This step involves identifying management strategies to be implemented post-approval, including:

- *identification of the nature of and location of any offsets;*
There is no need for any offsets as no Aboriginal Object will be impacted directly or indirectly by the proposal.
- *requirements for further work such as archaeological salvage or community collection for objects of high archaeological or community value;*
There are no requirements for further work within the proposal area as well as any areas of archaeological sensitivity within the study area. There is an unassessed midden within the study area on the south eastern corner, the size of which cannot be determined without further invasive investigation. Such investigation would be counterproductive particularly as the proposal will not impact upon that area as the proposed pipeline will be located well away from the midden along a disturbed path.

Salvage or subsurface investigation is not warranted as all known Aboriginal objects will be left in situ.

- *Specific on-going management protocols for both physical conservation outcomes and specific Aboriginal community requirements.*
The following specific management outcomes arising from the above assessment stages for management of the Aboriginal heritage values are enumerated below.
 - A post approval management plan to be prepared for the conservation of the midden as per Aboriginal community requirements with ongoing consultation with Aboriginal community throughout the development process.
 - The management plan is to be prepared in consultation with the Aboriginal stakeholders to consider preservation and protection of key Aboriginal heritage values and to deal with measures to be taken in the event that new Aboriginal objects of significance or a nature not anticipated, such as burials or ceremonial items are discovered during construction. This plan is to generally to include:
 - a. The bagging, tagging and collection of any artefacts that may be unearthed during the construction process and kept with KLALC until an appropriate keeping place is determined by the management plan.
 - b. Aboriginal Cultural Education Program should be developed by the proponent for the induction of personnel involved in the construction activities in the project area in consultation with KLALC.

10.0 Certification

This report was prepared in accordance with the brief given by City Plan Services to assess of the impact of the proposed development on Aboriginal heritage and was undertaken to demonstrate due diligence.

To the best of our knowledge the report accurately reflects the archaeological survey, findings and results, as well as the input and recommendations of the Local Aboriginal Land Council and the registered stakeholders. The attached Cultural Report and correspondence from the Aboriginal community (Appendix B) forms part of this certification and report.

Whilst every care has been taken in compiling this report to determine the impact the proposal may have on Aboriginal Heritage and to demonstrate a due diligence process, neither MCAS nor the Local Aboriginal Land Councils and stakeholders can warrant or guarantee that due diligence has been met. It is the responsibility of the individual or proponent to ensure that they have undertaken due diligence.

Signed

A handwritten signature in dark ink, appearing to read 'L.B. Roberts', is written over a light grey rectangular background.

(Archaeologist)

1/3/2013

11.0 References

(Books and Journals)

- Beaglehole, J.C. (1955) (ed.)
The Journals of captain James Cook on his Voyage of Discovery. London, Hakluyt Society.
- Bennett, F. C. Ed. (1981)
The Story of the Aboriginal People of the Central Coast. Brisbane Water Historical Society.
- Brayshaw, H (1986)
Aborigines of the Hunter Valley, A Study of Colonial Records, Bicentennial Publication No.4, 1986, Scone & Upper Hunter Historical Society Scone, N.S.W.
- Davidson, I, et. Alia (editor) (1995)
Archaeologists and Aborigines Working Together. University of New England Press.
- Flood, J (1995)
Archaeology of the Dreamtime. Angus and Robertson
- Gould, R. (1980)
Living Archaeology. New York. Cambridge University Press.
- Hester, T. R., et al (1997)
Field Methods in Archaeology. Mayfield Publishing Company
- Horton, D (1994)
Encyclopaedia of Aboriginal Australia. Aboriginal Studies Press
- Mulvaney & Kamminga (1999)
Prehistory of Australia. Allen & Unwin
- NPWS (1997)
Aboriginal Cultural Heritage. Standards and Guidelines Kit. NPWS
- Petersen, N (1986)
Australian Territorial Organisation. Oceania Monograph, Sydney. University of Sydney Press.
- Schiffer, M.B. et al(1978)
The Design of Archaeological Surveys. *World Archaeology* 10(1):1-28
- Speight, J. (1990)
Landform. Contained in *Australian Soil and Land Survey Field Handbook*. 2nd Edition. By R.C. McDonald et al. Inkata Press.
- (Archaeological and Scientific Reports)**

- Bonhomme, T. 1994.
A Study of the Shell Middens of the Central Coast of New South Wales. A Report to the Aboriginal Communities.
- Brayshaw, H. 1984
Archaeological Survey at Carrington, Port Stephens, NSW
- Dean-Jones, P & Mitchell, P. B. 1993
Hunter Valley Aboriginal Sites Assessment Project Unpublished Report to NP&WS (NSW).
- Donlon, D. (1990)
 Ettalong Beach Skeletons. Report for Darkinjung Local Aboriginal Land Council. Analysis of an Australian Aboriginal Skeleton from Wamberal Beach. Report for Darkinjung Local Aboriginal Land Council.
- Haglund, L. 1986
Assessment of the Prehistoric Heritage in the Lake Macquarie Area. Report to Lake Macquarie City Council.
- Klaver, J. & Heffernan, K. (1991)
 Greater Taree Aboriginal Heritage Study. Report to Greater Taree City Council
- Navin & Officer (1999)
North Wallarah Peninsula Project Site. Aboriginal Cultural Assessment. Report to AGC Woodward- Clyde Pty Ltd.
- Roberts, L.B 2009
Aboriginal Heritage Assessment Newdell Junction, Ravensworth, NSW. Report to TRANSPORT EXPRESS JV ARTC Strategic Alliance- Northern Improvement NSW, Newcastle. NSW
- 2000
Archaeological Survey "Karuah Holdings" North Arm Cove Report to HSO, Newcastle NSW
- 2011
 Midden Assessment on Lot 404 Spinifex Avenue, Tea Gardens Report to Crighton Properties Pty Ltd Tuggerah NSW
- Worth S, 2002
ABORIGINAL HERITAGE ASSESSMENT for a proposed ABALONE FARM at LOT 2 DP1014683 CARRUTHERS AVENUE, SOUTH PINDIMAR NSW report to Austasia Leefield, Pty Ltd Anna Bay NSW

(Maps)

Central Mapping Authority

Topographical Map NSW 25k East. Copyright © 2010 NSW Department of Lands

Aboriginal Australia

Source: Aboriginal Australia by David R. Horton. Names and regions as used by D. Horton in his book "The Encyclopaedia of Aboriginal Australia" published in 1994 by Aboriginal Studies Press for the Australian Institute of Aboriginal and Torres Strait Islander Studies.

Australia Geology

Source: Specially compiled in 1979-80 by G.W-Addario, W.D. Palfreyman, A.J. Stewart, J.M. Bultitude and R.A. Chan, Bureau of Mineral Resources, Geology and Geophysics, Canberra. Geological data published and unpublished information by BMR, State geological surveys, the Commonwealth Scientific and Industrial Research Organisation, universities and companies.

Australia Soil Resources

Source: Specially compiled 1976-77 by K.H. Northcote, Division of Soils, CSIRO, Adelaide, from 'A Soil Map of Australia' (1:5000 000) accompanying A Description of Australian Soils by K. H. Northcote and others (Commonwealth Scientific and Industrial Research Organisation, Australia, 1975)

11.0 Glossary

Aboriginal Site

1. Occupation Sites

Evidence of human occupation, which includes food remains, stone tools, baked clay, fire-blackened and fire-cracked stones and charcoal, is found in a range of sites known collectively as occupation sites

- *Shell middens.* These sites are found on the coastline and along the edges of rivers and lakes. It is a deposit composed of the remains of edible shellfish and also usually contains fish and animal bones, stone tools and campfire charcoal.
- *Rock shelters with archaeological deposit.* In rock outcrops such as sandstone and granite, overhangs sometimes form creating useable shelters. Sediment from fires, roof fall, discarded stone tools and food remains form a deposit protected within the shelter and this deposit can be excavated by archaeologists to study patterns of Aboriginal life.
- *Open campsites.* These sites are mostly surface and associated subsurface scatters of stone artefacts, sometimes with fireplaces. They exist throughout the landscape and are the most common site type in rural areas. While found in all environmental locations larger and denser sites tend to be found on riverbanks and lower slopes racing watercourses, as well as ridgelines and other areas that offers movement routes. The study of open sites can assist in understanding patterns of Aboriginal land use.
- *Base camp.* This is the name applied to the major or main area of habitation. They tended to be close to a permanent water source and food source. Generally well sheltered. These camps would be rotated for hygiene reasons. They are different to smaller open campsites, which were mainly camps on transport routes or overnight areas on hunting forays.

2. Aboriginal Reserves and Missions

These places are very important to Aboriginal people today. Although Aboriginal people were often moved to reserves by force and were restricted by harsh regulations, the reserves became home to many people, where they and their families were born, lived and died. Historic cemeteries at many reserves are still cared for by the local Aboriginal community.

3. Rock Paintings

Aboriginal paintings are found on the ceilings and walls of rockshelters, which occur wherever suitable rock surfaces and outcrops, exist. Figures include humans, kangaroos, emus, echidnas, grid patterns, animal tracks, boomerangs, axes, hand stencils and other motifs. Paintings are made with white, red, yellow and black pigments. The motifs may be drawn, painted or stencilled, and charcoal drawings are common as well.

4. Rock Engravings

These occur usually where there is a suitable exposure of fairly flat, soft rock or in rock overhangs. The outlines of motifs were made by hitting the rock surface with a sharp stone to make small holes or pits. Sometimes the pits were jointed to form a groove, by rubbing with a stone. People, animal shapes and tracks are common as well as non-figurative designs such as circles.

5. Grinding Grooves

Grooves are located on flat rock exposures close to a stream or rock hole. They vary in size but are generally long (about 30-40cm in length) and elliptical in shape. Stone axes were ground into the softer stone allowing a

working edge to be created or sharpened- Deeper grooves may have been used to work spears or other thin implements.

6. Quarries

Quarry sites occur wherever there are outcrops of siliceous or igneous rock. Stone material was used in creating stone tools, which in turn were used to work wood and provide people with tools to assist in hunting and gathering activities. Siliceous rock is easily flaked and made useful cutting and scraping tools whereas igneous rock was preferred for edge-ground tools, particularly axes.

7. Ceremonial grounds

These sites were used for initiation ceremonies, marriages, tribal meetings and other important functions and are of great significance to Aboriginal people. Bora rings, which are one or more raised earth rings, were used for male initiations.

8. Stone arrangements

These range from simple stone mounds to complex circles and pathways. Arrangements are found throughout inland New South Wales as well as the coast, where fish traps were sometimes constructed.

9. Carved and scarred trees

Tree bark was used for constructing canoes, shelters, coolamons and shields. Distinctive scars are left from bark removal and can usually be differentiated from natural scars. Carved trees are more distinctive, exhibiting patterns etched into the wood of the tree. They can occur throughout the state although clearing and forestry practices have greatly reduced numbers.

A range of diagnostic criteria has been developed to assist in the identification of Aboriginal scarred trees. The following criteria are based on archaeological work conducted by Simmons (1977) and Beesley (1989) It should be noted that these criteria have never been quantitatively tested or quantified using non-relative criteria such as absolute dating or an analysis of pre-occluded scar morphologies. This is because radiocarbon dating or dendrochronology is mostly inconclusive. and the removal of regrowth exposes trees to further damage.

1. **The scar does not normally run to ground level:** (scars resulting from fire, fungal attack or lightning nearly always reach ground level). However, ground termination does not necessarily discount an Aboriginal Origin (some ethno-historic examples of canoe scars reach the ground);
1. (A). **If a scar extends to the ground, the sides of the original scar must be relatively parallel:** (natural scars tend to be triangular in shape);
2. **The scar is either approximately parallel sided or concave, and symmetrical:** (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular and often adzed);
3. **The scar should be reasonably regular in outline and regrowth:** scars of natural origin tend to have irregular outlines and may have uneven regrowth;
4. **The ends or the scar should be shaped, either squared off, or pointed** (often as a result of regrowth): (a 'keyhole' profile with a 'tail' is suggestive of branch loss);
5. **A scar which contains adze or axe marks** on the original scar surface is likely to be the result of human scarring. Their morphology and distribution may lend support to an interpretation of an Aboriginal origin: (marks produced after the scarring event may need to be discounted);

6. **The tree must date to the time of Aboriginal bark exploitation within its region:** (an age of at least 100 years is prerequisite)
7. **The tree must be endemic to the region:** (and thus exclude historic plantings).

Field based identification of Aboriginal scars, is based on surface evidence only and will not necessarily provide a definitive classification. In many cases the possibility of a natural origin cannot be ruled out, despite the presence or several diagnostic criteria or the balance or interpretation leaning toward an Aboriginal origin. For this reason interpretations of an Aboriginal origin are qualified by the recorder's degree of certainty. The following categories are used

Definite Aboriginal scar - This is a scar that conforms to all of the criteria and/or has in addition a feature or characteristic that provides definitive identification, such as diagnostic axe or adze marks or an historical identification. All conceivable natural causes of the scar can be reliably discounted.

Aboriginal origin is most likely - This is a scar that conforms to all of the criteria and where a natural origin is considered unlikely and improbable.

Probable Aboriginal scar - this is a scar that conforms to all of the criteria and where an Aboriginal origin is considered to be the most likely. Despite this, a natural origin cannot be ruled out.

Possible Aboriginal scar - This is a scar which conforms to all or most of the criteria and where an Aboriginal origin cannot be reliably considered as more likely than alternative natural causes. The characteristics of this scar will also be consistent with a natural cause.

10. Burials

Aborigines feel equally as respectful about prehistoric burials as modern cemeteries. As Aborigines have lived in Australia for over 30 000 years burials are seen as part of a continuing culture and tradition as well as offering valuable archaeological information. The dead were sometimes cremated, sometimes placed in trees or rock ledges and sometimes buried. Burials exist throughout New South Wales and can be accidentally uncovered in construction work or become exposed through erosion. It is important that if a skeleton is found it be reported to the police, to a representative of the National Parks and Wildlife Service and to the relevant Aboriginal community group.

II. Natural sacred sites

Many features of the landscape, such as mountains, rocks, waterholes etc., are regarded as sacred sites by Aborigines. They are places associated with Dreamtime ancestors and usually can only be identified by Aboriginal people. They retain a high significance to Aborigines.

Fire- stick Farming

The process of burning to aid in hunting. Animals could be speared or clubbed as they fled to escape the flames. Other uses of fire were for long term hunting strategies. After firing, the bush would regenerate attracting animals on which the hunters would prey. (Flood, p250)

Flake fragment of stone that was used as a tool for weapons, scrapers etc.

Geographical

AHD (Australian Height Datum) Australian standard measurement from the mean high sea level.

Swamp. An almost level, closed, or almost closed depression with a seasonal or permanent water table at or above the surface, commonly aggraded by overbank stream flow (Speight 1990: 33).

Legal

Activity means a project, development, activity or work (ie this term is used in its ordinary way, and does not just refer to an activity as defined by Part 5 EP&A Act)

Disturbed land or land already disturbed by previous activity Land that has been previously subjected to any activity that has resulted in clear and observable changes to the land's surface. Examples include: soil that has been ploughed; urban development that has occurred; existing rural infrastructure such as dams and fences; existing roads, trails and walking tracks; and other existing infrastructure such as pipelines, transmission lines and stormwater drainage.

Due diligence Taking reasonable and practicable steps to avoid harm and protect Aboriginal objects.

harm an object or place includes any act or omission that:

- (a) destroys, defaces or damages the object or place, or
- (b) in relation to an object—moves the object from the land on which it had been situated, or
- (c) is specified by the regulations, or
- (d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c), but does not include any act or omission that:
- (e) desecrates the object or place, or
- (f) is trivial or negligible, or
- (g) is excluded from this definition by the regulations.

Sand Dune Refers to sand ridges and sand hills formed by the wind, usually found in desert regions, near a lake or in coastal areas. In areas of Western NSW, windblown dunes can occur along the eastern edges of ephemeral lakes (called lunettes dunes). They can also occur along the banks of rivers.

Waters means the whole or any part of: any river, stream, lake, lagoon, swamp, wetlands, natural watercourse, tidal waters (including the sea). Note: the boundary of tidal waters is defined as the high water mark. ²

12.0 Appendix

- (A) Aboriginal Community Consultation
- (B) Aboriginal Cultural Heritage Report
- (C) AHIMS Results
- (D) 2002 report

APPENDIX A

Consultation Log

1. Stakeholder Identification

- 4/6/2012 Letters written and sent to
 - (a) the relevant DECCW EPRG regional office
 - (b) the relevant Local Aboriginal Land Council(s)
 - (c) the Registrar, *Aboriginal Land Rights Act 1983* for a list of Aboriginal owners
 - (d) the National Native Title Tribunal for a list of registered native title claimants, native title holders and registered Indigenous Land Use Agreements
 - (e) Native Title Services Corporation Limited (NTSCORP Limited)
 - (f) the relevant local council(s)
 - (g) Hunter catchment management authorities
 - Advertisement Placed in Myall coast News 24/5/2012
 - The following people/organisations identified from response to the above were written to on 15/6/2012 informing them of the opportunity to register an interest in the project:
 - Karuah Local Aboriginal Land Council (KLALC)
 - Worimi Local Aboriginal Land Council (WLALC)
 - Nur-Run-Gee Pty Ltd
 - Do-Wa-Kee
 - Murrooma
 - Maaialgal Aboriginal Heritage
 - Garrigal Aboriginal Community Inc
 - Worimi Aboriginal Community Cooperative
 - Lakkari traditional owner Aboriginal Corporation
 - The following replied by the closing date and were registered as Stakeholders. There were no responses after the closing date.
 - KLALC
 - WLALC
 - Anthony Anderson (Murrooma)
 - Rebecca Anderson (Murrooma)
 - Len Anderson (Nur-Run-Gee)
- ## 2. Presentation of information about the proposed project and gathering information about cultural significance
- Initial meeting held with the stakeholders at Karuah LALC on 3/7/2012 to explain the project and seek information from the stakeholders as per minutes following.

MINUTES OF PINDIMAR ABALONE FARM MEETING HELD 3rd JULY 2012
AT KARUAH LAND COUNCIL AT 11AM

ATTENDANCE – Dave Feeney, CEO KLALC, J Lilley WLALC, Len Anderson Worimi T/O

Apologies: Anthony Anderson, Rebecca Anderson

- Maps and drawings of the proposal and site were distributed. Copies were given to attendees to take back to those who were unable to attend.
- Request was for topographical map showing location of proposal and the area to be included for inspection to be sent to stakeholders prior to inspection.
- Discussion was held on any known significance of site. It was noted that a Chinese fish hatchery settlement was just outside of the site which employed Aboriginal workers.
- It was recommended that the field survey be extended to the gate and that there is a possibility of a travel route for men's ceremonial area. Also to be aware of roads made out of shell as they are sometimes incorrectly assessed as containing possible significance.
- The existence of the midden suggests occupation and whether it really was a midden or a natural shell deposit. However it was noted that it was good to avoid it anyway as a precaution. concern was expressed regarding the fact that burials are known to have occurred just above the high water mark in sand.
- The field survey is to be on Monday 23rd July with 4 Aboriginal site field officers in attendance.
- It is recommended that there be at least one female field officer to identify any significance from a woman's perspective. This will ensure that Aboriginal heritage has been fully assessed and cannot be doubted.

Site officers to meet at Karuah Land Council at 8.30am.

Meeting closed at 12 o'clock.

3. Review of draft cultural heritage assessment report

- Draft report forwarded to stakeholders for comment and feedback on 26/9/2012
- Cultural report received from all stakeholders by 23/2/2013 copies form Appendix B to the report.

Letters to Agencies



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011

Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922

ACN 002 992 430

The General Manager,
Great Lakes Council,
Breeze Parade
Forster

Dear Sir,

I am writing to you as per the OEH Consultation Guidelines 2010 under Part 6 of the NPW Act.

Myall Coast Archaeological Service has been engaged by CityPlan to develop a heritage management plan for a proposed Abalone farm, Carruthers Avenue, Pindimar. The assessment will be conducted under the former Part 3A requirements of the EP&A Act.

OEH advises that you may be an appropriate source of information for the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places.

If you do hold such information it would be appreciated if you could forward such information within 7 days of the date of this letter. The information supplied will be used to assist the proponent in the preparation (if required) of a heritage management plan and to assist the Director General in his or her consideration and determination of the Part 3A application.

Please note the information you provide regarding the stakeholder list may be used in court if challenges are made to the validity of the registered stakeholder list. It is therefore important that you supply the basis upon which you came to the conclusion that, those on the list are active Aboriginal organisations and/or Aboriginal persons; and are able to speak on country.

If the information you have furnished has not been verified or validated could you please respond accordingly. A nil response within the timeframe will indicate that you are unable to provide such information

Thank you for your assistance in the matter.

Yours sincerely
Kind regards,

Len Roberts
Archaeologist
4/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011

Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922

ACN 002 992 430

The CEO,
Karuah LALC

Dear Dave,

I am writing to you as per the OEH Consultation Guidelines 2010 under Part 6 of the NPW Act.

Myall Coast Archaeological Service has been engaged by CityPlan to develop a heritage management plan for a proposed Abalone farm, Carruthers Avenue, Pindimar. The assessment will be conducted under the former Part 3A requirements of the EP&A Act.

OEH advises that you may be an appropriate source of information for the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places.

If you do hold such information it would be appreciated if you could forward such information within 7 days of the date of this letter. The information supplied will be used to assist the proponent in the preparation (if required) of a heritage management plan and to assist the Director General in his or her consideration and determination of the Part 3A application.

Please note the information you provide regarding the stakeholder list may be used in court if challenges are made to the validity of the registered stakeholder list. It is therefore important that you supply the basis upon which you came to the conclusion that, those on the list are active Aboriginal organisations and/or Aboriginal persons; and are able to speak on country.

If the information you have furnished has not been verified or validated could you please respond accordingly. A nil response within the timeframe will indicate that you are unable to provide such information

Thank you for your assistance in the matter.

I have automatically registered Karuah LALC as a stakeholder and shall inform you when the meeting is called.

Yours sincerely
Kind regards,

Len Roberts
Archaeologist
4/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011

Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922

ACN 002 992 430

The Manager,
Native Title Services Corporation Limited (NTSCORP Limited)
Level 1, 44-70 Rosehill Street, Redfern NSW 2016
Postal Address:
PO Box 2105, Strawberry Hills 2012

Phone: 02 9310 3188

Fax: 02 9310 4177

Dear Sir or Madam,

I am writing to you as per the OEH Consultation Guidelines 2010 under Part 6 of the NPW Act.

Myall Coast Archaeological Service has been engaged by CityPlan to develop a heritage management plan for a proposed Abalone farm, Carruthers Avenue, Pindimar. The assessment will be conducted under the former Part 3A requirements of the EP&A Act.

OEH advises that you may be an appropriate source of information for the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places.

If you do hold such information it would be appreciated if you could forward such information within 7 days of the date of this letter. The information supplied will be used to assist the proponent in the preparation (if required) of a heritage management plan and to assist the Director General in his or her consideration and determination of the Part 3A application.

Please note the information you provide regarding the stakeholder list may be used in court if challenges are made to the validity of the registered stakeholder list. It is therefore important that you supply the basis upon which you came to the conclusion that, those on the list are active Aboriginal organisations and/or Aboriginal persons; and are able to speak on country.

If the information you have furnished has not been verified or validated could you please respond accordingly. A nil response within the timeframe will indicate that you are unable to provide such information

Thank you for your assistance in the matter.

Yours sincerely
Kind regards,

Len Roberts
Archaeologist
4/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011

Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922

ACN 002 992 430

The Manager,
National Native Title Tribunal
Level 4, Commonwealth Law Courts Building
1 Victoria Avenue
GPO Box 9973
Perth WA 6848
Telephone: (08) 9268 9700
Freecall: 1800 640 501
Facsimile: (08) 9268 7299
Email: enquiries@nntt.gov.au

Dear Sir or madam,

I am writing to you as per the DECCW Consultation Guidelines 2010 under Part 6 of the NPW Act.

Myall Coast Archaeological Service has been engaged by CityPlan to develop a heritage management plan for a proposed Abalone farm, Carruthers Avenue, Pindimar. The assessment will be conducted under the former Part 3A requirements of the EP&A Act.

OEH advises that you may be an appropriate source of information for the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places.

If you do hold such information it would be appreciated if you could forward such information within 7 days of the date of this letter. The information supplied will be used to assist the proponent in the preparation (if required) of a heritage management plan and to assist the Director General in his or her consideration and determination of the Part 3A application.

Please note the information you provide regarding the stakeholder list may be used in court if challenges are made to the validity of the registered stakeholder list. It is therefore important that you supply the basis upon which you came to the conclusion that, those on the list are active Aboriginal organisations and/or Aboriginal persons; and are able to speak on country.

If the information you have furnished has not been verified or validated could you please respond accordingly. A nil response within the timeframe will indicate that you are unable to provide such information

Thank you for your assistance in the matter.

Yours sincerely
Kind regards,

Len Roberts
Archaeologist
4/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011

Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922

ACN 002 992 430

The Manager,
Culture and heritage
Office of Environment and heritage Northern

Dear Sir or Madam

I am writing to you as per the OEH Consultation Guidelines 2010 under Part 6 of the NPW Act.

Myall Coast Archaeological Service has been engaged by CityPlan to develop a heritage management plan for a proposed Abalone farm, Carruthers Avenue, Pindimar. The assessment will be conducted under the former Part 3A requirements of the EP&A Act.

OEH advises that you may be an appropriate source of information for the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places.

If you do hold such information it would be appreciated if you could forward such information within 7 days of the date of this letter. The information supplied will be used to assist the proponent in the preparation (if required) of a heritage management plan and to assist the Director General in his or her consideration and determination of the Part 3A application.

Please note the information you provide regarding the stakeholder list may be used in court if challenges are made to the validity of the registered stakeholder list. It is therefore important that you supply the basis upon which you came to the conclusion that, those on the list are active Aboriginal organisations and/or Aboriginal persons; and are able to speak on country.

If the information you have furnished has not been verified or validated could you please respond accordingly. A nil response within the timeframe will indicate that you are unable to provide such information

Thank you for your assistance in the matter.

Yours sincerely
Kind regards,

Len Roberts
Archaeologist
4/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011

Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922

ACN 002 992 430

Hunter CMA
816 Tocal Road
(Private Bag 2010)
Paterson NSW 2421
hcr@cma.nsw.gov.au
Dear Sir or Madam,

I am writing to you as per the OEH Consultation Guidelines 2010 under Part 6 of the NPW Act.

Myall Coast Archaeological Service has been engaged by CityPlan to develop a heritage management plan for a proposed Abalone farm, Carruthers Avenue, Pindimar. The assessment will be conducted under the former Part 3A requirements of the EP&A Act.

OEH advises that you may be an appropriate source of information for the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places.

If you do hold such information it would be appreciated if you could forward such information within 7 days of the date of this letter. The information supplied will be used to assist the proponent in the preparation (if required) of a heritage management plan and to assist the Director General in his or her consideration and determination of the Part 3A application.

Please note the information you provide regarding the stakeholder list may be used in court if challenges are made to the validity of the registered stakeholder list. It is therefore important that you supply the basis upon which you came to the conclusion that, those on the list are active Aboriginal organisations and/or Aboriginal persons; and are able to speak on country.

If the information you have furnished has not been verified or validated could you please respond accordingly. A nil response within the timeframe will indicate that you are unable to provide such information

Thank you for your assistance in the matter.

Yours sincerely
Kind regards,

Len Roberts
Archaeologist
4/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011
Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922
ACN 002 992 430

Maaiangal Aboriginal Heritage
Carol Ridgeway--Bissett
5 Ondine Close
Nelson Bay 2315 NSW

Dear Carol,

I am writing to you as per the DECCW Consultation Guidelines 2010 under the NPW Act 1974 as amended. Myall Coast Archaeological Service has been engaged by City Plan, Newcastle (the proponent) to assess heritage management options which may lead to an application for an Aboriginal Heritage Impact Permit for a proposed Abalone Farm, Carruthers Street, Pindimar

I am writing to you as your name has been forwarded to me as An Aboriginal person who may have an interest in Aboriginal Cultural matters in the Singleton Area and may have a right to be consulted regarding the project.

The purpose of the consultation is to:

- Assist in determining appropriate decisions and recommendations informed by Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and/or places regarding the conservation and management of Aboriginal objects and/or places.
- Assist the proponent in the preparation (if required) of an Aboriginal Heritage management plan and to assist Minister of Planning in his or her consideration and determination of the application
- Ensure opportunity for effective involvement of Aboriginal people or groups with relevant cultural knowledge in the heritage-impact assessment processes
- Enable Aboriginal people to efficiently identify those within their communities who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

The objective of community consultation is to ensure that Aboriginal people have the opportunity to improve assessment outcomes by:

- providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)
- influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area
- commenting on draft assessment reports before they are submitted by the proponent to the DOP.

An invitation is extended to you as an Aboriginal person or Aboriginal Organisation if you hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proponent regarding the proposed activity. Please note for legal reasons individuals will need to demonstrate their right to speak on behalf of country.

Only Aboriginal persons or Aboriginal organisations can register an interest. If an Aboriginal organisation i.e. Land Council or Registered and active Aboriginal Corporation wishes to register an interest then a representative must be nominated. By law, a company, partnership, trust or business entity is not considered to be an Aboriginal organisation.

You cannot register an interest on behalf of another person.

According to the Consultation Guidelines the qualifications of those who can register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom
- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

If you meet the qualifications and would like to register an interest please provide the following Information:

Name,
Residential Address
Postal address (if applicable)
Phone
Email (if applicable)
Organisation you are representing (if applicable)
Authority to speak on country

To register your interest, please contact in writing:

Sue Roberts
Myall Coast Archaeological Services
6783 Pacific Highway
Tea Gardens. 2324
Email:archaeology@myallcoast.net.au

Closing date for Registration 5pm 29/ 6/ 2012

For record purposes the registration must be in writing. So if you have expressed an interest previously please provide the above information as well. If you are aware of others please pass a copy of this letter to them so that they can respond personally.

Please note those who register an interest your details will be forwarded to DECCW and the Local Aboriginal Land Council (LALC) unless you specify that you do not want your details released.

Once a stakeholder list has been established you will be advised of a consultation meeting to be held at XXXXX for the community to determine the stakeholders and to discuss project options.

Your earliest response would be greatly appreciated.

Kind regards
Sue Roberts
15/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011
Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922
ACN 002 992 430

Do-Wa-Kee

Dear Mick,

I am writing to you as per the DECCW Consultation Guidelines 2010 under the NPW Act 1974 as amended. Myall Coast Archaeological Service has been engaged by City Plan, Newcastle (the proponent) to assess heritage management options which may lead to an application for an Aboriginal Heritage Impact Permit for a proposed Abalone Farm, Carruthers Street, Pindimar

I am writing to you as your name has been forwarded to me as An Aboriginal person who may have an interest in Aboriginal Cultural matters in the Singleton Area and may have a right to be consulted regarding the project.

The purpose of the consultation is to:

- Assist in determining appropriate decisions and recommendations informed by Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and/or places regarding the conservation and management of Aboriginal objects and/or places.
- Assist the proponent in the preparation (if required) of an Aboriginal Heritage management plan and to assist Minister of Planning in his or her consideration and determination of the application
- Ensure opportunity for effective involvement of Aboriginal people or groups with relevant cultural knowledge in the heritage-impact assessment processes
- Enable Aboriginal people to efficiently identify those within their communities who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

The objective of community consultation is to ensure that Aboriginal people have the opportunity to improve assessment outcomes by:

- providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)
- influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area
- commenting on draft assessment reports before they are submitted by the proponent to the DOP.

An invitation is extended to you as an Aboriginal person or Aboriginal Organisation if you hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proponent regarding the proposed activity. Please note for legal reasons individuals will need to demonstrate their right to speak on behalf of country.

Only Aboriginal persons or Aboriginal organisations can register an interest. If an Aboriginal organisation i.e. Land Council or Registered and active Aboriginal Corporation wishes to register an interest then a representative must be nominated. By law, a company, partnership, trust or business entity is not considered to be an Aboriginal organisation.

You cannot register an interest on behalf of another person.

According to the Consultation Guidelines the qualifications of those who can register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom

- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

If you meet the qualifications and would like to register an interest please provide the following Information:

Name,
Residential Address
Postal address (if applicable)
Phone
Email (if applicable)
Organisation you are representing (if applicable)
Authority to speak on country

To register your interest, please contact in writing:

Sue Roberts
Myall Coast Archaeological Services
6783 Pacific Highway
Tea Gardens. 2324
Email:archaeology@myallcoast.net.au

Closing date for Registration 5pm 29/ 6/ 2012

For record purposes the registration must be in writing. So if you have expressed an interest previously please provide the above information as well. If you are aware of others please pass a copy of this letter to them so that they can respond personally.

Please note those who register an interest your details will be forwarded to DECCW and the Local Aboriginal Land Council (LALC) unless you specify that you do not want your details released.

Once a stakeholder list has been established you will be advised of a consultation meeting to be held at XXXXX for the community to determine the stakeholders and to discuss project options.

Your earliest response would be greatly appreciated.

Kind regards

Sue Roberts

15/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011
Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922
ACN 002 992 430

Garrigal Aboriginal Community Inc
Del Arnold
PO Box 182
Gloucester NSW 2422

Dear Del,

I am writing to you as per the DECCW Consultation Guidelines 2010 under the NPW Act 1974 as amended. Myall Coast Archaeological Service has been engaged by City Plan, Newcastle (the proponent) to assess heritage management options which may lead to an application for an Aboriginal Heritage Impact Permit for a proposed Abalone Farm, Carruthers Street, Pindimar

I am writing to you as your name has been forwarded to me as An Aboriginal person who may have an interest in Aboriginal Cultural matters in the Singleton Area and may have a right to be consulted regarding the project.

The purpose of the consultation is to:

- Assist in determining appropriate decisions and recommendations informed by Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and/or places regarding the conservation and management of Aboriginal objects and/or places.
- Assist the proponent in the preparation (if required) of an Aboriginal Heritage management plan and to assist Minister of Planning in his or her consideration and determination of the application
- Ensure opportunity for effective involvement of Aboriginal people or groups with relevant cultural knowledge in the heritage-impact assessment processes
- Enable Aboriginal people to efficiently identify those within their communities who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

The objective of community consultation is to ensure that Aboriginal people have the opportunity to improve assessment outcomes by:

- providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)
- influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area
- commenting on draft assessment reports before they are submitted by the proponent to the DOP.

An invitation is extended to you as an Aboriginal person or Aboriginal Organisation if you hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proponent regarding the proposed activity. Please note for legal reasons individuals will need to demonstrate their right to speak on behalf of country.

Only Aboriginal persons or Aboriginal organisations can register an interest. If an Aboriginal organisation i.e. Land Council or Registered and active Aboriginal Corporation wishes to register an interest then a representative must be nominated. By law, a company, partnership, trust or business entity is not considered to be an Aboriginal organisation.

You cannot register an interest on behalf of another person.

According to the Consultation Guidelines the qualifications of those who can register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom
- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

If you meet the qualifications and would like to register an interest please provide the following Information:

Name,
Residential Address
Postal address (if applicable)
Phone
Email (if applicable)
Organisation you are representing (if applicable)
Authority to speak on country

To register your interest, please contact in writing:

Sue Roberts
Myall Coast Archaeological Services
6783 Pacific Highway
Tea Gardens. 2324
Email:archaeology@myallcoast.net.au

Closing date for Registration 5pm 29/ 6/ 2012

For record purposes the registration must be in writing. So if you have expressed an interest previously please provide the above information as well. If you are aware of others please pass a copy of this letter to them so that they can respond personally.

Please note those who register an interest your details will be forwarded to DECCW and the Local Aboriginal Land Council (LALC) unless you specify that you do not want your details released.

Once a stakeholder list has been established you will be advised of a consultation meeting to be held at XXXXX for the community to determine the stakeholders and to discuss project options.

Your earliest response would be greatly appreciated.

Kind regards
Sue Roberts
15/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011
Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922
ACN 002 992 430

Lakkari Traditional Owner Aboriginal Corporation
11Kananook Crescent
Belmont NSW 2280

Dear Laurel,

I am writing to you as per the DECCW Consultation Guidelines 2010 under the NPW Act 1974 as amended. Myall Coast Archaeological Service has been engaged by City Plan, Newcastle (the proponent) to assess heritage management options which may lead to an application for an Aboriginal Heritage Impact Permit for a proposed Abalone Farm, Carruthers Street, Pindimar

I am writing to you as your name has been forwarded to me as An Aboriginal person who may have an interest in Aboriginal Cultural matters in the Singleton Area and may have a right to be consulted regarding the project.

The purpose of the consultation is to:

- Assist in determining appropriate decisions and recommendations informed by Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and/or places regarding the conservation and management of Aboriginal objects and/or places.
- Assist the proponent in the preparation (if required) of an Aboriginal Heritage management plan and to assist Minister of Planning in his or her consideration and determination of the application
- Ensure opportunity for effective involvement of Aboriginal people or groups with relevant cultural knowledge in the heritage-impact assessment processes
- Enable Aboriginal people to efficiently identify those within their communities who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

The objective of community consultation is to ensure that Aboriginal people have the opportunity to improve assessment outcomes by:

- providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)
- influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area
- commenting on draft assessment reports before they are submitted by the proponent to the DOP.

An invitation is extended to you as an Aboriginal person or Aboriginal Organisation if you hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proponent regarding the proposed activity. Please note for legal reasons individuals will need to demonstrate their right to speak on behalf of country.

Only Aboriginal persons or Aboriginal organisations can register an interest. If an Aboriginal organisation i.e. Land Council or Registered and active Aboriginal Corporation wishes to register an interest then a representative must be nominated. By law, a company, partnership, trust or business entity is not considered to be an Aboriginal organisation.

You cannot register an interest on behalf of another person.

According to the Consultation Guidelines the qualifications of those who can register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom
- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

If you meet the qualifications and would like to register an interest please provide the following Information:

Name,
Residential Address
Postal address (if applicable)
Phone
Email (if applicable)
Organisation you are representing (if applicable)
Authority to speak on country

To register your interest, please contact in writing:

Sue Roberts
Myall Coast Archaeological Services
6783 Pacific Highway
Tea Gardens. 2324
Email:archaeology@myallcoast.net.au

Closing date for Registration 5pm 29/ 6/ 2012

For record purposes the registration must be in writing. So if you have expressed an interest previously please provide the above information as well. If you are aware of others please pass a copy of this letter to them so that they can respond personally.

Please note those who register an interest your details will be forwarded to DECCW and the Local Aboriginal Land Council (LALC) unless you specify that you do not want your details released.

Once a stakeholder list has been established you will be advised of a consultation meeting to be held at XXXXX for the community to determine the stakeholders and to discuss project options.

Your earliest response would be greatly appreciated.

Kind regards
Sue Roberts
15/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011
Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922
ACN 002 992 430

Nur-Run-Gee Pty Ltd

Dear Lea,

I am writing to you as per the DECCW Consultation Guidelines 2010 under the NPW Act 1974 as amended. Myall Coast Archaeological Service has been engaged by City Plan, Newcastle (the proponent) to assess heritage management options which may lead to an application for an Aboriginal Heritage Impact Permit for a proposed Abalone Farm, Carruthers Street, Pindimar

I am writing to you as your name has been forwarded to me as An Aboriginal person who may have an interest in Aboriginal Cultural matters in the Singleton Area and may have a right to be consulted regarding the project.

The purpose of the consultation is to:

- Assist in determining appropriate decisions and recommendations informed by Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and/or places regarding the conservation and management of Aboriginal objects and/or places.
- Assist the proponent in the preparation (if required) of an Aboriginal Heritage management plan and to assist Minister of Planning in his or her consideration and determination of the application
- Ensure opportunity for effective involvement of Aboriginal people or groups with relevant cultural knowledge in the heritage-impact assessment processes
- Enable Aboriginal people to efficiently identify those within their communities who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

The objective of community consultation is to ensure that Aboriginal people have the opportunity to improve assessment outcomes by:

- providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)
- influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area
- commenting on draft assessment reports before they are submitted by the proponent to the DOP.

An invitation is extended to you as an Aboriginal person or Aboriginal Organisation if you hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proponent regarding the proposed activity. Please note for legal reasons individuals will need to demonstrate their right to speak on behalf of country.

Only Aboriginal persons or Aboriginal organisations can register an interest. If an Aboriginal organisation i.e. Land Council or Registered and active Aboriginal Corporation wishes to register an interest then a representative must be nominated. By law, a company, partnership, trust or business entity is not considered to be an Aboriginal organisation.

You cannot register an interest on behalf of another person.

According to the Consultation Guidelines the qualifications of those who can register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom

- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

If you meet the qualifications and would like to register an interest please provide the following Information:

Name,
Residential Address
Postal address (if applicable)
Phone
Email (if applicable)
Organisation you are representing (if applicable)
Authority to speak on country

To register your interest, please contact in writing:

Sue Roberts
Myall Coast Archaeological Services
6783 Pacific Highway
Tea Gardens. 2324
Email:archaeology@myallcoast.net.au

Closing date for Registration 5pm 29/ 6/ 2012

For record purposes the registration must be in writing. So if you have expressed an interest previously please provide the above information as well. If you are aware of others please pass a copy of this letter to them so that they can respond personally.

Please note those who register an interest your details will be forwarded to DECCW and the Local Aboriginal Land Council (LALC) unless you specify that you do not want your details released.

Once a stakeholder list has been established you will be advised of a consultation meeting to be held at XXXXX for the community to determine the stakeholders and to discuss project options.

Your earliest response would be greatly appreciated.

Kind regards

Sue Roberts

15/6/2012



Myall Coast Archaeological Services

"Tall Pines"
Tea Gardens. 2324

Phone/Fax: 49971011
Email: archaeology@myallcoast.net.au

Mobile: 04 03 07 1922
ACN 002 992 430

Worimi Aboriginal Community Cooperative
Cheryl Hendry
17a Wahgunyah Rd
Nelson Bay 2315 NSW

Dear Cheryl,

I am writing to you as per the DECCW Consultation Guidelines 2010 under the NPW Act 1974 as amended. Myall Coast Archaeological Service has been engaged by City Plan, Newcastle (the proponent) to assess heritage management options which may lead to an application for an Aboriginal Heritage Impact Permit for a proposed Abalone Farm, Carruthers Street, Pindimar

I am writing to you as your name has been forwarded to me as An Aboriginal person who may have an interest in Aboriginal Cultural matters in the Singleton Area and may have a right to be consulted regarding the project.

The purpose of the consultation is to:

- Assist in determining appropriate decisions and recommendations informed by Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of objects and/or places regarding the conservation and management of Aboriginal objects and/or places.
- Assist the proponent in the preparation (if required) of an Aboriginal Heritage management plan and to assist Minister of Planning in his or her consideration and determination of the application
- Ensure opportunity for effective involvement of Aboriginal people or groups with relevant cultural knowledge in the heritage-impact assessment processes
- Enable Aboriginal people to efficiently identify those within their communities who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

The objective of community consultation is to ensure that Aboriginal people have the opportunity to improve assessment outcomes by:

- providing relevant information about the cultural significance and values of the Aboriginal object(s) and/or place(s)
- influencing the design of the method to assess cultural and scientific significance of Aboriginal object(s) and/or place(s)
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal object(s) and/or place(s) within the proposed project area
- commenting on draft assessment reports before they are submitted by the proponent to the DOP.

An invitation is extended to you as an Aboriginal person or Aboriginal Organisation if you hold cultural knowledge relevant to determining the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proponent regarding the proposed activity. Please note for legal reasons individuals will need to demonstrate their right to speak on behalf of country.

Only Aboriginal persons or Aboriginal organisations can register an interest. If an Aboriginal organisation i.e. Land Council or Registered and active Aboriginal Corporation wishes to register an interest then a representative must be nominated. By law, a company, partnership, trust or business entity is not considered to be an Aboriginal organisation.

You cannot register an interest on behalf of another person.

According to the Consultation Guidelines the qualifications of those who can register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom
- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

If you meet the qualifications and would like to register an interest please provide the following Information:

Name,
Residential Address
Postal address (if applicable)
Phone
Email (if applicable)
Organisation you are representing (if applicable)
Authority to speak on country

To register your interest, please contact in writing:

Sue Roberts
Myall Coast Archaeological Services
6783 Pacific Highway
Tea Gardens. 2324
Email:archaeology@myallcoast.net.au

Closing date for Registration 5pm 29/ 6/ 2012

For record purposes the registration must be in writing. So if you have expressed an interest previously please provide the above information as well. If you are aware of others please pass a copy of this letter to them so that they can respond personally.

Please note those who register an interest your details will be forwarded to DECCW and the Local Aboriginal Land Council (LALC) unless you specify that you do not want your details released.

Once a stakeholder list has been established you will be advised of a consultation meeting to be held at XXXXX for the community to determine the stakeholders and to discuss project options.

Your earliest response would be greatly appreciated.

Kind regards
Sue Roberts
15/6/2012



National
Native Title
Tribunal



6 June 2012

Mr. Len Roberts
Archaeologist
Myall Coast Archaeological Services
"Tall Pines"
Tea Gardens NSW 2324

**South-East & Central
Registry –Sydney Office**

Level 25, 25 Bligh Street
Sydney NSW 2000
GPO Box 9973
Sydney NSW 2001
Telephone (02) 9227 4000
Facsimile (02) 9227 4030

Our Reference: 4942/12SJ

Your Reference: Their Reference

Dear Mr. Roberts

Native Title Search Results of Pindimar within the Great Lakes Local Government Area

Thank you for your search request received on 4 June 2012 in relation to the above area.

Search Results

The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

Register Type	NNTT Reference Numbers
Schedule of Applications (unregistered claimant applications)	Nil.
Register of Native Title Claims	Nil.
National Native Title Register	Nil.
Register of Indigenous Land Use Agreements	Nil.
Notified Indigenous Land Use Agreements	Nil.

At the time this search was carried out, there were **no relevant entries** in the above databases.

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

Tribunal accepts no liability for reliance placed on enclosed information



The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representation, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please do not hesitate to contact me on the number below or on the free call number 1800 640 501.

Yours sincerely

A handwritten signature in blue ink that reads "Sylvia Jagtman".

Sylvia Jagtman
Senior Case Management Assistant

Telephone (02) 9227 4013

Facsimile (02) 9227 4030

Email sylvia.jagtman@nntt.gov.au

Encl



Searching the NNTT Registers in New South Wales

Search service

On request the National Native Title Tribunal will search its public registers for you. A search may assist you in finding out whether any native title applications (claims), determinations or agreements exist over a particular area of land or water.

In New South Wales native title cannot exist on privately owned land including family homes or farms.

What information can a search provide?

A search can confirm whether any applications, agreements or determinations are registered in a local government area. Relevant information, including register extracts and application summaries, will be provided.

In NSW because we cannot search the registers in relation to individual parcels of land we search by local government area.

Most native title applications do not identify each parcel of land claimed. They have an external boundary and then identify the areas not claimed within the boundary by reference to types of land tenure e.g., freehold, agricultural leasehold, public works.

What if the search shows no current applications?

If there is no application covering the local government area this only indicates that at the time of the search either the Federal Court had not received any claims in relation to the local government area or the Tribunal had not yet been notified of any new native title claims.

It does not mean that native title does not exist in the area.

Native title may exist over an area of land or waters whether or not a claim for native title has been made.

Where the information is found

The information you are seeking is held in three registers and on an applications database.

National Native Title Register

The National Native Title Register contains determinations of native title by the High Court, Federal Court and other courts.

Register of Native Title Claims

The Register of Native Title Claims contains applications for native title that have passed a registration test.

Registered claims attract rights, including the right to negotiate about some types of proposed developments.

Register of Indigenous Land Use Agreements

The Register of Indigenous Land Use Agreements contains agreements made with people who hold or assert native title in an area.

The register identifies development activities that have been agreed by the parties.

Application summaries

An application summary contains a description of the location, content and status of a native title claim.

This information may be different to the information on the Register of Native Title Claims, e.g., because an amendment has not yet been tested.

How do you request a search?

A search request form is available on the Tribunal's web site at:



<http://www.nntt.gov.au/registers/search.html>

Mail, fax or email your request to the

Tribunal's Sydney registry, identifying the local government area/s you want searched.

Email: SydneySearch@nntt.gov.au

Fax: (02) 9227 4030

Address: GPO Box 9973, Sydney NSW 2001

Phone: (02) 9227 4000

APPENDIX B

Aboriginal Cultural Heritage Report

Pindimar Abalone Farm

Produced by

Registered Aboriginal Stakeholders

17th January, 2013

ABOUT Registered Aboriginal Stakeholders (RAS)

RAS was established as a reference group as a result of expressions of interest from known Aboriginal persons/groups who may have had an interest with respect of Cultural Heritage within the boundaries of a proposed Abalone Farm at Pindimar NSW. It is important to recognise the need to ensure all Aboriginal people who had established connection with country, as well as, those local Aboriginal people who may not have connection to country but have an interest in the advancement of Aboriginal Heritage, culture education and welfare were represented in guiding the development of the project to benefit Aboriginal people.

To this end RAS was constituted with representatives from Karuah Local Aboriginal Land Council, Worimi Local Aboriginal Land Council, Anthony Anderson and Len Anderson representatives of tradition families with connection to country. Although, the representatives attending various meetings may have changed from time to time, the represented organisations and families remained the same.

RAS represents the interests of all Aboriginal people connected to country through the various administrative divisions of the Worimi People; those who may not be connected to country were also represented through the Karuah and Worimi Local Aboriginal Land Council who have a legislated function for culture and Heritage within their boundaries. The Abalone Farm land component is within the KLALC boundaries, whilst some of the water component is within WLALC boundaries.

Aboriginal Cultural Assessment

This Cultural assessment is to be appended to and forms part of the Aboriginal Heritage and Archaeological Assessment by Myall Coast Archaeological Services January 2013.

1. RAS is in receipt of the .draft Aboriginal Heritage and Archaeological Assessment by Myall Coast Archaeological Services.

2. RAS met with the archaeologist Len Roberts to discuss and consider the proposal on July 3rd, 2012 at Karuah LALC The proposal was presented and each section dealt with page by page. In attendance was Dave Feeney, Len Anderson and Johnathon Lilley
3. RAS undertook a field inspection on 23rd July, 2012. In attendance were Ron Tisdell, Fiona Manton, Len Anderson, Chris Collison, Johnathon Lilley and Jaimee Merrick.
4. RAS received copies of the draft report and findings on 26th September 2012
5. Karuah CEO Dave Feeney accompanied the archaeologist and representatives of the company on 14th November, 2012 to determine the exact location of the proposed new pipeline route.
6. RAS received copies of final report taking into account all received comments and showing the agreed relocation of the pipeline.
7. RAS agrees with and confirms the report prepared by MCAS. RAS believes the comments on the historical background summarises well the Aboriginal connection to the land and the environment rather than connection to things. It puts well our unity, contentment and lifestyle.
8. RAS confirms that the assessment accurately reflects the findings, our consultation, input and recommendations.
9. RAS confirms results of the visual assessment and appreciates the level of consultation on the assessment and more particularly our role in the entire project.
10. RAS endorses the investigation methodology and coverage.
11. RAS supports and endorses the management strategies identified in the report.
12. RAS has no concerns from a cultural perspective for the proposal to proceed.

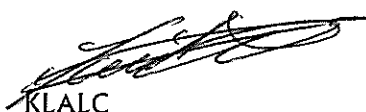
Recommendations

After due and proper consideration of the information, our cultural knowledge on Behalf of the Registered Stakeholders and the people we represent;

We strongly recommend the following:

- A post approval management plan to be prepared for the conservation of the midden as per Aboriginal community requirements with ongoing consultation with Aboriginal community throughout the development process.
- The management plan is to be prepared in consultation with the Aboriginal stakeholders to consider preservation and protection of key Aboriginal heritage values and to deal with measures to be taken in the event that new Aboriginal objects of significance or a nature not anticipated, such as burials or ceremonial items are discovered during construction. This plan is to generally to include:
 - a. The bagging, tagging and collection of any artefacts that may be unearthed during the construction process and kept with KLALC until an appropriate keeping place is determined by the management plan.
 - b. Aboriginal Cultural Education Program should be developed by the proponent for the induction of personnel involved in the construction activities in the project area in consultation with KLALC.

SIGNED:



KLALC
Dave Feeney CEO
January 23rd 2012



Mur-Roo-Ma Inc

9 Vardon Road Fern Bay
2295 N.S.W Australia

ABN : 978 077 194 84

Phone / Fax : 02 49281910

Mobile : 0402 82 74 82

E-mail : murroomainc1@gmail.com

25th January 2013
Myall Coast Archaeological Services

Dear Len and Sue

Re: RAS Assessment for the Proposed Abalone Farm at Pindimar Port Stephens NSW

Thank you for the opportunity to comment on this project

Murrooma inc has read and fully understands the draft report for the Proposed Abalone Farm at Pindimar Port Stephens NSW at this stage we have no comments or amendments to make therefore we agree with the draft report in its entirety

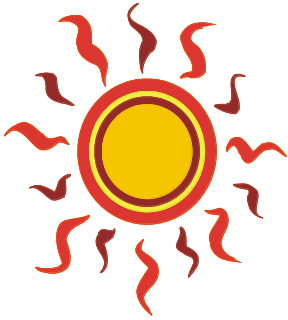
Kind Regards

Anthony Anderson

CEO

Mur-roo-ma Inc

Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**INDIGENOUS ARCHAEOLOGIST
CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@kooee.com.au

17th January 2013
Myall Coast Archaeological Services

Dear Len and Sue

**Re: RAS Assessment for the Proposed Abalone Farm at Pindima
Port Stephens NSW**

Thank you for the opportunity to comment on the Research Design, Methodology and Recommendations in regards to the protection of Aboriginal Heritage within this Proposal.

After reading the draft report, and now this final presentation Nur-Run-Gee P/L, agrees with and understands the proposed mitigation and management recommendations along with the proposed research design and methodology – The only inclusion would be that: – Worimi Traditional Caretakers (Owners) is involved on all site investigations and assessments.

If you have any further enquiries please do not hesitate to contact us.

Yours Sincerely

Lennie Anderson OAM
Worimi Traditional Owner
Indigenous Archaeologist
Director
Nur-Run-Gee Pty Ltd

Aboriginal Cultural Heritage Report

Pindimar Abalone Farm

Produced by

Registered Aboriginal Stakeholders

17th January, 2013

ABOUT Registered Aboriginal Stakeholders (RAS)

RAS was established as a reference group as a result of expressions of interest from known Aboriginal persons/groups who may have had an interest with respect of Cultural Heritage within the boundaries of a proposed Abalone Farm at Pindimar NSW. It is important to recognise the need to ensure all Aboriginal people who had established connection with country, as well as, those local Aboriginal people who may not have connection to country but have an interest in the advancement of Aboriginal Heritage, culture education and welfare were represented in guiding the development of the project to benefit Aboriginal people.

To this end RAS was constituted with representatives from Karuah Local Aboriginal Land Council, Worimi Local Aboriginal Land Council, Anthony Anderson and Len Anderson representatives of tradition families with connection to country. Although, the representatives attending various meetings may have changed from time to time, the represented organisations and families remained the same.

RAS represents the interests of all Aboriginal people connected to country through the various administrative divisions of the Worimi People; those who may not be connected to country were also represented through the Karuah and Worimi Local Aboriginal Land Council who have a legislated function for culture and Heritage within their boundaries. The Abalone Farm land component is within the KLALC boundaries, whilst some of the water component is within WLALC boundaries.

Aboriginal Cultural Assessment

This Cultural assessment is to be appended to and forms part of the Aboriginal Heritage and Archaeological Assessment by Myall Coast Archaeological Services January 2013.

1. RAS is in receipt of the .draft Aboriginal Heritage and Archaeological Assessment by Myall Coast Archaeological Services.
2. RAS met with the archaeologist Len Roberts to discuss and consider the proposal on July 3rd, 2012 at Karuah LALC The proposal was presented and each section dealt with page by page. In attendance was Dave Feeney, Len Anderson and Johnathon Lilley

3. RAS undertook a field inspection on 23rd July, 2012. In attendance were Ron Tisdell, Fiona Manton, Len Anderson, Chris Collison, Johnathon Lilley and Jaimee Merrick.
4. RAS received copies of the draft report and findings on 26th September 2012
5. Karuah CEO Dave Feeney accompanied the archaeologist and representatives of the company on 14th November, 2012 to determine the exact location of the proposed new pipeline route.
6. RAS received copies of final report taking into account all received comments and showing the agreed relocation of the pipeline.
7. RAS agrees with and confirms the report prepared by MCAS. RAS believes the comments on the historical background summarises well the Aboriginal connection to the land and the environment rather than connection to things. It puts well our unity, contentment and lifestyle.
8. RAS confirms that the assessment accurately reflects the findings, our consultation, input and recommendations.
9. RAS confirms results of the visual assessment and appreciates the level of consultation on the assessment and more particularly our role in the entire project.
10. RAS endorses the investigation methodology and coverage.
11. RAS supports and endorses the management strategies identified in the report.
12. RAS has no concerns from a cultural perspective for the proposal to proceed.

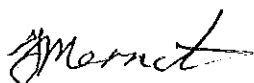
Recommendations

After due and proper consideration of the information, our cultural knowledge on behalf of the Aboriginal people we represent;

We strongly recommend the following:

- A post approval management plan to be prepared for the conservation of the midden as per Aboriginal community requirements with ongoing consultation with Aboriginal community throughout the development process.
- The management plan is to be prepared in consultation with the Aboriginal stakeholders to consider preservation and protection of key Aboriginal heritage values and to deal with measures to be taken in the event that new Aboriginal objects of significance or a nature not anticipated, such as burials or ceremonial items are discovered during construction. This plan is to generally to include:
 - a. The bagging, tagging and collection of any artefacts that may be unearthed during the construction process and kept with KLALC until an appropriate keeping place is determined by the management plan.
 - b. Aboriginal Cultural Education Program should be developed by the proponent for the induction of personnel involved in the construction activities in the project area in consultation with KLALC.

SIGNED:



WLALC

January 23rd 2012

APPENDIX C

Lennard Roberts
6783 Pacific Highway
Tea Gardens New South Wales 2324
Attention: Lennard Roberts
Email: len@myallcoast.net.au

Date: 13 August 2012

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : 152.05684, -32.68943 - Lat, Long To : -32.65159, 152.12002 with a Buffer of 200 meters. conducted by Lennard Roberts on 13 August 2012

A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

7	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette](http://www.nsw.gov.au/gazette) (<http://www.nsw.gov.au/gazette>) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Pidimar abalone

Client Service ID : 77024

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
38-5-0054	Northarm Cove;Fame Cove; <u>Contact</u>	AGD	56	412127	6383276	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0055	Northarm Cove Fame Cove <u>Contact</u>	AGD	56	412127	6383276	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0010	Northarm Cove Fame Cove <u>Contact</u>	AGD	56	412131	6383093	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0011	Fame Bay;Soldiers Point; <u>Contact</u>	AGD	56	412144	6382362	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0224	Pindimar 1 <u>Contact</u>	AGD	56	414000	6383250	Open site	Valid	Shell : 1		98302
38-5-0274	Farm Cove Artefacts <u>Contact</u> Steve Brereton	AGD	56	411971	6383575	Open site	Valid	Artefact : 2		
38-5-0275	Piggy Beach Axe Grooves <u>Contact</u> Karuah LALC	GDA	56	413203	6382817	Open site	Valid	Grinding Groove : 3, Potential Archaeological Deposit (PAD) : 1		

Report generated by AHIMS Web Service on 13/08/2012 for Lennard Roberts for the following area at Lat, Long From : 152.05684, -32.68943 - Lat, Long To : -32.65159, 152.12002 with a Buffer of 200 meters.Additional Info : Cultural Survey. Number of Aboriginal sites and Aboriginal objects found is 7

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Pindimar Abalone 2

Client Service ID : 77027

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-5-0054	Northarm Cove;Fame Cove; Contact	AGD	56	412127	6383276	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0055	Northarm Cove Fame Cove Contact	AGD	56	412127	6383276	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0062	Northarm Cove Baromee Hill Contact	AGD	56	409820	6384421	Open site	Not a Site	Stone Arrangement : -	Stone Arrangement	99706,99707
38-5-0003	Northarm Cove Baromee Point Contact	AGD	56	409356	6384778	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0004	Northarm Cove Baromee Point Contact	AGD	56	409551	6384142	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0008	Northarm Cove Bulga Creek Contact	AGD	56	411000	6387000	Open site	Valid	Ceremonial Ring (Stone or Earth) : -, Modified Tree (Carved or Scarred) : -	Bora/Ceremonial,C arved Tree	
38-5-0010	Northarm Cove Fame Cove Contact	AGD	56	412131	6383093	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0011	Fame Bay;Soldiers Point; Contact	AGD	56	412144	6382362	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0202	MT KARUAH/CARRINGTON 1 Contact	AGD	56	408750	6387050	Open site	Valid	Artefact : -		
38-5-0204	MT KARUAH/CARRINGTON 3 Contact	AGD	56	408730	6387050	Open site	Valid	Modified Tree (Carved or Scarred) : -		
38-5-0224	Pindimar 1 Contact	AGD	56	414000	6383250	Open site	Valid	Shell : 1		98302
38-5-0041	Tea Gardens Limekilns Contact	AGD	56	419134	6384962	Open site	Valid	Shell : -, Artefact : -	Midden	
38-5-0274	Farm Cove Artefacts Contact Steve Brereton	AGD	56	411971	6383575	Open site	Valid	Artefact : 2		

Report generated by AHIMS Web Service on 13/08/2012 for Lennard Roberts for the following area at Lat, Long From : 152.02837, -32.69211 - Lat, Long To : -32.62454, 152.14118 with a Buffer of 50 meters.Additional Info : cultural survey. Number of Aboriginal sites and Aboriginal objects found is 14

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref Number : Pindimar Abalone 2

Client Service ID : 77027

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
38-5-0275	Piggy Beach Axe Grooves	GDA	56	413203	6382817	Open site	Valid	Grinding Groove : 3, Potential Archaeological Deposit (PAD) : 1		
	<u>Contact</u> Karuah LALC			<u>Recorders</u> Steve Brereton				<u>Permits</u>		

Report generated by AHIMS Web Service on 13/08/2012 for Lennard Roberts for the following area at Lat, Long From : 152.02837, -32.69211 - Lat, Long To : -32.62454, 152.14118 with a Buffer of 50 meters. Additional Info : cultural survey. Number of Aboriginal sites and Aboriginal objects found is 14

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

APPENDIX D

ABORIGINAL HERITAGE ASSESSMENT

**for a proposed
ABALONE FARM**

at

**LOT 2 DP1014683
CARRUTHERS AVENUE, SOUTH PINDIMAR NSW**

Prepared by: Suzie Worth

**Bronwyn Bloxham BA(Hons)
Garry Worth BSc DipSc**

of

Wildthing Environmental Consultants

ABN: 67 096 825 053

RMB 91 Lemon Tree Passage Road

SALT ASH NSW 2318

For: Mr G Housefield

Austasia Leefield Pty Ltd

41 James Paterson Street

ANNA BAY NSW 2316

August 2002

WILDTHING

Environmental Consultants

(Wildthing Enterprises Pty Ltd - ACN: 096 825 053)

RMB 91 Lemon Tree Road, SALT ASH NSW 2318

Phone: (02) 49826258 Fax: (02) 49826658

ABN: 67 096 825 053

EXECUTIVE SUMMARY

An Aboriginal Heritage Assessment has been undertaken over land at Lot 2 DP1014683 Carruthers Avenue, South Pindimar, NSW as the location for the development of a land based Abalone Farm. The requirements for this assessment was outlined in a letter to the proponent from the NSW National Parks and Wildlife Service dated 23 October 2001 and they were to be carried out in accordance with the Environmental Planning and Assessment Act 1979 (EPA Act 1979) and under the provisions of the National Parks and Wildlife Act 1974 (NPW Act 1974).

The aim of the study was to provide a description of Aboriginal heritage and cultural values, and to give consideration to any likely impacts on these values by the proposed development activities.

The survey was carried out by Joel Henderson (Worimi LALC), Suzie Worth and Joanne Woodhouse of Wildthing Environmental Consultants on Tuesday 11 June 2002.

The construction and development of abalone farm operating and management facilities has the potential to damage an archaeological site identified during the survey for this report. This would occur due to the excavating of a trench through a shell midden on the beach ridge and headwall to lay a pipeline from the land operation into Port Stephens. The proponent has indicated that it is intended that the inlet and outlet pipes be laid above the ground from the header tank to the pumping station, then underground below the beach ridge substrate and under the inter-tidal surface (Housefield, *pers.comm.*). Where the currently proposed route of the pipes lies below the beach ridge and cuts through the headwall, it would disturb the shell midden.

It was agreed that it would be preferable to redesign the route of the pipeline to avoid disturbance of the site. A further study of the beach ridge and headwall was undertaken. An area approximately 15m to the west of the original pipeline route was seen as a more suitable place for the pipeline to transect the western end of the shell midden and in an area where it appeared that there was a lesser amount of shell deposits visible. However since the shell midden could not be fully assessed to its full extent during this survey, it was recommended that a Worimi LALC representative and consultant be present

during the trenching operation and that should any additional evidence, e.g. stone or manufactured shell artefacts be uncovered, the Heritage Unit of the NSW National Parks and Wildlife Service be informed.

Although no other evidence or archaeological sites were identified within the study area, ground preparation for the construction of other building and pond facilities or removal of trees could bring to the surface isolated artefacts. During all these phases of the construction, it would be advisable to also have a Worimi LALC representative present to identify any artefactual evidence uncovered.

In conclusion, provided that the recommendations are followed and no further evidence is identified, the proposal is unlikely to have any effect on the archaeological landscape of the study area.

CONTENTS

	PAGE
1.0 INTRODUCTION	1
1.1 Description of the Proposed Development Site	1
1.1.1 Geology and Soil	3
1.1.2 Vegetation	3
1.2 Description of the Development Proposal	5
2.0 LEGISLATIVE REQUIREMENTS	7
3.0 METHODOLOGY	9
3.1 Aboriginal Community Consultation	9
3.2 NPWS Aboriginal Site Register	9
3.3 Literature Reviews	9
3.4 Site Survey Strategy	9
3.5 Site Inspection Strategy	10
4.0 RESULTS AND ANALYSIS OF THE SURVEY	12
4.1 NPWS Aboriginal Heritage Database	12
4.2 Literature Review	14
4.2.1 Previous Archaeological/Anthropological Research	14
4.2.2 Historical Research	15
4.3 Site Inspection	18
4.3.1 Site Survey Strategy	18
4.3.2 Survey Results	20
5.0 THE PREDICTION OF OTHER TYPES OF SITES IN THE STUDY AREA	23
6.0 IMPACT ASSESSMENT	25
5.1 Impact by Natural Processes	25
5.2 General Impacts by Human Processes	25
5.3 Potential Impact of the Proposed Development	26
7.0 SIGNIFICANCE ASSESSMENT	29
7.1 General	29
7.2 Cultural Significance to Contemporary Aboriginal People	30
7.3 Scientific or Archaeological Significance	30
7.4 Significance of the Study Area	31
8.0 RECOMMENDATIONS AND CONCLUSION	32
9.0 BIBLIOGRAPHY	33

APPENDIX A:	Worimi Local Aboriginal Land Council – Cultural Assessment
APPENDIX B:	Types of Aboriginal Archaeological Sites
APPENDIX C:	NPWS Director-General’s Requirements and National Parks and Wildlife Act 1974 Extracts
APPENDIX D:	Resumes of Relevant Personnel

1.0 INTRODUCTION

An Aboriginal Heritage Assessment has been undertaken over land at Lot 2 DP1014683 Carruthers Avenue, South Pindimar, NSW as the location for the development of a land based Abalone Farm (Figure 1). The requirements for this assessment have been outlined in a letter to the proponent from the NSW National Parks and Wildlife Service dated 23 October 2001 (Appendix C) and they were to be carried out in accordance with the Environmental Planning and Assessment Act 1979 (EPA Act 1979) and under the provisions of the National Parks and Wildlife Act 1974 (NPW Act 1974).

The aim of the study was to provide a description of Aboriginal heritage and cultural values, and to give consideration to any likely impacts on these values by the proposed development activities.

The general objectives of this report were to:

- i. Carry out a literature review of studies relevant to the survey area;
- ii. Carry out a field survey and analysis of any Aboriginal archaeological sites within the designated area of the proposed development to provide insights into past land use patterns; and
- iii. Consider the impact of proposed activities on any archaeological resources and recommend a mitigation strategy that aims to protect a representative proportion of any resources and sites of significance.

The survey was carried out by the author, Suzie Worth and Joanne Woodhouse under the supervision of Bronwyn Bloxham BA (Hons) (Appendix D) and Joel Henderson, a representative from the Worimi Local Aboriginal Land Council who participated in the survey and commented on the Aboriginal community's interest in sites recorded in the area and on the project in general.

1.1 DESCRIPTION OF THE PROPOSED DEVELOPMENT SITE

The study area is approximately 5ha and is located to the west of the village of South Pindimar, on the northern shores of Port Stephens, NSW. The site is accessed via Chalis Avenue (unformed) and is bounded by Carruthers Avenue (unformed) to the south and south-east and privately owned land on all other sides. The bushland to the north and north-east remains relatively intact whilst the land to the west shows evidence of disturbance in the form of partial vegetation clearing.

A small amount of clearing was evident within the proposed development areas however, the majority of the vegetation on site remains relatively intact with a number of large mature trees scattered throughout. A number of well used tracks traverse the site and a small amount of litter was noted in close proximity to these tracks.



Figure 1: Locality Map

Two SEPP 14 Wetlands are located in close proximity to the subject site. Wetland No. 757a lies to the south-east of the study area and No. 757b lies further to the south-west.

Elevation across the study area ranges between 0m and 16m AHD. The landform consists of a tidal flat, headwall and beach ridge with a low lying, swale to the north, rising relatively gently to the north. A small disused quarry was identified in the centre of the site and currently forms a small dam.

Due to the proposed pipeline route extending into Port Stephens, the inter-tidal environmental along the proposed pipeline route was also considered during this study. These areas appeared to be relatively undisturbed by anthropogenic activities although erosion was noted along the Mean High Water Mark and a shell midden was evident along the headwall.

1.1.1 GEOLOGY AND SOILS

South Pindimar is described as being a swamp soil landscape characterised by Holocene quartz sandsheets which overlie estuarine sediments. This soil landscape is dominated by ground surfaces which are often seasonally waterlogged, combined with a watertable which is close to the surface.

The soil material is composed of large amounts of accumulated decayed organic matter (imperfectly drained Humus Podzols). This dominant soil type is composed of a loose, brownish black loamy sand topsoil and horizons of bleached loose sand, an organic coffee coloured pan and coarse, loose saturated brown sand subsoils mostly on the sandy rises.

On the poorly drained flats, the topsoil consists of up to 40cm of loose brownish black loamy sand overlaying >50cm of poorly drained siliceous sands.

The total soil depth on the sandy rises and flats is >300cm. On the low flats, the soil at >50cm depth is extremely acidic and very saline with a high potential for acid sulphate below 1.5m AHD (Matthei, 1995).

1.1.2 VEGETATION ASSEMBLAGES

Two main vegetation assemblages were identified within the study area being, Melaleuca/Swamp Mahogany Woodland and Open Eucalypt Forest.

Melaleuca/Swamp Mahogany Woodland

The Melaleuca/Swamp Mahogany Woodland complex covered the southern portion of the site, within the ephemerally wet/swampy areas. The upper stratum was dominated by *Eucalyptus robusta* (Swamp Mahogany) and *Melaleuca quinquenervia* (Broad-leaved Paperbark). Also noted were *Eucalyptus*

propinqua (Blackbutt) and *Angophora costata* (Smooth-barked Apple). The density of the understorey varied, although it was generally fairly sparse and included species such as *Duboisia myoporoides* (Corkwood) and *Casuarina glauca* (Swamp She-oak).

Moisture loving species dominated the shrub/herb layer and included *Typha orientalis* (Cumbungi), *Cotula coronopifolia* (Waterbuttons), *Cyperus* sp., *Juncea* sp., *Gahnia aspera*, *Gahnia clarkei* and *Lepidosperma laterale* (Sword-sedge). Also noted were within this assemblage were *Pteridium esculentum* (Bracken) and *Calochlaena dubia* (False Bracken Fern).

Open Eucalypt Forest

The Open Eucalypt Forest complex covered the majority of the site. Species forming the upper stratum of this assemblage were *Angophora costata* (Smooth-barked Apple), *Eucalyptus propinqua* (Blackbutt), *Eucalyptus microcorys* (Tallowwood), *Eucalyptus punctata* (Grey Gum), *Eucalyptus fibrosa* ssp. *fibrosa* (Broad-leaved Ironbark), *Eucalyptus capitellata* (Brown Stringybark) and *Eucalyptus acmenoides* (White Mahogany).

The relatively sparse understorey was dominated by juvenile dominants as well as *Allocasuarina torulosa* (Forest Oak), *Glochidion ferdinandi* (Cheese Tree), *Syncarpia glomulifera* (Turpentine) and *Duboisia myoporoides* (Corkwood).

The shrub layer was evident across much of this vegetation community except within the proposed development areas where some clearing has been undertaken. Species noted include *Lantana camara* (Lantana), *Dodonaea triquetra* (Common Hop Bush), *Banksia integrifolia* (Coastal Banksia), *Banksia serrata* (Old Man Banksia), *Persoonia linearis* (Narrow-leaved Geebung), *Breynia oblongifolia* (Breynia) and *Acacia ulicifolia* (Prickly Moses).

The grass layer varied in density, although it was quite dense over much of the site. Species identified included *Aristida vagans* (Three-awn Speargrass), *Chloris gayana* (Rhodes Grass), *Cynodon dactylon* (Common Couch), *Echinopogon caespitosus* var. *caespitosus* (Tufted Hedgehog Grass), *Entolasia stricta* , *Imperata cylindrica* var. *major* (Blady Grass), *Panicum simile* (Two Colour Panic), *Wahlenbergia gracilis* (Native Bluebell) and *Adiantum aethiopicum* (Common Maidenhair Fern).

Orchid species were also commonly encountered within the Open Forest and along the edge of the high tide level and included *Acianthus fornicatus* (Pixie Orchid), *Corybas* sp. (Helmet Orchid) and *Pterostylis* sp. (Greenhood)

A large variety of climbing species were noted across the site, particularly within the areas of Open Forest and included species such as *Eustrephus latifolius* (Wombat Berry), *Geitonoplesium cymosum* (Scrambling Lily), *Rubus* sp. aff. *moorei* (Bush Lawyer), *Rubus ulmifolius* (Blackberry), *Sarcopetalum harveyanum* (Pearl Vine) and *Stephania japonica* var. *discolor* (Snake Vine).

Aquatic Vegetation

For the purposes of this study, the aquatic vegetation community delineated along the proposed pipeline route within the inter-tidal environment between the Mean High Water Mark (MHWM) and the Mean Low Water Mark (MLWM) were considered. This community consisted of *Avicennia marina* var. *australasica* (Grey Mangrove) and *Zostera capricorni* (Eel Grass).

1.2 DESCRIPTION OF THE DEVELOPMENT PROPOSAL

The proposal involves the construction of a commercial Abalone Farm (Figure 2) and includes the following land-based facilities:

- Cultivation and breeding facilities;
- Water circulation and treatment facilities including ponds, pumping and reticulation facilities;
- Waste management facilities;
- Access roads and an internal road network including visitor parking areas, truck parking and loading facilities;
- Administration, maintenance and workshop facilities;
- Landscaping for visual and noise control;
- Storage facilities; and
- Fencing and security.

In addition to the above land based facilities, two intake pipes of 300mm internal diameter and two water release pipes of 250mm internal diameter are proposed to extend into Port Stephens (Figure 3). The polypropylene pipes will be welded together and laid side by side. The pipes will be laid on top of the land surface, from the header tanks to the pumping station site. From the pumping station, the pipes will be laid below approximately 700mm of substrate and the subtidal pipes will be laid on the substrate surface.

It is proposed that the above ground portions of the pipeline will not necessitate any tree removal as the polypropylene material is flexible and can be manipulated around the trunks and roots which lie in its path (Housefield, G. pers. comm.).

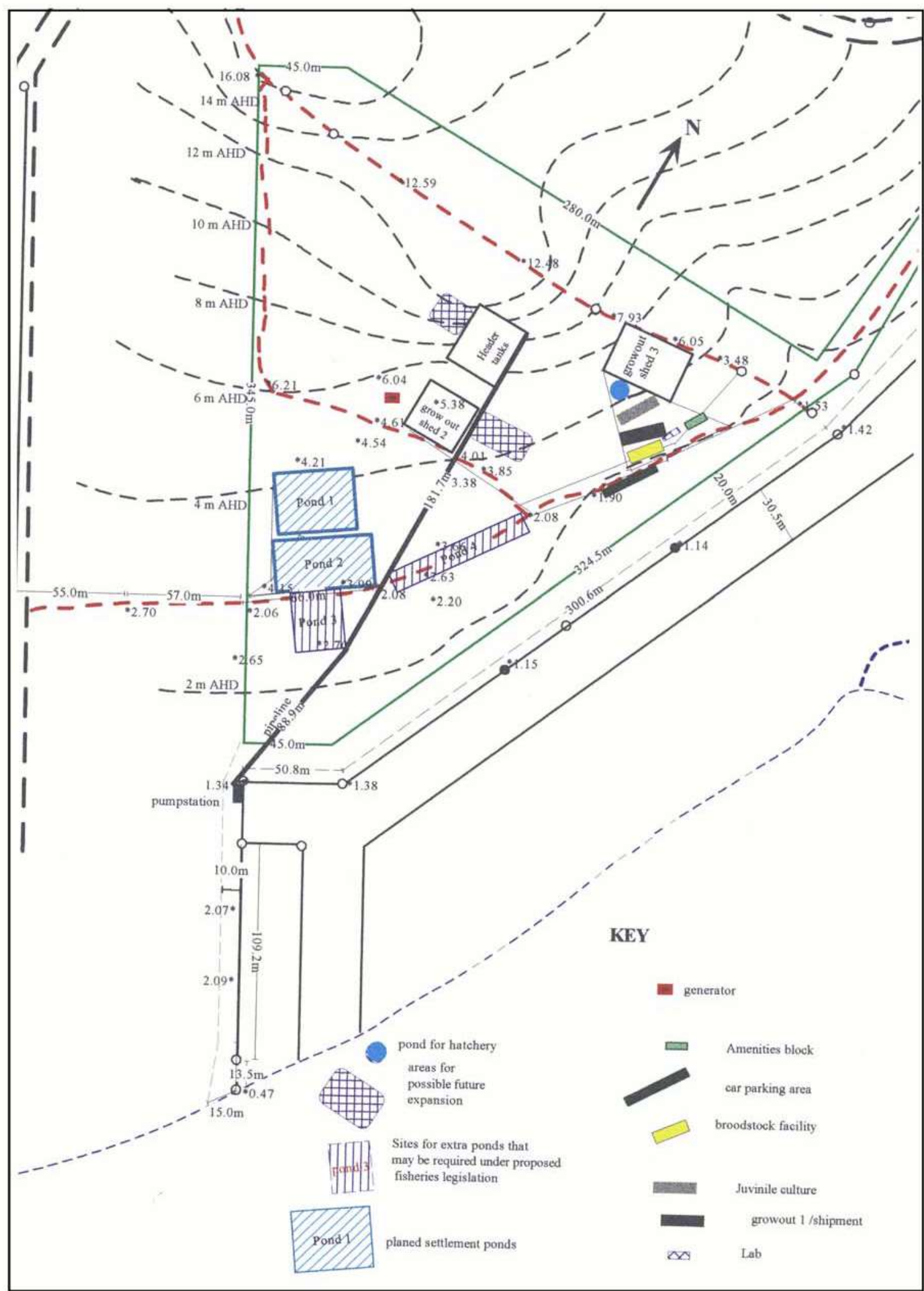


Figure 2: Proposed Development Plan

2.0 LEGISLATIVE REQUIREMENTS

The two main State legislative acts which provide for Aboriginal heritage management in NSW are the National Parks and Wildlife Act 1974 (NPW Act) and the Environmental Planning and Assessment Act 1979 (EP&A Act). The NPW Act provides statutory protection for Aboriginal relics and places, while the EP&A Act provides the basis upon which Aboriginal heritage values will be assessed in land use planning and development consent processes.

The NPW Act (as amended) provides the primary basis for the legal protection and management of Aboriginal sites and relics within NSW under Section 90 and Section 84. The implementation of the Aboriginal heritage provisions of the Act is the responsibility of the NSW National Parks and Wildlife Service (NPWS).

The rationale behind the act is the prevention of unnecessary or unwarranted destruction of relics and the active protection and conservation of relics where such action is considered warranted.

With the exception of some artefacts in collections, the Act generally defines all relics to be the property of the Crown. The Act then provides for the protection, management and destruction of these relics.

The archaeological definition of a site may vary according to survey objectives, however it should be noted that even single and isolated artefacts are protected as relics under the Act.

Generally, it is an offence to disturb or to excavate any land with the purpose of discovering, disturbing or moving a relic without the written consent of the Director General of the NSW NPWS. Consents regarding the use of destruction of relics are managed through the NPWS permit system. The issuing of permits is dependent upon adequate archaeological review and assessment together with an appropriate level of Aboriginal community liaison and involvement.

The Act, together with the policies of the NSW National Parks and Wildlife Service, provides constraints and requirements on landowners and managers in project management. For example, it is an offence to knowingly disturb an Aboriginal artefact or site without an appropriate permit; it is necessary to carry out archaeological survey and assessment prior to land surface disturbance or land clearing and when any archaeological resource of an area is known or can be predicted, appropriate measures should be adopted to minimise the necessity for the destruction of sites or relics and prevent their destruction when conservation is warranted.

The present policy of the NPWS is to conserve all relics within their original location and context. An extract from the National Parks and Wildlife Act is detailed in Appendix B.

In land use planning and decision making, environmental impacts on Aboriginal heritage are to be considered under the EP&A Act. Three parts of the EP&A Act have relevance to Aboriginal heritage:

- Part III - used as a planning tool for those producing Local Environmental Plans etc.;
- Part IV – used for assessing processes such as development applications and subdivisions which are being determined by Local Government councils. Under certain circumstances, an Environmental Impact Statement is required and other Government Authorities will need to assess these applications; and
- Part V – used for assessing development approvals to be determined by other Government Authorities (e.g. DUAP, DLWC, NSW Fisheries) outside Local Government Authorities (e.g. fish farms, subdivisions containing waterways, etc). These developments maybe ‘designated’ or ‘integrated’ developments, and in some cases both.

In the case of this study, the assessment was carried out under Part IV of the EP&A Act.

There are also other statutory provisions that are relevant to Aboriginal heritage management in New South Wales. These include the Aboriginal and Torres Strait Islander (Heritage Protection) Act (1984), the Australian Heritage Commission Act (1975); the NSW Heritage Act (1977) and the Local Government Act (NPWS, 1997; Farrier *et al.*, 1999). These provisions were also considered within the scope of this project.

3.0 METHODOLOGY

3.1 ABORIGINAL COMMUNITY CONSULTATION

The study area falls within the boundaries of the Worimi Local Aboriginal Land Council (Worimi LALC). A letter was sent on 3 June 2002 to Lennie Anderson of the Worimi LALC informing him of the nature of the investigation, providing a map of the study area and requesting the involvement of the Worimi LALC in the field survey. Val Merrick from the Worimi LALC arranged for Joel Henderson, as the representative of the LALC, to accompany the author, Suzie Worth. It was arranged to carry out the site survey on Tuesday 11 June 2002. On completion of the fieldwork, the Worimi LALC is to supply a Cultural Heritage report (Appendix A) for inclusion in this Aboriginal Heritage Assessment report. A meeting was held with Lennie Anderson on completion of the site survey to discuss the recommendations for this report.

3.2 NPWS ABORIGINAL SITE REGISTER

Information on the nature, distribution and frequency of occurrence of sites in or close to the study area was obtained from the NPWS Aboriginal Sites Register database. A map plotting the sites recorded within the immediate area of the study area is provided in Section 4.1.

It should be noted that:

- Site records for many sites are incomplete to varying degrees: grid references are not always accurate (due to errors on the part of field investigators or data processors) and unless the original site cards and associated reports are accompanied by detailed maps at 1:25,000 scale, it can be very difficult to check the accuracy of the grid references.
- Sites can be sometimes recorded more than once by different field investigators and registered as separate sites.
- There are possibly many sites yet to be uncovered.

3.3 LITERATURE REVIEWS

Archaeological and anthropological reports were reviewed at the NPWS Northern Regional Office at Coffs Harbour, and information on past landuse and maps relevant to the study area and region were obtained locally.

3.4 SITE SURVEY STRATEGY

This section discusses the theoretical basis of the surveying strategy and the analyses presented in this study. The general approach has been based on the connection between "off-site" approaches to artefact distribution; land systems analysis and predictive modelling and "on-site" survey.

A major trend in world archaeological surveying has been towards off-site archaeology (Dunnell and Dancey, 1983; Thomas, 1975; Foley, 1981). This approach consciously focuses archaeological analyses towards predictive patterning of artefactual material in the range of environment types found within the region. In practice, these approaches tend to have two basic tenets:

- i. They consider the individual artefact as the basic unit of analysis; and
- ii. They focus archaeological resource management towards preserving a representative sample within a region and away from a concentration on individual known sites.

In the United States, Dunnell and Dancey (1983) advocate what they call 'site-less surveys' in which archaeological material is considered to exist continuously across the landscape. Archaeologists in Australia are recognising that the archaeological evidence for past behaviours will be continuous in space (Smith, 1993). This recognition leads to a focus on the management of archaeological material as a whole landscape, rather than a site-based management strategy that does not take into account the spatial aspects of the archaeological record. Therefore it is closely tied to the analysis of land systems and predictive modelling.

Land systems approaches are based on the analysis of the archaeological implications of major landforms and their associated geology, soils, climate and both the floral and faunal resources. It is clear that these factors influenced the movements and settlement patterns of Aboriginal people in prehistory. This could have created particular artefactual patterns across the landscape that archaeologists attempt to reconstruct. Management recommendations can then be geared towards the preservation of what is estimated to be a representative sample of the overall artefactual material within the region.

The second point concerning the influence of the environment on the patterning of archaeological material is artefactual material in varying environments has varying rates of survival and discovery. For example, plant material is less likely to survive in a rainforest environment than in a desert, or alluvial deposits may overlie stone artefacts knapped near a stream over time (Shipman, 1981; Beck *et al.*, 1989; Solomon *et al.*, 1990; Smith, 1993).

et

The initial predictive model for this study was derived from a general understanding of archaeological patterning and Aboriginal movements and will probably be confirmed following further literature and physical searches.

The “on-site” surveys were undertaken as described in Section 3.5.

3.5 SITE INSPECTION STRATEGY

The aim of the site inspection was to confirm and enhance the predictive model and it was undertaken with the results of the model in mind.

Prior to the survey of the land, there was no evidence to suggest that the land had a cultural significance beyond general usage, even though there was recorded evidence of cultural and ritual usage of land within 5km north of this report's study area. Cultural significance however, may be possible and would be expected to become apparent following advice from the Local Aboriginal Land Council if this was the case.

From the topography of the land, the information available from NPWS Aboriginal Sites Register database and the literature review, it was predicted that Aboriginal activity on this land consisted of the general activities of hunter-gatherer lifestyle. This would have encompassed moving through the site and using the natural resources available (Henderson, J. *pers. comm.*). These activities would more than likely have been evidenced by shell middens, artefact deposits, scarred trees, etc.

The survey was carried out paying particular attention to any possible stone tool scatters, shell assemblages around the foreshore embankment, scars on mature trees or other evidence which would indicate the presence of Aboriginal sites.

4.0 RESULTS AND ANALYSIS OF THE SURVEY

4.1 NATIONAL PARKS AND WILDLIFE SERVICES ABORIGINAL HERITAGE DATABASE

The NPWS Aboriginal Sites Register was consulted for information on sites recorded within a five (5) kilometre radius of the study area. The search parameters included sites recorded within the grid reference range, from 409000E to 419000E and from 6378500N to 6388500N. In the case of this search, the NPWS Aboriginal Sites Register database returned with 21 sites recorded on the register. These are shown below in Table 1.

Table 1: Aboriginal archaeological sites located in the vicinity of the study area

Site type	Number of sites located in search area	Reported to Database
Artefact (Stone, Bone, Shell, Glass, Ceramic), Earth Mounds and Shell	11 Recorder Unknown; Welsh,	1998; Dunnett, 1995.
Modified Tree (Carved or Scarred)	6 Dallas, 1994; Turner, 1986;	Welsh, 1998.
Stone Arrangement	1 Recorder Unknown	
Ceremonial Ring (Stone or Earth), Modified Tree (Carved or Scarred)	1 Recorder Unknown	
Water Hole	1 Welsh, 1998.	
Earth Mound	1 Welsh, 1998.	

There does not appear to be much information on Aboriginal sites found within the Pindimar vicinity. This may be due to the lack of archaeological studies carried out in the vicinity over recent years. The nearest recording of a midden is at Fame Cove (unknown recorder) which is within 2km, however there are other recordings on the northern shores of Port Stephens and to the west of the study area at North Arm Cove. The location of these previously recorded middens is shown in Figure 3. On the southern shores of Port Stephens, middens have been recorded on the Soldiers Point peninsula.

Modified trees were identified at Bulga Creek to the north west of the study area (unknown recorder) and Bagnalls Beach on the southern shores of Port Stephens. Stone arrangements and a ceremonial ring have been recored in the Baromee Hill/North Arm Cove area. Five kilometres to the south-east of the study area on the southern side of Port Stephens was the recorded Worimi Women’s Waterhole at Salamander Bay (Welsh, 1998), where an Earth Mound (Welsh, 1998) was also recorded.

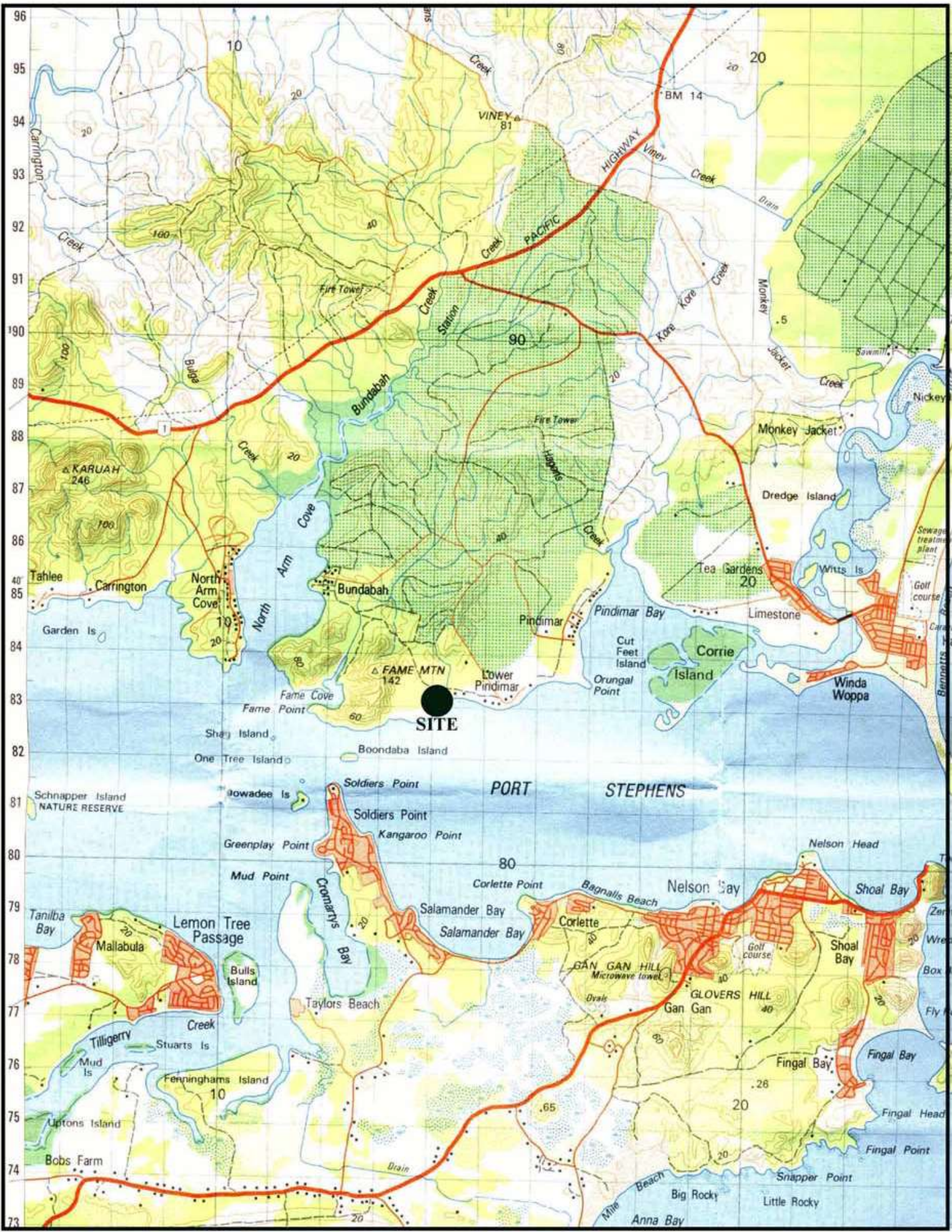


Figure 3: Recorded Sites within 2km of the Study Area

4.2 LITERATURE REVIEW

4.2.1 PREVIOUS ARCHAEOLOGICAL/ANTHROPOLOGICAL RESEARCH

This section details previous archaeological research in the general and immediate region of the study area.

Archaeological Survey at Carrington, Port Stephens, NSW (Brayshaw 1984)

This report covered an area of approximately 225ha located north east of the present village of Carrington, on the shores of Port Stephens about 6km west of the South Pindimar study area. The land was traditionally owned by the Gringhai tribe who were keen fishermen and in the report noted examples of coastal occupation sites on the north coast of NSW, identifying two kinds of coastal middens present in the Port Stephens area.

Carrington foreshore and the Corrigan Creek estuary were investigated and during the study, two areas of midden deposit were located. Shell deposits in long bands were found on the high black loamy sand banks and mainly consisted of cockles, whelks, rock and drift oysters. The middens were approximately 200m apart and Brayshaw suggested that they may have been a continuation of the same midden, however wave action over many decades may have eroded the middle section away. A scarred tree was identified (Iron Bark) and recorded. Stone structures (boombit/bora rings) were observed in various stages of disrepair and others had been bulldozed. As this was a preliminary survey these potential sites were not registered (Brayshaw 1984).

This report indicated an intensive use of the area by the Gringhai people in the past, as a base for “day camping”, fishing and ceremonial (initiation) purposes.

Archaeological Survey “Karuah Holdings” North Arm Cove (Roberts, 2000)

This report was commissioned to assess an area of approximately 350 hectares in the Carrington/North Arm Cove (ex-Booral land) area on the north western shore of Port Stephens. It notes the past land use and regional ethno history of the area. The report notes that local knowledge suggests that there are rock shelters with artwork, scarred and ceremonial trees, various artefacts, burial sites and campsites as well as European Heritage in the study area vicinity, many known to the Karuah LALC but not recorded.

An RTA survey in 1999 recognised Bulga Creek as having possible archaeological significance (Roberts 2000). The report also describes the assessment criteria for Aboriginal archaeological finds i.e. isolated finds (single stone artefacts), background scatters (artefactual material where association between artefacts can only be described using large scale and inclusive temporal and spatial categories of past occupation), sites (material evidence of past Aboriginal activity) and scarred trees.

Scarred trees were identified along Bulga Creek during the survey and it was suggested that this represents significant use of Bulga Creek by the Gringai people. There was no other artefactual or historical evidence uncovered during the survey.

4.2.2 HISTORICAL RESEARCH

Extracts from ‘The Present State of Australia’ (Robert Dawson, late Chief Agent of the Australian Agricultural Company, 1830)

This article, consisted of extracts from a reproduction of a copy of the document in the British Library and produced by Alburgh Archival Facsimiles Limited in 1987, was downloaded from the internet. It gave an anthropological view of the Worimi people in the 1800s, and was used in this report as an example of historical background into early European settlers observations of ‘The Worimi, a tribe of Port Stephens’.

The Port Stephens Story. A booklet published on behalf of the Port Stephens Historical Society (Bartlett, M.A. updated)

This is a very interesting look at the history of Port Stephens. It was compiled sometime in the 1980s and refers to Pindimar’s State financed fishing industry history:

“An odd offshoot of the fishing industry was the shark catching and processing station opened at Pindimar, on the northern side of the Port, in May 1927. Marketable commodities were shark hides, livers (to become “cod-liver” oil), and the fins, considered a gastronomic delicacy by the Chinese. Sharks were caught by netting, and the first netting haul, which took place in Salamander Bay, yielded 30 whaler sharks of between 100-500 pounds”.

A one day a week water transport service was maintained in the early 1900s by the yacht ‘Defender’. This supplied the community of the little village of Pindimar with food and general merchandise and returned to Newcastle with fish and dairy products.

In the 1920s, there was also a plan to create a new city at Pindimar.

Port Stephens Community based Heritage Study prepared for Port Stephens Council (Hunter, 2001)

In 1910 the NSW Harbours and Rivers Department set up a chain of coastal fish receiving and refrigeration depots, one being at Pindimar. It was opened in 1917 and incorporated an ice works factory, however the business did not reach its full potential due to competition from a family commercial fish and ice provider at Tea Gardens.

Wild Food in Australia (Cribb, A.B. and J.W., 1974)

This book has been referred to, in order to provide some information on a selection of the plant species identified within the study area which, were they present in the vicinity 200 years ago, may have been utilised as a natural resource by the Worimi people moving through the area:

Species Description

<i>Melaleuca quinquenervia</i> (Broad-leaved Paperbark)	Bark was used for many practical purposes e.g. containers, burial wrappings and for dwellings: ‘In building their shelters strips of bark in lengths of three to six feet were cut in the following way, either by climbing notches or with the support of a forked stick. Stringy bark (<i>Eucalyptus obliqua</i>) or ti-tree bark (<i>Melaleuca quinquenervia</i>) was preferred.’ (Dawson, p.19).
<i>Banksia</i> sp. Many species of Banksia were used by the	Aborigines as a good source of nectar. They used to suck the fluid direct from the flowers or wash it out with water.
<i>Eustrephus latifolius</i> (Wombat Berry)	This is a tough twinning plant which produces a cluster of white, tuberous roots which are edible raw. They are crisp and whitish but have a slightly earthy flavour.
<i>Duboisia myoporoides</i> (Corkwood)	Aboriginals used many plants as remedy agents. Corkwood was used to prepare stupefying drinks.
<i>Gahnia aspera</i> (Saw-sedge)	The nuts of this plant, being a widespread species found in sandy coastal areas, are orange-red or brown-red when ripe. They were pounded to produce flour and would have taken a great deal of effort to produce enough for a meal.
<i>Persoonia</i> sp. (Geebung)	Just beneath the skin of the fruit is a thin layer of sweet pulp which is very fibrous and is chewed. Emus eat the fruits which pass through the bird almost without visible change.
<i>Wahlenbergia</i> sp. (Native Bluebell)	The delicate, sky-blue flowers of this plant are one of the most recognisable splashes of colour in the Australian bush and have a very mild flavour.
<i>Geitonoplesium cymosum</i> (Scrambling Lily)	This plant is most common along creek banks and moist Eucalypt forests. It has distinctive green tips to the flowers and black fruit. The tender, pale, young shoots as they emerge from the ground, resemble very slender asparagus spears and their taste is very similar. However in most areas it would be difficult to find enough shoots for a meal.
<i>Rubus moorei</i> (Bush Lawyer)	This plant produces luscious red raspberries. The quality is not quite that of the cultivated variety, but were probably well worth eating as a fruit supplement.
<i>Rubus ulmifolius</i> (Blackberry)	This plant was introduced into Australia during the early 19 th Century and is now probably the most widely used wild fruit growing in Australia.
<i>Avicennia marina</i> var. <i>australasica</i> (Grey Mangrove)	In some parts of coastal Australia, the seeds of the Grey Mangrove formed an important part of the Aboriginal diet. The seeds were steamed for a couple of hours on hot stones covered with bark and soil and were then washed or soaked before eating. Their taste is reminiscent to the flavour of avocado or olive but has a bitterness which becomes apparent as more are eaten.
Orchids	Many terrestrial orchids have fleshy underground parts, in some cases small whitish tubers of about pea size. Many species are recorded as having tubers which were eaten by Aboriginal people.

The Worimi: Hunter-Gatherers at Port Stephens in Hunter Natural History (Sokoloff, 1976)

These articles in the Hunter Natural History Journal give a view to the everyday life of the Worimi people as seen by early Europeans in the Port Stephens region particularly. The Worimi people felt one with the land and the sea, and utilised and managed its natural resources with skill and initiative. The articles mention the division of labour in respect to hunting and gathering and about the types of animals which were hunted on the coastal strip. These included possums and native bees, where ‘the men were very agile and swift in climbing trees to secure possums and honey’ (Sokoloff, 1976). Other methods of hunting kangaroo, flying foxes, birds and kangaroo rats: ‘Flying foxes were caught by tugging down vines and branches or by being speared. Smaller animals, like the kangaroo-rat, which sought cover in hollow logs were forced out by cutting a hole in the centre with the axe. Birds were killed with stones or spears and the throwing stick was also used to secure small game’ (Sokoloff, 1976).

The articles also describe the roles of the Worimi people fishing and the types of apparatus they used e.g. fish-hooks, spears, lines. The implements and utensils manufactured and used by the women included digging sticks, fish-hooks, dilly bags, baskets, containers and nets, all made from local, natural materials. Fish-hooks were made from various types of shell including the mud oyster (*Ostrea sinuata*). Shells were also used for scraping bark and for scarification. One type of container was made from the bark of *Melaleuca quinquenervia* and was called ‘yuppee’. It was canoe-shaped and used for collecting such things as honeycomb, and carrying roots and other articles for food.

The Worimi people used possum and kangaroo fur, mainly for ornamental or ceremonial purposes, however ‘both men and women wore full cloaks in cold or wet weather’ (Sokoloff, 1975).

It is more than likely that these activities were carried out along the northern shores of Port Stephens and that the study area provided many of these resources necessary to maintain the lifestyle of the Worimi people.

4.3 SITE INSPECTION

4.3.1 SITE SURVEY STRATEGY

The survey was carried out by Joel Henderson (Worimi LALC), Suzie Worth and Joanne Woodhouse of Wildthing Environmental Consultants on Tuesday 11 June 2002. Table 2 below identifies climatic conditions present on the day of the site inspection.

Table 2 Survey dates, times and weather conditions

Date	Times	Weather	Conditions	Ground Conditions	Activity
11/06/02	09.30 – 12.30	Fine, mild	Wet underfoot in the	low flat areas, dry on the hill rises	Site survey

On arrival at the study area, the survey methodology was discussed and it was agreed to cover the entire study area using an ‘intensive foot survey’ technique. Concentration was made in four targetted areas (Figure 4):

- A1: Beach Ridge and Headwall
- A2: Designated Pond Area
- A3: Growout and Header Tank Area
- A4: Administration and Dispatch Area

An assessment of average surface exposure and archaeological visibility across the study area was carried out with the results displayed below in Table 3.

Table 3 Summary of Areas Surveyed and Archaeological Visibility

Total Area of Site	Total Area Surveyed	% Area Surveyed	Average Surface Exposure %	Average Archaeological Visibility *
Development site - 5ha (Incorporating areas A2, A3 and A4)	3ha	60%	40%	<35%
Beach Ridge and Headwall - 0.25ha (area A1)	0.25ha	100%	80%	>60%

* (Archaeological visibility is similar to, but often different from, surface exposure. For example, an area may have a surface exposure of 100% (i.e. situation with regard to sunlight, wind, etc.) but it may be covered in gravels or pebbles that will consequently reduce the archaeological visibility of the area.)

The surface visibility on the low flats area (the Melaleuca/Swamp Mahogany Woodland), was relatively good (>60%) but was reduced by leaf litter and shadows from the tree canopy which also hindered the exposure level (80%). The headwall provided clear opportunities for investigation, this being due to erosion and wash-away of sands and organic materials due to tides and storm events.

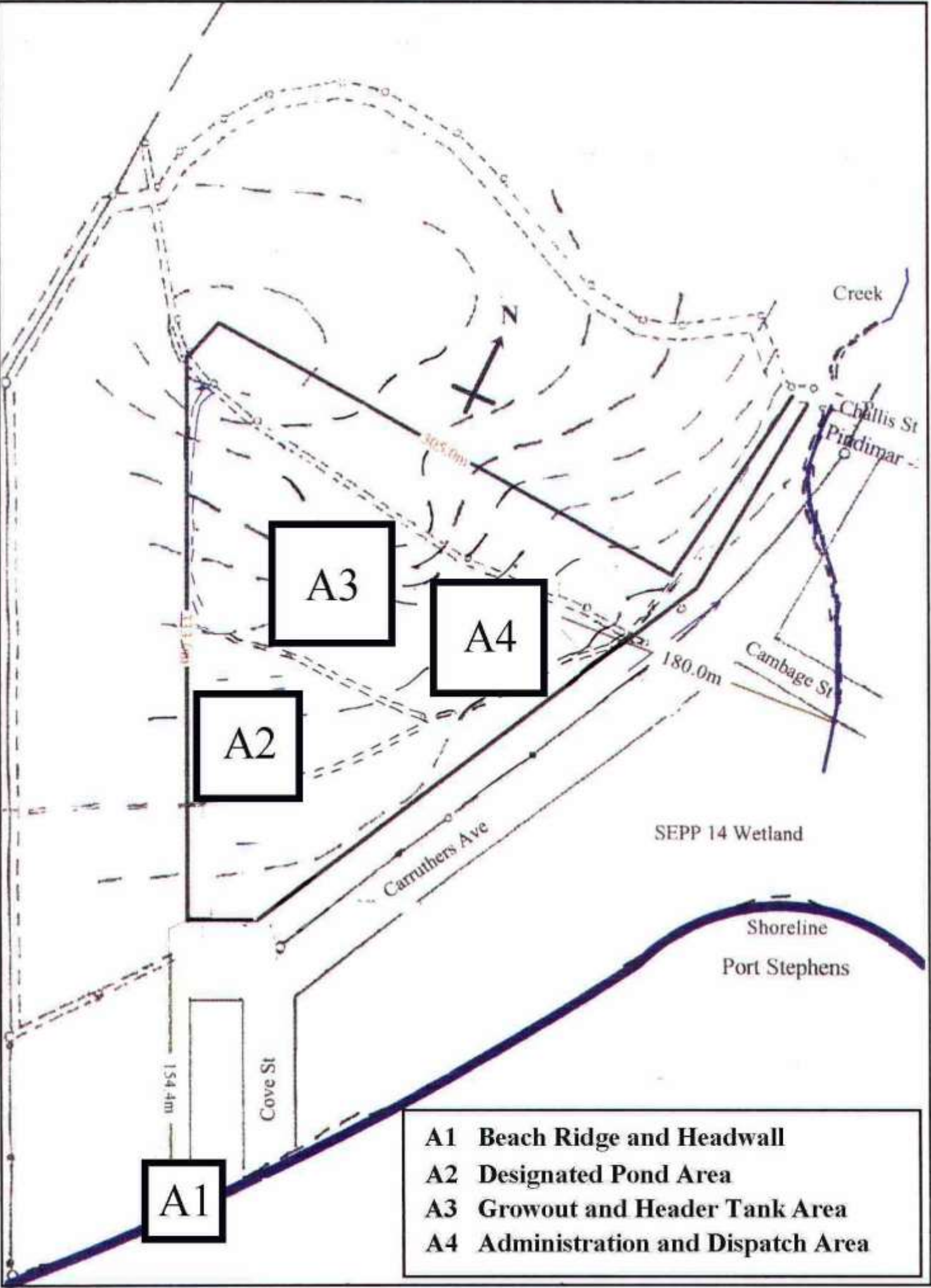


Figure 4: Targetted Survey Areas

Between the beach ridge and the main study area, and where the pipeline is proposed to run from the development site, the ground level dips within a swale and is quite swampy. Long grasses and water lying underfoot (in some places to a depth of >15cm) reduced the visibility to approximately 10%.

Some areas of the undulating Open Eucalypt Woodland area were found during the survey, to have been cleared in recent times and comprised a low understorey regrowth mainly of fern and grass species. These areas appeared to be consistent with the areas selected by the proponent for their development sites. Surface visibility in these areas studied was good (80%) due to the clear ground and not too dense vegetation but was once again, hindered by speckled shade from the overhead canopy (80%).

Gravel roads and tracks within the study area were investigated along with the gravel pit dam. It was agreed that it would be difficult to locate any isolated artefactual scatters or finds due to the amount of noise (rock debris).

The trees generally over the study area were healthy, young to mature. The lack of a great number of mature to over mature trees on the study area, indicated that this area may have been logged in the past for fence posts or building material and so the identification of trees with scars of Aboriginal origin was unlikely.

4.3.2 SURVEY RESULTS

The headwall (area A1) rises from the sandy beach to form a low beach ridge extending approximately 12m in width before gently sloping away to a swampy lowland. Shell deposits were located on the top of the eroding headwall towards the beach. These deposits were observed in surface exposures and amongst vegetation on the beach ridge. On the face of the headwall, a layer of shell comprising *Pyrazus ebeninus* (Hercules club whelk) and *Anadara trapezia* (Sydney Cockle) and *Ostrea sinuata* (mud oyster) was exposed amongst the brownish black, loamy sand and vegetation roots (Photographs 1 and 2). The layer of shell was found on the surface to a depth of approximately 30cm in some places. Further down from this layer, another thin layer of the same species of shells was noted at a depth of approximately 0.56m from the surface, particularly around the base of the trees which straddle the sandy beach front and the headwall. Erosion, through water action and wind, has undermined the headwall and allowed the shell layers to be exposed to natural dispositioning affects.

The inland extent of the shell midden could not be quantified due to it being covered by sand and grassy vegetation. Inspection of the face of the headwall showed only the extent of the shell deposits in one horizontal direction, and where the pipeline is currently planned to cut through the beach ridge and out through the headwall, it may possibly destroy artefactual evidence potentially present within



Photographs 1 and 2: Shell Deposits Identified on Beach Ridge and Headwall

the shell midden.

The areas defined as A2, A3 and A4 were carefully traversed and no artefactual evidence was identified.

The gravel pit/dam in the centre of the area defined as A3 was scrutinised for evidence of any non-mechanical rock workings which might indicate that the resource was used for the manufacture of stone artefacts or collection of rock resources for future use. No such evidence was found. It was believed that the gravel extracted from this pit was used as road base material in the Pindimar vicinity many years ago by Great Lakes Council (Housefield, G., *pers. comm.*). However, it is possible that the volcanic rocks found within the study area could have been seen as being suitable for the manufacture of stone tools and because the pit/dam is located on a rising slope, any evidence that may have been there could have been washed or rolled into the centre of the pit which, at the time of the survey, was full of water.

5.0 THE PREDICTION OF OTHER TYPES OF SITES IN THE STUDY AREA

Coastal and estuarine shorelines provide a high archaeological potential. They are areas which are rich in a variety of exploitable food resources such as fish, shellfish and waterbirds as indicated in the literature search. These aspects would have attracted Aboriginal people to the area and site types such as shell middens, open camp sites and ceremonial/social sites would have occurred.

Shell deposits are common around the coast of NSW and middens tend to be found near rivers and shorelines, but because they have no distinct landscape features they would probably be small, ‘dinner camps’ rather than long term campsites.

Sites previously recorded within the study area and its vicinity (Section 4.1) consisted mainly of shell middens at Fame Cove and North Arm Cove, a ceremonial ring and scarred trees at Bulga Creek and a stone arrangement at North Arm Cove.

Stone artefact scatters are likely to be found on level, well drained locations, on low ridges above creeklines and water courses. Exposure of these artefact scatters generally occurs when the vegetation is cleared or through soil erosion. Although no stone arrangements or tool artefacts were identified within the study area, this does not mean that they may not have been present in the past, or may not still be present under the ground surface. The fact that these types of sites would have easily been destroyed or damaged by land clearing or gravel extraction activities in the immediate study area, would suggest that it is unlikely that any such sites would come to light in the future. Often evidence of stone knapping (flaking) for the manufacture or maintenance of stone tools or evidence of domestic hearths may indicate an open camp site.

Scarred or carved trees are sometimes found where trees are older than 100 years however as indicated previously, most of the mature or over mature trees have been cleared from the study area and therefore the probability of their presence is unlikely.

No rockshelters or caves are known within the vicinity of the study area. Elsewhere rockshelters have been found to contain archaeological deposits resulting from Aboriginal occupation and, in some cases, examples of rock art. Such sites have been recorded on the other side of Port Stephens at Mallabula and Lemon Tree Passage. The lack of such sites within the immediate vicinity of the study area is not surprising given the area’s geology and it is unlikely that any will be found in the future.

It is feasible that quarry sites, together with associated stone implement “workshops” could be found on the northern side of Port Stephens in the future, particularly if more studies in the region were undertaken with archaeological surveys designed to deliberately target them (Hiscock & Mitchell,

1993).

Burials could be located in sandy deposits anywhere, but would probably be exposed accidentally by erosion or excavation. The locations are generally not known and are not detectable unless they be unearthed or identified by an Aboriginal informant. These sites are highly significant to the Aboriginal people.

Axe grinding grooves are often found on flat areas of rocky outcrop, e.g. sandstone near water holes and creek beds. There are no such landscape features within the study area.

Appendix C provides definitions and descriptions of Aboriginal sites.

6.0 IMPACT ASSESSMENT

This assessment called for a consideration of the potential impact of the proposed development on the Aboriginal archaeological resources present within the area and also the concerns of the potential impact of the proposed development itself.

Generally, the majority of the archaeological resources within a study area will have been affected to varying degrees by natural processes and/or human processes. The notion of ‘pristine’ archaeological sites will not always be tenable. The different types of artefactual material may be impacted in different ways by the same different processes. For example, tree removal will disturb a stone artefact scatter but will destroy a carved tree. Accordingly, unlike biological resources, prehistoric artefactual material has no capacity for renewal.

6.1 IMPACT BY NATURAL PROCESSES

The impact of natural processes on the archaeological record has been the subject of intensive research within the discipline of archaeology worldwide. This research has resulted in the study of post-depositional processes (taphonomy) with the aim of reconstructing the past as it pertains to a particular assemblage (Shipman, 1981). Major taphonomic sources of disturbance to archaeological material include erosion, weathering, abrasion, disturbance by animals and hydraulic transportation as well as the impact of chemicals, roots and insects (Shipman, 1981; Solomon *et al.*, 1990). While all of the above are possible sources of natural impact within the study area, the major sources of natural disturbance would be wave and wind erosion on coastal shorelines, the removal of trees, aggrading of soils and clearance of undergrowth. All of these, along with the potential for acid sulphate and high erodibility qualities of the soils within the study area, have the potential to disturb, damage or in some cases, destroy any archaeological material within the study area.

6.2 GENERAL IMPACT BY HUMAN PROCESSES

Humans impact upon the environment in a number of ways. Within the study area, the primary sources may have been felling of trees for fence posts and building material as well as land clearing. Human sources of impact generally have a higher potential than most natural processes to seriously damage, as opposed to merely disturb, archaeological material. Indirect impacts could be those created as a result of changes to vegetation regimes.

The construction of buildings, roads and tracks within the study area also has the potential to impact upon archaeological resources, primarily through the direct means of land clearance and grading. It is highly unlikely that early or relatively recent road construction in the area was re-routed to avoid archaeological sites.

6.3 POTENTIAL IMPACT OF THE PROPOSED DEVELOPMENT

The construction and development of abalone farm operating and management facilities has the potential to damage an archaeological site identified during the survey for this report. This would occur due to the excavating of a tunnel through a shell midden on the beach ridge and headwall to lay a pipeline from the land operation into Port Stephens. The proponent has indicated that it is intended that the inlet and outlet pipes be laid above the ground from the header tank to the pumping station, then dug approximately 700mm into the substrate, through the beach ridge and out under the inter-tidal surface into Port Stephens (Housefield, *pers.comm.*). Where the currently proposed route of the pipes runs below and cuts through the headwall, it would disturb the shell midden.

During the course of the survey, it was discussed between the author and the representative of the Worimi LALC, that it would be preferable to redesign the route of the pipeline to avoid disturbance of the site. A further study of the beach ridge and headwall was undertaken. An area approximately 15m to the west of the original pipeline route was seen as a more suitable place for the pipeline to transect the western end of the shell midden and in an area where it appeared that there was a lesser amount of shell deposits visible (Figure 5) and may have a reduced effect on the deposits. However since the shell midden could not be fully assessed to its full extent during this survey, it was recommended that a Worimi LALC representative and consultant be present during the trenching operation and that should any additional evidence, e.g. stone or manufactured shell artefacts be uncovered, the Heritage Unit of the NSW National Parks and Wildlife Service be informed.

Furthermore, care must be exercised in the excavation and restoration of the beach ridge while laying the pipeline, as the trench will be exposed to possible natural wave surges which could cause salt water to seep or flow into the fresh water swale behind it. This would have the effect of eventually destroying the vegetative assemblage and will further the headwall.

Where the pipeline is laid above the ground surface, it is proposed that it will be disguised in a manner to minimise any visual impact from the foreshore and Port Stephens waterways (Housefield, G., *pers. comm.*).

Although no other evidence or archaeological sites were identified within the study area, ground preparation for the construction of other building and pond facilities or removal of trees could bring to the surface isolated artefacts. During all these phases of the construction, it would be advisable to also have a Worimi LALC representative present to identify any artefactual evidence uncovered.

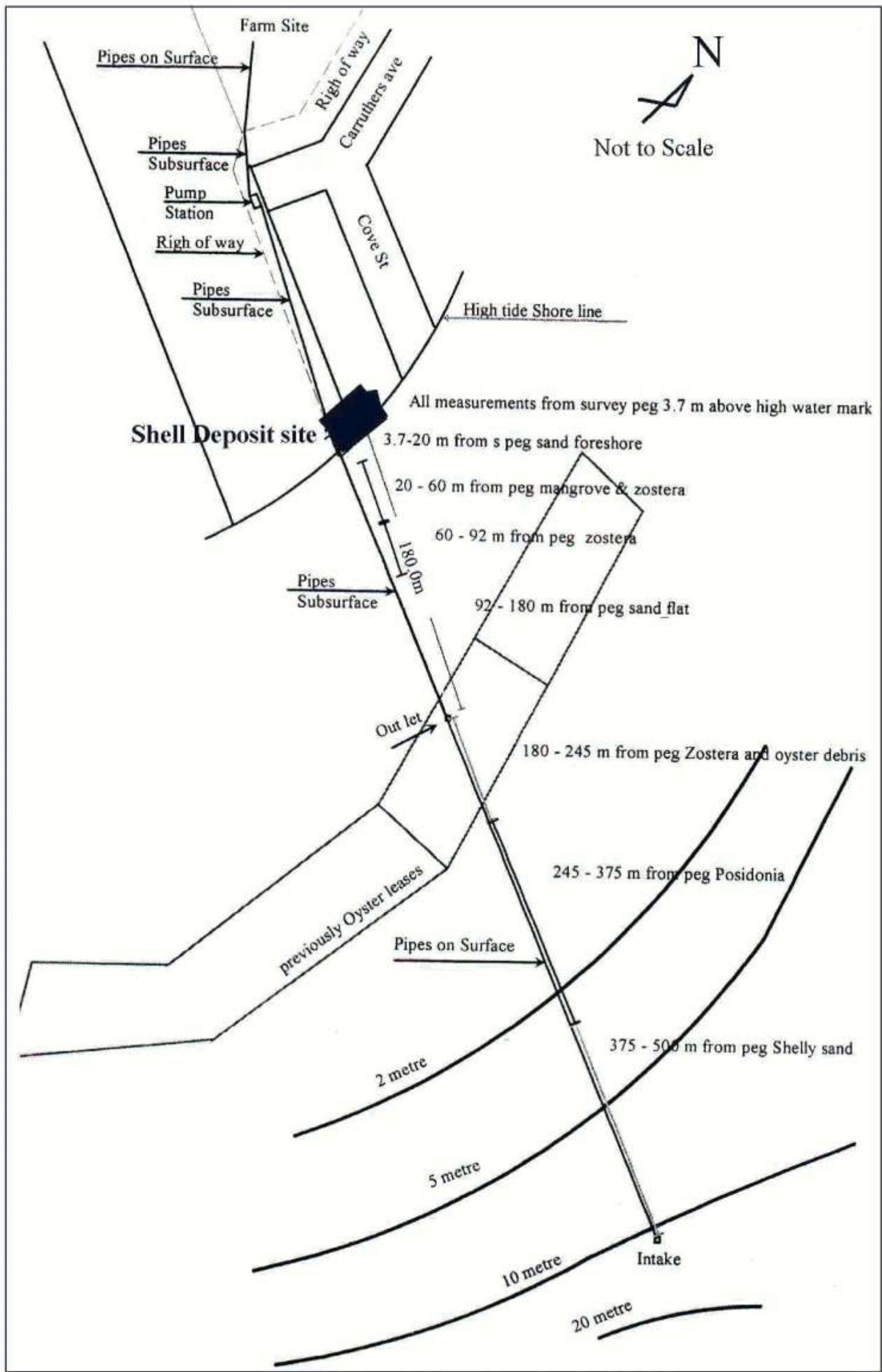


Figure 5: Suggested Re-routing of Pipeline to Minimise Disturbance of Shell Deposits

7.0 SIGNIFICANCE ASSESSMENT

7.1 GENERAL

The Burra Charter of Australia defines cultural significance as the "...aesthetic, historic, scientific or social value for the past, present and future generations" (Marquis-Kyle & Walker, 1992). The assessment of cultural significance of a place is based on this definition, but often varies in the precise criteria used according to the analytical discipline and nature of the site, object or place.

In general, Aboriginal archaeological sites are assessed using five potential categories of significance:

- i. Significance to contemporary Aboriginal people;
- ii. Scientific or Archaeological significance;
- iii. Aesthetic value;
- iv. Representativeness; and
- v. Value as an Educational and/or Recreational Resource.

Many areas will be significant according to several categories and the exact criteria used will vary according to the nature and purpose of the evaluation. The cultural significance of a place is therefore not a fixed assessment and may vary with changes in knowledge and social perceptions.

The following is the author's understanding of Aboriginal cultural significance and cannot be taken as a direct or complete statement of the interests of the Worimi Aboriginal community with regard to the study area. Aboriginal significance can be defined as the cultural and social value of a place manifest within the local and wider Aboriginal community. Places of significance may be landscape features as well as archaeologically definable traces of past human activities. The significance of a place can be the result of several factors including: continuity of tradition; historical association; custodianship or concern in the protection and maintenance of places; and the value of sites as tangible and meaningful links with the lifestyle and values of community ancestors. Aboriginal cultural significance may or may not parallel the archaeological significance of a site.

Scientific significance can be defined as the present and future research potential of the artefactual material occurring within a place or site. This is also known as the archaeological significance. There are two main criteria used in assessing the scientific significance:

- i. The potential of a place to provide information that is of value in scientific analysis and the resolution of potential research questions. Sites may fall into this category because they: contain undisturbed artefactual material; occur within a context which enables the testing to ascertain certain prepositions; are very old or contain significant time depth; contain large

- artefactual assemblages or material diversity; have unusual characteristics; are of good preservation; or are a constituent of a larger significant structure such as a site complex.
- ii. The representativeness of a place is a measure of the degree to which a place is characteristic of other places of its type, content, context or location. Under these criteria a place may be significant because it provides a characteristic example or reference.

The value of an Aboriginal place as an educational resource is dependent on the potential for interpretation to the general public, compatible Aboriginal values, feasible site access and management resources.

The principal aim of cultural resource management is the conservation of a representative sample of site types and variation from differing social and environmental contexts. Sites with inherently unique features, or which are poorly represented elsewhere in similar environment types are considered to have a relatively high cultural significance.

The cultural significance of a place can be usefully classified according to a comparative scale that combines a relative value with a geographical context. In this way a site can be of low, moderate or high significance within a local, regional or national context. This system provides a means of comparison between and across places. However it does not necessarily imply that a place with a limited sphere of significance is of lesser value than one of greater significance.

7.2 CULTURAL SIGNIFICANCE TO CONTEMPORARY ABORIGINAL PEOPLE

It is perceived that all Aboriginal sites and relics are very important to the local Aboriginal community. They see Aboriginal sites and relics as part of a living cultural link with the past.

It is common for Aboriginal and archaeological beliefs to be at odds in relation to significance and cultural value of evidence identified by each group. This is complicated by non-Aboriginal history being constructed around sites which are deemed to be of European cultural value, without recognising that Aboriginal people's history is also located in these sites (Pearson and Sullivan, 1995).

7.3 SCIENTIFIC OR ARCHAEOLOGICAL SIGNIFICANCE

The scientific assessment was based primarily on the opportunity that sites are present within the geographical location studied.

It has been found that most small artefacts generally hold little scientific significance other than to indicate transient Aboriginal use of an area. Aboriginal sites often provide potential for extensive new archaeological data. The positive or negative identification of such sites is justified in order to fill

some of the gaps in the archaeological record and in an attempt to understand how Aboriginal people utilise an area. For this reason, future researchers may use the data and information collected in this survey.

7.4 SIGNIFICANCE OF THE STUDY AREA

During the procedure of surveying the study area in the context of exploring its scientific significance, a shell midden was identified. No other artefactual evidence was observed in the vicinity of the shell deposit confines or on the hill slopes within the study area which would have provided new insight to the archaeological record of South Pindimar or the Port Stephens regions.

The cultural heritage significance placed by Aboriginal people on this, the study area, is an issue for the Aboriginal people to consider and express (Appendix A).

8.0 RECOMMENDATIONS AND CONCLUSION

A shell midden was found within the study area during the course of the survey, however no other evidence was uncovered. The midden appeared to be consistent with other such sites along the foreshore of Port Stephens and provided the following recommendations are undertaken, it was therefore agreed that the development proposal in its present form should be allowed to proceed. It is recommended that:

- the proponents be made aware of their responsibilities under the National Parks and Wildlife Act 1974. In particular, that they should be made aware that if they locate any stone or manufactured shell artefactual material during the tree clearance and/or the civil works phase of the development, that all activities in the immediate vicinity must halt and that they contact both the NPWS Regional Office, Nelson Bay (Phone: 02 4984 8204) and the Worimi LALC (Phone: 02 4982 3405). To assist the facilitation of this monitoring, it is advisable that the LALC be notified of the commencement of civil works and to arrange for a representative of the Land Council and consultant be on site during this stage of the development.
- should any such artefactual material be identified, work in this study area cannot resume until permission has been received from both of the above parties.
- should the proponent seek consent from the NPWS to destroy any archaeological sites identified, it will be necessary to gain approval from the Worimi LALC regarding their opinion on whether salvage/destruction is appropriate, and to decide what measures are required to achieve appropriate actions. If artefactual material is identified during the course of the proposed development, a contractual agreement must be completed with the Land Council prior to applying for Consent to Destroy/Salvage and the continuation of development activities.
- the proponent should not carry out any program of public interpretation of archaeological sites within the study area without negotiating the content of such programs with the Worimi LALC.
- a copy of this report be forwarded to National Parks and Wildlife Service, Northern Zone, Coffs Harbour.

In conclusion, provided that no artefactual evidence is uncovered during the earthworks phase of the project, the development is unlikely to have any effect on the archaeological landscape of the study area.

9.0 BIBLIOGRAPHY

Brayshaw, H. (1984) *Archaeological Survey at Carrington, Port Stephens, NSW* . Report to Michael Whelan & Associates, Newcastle NSW

Brooker, M.I.H. & Kleinig, D.A. (1999) *Field Guide to Eucalypts: South-eastern Australia* Volume 1 Second Edition. Bloomings Books, Hawthorn Vic.

Cribb, A.B. & J.W. (1976) *Wild Food in Australia* . William Collins Publishers, Sydney.

Dakin, W.J., (1969) *Australian Seashores* Revised Edition. Angus and Robertson Ltd, Sydney NSW.

Dallas, M., Barton, H., Cowlinshaw, G. & Worimi LALC. (1996) *Archaeological, Anthropological and Community-based Study of the Land Effected by the Upgrading of the Soldiers Point Caravan Park* . A report for Port Stephens Council.

Dallas, M., (1996) *Archaeological Survey at Diemars Road, Salamander Bay, Port Stephens, NSW* . A report for McClelland Fagan & Partners.

Dallas, M., (2001) *Additional Archaeological Assessment: Proposed Retirement Village at Soldiers Point Road and Diemars Road, Salamander Bay, Port Stephens* . A report for Port Stephens Veterans and Citizens Aged Care Limited, Shoal Bay, NSW

Dawson, R., (1830) The Worimi, a Tribe of Port Stephens in *The Present State of Australia* . A reproduction of a transcript held by the British Library published by Alburgh: Archival Facsimiles Limited 1987, London, England. Internet web site: <http://users.hunterlink.net.au/~madms/woro.html>.

DUAP (1995) *Is an EIS Required?* . NSW Government Department of Planning, Sydney.

Dunnell, R. & Dancey, W. (1983) Siteless surveys: A regional scale data collection strategy. In M. Schiffer (Ed.) *Advances in Archaeological Method and Theory* Volume 6. Academic Press, New York.

Farrier, D., Pearson, L & Lyster, R. (1999) *Environmental law handbook : planning and land use in New South Wales*(3rd edn). Redfern Legal Centre Publishing, Redfern.

Hiscock, P. & Mitchell, S. (1993) *Stone Artefact Quarries and Reduction Sites in Australia : Towards a Type Profile.* Australian Government Publishing Service, Canberra.

Hunter, C. (2001) *Port Stephens Heritage Historical Context Report including Thematic Analyses prepared for Port Stephens Council Community Based Heritage Study* . Keith Rudkin Copy Centre, Newcastle, NSW.

Murphy, C.L. (1995) *Soil Landscapes of Port Stephens 1:100 000 Sheet* . Department of Land and Water Conservation.

Marquis-Kyle, P. & Walker, M. (1992) *The Illustrated Burra Charter : Making Good Decisions about the Care of Important Places* . Australia ICOMOS Inc., Sydney.

Myall Coast Archaeological Services. (2000) *Archaeological Survey “Karuah Holdings” North Arm Cove* . Report to Harper Somers for AMP.

NSW National Parks and Wildlife Service (1997) *Investigation Report “Fame Cove” Land Offer* .
Cultural Heritage Services Division and Land Assessment Unit, NSW National Parks and
Wildlife Service.

NSW National Parks and Wildlife Service (1997) *Guidelines for Archaeological Survey Reporting:
Working Draft, Sept 1997* . Cultural Heritage Services Division, NSW National Parks and
Wildlife Service.

NSW National Parks and Wildlife Service (June 2002) *Aboriginal Sites Register Database Eastings:
407000-417000, Northings: 6375000-6385000* . Cultural Heritage Services Division, NSW
National Parks and Wildlife Service.

Robinson, L. (1991) *Field Guide to the Native Plants of Sydney* , Kangaroo Press, Sydney.

Shipman, P. (1981) *Life History of a Fossil. An Introduction to Taphonomy and Paleoecology* .
Harvard University Press, Cambridge.

Sokoloff, B. (1975) The Worimi: Hunter-Gatherers at Port Stephens Part III-Subsistence Economy;
Methods of Hunting, Fishing and Gathering in *Hunter Natural History* . Official publication
of Newcastle Flora and Fauna Protection Society, Cardiff South, NSW.

Sokoloff, B. (1975) The Worimi: Hunter-Gatherers at Port Stephens Part IV-Subsistence Economy:
Preparation of Food, and the Role of Fire in *Hunter Natural History* . Official publication of
Newcastle Flora and Fauna Protection Society, Cardiff South, NSW.

Sokoloff, B. (1975) The Worimi: Hunter-Gatherers at Port Stephens Part VI-Material Culture:
Implements and Utensils in *Hunter Natural History* . Official publication of Newcastle Flora
and Fauna Protection Society, Cardiff South, NSW.

Sokoloff, B. (1976) The Worimi: Hunter-Gatherers at Port Stephens Part VII-Material Culture:
Dwellings and Canoes in *Hunter Natural History* . Official publication of Newcastle Flora and
Fauna Protection Society, Cardiff South, NSW.

Solomon, S., Davidson, I & Watson, D. (1990) *Problem Solving in Taphonomy* . Tempus, University
of Queensland Press, St Lucia.

Speight, J. (1988) Land Classification. *Australian Soil and Landscape Survey Handbook* In R. Gunn,
J.Beattie, R.Reid and R. van de Graaff (Eds.). Inkata Press, Melbourne.

Thom, B.G., Shepherd, M., Ly, C.K., Roy, P.S., Bowman, G.M. & Hesp, P.A. (1992) *Coastal
Geomorphology and Quaternary Geology of the Port Stephens-Myall Lakes Area* . The
Australian National University, Canberra, ACT.

APPENDIX A

WORIMI LOCAL ABORIGINAL LAND COUNCIL

CULTURAL ASSESSMENT

APPENDIX B

**TYPES OF ABORIGINAL ARCHAEOLOGICAL
SITES**

**ABORIGINAL SITE TYPES AS DEFINED BY NEW SOUTH WALES
NATIONAL PARKS AND WILDLIFE SERVICE (1997)**

An Aboriginal site is any place that has the physical remains of prehistoric occupation or is of contemporary significance to the Aboriginal community. Sites include:

1. Occupation sites (shell middens, rockshelters and open camp sites)
2. Aboriginal Reserves and Missions
3. Rock paintings
4. Rock engravings
5. Grinding Grooves
6. Quarries
7. Ceremonial grounds
8. Stone Arrangements
9. Carved and Scarred Trees
10. Burials
11. Natural Sacred Trees

1. Occupation Sites

Evidence of human occupation, which includes food remains, stone tools, baked clay, fire-blackened and fire-cracked stones and charcoal is founding a range of sites known collectively as occupation sites.

Shell middens . These sites are found on the coastline and along the edges of rivers and lakes. It is a deposit composed of the remains of edible shellfish, and also usually contains fish and animal bones, stone tools and campfire charcoal.

Rockshelters with Archaeological deposits . In rock outcrops such as sandstone and granite, overhangs sometimes form creating useable shelters. Sediments from fires, roof fall, discarded stone tools and food remains can form a deposit protected within the shelter and this deposit can be excavated by archaeologists to study patterns of Aboriginal life.

Open Camp Sites . These sites are mostly surface and associated subsurface scatters of stone artefacts, sometimes with fireplaces. They exist throughout the landscape and are the most common site type in rural areas. While found in all environmental locations, larger and denser sites tend to be found on river banks and lower slopes facing water courses, as well as ridgelines and other areas that offer movement routes. The study of open sites can assist in understanding patterns of Aboriginal landuse.

2. Aboriginal Reserves and Missions

These places are very important to Aboriginal people today. Although Aboriginal people were often moved to reserves by force and were restricted by harsh regulations, the reserves became home to many people, where they and their families were born, lived and died. Historic cemeteries at many reserves are still cared for by the local Aboriginal community.

3. Rock Paintings

Aboriginal painting are found on the ceilings and walls of rockshelters that occur wherever suitable surfaces and outcrops exist. Figures include humans, animals, grid patterns, animal tracks, boomerangs, axes, hand stencils and other motifs. Paintings may be made with white, red, yellow and black pigments. The motifs may be drawn, painted or stenciled. Charcoal drawings are common as well.

4. Rock Engravings

These occur usually where there is suitable exposure of fairly flat, soft rock or in rock overhangs. The outlines of motifs were made by hitting the rock surface with a sharp stone to make small holes or pits. Sometimes, the pits were jointed to form a groove by rubbing with a stone. People, animal shapes and tracks are common as well as non-figurative designs such as circles.

5. Grinding Grooves

Grooves are located on flat rock exposures close to a stream or rock hole. They vary in size but are generally long (about 30-40cm in length) and elliptical in shape. Stone axes were ground into the softer stone allowing a working edge to be created or sharpened. Deeper grooves may have been used to work spears or other thin implements.

6. Quarries

Quarry sites occur wherever there are outcrops of siliceous or igneous rock. Stone material was used in creating stone tools that in turn were used to work wood and provide people with tools to assist in hunting and gathering activities. Siliceous rock is easily flaked and made into useful cutting and scraping tools whereas igneous rock was preferred for edge-ground tools, particularly axes.

7. Ceremonial Grounds

These sites were used for initiation ceremonies, marriages, tribal meetings and other important functions and are of great significance to Aboriginal people. Bora rings, which are one or more raised earth rings, were used for male initiations.

8. Stone Arrangements

These range from simple stone mounds to complex circles and pathways. Arrangements are found throughout inland New South Wales as well as the coast, where fish traps were often constructed.

9. Carved and Scarred Trees

Tree bark was used for constructing canoes, shelters, coolamons and shields. Distinctive scars are left from the bark removal and can usually be differentiated from natural scars. Carved trees are more distinctive, exhibiting

patterns etched into the wood of the trees. They can occur throughout the state although clearing and forestry practices have greatly reduced numbers of these trees.

10. Burials

Aboriginal people feel as equally respectful about their prehistoric burials as modern cemeteries. As Aboriginal people have lived in Australia for over 50 000 years, burials are seen as part of a continuing culture and tradition as well as offering valuable archaeological information. The dead were sometimes cremated, sometimes placed in trees or rock ledges and sometimes buried. Burials exist throughout New South Wales and can be accidentally uncovered in construction work or become exposed through erosion. It is important that if a skeleton is found that it be reported to the police, to a representative of the NSW National Parks and Wildlife Service and to the relevant Aboriginal community group.

11. Natural Sacred Trees

Aboriginal people regard many features of the landscape, such as mountains, rocks, waterholes, etc, as sacred sites. These places are associated with Dreamtime ancestors and usually can only be identified by Aboriginal people. They retain a high significance to Aboriginal people.

APPENDIX C

NPWS DIRECTOR-GENERALS REQUIREMENTS

and

NATIONAL PARKS AND WILDLIFE ACT 1974

EXTRACTS

APPENDIX D

Resumes:

SUZIE WORTH

BRONWYN BLOXHAM

**SOME RECENT ARCHAEOLOGICAL STUDIES CARRIED OUT BY
WILDTHING ENVIRONMENTAL CONSULTANTS**

Worth S and Bloxham B (2002) Aboriginal Heritage Assessment for a proposed unit development at Ash Street, Soldiers Point NSW

Worth S and Bloxham B (2002) Preliminary Aboriginal Heritage Assessment for the feasibility study of a proposed development of land at Campbells Hill, Rutherford NSW

Bloxham B and Worth S (2002) Initial Aboriginal Heritage Assessment for a proposed tourist development on Paterson Forest Road, Upper Allyn NSW

Bloxham B and Worth S (2002) Preliminary Aboriginal Heritage Assessment for the proposed development of a high school at Banora Point NSW

Bloxham B and Worth S (2002) Archaeological Heritage Assessment for the proposed development of a primary school at Bogangar NSW

Bloxham B and Worth S (2001) Initial Archaeological Assessment for the proposed development of The Cessnock Regional Shooting Complex at Cessnock NSW

Bloxham B, J Woodhouse and Worth S (2001) Initial Archaeological Assessment for the proposed development of a Tourist Retreat at Oakey Creek Road, Pokolbin NSW

Roberts L (2001) Archaeology and Cultural Heritage Survey over land proposed for an integrated tourist facility at North Entrance NSW

Roberts L (2000) Archaeology and Cultural Heritage Survey over land proposed for a residential development at Nelson Bay NSW

RESUME

SUZIE WORTH DIRECTOR/ARCHAEOLOGIST

Educated in Sydney and Hunter Institute of Technology, Suzie graduated with an Advanced Certificate in Marketing Management in 1993 and a Certificate in Environmental Studies in 1997. She is currently undertaking the final year of a University Diploma course in Indigenous Archaeology at University of New England.

Since October 1992, Suzie has been a partner and director in the consultancy in a managerial, ecological, financial and marketing capacity. She provides project mapping, research, flora / fauna fieldwork support to the consultancy team and ecological and environmental educational programs for various clients.

Suzie also works with clients in the production of educational pamphlets tailored to any particular development site to inform interested groups (eg. prospective purchasers of land or neighbours of new subdivisions, farm owners) of native fauna and flora species identified there, domestic animal controls and how the species' habitats can be enhanced to help ensure the species survival in the locality.

For some time now Suzie has been liaising with clients and Aboriginal communities in archaeological issues within the Hunter Valley and east coast of NSW - this has required a great deal of networking, travel and attendance at meetings with Land Council representatives.

Following years of research and field experience in Aboriginal archaeology, and having studied aspects of this work at university, Suzie undertakes Aboriginal Heritage Assessments as required by NSW National Parks and Wildlife Service legislation, under the supervision of Senior Archaeologist, Bronwyn Bloxham.

RESUME

BRONWYN BLOXHAM BA (Hons)
SENIOR ARCHAEOLOGIST

Bronwyn holds a Bachelor of Arts degree with Honours in Archaeology and Paleoanthropology from the University of New England. Her experience includes the excavation of historic house sites, mine sites and cave excavations. She has undertaken research on natural resource use in Aboriginal Culture, Aboriginal rock art in NSW and the distribution of faunal remains in cave deposits.

Since Bronwyn has joined the firm, **Wildthing Environmental Consultants** has been able to offer Archaeology, European and Indigenous Heritage assessments as a part of the suite of reports which may be needed to support development applications. This has dramatically enhanced the capabilities of **Wildthing Environmental Consultants** and brings us closer to providing a total consulting service to clients undertaking land development.

LISTING OF PUBLICATIONS AND PAPERS

Bloxham, B and Thomas, A. 1998 *Where have all the possums gone: An investigation into the prolific ethnographic use of possum as a resource in Aboriginal Culture, and the possum's limited representation in the rock art of the region* . International Rock Art Conference, Portugal

Bloxham, B. 1997. *Bones that lay scattered by: The spatial patterning of faunal remains at Petzke's Cave, north-western NSW* . Australian Archaeology Association Conference, Boambee