ATTACHMENT 8: ARCHAEOLOGICAL ASSESSMENT

PO Box 2135
Central Tilba
NSW 2546
0427074901 mob
02 44737947 office
julie@nswarchaeology.com.au

Brooke Marshall
nghenvironmental
PO Box 470
Bega NSW 2550

11th September 2006

Dear Brooke

RE: Telstra mobile phone telecommunications facility on Crown Land Reserve Number 86770, Lot 169 DP 755904, South Durras.

The following information is provided to you in regard to the proposed Telstra Mobile Phone Base Facility site at Durras.

New South Wales Archaeology conducted an archaeological assessment in August 2006 in relation to a proposal by Telstra to commission the installation of an underground powerline at Durras, NSW. The powerline is proposed for the purposes of supplying electricity to the proposed Telstra Mobile Phone Base Facility. While the archaeological assessment was conducted specifically in response to the proposed power supply, the site of the Mobile Phone Base Facility was also inspected.

No Aboriginal objects or areas of Aboriginal sensitively were located at the proposed Mobile Phone Base Facility site. Furthermore the area was found to be disturbed. The site was assessed to be of low Aboriginal archaeological potential.

I trust this information is of assistance to you.

Please call me if you need to discuss this matter further.

Yours faithfully

Julie Dibden (BA Honours)
Director
New South Wales Archaeology Pty Ltd

Proposed Power Route, Skid Ridge Road
Murramarang National Park, Durras, NSW
Aboriginal Archaeological Assessment

A Report to Nick Graham-Higgs
nghenvironmental
PO Box 470
Bega NSW 2550

August 2006

Julie Dibden
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546 ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

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1. SUMMARY

1.1 Introduction

New South Wales Archaeology was commissioned by **ngh**environmental in July 2006 to undertake an archaeological assessment in relation to a proposal by Telstra to commission the installation of an underground powerline at Durras, NSW. The powerline route, measures approximately 550 metres in length, and is partially situated in Murramarang National Park on either side of the Durras Road. The powerline is proposed for the purpose of supplying electricity to a proposed Telstra Mobile Phone Base Facility.

This Aboriginal archaeological assessment has been undertaken for the purposes of identifying whether or not any Aboriginal sites or archaeologically sensitive landforms are present in the proposal area.

1.2 The Archaeological Study

An archaeological investigation for Aboriginal archaeological sites within the proposal area has been conducted by Andrew Pearce, New South Wales Archaeology Pty Ltd, and Violet Parsons, Batemans Bay Local Aboriginal Land Council.

The study has sought to identify and record any Aboriginal objects which may be present in the proposal area, to assess the archaeological potential of the landform elements present and to formulate management recommendations based on the results of background research, a field survey and site significance assessment.

The New South Wales National Parks and Wildlife Service (now incorporated in the Department of Environment and Conservation) has prepared a draft document which provides a series of guidelines regarding the assessment and management of Aboriginal cultural heritage in New South Wales. This report has been prepared in accordance with these draft guidelines (NSW NPWS 1997). Additionally the study has been conducted in accordance with the Interim Guidelines for Aboriginal Community Consultation - Requirements for Applicants (NSW DEC 2004).

1.3 Previously Recorded Sites

A search of the New South Wales Department of Environment and Conservation Aboriginal Heritage Information Management System (AHIMS) has indicated that there are no previously recorded Aboriginal sites located within the proposal area (AHIMS #16421). Five sites are listed to be present in the immediate local area.

1.4 Results and conclusions

Field work was undertaken on 4th August 2006. The proposal area was subject to a comprehensive field survey. The field survey was comprehensive of the entire proposal area.

In general the route is assessed to be of low archaeological sensitivity. However, one Aboriginal archaeological site was recorded. This site is substantially disturbed and assessed to be of low archaeological significance. Nevertheless, if impacts are proposed in relation to the site, management and mitigation measures will need to be implemented prior to the development of the proposal.

Overall, it is assessed that the proposed powerline installation has very low potential to cause impacts to any unrecorded Aboriginal objects.

1.5 Statutory Context

Sections 84 and 90 of the *National Parks and Wildlife Act 1974* (as amended) provide statutory protection for any physical/material evidence of Aboriginal occupation of NSW and places of cultural significance to the Aboriginal community.

The implementation of the Aboriginal heritage provisions of the Act is the responsibility of the NSW Department of Environment and Conservation. It is an offence to damage, deface or destroy an 'Aboriginal object' *irrespective of its nature or significance* without the prior consent of the Director-General of the NSW DEC.

The Act defines an Aboriginal 'object' as

> 'Any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.

1.6 Recommendations

It is recommended that (see Section 12 for a full listing of recommendations):

- The field inspection carried out in respect of the proposal is assessed to have been adequate for the task of establishing the archaeological status and significance of the impact area. Effective survey coverage achieved during the inspection was relatively high. Accordingly it is concluded that the survey results are reasonable accurate.

- The identified site is assessed to be of low scientific significance only. The site does not surpass any significance criteria thresholds which would preclude impact. Accordingly, it is recommended that a management strategy of *unmitigated impact* is appropriate in regard to this site.

  Accordingly if the proponent proposes to impact the site, s90 Consent should be sought from the Director-General, Department of Environment and Conservation. Any s90 Consent application will need to be supported with written documentation from the Batemans Bay Local Aboriginal Land Council.

Acknowledgements

Gratitude is extended to the following people for their assistance in this project:

Violet Parsons, Batemans Bay Local Aboriginal Land Council

Shane Priddle and Brooke Marshall, nghenvironmental

Figure 1 The proposal area (1:100,000 topographic map Batemans Bay Sheet 8926 1st ed.)

2. INTRODUCTION

New South Wales Archaeology was commissioned by **ngh**environmental in July 2006 to undertake an archaeological assessment in relation to a proposal by Telstra to commission the installation of an 11kv High Voltage underground powerline at Durras, NSW. Country Energy will install the proposed powerline.

Sections of the proposed route fall within the Murramarang National Park, on either side of the Durras Road. The route follows existing road verges and road reserves along Skid Ridge Road and Durras Road. Almost the entire proposed route falls within areas which have sustained prior disturbance.

The powerline route, which measures ca. 550 metres in length, is proposed for the purpose of supplying electricity to a proposed Telstra Mobile Phone Base Facility. However this report is concerned with the proposed power route only.

This Aboriginal archaeological assessment has been undertaken for the purposes of identifying whether or not any Aboriginal sites and/or archaeologically sensitive landforms are present in the proposal area. The archaeological assessment has been conducted in partnership with the Batemans Bay Local Aboriginal Land Council.

2.1 Report Outline

In accordance with the NSW Department of Environment and Conservation guidelines for archaeological survey reporting this report aims to document (NPWS 1997):

- the proposal;
- the potential impact of the proposal on any Aboriginal archaeological sites which may be present within the area;
- the participation of the Aboriginal community in the archaeological assessment;
- the methodology implemented during the study;
- the environmental setting of the study area in order to establish background parameters;
- a review of archaeological and relevant literature, heritage listings on the NSW Department of Environment and Conservation Aboriginal Heritage Information Management System and other relevant registers;
- any Aboriginal archaeological sites known to exist within the study area;
- a synthesis of local and regional archaeology;
- a predictive model of site location for the study area;
- the field survey strategy and results; and
- a series of recommendations based on the results of the investigation.

2.2 Project Personnel

This archaeological investigation has been conducted by Andrew Pearce, New South Wales Archaeology, and Violet Parsons, Batemans Bay Local Aboriginal Land Council. Fieldwork was conducted in August 2006. This report has been written by Andrew Pearce.

3. PARTNERSHIP WITH THE ABORIGINAL COMMUNITY

This project has been undertaken in accordance with the NSW DEC Interim Guidelines for Aboriginal Community Consultation - Requirements for Applicants (IGACC) (NSW DEC 2004). The NSW DEC requires proponents to undertake consultation with the Aboriginal community "…as an integral part of the impact assessment" process (NSW DEC 2004).

The NSW DEC manages Aboriginal cultural heritage in NSW in accordance with the National Parks and Wildlife Act 1974. Part 6 of the Act provides protection for Aboriginal objects and Aboriginal Places. When an activity is likely to impact Aboriginal objects or declared Aboriginal Places approval of the Director-General of the NSW DEC under s90 or s87 of the NPW Act is required. The decision as

to whether or not to issue s90 or s87 is based on the supply to the NSW DEC by a proponent of adequate information to enable the Director-General to make an informed decision (NSW DEC 2004).

When administering its approval functions under the NPW Act the NSW DEC requires applicants to have consulted with the Aboriginal community about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and places present in the area subject to development (NSW DEC 2004).

The NSW DEC requires consultation with the Aboriginal community because it recognises the following:

- That Aboriginal heritage has a cultural and archaeological significance and that both should be the subject of assessment to inform its decision process;
- That Aboriginal people are the primary determinants of the significance of their heritage;
- That Aboriginal community involvement should occur *early* in the assessment process to ensure that their values and concerns can be taken into account and so that their own decision making structures can function;
- That the information arising from consultation allows consideration of Aboriginal community views about significance and impact and allows for management and mitigation measures to be considered in an informed way (NSW DEC 2004).

The community consultation process as outlined in the IGACC document aims to improve the assessment by providing the Aboriginal community with an opportunity to:

- Influence the design of the assessment of cultural and scientific significance;
- Provide relevant information about cultural significance values of objects/places;
- Contribute to the development of cultural heritage management recommendation; and
- Provide comment on draft assessment reports (NSW DEC 2004).

The role of the Aboriginal Community is outlined by the NSW DEC (2004) as follows:

- The Aboriginal community is the primary determinant of the significance of their heritage;
- The Aboriginal community may participate in the process via comment on the assessment methodology, contribution of cultural knowledge; and
- The Aboriginal Community may comment on cultural significance of potential impacts and/or mitigation measures.

In order to fulfill the consultation requirements as outlined in the IGACC document NSW Archaeology Pty Ltd, on behalf of the proponent, has followed the following procedure:

1. Notification and Registration of Interests

   The proponent has actively sought to identify stakeholder groups or people wishing to be consulted about the project and has invited them to register their interest as follow:

   Written notification about the project dated 25th July 2006 has been supplied to the following bodies:

   - The Batemans Bay Local Aboriginal Land Council
   - Native Title Services
   - Shoalhaven City Council
   - Department of Environment and Conservation

   Given previous advice (received from Adam Black DAA) the Registrar of Aboriginal Owners was not notified of the project given that the proposal was not situated within a National Park which possessed a register of Aboriginal owners.

   In addition an advertisement has been placed in Bay Post (28th July 2006) providing notification of the cultural heritage study.

   The closing date of registration of interest was 11th August 2006.

   No groups or individuals registered an interest in this project.

2. Preparation for the Assessment (design)

   Given the absence of registered interests a methodology was not forwarded to any individuals or groups.

3. Drafting, Review and Finalisation of the Cultural Heritage Assessment Report

   The draft report will be provided to the Batemans Bay Local Aboriginal Land Council review and comment.

The study area falls within the boundaries of the Batemans Bay Local Aboriginal Land Council (BBLALC) as defined under the *Aboriginal Land Rights Act 1983* (NSW). Violet Parsons has represented BBLALC in this project. Mrs Parsons has participated in Aboriginal archaeological assessments over a thirty year period and accordingly has a vast body of prior experience in Aboriginal site assessment on the south coast.

All assessments in regard to the archaeological sensitivity and potential of the study area and recommendations were formulated jointly by Andrew Pearce and Violet Parsons while in the field.

A draft copy of this report will be provided to BBLALC for review and endorsement. Mrs Parsons will provide written documentation which will set out BBLALC's view of the archaeological assessment and recommendations. The BBLALC document is required by NSW DEC and will need to accompany this archaeological report.

4. THE DEVELOPMENT PROJECT

New South Wales Archaeology was commissioned by **ngh**environmental in July 2006 to undertake an archaeological assessment in relation to a proposal by Telstra to install an 11kv High Voltage underground powerline at Durras, NSW. The proposed powerline is intended to provide a power supply to a proposed Telstra Mobile Phone Base Station Facility, which is to be situated adjacent to an old tip located approximately 80 m north of Durras Road and partly within the Murramarang National Park, at Durras. However, this assessment does not include the proposed development of the Telstra Mobile Phone Base Station Facility.

The upgrading of the Durras Mobile Phone infrastructure would improve access to telecommunications services, enhance a range of existing services, and greatly improve communications to emergency services.

The proposed powerline route measures approximately 550 m in length. The route follows Skid Ridge Road, a section of Durras Road and thereafter access tracks located north of Durras Road. Approximately 410 m of the proposed route is situated within Murramarang National Park. The route has been purposely designed so as to follow areas of prior disturbance along existing tracks and road verges, including the Skid Ridge Road verge, Council road reserve and existing Crown management trails. The one area of the route where prior disturbance is minimal, a 20 m long section immediately north of where the Durras Road is proposed to be under-bored, will in turn be under-bored so as to avoid impacts.

The proposal is to run a power line off the existing High Voltage line then to excavate a trench along the eastern verge of Skid Ridge Road to the Durras road junction (approximately 80m), along the southern Durras Road verge (approximately 170m), and then under-bore Durras Road to reach an access track on the northern side (approximately 40m). Thereafter the proposal is to excavate a trench along existing cleared tracks to the proposed Telstra Base Station Facility site (approximately 260m).

No clearance of vegetation would be undertaken in this proposal.

The powerline would be laid in a trench at least 750-1000 mm deep and where possible the trench would be set in the centre of the existing tracks. Under Durras Road the powerline would be installed at a depth of at least 1.2m deep. Access would follow the existing access trails (DEC and Crown) and Skid Ridge Road, off Durras Road. No additional access or clearing would be required.

All of the above components of the proposal will have the potential to cause direct impacts to any Aboriginal objects which may be present within the study area.

5. STUDY METHODOLOGY

This Aboriginal archaeological study has included the following components:

- A NSW DEC Aboriginal Heritage Information Management System site search to determine whether or not previously recorded sites are present on the proposal area and to give consideration to the type of sites known to be present within the local area.
- A review of local and regional archaeological reports and other relevant documents in order to provide a contextual framework to the study and heritage management process.
- A comprehensive field survey of the study area aimed at recording Aboriginal sites, survey coverage data and assessing the archaeological potential of the various landform elements present.
- Documentation of survey results.
- An analysis of survey results.
- Site significance assessment.
- The formulation of management recommendations ensuing from the above.

5.1 Review of Existing Documentation

Background research has been conducted to determine if known Aboriginal archaeological sites are located in the vicinity of the development area and to facilitate site prediction on the basis of known regional and local site patterns in order to place the study area within an archaeological research and heritage management context.

The following information sources were accessed for this study:

- NSW DEC Aboriginal Heritage Information Management System.
- Relevant archaeological reports held in the NSW DEC Cultural Heritage Unit.
- Durras 8926-1S 4th ed. 1:25,000 topographic map.

5.2 Field Survey and Methodology

The field survey was carried out by two people on 4th August 2006 and encompassed the entire proposed route as well as adjoining areas. The survey was conducted on foot and was comprehensive.

The field survey was aimed at locating archaeological material (Aboriginal objects as defined under the Act) situated on or in ground surfaces. An assessment was also made of prior land disturbance, survey coverage variables (ground exposure and archaeological visibility) and the potential archaeological sensitivity of the land. All trees assessed to be of sufficient age as to bear evidence of Aboriginal scarring were examined.

The proposed powerline route was contained within a single Survey Unit, defined as an archaeological terrain unit (a combination of landform element, gradient and aspect). Archaeological terrain units are defined as individual units of land that are bounded on all sides by different archaeological terrain units. The rationale for conducting the study in this way is that differing archaeological terrain units are assumed to potentially have been utilised differently by Aboriginal people and that this will result in variability in the nature of the archaeological evidence between different areas: archaeological terrain units are "…discrete, recurring areas of land for which it is assumed that the Aboriginal land use and resultant heritage evidence in one location may be extrapolated to other similar locations" (Kuskie 2000: 67). The employment of this methodology is useful for predicting the archaeological potential of the study area. Both the predictive model of site location relevant to the study area and the results of the field survey assist in informing the archaeological potential of the different landforms within the study area.

6. LANDSCAPE CONTEXT

A consideration of the landscape is necessary in archaeological work in order to characterise and predict the nature of Aboriginal occupation across the land (NPWS 1997). In Aboriginal society landscape could be both the embodiment of Ancestral Beings and the basis of a social geography and economic and technological endeavour. The various features and elements of the landscape are/were physical places that are known and understood within the context of social and cultural practice.

Given that the natural resources that Aboriginal people harvested and utilised were not evenly distributed across landscapes Aboriginal occupation and the archaeological manifestations of that occupation will not be uniform across space. Therefore, the examination of the environmental context of a study area is valuable for predicting the type and nature of archaeological sites which might be expected to occur. Factors which typically inform the archaeological potential of landscapes include the presence or absence of water, animal and plant foods, stone and other resources, the nature of the terrain and the cultural meaning of a place.

Additionally, geomorphological and humanly activated processes need to be defined as these will influence the degree to which archaeological sites may be visible and/or conserved. Land which is heavily grassed will prevent the detection of archaeological material while land which has suffered disturbance may no longer retain artefacts or stratified deposits. A consideration of such factors assists in the formulation of site significance and site management assessment.

The following sections provide information in regard to the landscape context of the study area.

6.1 Topography, geology, climate and vegetation

The proposal area is located on either side of Durras Road, approximately 700m northwest of the township of South Durras, situated on the South Coast of New South Wales. The proposed powerline route measures approximately 550m in length and extends along a ridge crest landform.

The ridge crest slopes to the northeast and is situated between two unnamed 1st order drainage lines. It is positioned almost equidistant from Durras Lake to the west and the Pacific Ocean to the east (ca. 700m). The nearest source of reliable water would appear to have been the swampy area to the southeast, some 400m distant from the study area.

The bedrock geology of the study area is the Permian age Shoalhaven Group Conjola Formation, consisting of silty sandstone and sandstone conglomerate (Ulladulla Geological Series Sheet S1 56-13). Soils are shallow brown and grey-brown silty loams which contain quantities of sandstone shatter and some pebbles from the parent rock.

The vegetation on the ridge crest consists of a forest dominated by spotted gum (*Eucalyptus maculata*), yertchuk (*E. consideniana*), red bloodwood (*Corymbia gummifera*), white stringybark (*E. globoidea*) and blackbutt (*E. pilularis*). The understorey features *Banksia spinulosa*, *Acacia terminalis*, *Bossiaea obcordata* and *Hibbertia empetrifolia*, while ground cover species include burrawang (*Macrozamia*), bracken (*Pteridium esculentum*) and *lomandra spp* (**ngh**environmental 2006).

The climate of the area is described as meso-thermal. Precipitation is uniformly distributed throughout the year and summers are long and mild. (Kalma and McAlpine 1978).

The proposed powerline route falls almost totally within areas that have undergone extensive ground disturbance over time as the result of road construction and/or vehicle use. Indeed the route was intentionally selected so as to minimise disturbance on previously unaffected areas of ground and vegetation. The existing disturbance varies from formal road construction and road paving, to graded dirt road construction, with other parts of the route running along informal tracks that have been incised through vehicle usage and subsequent erosion. The one section of the route where prior disturbance is minimal, in the area immediately north of where the Durras Road is proposed to be under-bored, will itself be under-bored to avoid surface impacts.

In summary the study area represents a limited resource area for Aboriginal land users which would have supported a restricted variety of edible plant and faunal species. It is at some distance from reliable water and areas where a diversity of resources are available, so that land usage and occupation would have been transitory. Such Aboriginal occupation of the proposal area is likely to have resulted in low level stone artefacts discard.

However, given that for the most part the proposed route follows pre-existing road verges and graded vehicle tracks, these prior impacts have resulted in a heavily disturbed environment. The consequences of this prior disturbance are that by and large any Aboriginal objects which may be present are likely to have been correspondingly disturbed.

Figure 2 Location of the proposed powerline route and topographic context (Durras 8926-1S 4th ed. 1:25,000 topographic map: GDA)

7. ARCHAEOLOGICAL CONTEXT

7.1 Social geography

A deep understanding of social geography which obtained in the local area is limited given the absence of reliable information. The main sources of information relating to Aboriginal life in south east come from Howitt and Mathews, both of whom obtained information between the years 1880 and 1900. During this time Aboriginal people had adjusted to the new settler economy and accordingly, the information recorded at this time is limited in regard to pre-European social life and geography. In addition, the work of both Howitt and Mathews is complicated further by the nature of their assumptions regarding Aboriginal society; "…they were working with ethnographic models which laid emphasis on a rather limited view of social and cultural life" (Rose 1990: 8). The work of Matthews is regarded as "slight and unreliable" (Flood 1982: 8) and Howitt, who collected information by questionnaires, is often found to be contradictory.

Relying heavily on these early writers, Tindale (1974) defined 'tribal' groups in this area: according to Tindale the study area lies within the country of the Walbanga people. Tindale's (1974) modeling was based on an uncritical adoption of the Radcliffe-Brown model of social organization in which the band is perceived as the most important structural feature in Aboriginal social organisation. Tindale's tribal boundaries were largely defined according to what he understood to be language groups (Flood 1980: 107). Tindale's work was conceptualized according to a model of band social organisation in which the 'horde' or clan was considered to be the group which possessed political power and proprietary rights to land (Rumsey 1989: 70). The 'tribes' which Tindale determined to have existed were seen as coterminous with language groups with the implication that these groupings were territorial units.

The assumptions inherent in this conflation of language group with tribe are no longer seen to be relevant, and furthermore the concept of tribe as a territorial group is not regarded as being correct. In Aboriginal society people were multilingual rather than monolingual; therefore conceiving of language groups as bounded social groupings is not appropriate (Rumsey 1989: 74). In the Radcliffe-Brown model the land/language relationship was seen as indirect: the estate of a tribe was seen as the aggregation of all the clan estates who spoke the same language. This relationship is know viewed to be direct – it is recognised that the importance of land/language relations in Aboriginal society is that particular languages and particular tracts of country were directly linked according to Dreaming activity (Rumsey 1989: 74-75).

Previously it was assumed that tribes or language groups functioned as politically cohesive corporate groups, however, more recently it has been recognised that linguistic groupings do not structure the Aboriginal social and geographical landscape. Sutton and Rigsby (1979: 722) argue that Tindale's tribal boundaries are not meaningful at either a demographic or political level.

Howitt (1904) defined the Yuin tribal area as extending from Cape Howe in the south to the Shoalhaven River in the north. Howitt recorded information provided to him by Aboriginal people during the 1880's relating to socially sanctioned marriages which extended over a large area from coast to the tablelands. It is generally understood that movement of individuals and small groups occurred between the coast and tablelands and that relationships had the potential for both amity and conflict (Flood 1980; Rose 1990).

While a persons Yuin identity derived from both mother and father more fine grained aspects of identity which are likely to have prevailed include totemic identity and specific relationships to country inherited via birth rights, place of birth and so on (Rose 1990). In addition people would have traveled to and resided in different tracts of country, forging temporary groups of varying personnel and clan composition for the fulfillment of a variety of economic, familial and ceremonial purposes. Certainly archaeological conceptions of social groupings need to consider the multidimensional nature of groups based on clan, gender and age identities which are likely to have been both contemporaneously and generationally fluid.

Wesson (2000) has defined the multi-dimensional aspect of Aboriginal social geography in the region based on habitual place of residence, dominant mode of livelihood and language. The study area is situated within the area named as Kurregal/Kurial or northern fisher people. The Dhurga (Thoorga)

language was spoken over a large area extending from Jervis Bay in the north to Wallaga Lake in the south and west to Braidwood (Eades 1976). Wesson (2000) defines a local variant of the Thoorga named Thurumba/Mudthung as spoken in the area in which the proposal area is situated.

The study area is located within the Batemans Bay Local Aboriginal Land Council area.

7.2 Previously Recorded Sites

A search of the NSW DEC Aboriginal Heritage Management Information System (AHIMS #16421) was undertaken for an area which measures 6km² situated between eastings 253000-255000 and northings 6050000-6051000.

Five Aboriginal sites are recorded on AHIMS as being present within the site search area, none of which are situated within the proposal area itself. The AHIMS register only includes sites which have been reported to NSW NPWS. Accordingly, this search cannot be considered to be an actual or exhaustive inventory of Aboriginal sites situated within the local area. Generally, sites are only recorded during targeted surveys undertaken in either development or research contexts. It can be expected that sites may be present in the study area but that to date they have not been recorded and/or reported to NSW DEC.

The following discussion in Section 7.3 will present a review of previous archaeological work in the region for the purposes of producing a predictive model of site type and location for the study area.

7.3 Archaeology – The local area

On the basis of archaeological research it is known that Aboriginal people have occupied Australia for at least 40,000 years and possibly as long as 60,000 years (Mulvaney and Kamminga 1999: 2). By 35,000 years before present (BP) all major environmental zones in Australia, including periglacial environments of Tasmania, were occupied (Mulvaney and Kamminga 1999:114).

At the time of early occupation Australia experienced moderate temperatures. However, between 25,000 and 12,000 years BP (a period called the Last Glacial Maximum) dry and either intensely hot or cold temperatures prevailed over the continent (Mulvaney and Kamminga 1999: 114). At this time the mean monthly temperatures on land were 6-10ºC lower; in southern Australia coldness, drought and winds acted to change the vegetation structure from forests to grass and shrublands (Mulvaney and Kamminga 1999: 115-116).

During the Last Glacial Maximum at about 24-22,000 years ago, sea levels fell to about 130m below present levels and accordingly, the continent was correspondingly larger. With the cessation of glacial conditions, temperatures rose with a concomitant rise in sea levels. By ca. 6000 BP sea levels had more or less stabilised to their current position. With the changes in climate during the Holocene Aboriginal occupants had to deal not only with reduced landmass, but changing hydrological systems and vegetation; forests again inhabited the grass and shrublands of the Late Glacial Maximum. As Mulvaney and Kamminga (1999: 120) have remarked:

> When humans arrived on Sahul's shores and dispersed across the continent, they faced a continual series of environmental challenges that persisted throughout the Pleistocene. The adaptability and endurance in colonising Sahul is one of humankinds' inspiring epics.

Occupation of the NSW south coast dates from at least 20,000 years ago as evidenced by dated sites at Burrill Lake (Lampert 1971), Bass Point (Bowdler 1970) and two sites near Buchan in Victoria; Cloggs Cave (Flood 1980) and New Guinea 2 (Ossa *et al* 1995). The Bulee Brook 2 site in the south coast hinterland ranges, excavated by Boot (1994), provides evidence that occupation of this zone had occurred by at least 18,000 years ago. These known Pleistocene occupation sites are few on the south coast; the majority of recorded sites date from the mid to late Holocene at the time when the sea more or less stabilized to its current level. It is nevertheless reasonable to assume that the Durras area was occupied and utilised by Aboriginal people from the late Pleistocene onwards.

Numerous studies have been undertaken, both in an academic and consultancy context, in the broader region of the New South Wales south coast. Consideration of a predictive model of site type and site location within a geographical context relevant to the study area can be made through recourse to these previous studies. From this a contextual and relevant assessment of the archaeological potential of the study area can be formed.

The contemporary consideration by a number of researchers with regard to the nature of Aboriginal occupation on the South Coast prior to European settlement has resulted in conflicting arguments. Perceived higher site densities on the coast compared to forested hinterland contexts have led researchers, until recently, to argue that the coast was the focus of Aboriginal occupation and landuse.

Poiner (1971) proposed semi-nomadic occupation of the coast during summer and nomadic occupation of both the coast and hinterland during winter. However, this model was based on scanty evidence (Hiscock 1982) and an assumption that hinterland sites were few in number, small and widespread (Boot 2002). The strong seasonal focus of Poiner's (1971) model is inappropriate however, given that the mesothermal climate which prevails on the south coast presents only limited seasonal variation (Boot 2002).

Attenbrow (1976) argued that the major determinant of Aboriginal land use would have been the carrying capacity of the land. While Attenbrow (1976) proposed that groups would have utilized the coast and inland at all times of the year she argued that in spring, summer and autumn more people in larger numbers would have occupied the coastal zone practicing a largely marine economy and in winter smaller groups would be spread more evenly across country subsisting on a higher proportion of land animals. She predicted that areas such as coastal margins and inland valleys would have supported larger populations than the mountain slopes or foothills.

The forest-woodland environment contains large numbers of land mammals and plants (Attenbrow 1976). Poiner (1976) and Attenbrow (1976) have argued that both inland and marine resources declined in both range and abundance during winter. Poiner (1971) argued that the sea was the source of the bulk of food resources.

Vallance (1983) argued that a range of subsistence strategies would have been pursued and that these would have varied both within and between seasons and from year to year. This shift away from a seasonal model has been further expanded by Boot (1994) who has predicted that based on the Vallance (1983) model larger archaeological sites could be expected to be situated in areas where large quantities of food are available, either on a single occasion or on a regular basis, with smaller sites located elsewhere reflecting short term occupation or movement between focused occupation sites. Based on work undertaken during his doctoral research Boot (1994) has argued that the hinterland occupation was "widespread and very dense…" during the past 4000 years.

One of the preliminary consultancy projects undertaken on the south coast was conducted by Sullivan and Gibbney (1978) for the Eurobodalla Shire Council. The study was aimed at identifying and recording locations containing evidence of Aboriginal and early non-Aboriginal occupation. Two hundred and eleven Aboriginal sites were listed during the survey. Site types recorded include shield and canoe trees, surface campsites, hatchet grinding grooves and stratified deposits including open shell middens and rock shelters (Sullivan and Gibbney 1978: 197).

From this time archaeologists began investigations in the south coast conducted within the context of the environmental impact assessment process.

The most exhaustive body of information relating to the South Coast was undertaken by undergraduate students at the Australian National University. The research focused primarily on the hinterland of the Batemans Bay region between Moruya and Ulladulla. Over 5,000 hours of field survey was undertaken covering over 1,000 kilometres of roads, tracks and exposures. In total, 2270 sites were recorded, 78 percent of which were identified in the hinterland and 22 percent on the coast (Knight 1996).

Treloar (1985) produced the first basic analysis of these recordings asserting that open artefact scatters are generally found on ridge lines and spurs where relatively level ground is available (Treloar 1985).

Proximity to permanent water sources was also found to be a factor relating to long term occupation of a site.

More recently Knight (1996) compiled and analysed this archaeological data at a basic level identifying several trends in site type and distribution. Over 55 percent of the sites recorded are located on high points such as ridges or hills, peaks, spurs or saddles. Over 12 percent occur on slopes of which foot and upper slopes are most common. Valley locations comprised 6.4 percent of the total number of sites and 13.5 percent occur within the ocean shoreline, including dunes, cliff tops and headlands. Approximately 7.4 percent of sites were found to occur near estuarine features such as lake shores and river banks.

Knight (1996) also records that almost 90 percent of all sites occur on landform units with a gradient of less than 6 degrees, with 73 percent of the total occurring on gradients of less than 3 degrees. Forty percent of sites are located within 60m of potable water, with large, complex sites occurring in close proximity to permanent supplies of fresh water in the hinterland.

Artefact scatters are notable for their small size with over 95 percent of artefact scatters recorded containing less than 50 artefacts. The average number of artefacts found at each site was only 7. The sites are generally confined to the surface with minimal potential for subsurface deposits, with the exception of depositional contexts such as creek beds and river terraces. Larger, more complex sites tend to be located at high linear feature junctions and in close proximity to permanent fresh water. Flakes, flaked pieces and chips dominate the stone artefact assemblages representing approximately 80 percent of artefacts found. Another 14 percent is represented by hammers and anvils with formal tools such as backed blades and scrapers comprising only 5 percent of assemblages. The primary raw materials used are silcrete and volcanics with quartz, chert and quartzite being used less commonly. Knight (1996) notes a clear emphasis upon the use of locally available material in stone artefact manufacture.

A number of studies have been undertaken in the Batemans Bay area within the context of environmental impact assessment.

Hughes (1982) surveyed a 200 x 50m area proposed for the development of a townhouse complex near Denhams Beach. The development site was located on a headland. On the southern side of the headland a stone artefact scatter and two isolated artefact finds were found. The site consisted of six artefacts made from silcrete, acid volcanic and feldspar porphyry. The two isolated finds included a quartz core and a quartz porphyry acid flake. The excellent visibility available to Hughes (1982) over the survey area led him to assert that these findings were a true reflection of prehistoric Aboriginal land use in the study area. The amount of archaeological material on this headland is considerably less than would be expected when compared with other headlands along the south coast. Hughes (1982) explains this lack of material as the likely product of restricted access to and from the area by the steep cliffs that back the platform around the headland.

Approximately four kilometers southeast of Batemans Bay Hughes (1983) surveyed an area in which Eurobodalla Site Council proposed to construct a 3.5km road connecting George Bass Drive in the south with Glenella Road in the north. Surface visibility was found to be poor along most of the route due to a dense cover of shrubs, grass and organic litter. However, areas with greatest visibility were those considered most likely to contain sites, such as flat areas along ridges or creek banks. Ridge tops tended to have only a thin veneer of soil and no colluvium which might have buried archaeological materials. Three Potential Archaeological Deposits were identified. One was located on the bank of a creek and two others were noted on ridge tops. However despite good visibility around each of these areas, no archaeological remains were found. An artefact scatter was located on the eastern bank of Short Beach Creek, consisting of three silcrete flakes and one quartz flake. Hughes (1983) considers the identification of only one site in the survey area to support the theory that sites away from the coastline tend to be relatively scarce in number and sparse in content.

Lance (1988) surveyed an area proposed for subdivision between Vista Avenue and Glenella Road, Batemans Bay, in grazing land and forest south of existing residential areas at Catalina Heights. The development was restricted to the ridges and slopes of this area, with creeks and valleys proposed as parkland. As such, greater attention was paid to the survey of ridge and slope landforms. Visibility was quite variable throughout the survey area, ranging from extremely poor in swampy, grassy areas to

between ninety and one hundred percent on vehicle tracks and exposures. Lance recorded one site and two isolated finds. The site, located on a gentle slope beside an ephemeral creek, comprised two artifacts: one made from a porphyry pebble fragment and a broken backed blade made from an unidentified fine siliceous material. One of the isolated finds was a quartz core found in an extensively disturbed area with other fragments of machine fractured quartz. A second isolated find was a fine grained siliceous flaked piece located on a saddle ridge.

Williams (1992) surveyed an area proposed for subdivision at Lots 22, 23 and 24, DP 1068, Clyde Road, Batemans Bay. The area is located north of the Clyde River and to the east of Clyde Road at approximately 2km north of the Princes Highway/Clyde Road intersection. A total of four sites were located with a combined count of twenty four artefacts. Artefact types included cores and unretouched flakes made from quartz, silcrete, quartzite, chert and volcanics. Several fragments of *Anadara* shell were also identified. The method of survey for this study comprised following existing tracks and a ridgeline which had good visibility and high potential for the identification of archaeological material. Consequently, the identification of all sites along the ridgeline was a product of such a survey strategy.

Officer and Navin (1995) investigated a 2.8 kilometre road route stretching from the Princess Highway at the Ridge Road east along Glenella Road to a section of George Bass Drive, Batehaven. The route included a range of landforms including ridge crests, simple and basal slopes and creek flats. Four artefact scatters and four isolated finds were located during the study. These scatters ranged in size from five to eighteen artefacts and were located predominantly on basal slopes fringing the flats and one scatter was found on a ridge crest saddle. Most of the thirty six artefacts located were quartz flakes and cores, with silcrete and porphyry flakes also found. One backed blade and two retouched flakes made from quartz were also located. Three of the sites found in this survey were salvaged prior to the commencement of roadworks (Officer 1997). Excavation recovered an additional thirty four artefacts not recorded during the first survey, including three microblades and a bipolar core as well as several quartz flakes and flake fragments.

Kuskie (1995) surveyed a thirty nine hectare property proposed for a rural/residential housing subdivision at Lot 8 DP 837396 located at the intersection of the Clyde Road and Princes Highway, North Batemans Bay. Kuskie (1995) recorded three artefact scatters and four isolated finds. The Liamena Sites 1, 3 and 4 consisted of artefact scatters of three, thirteen and two artefacts respectively. Raw materials included quartz, porphyry, silcrete and volcanics with a range of artefact types including flakes, cores and one blade. Sites 2, 5, 6 and 7 were isolated finds of silcrete flakes and a volcanic manuport. Very high levels of ground disturbance caused by heavy machinery and vegetation removal were noted at all sites. Sites were commonly located on simple, gentle basal slopes with two sites found along a ridge line or crest with low gradients. Most sites were noted to have a southerly aspect and to be situated within three hundred meters of potable water. Kuskie (1995) interpreted these findings as conforming to the results of previous studies in the area.

A 1.2 hectare area proposed for the upgrade of the intersection of Old Malua Bay Road (The Ridge Road) and Burri Road (Ridge Avenue), west of Malua Bay, was surveyed by Navin (1995). The survey area is situated on a hinterland ridge crest and associated slopes at ninety meters above sea level. All ground surface exposures were inspected with forty percent of the survey area estimated to have provided effective survey coverage. One open artefact scatter was located along Ridge Road and included five artefacts made from chert, quartz and silcrete. However the construction and maintenance of existing roads were found to have impacted on substantial portions of the ridge crest. It is likely that prior ground disturbance reduced the potential for recording archaeological sites.

Navin and Officer (1997) surveyed a 130 hectare area along Long Beach, Batemans Bay proposed for subdivision for residential purposes. The locale comprises ridge crests, sides, shoulders, saddles and flat elevated ground adjacent to creek flats and basal slopes. Much of the area had been heavily disturbed by the clearance of original vegetation, logging, army exercises, gravel quarrying and the clearance of ridge crests, slopes and flats for tracks. As such, Navin and Officer (1997) note that such extensive disturbance is likely to have destroyed many surface and subsurface archaeological deposits. Visibility was substantially higher on crests and spurs than on valley floors. Nevertheless, a total of nine artefacts were located distributed as two open scatters and three isolated finds. Artefact types included flakes, a core and a thumbnail scraper. Navin and Officer (1997) note that the results conformed to expected patterns of site type content and distribution for the region. Artefact scatters

exhibited low densities and technological diversity, except where they are located within close proximity to major water sources or wetlands.

Approximately seven kilometres south of Batemans Bay Williams (1997) surveyed a ca. four hectare area proposed for subdivision at Lot 5, George Bass Drive near Surf Beach. The area covers a range of topographic areas including spur crest, upper, mid and lower slopes and a drainage line. One small open artefact scatter was recorded on a spur crest and adjacent upper slope. The site was located within 125m of ephemeral water and 1.5-2km of permanent water. The site comprised six quartz artifacts all of which were unretouched with no formal types identified. All the artifacts tended to be small with a maximum size of 23mm recorded. Williams (1997) noted that the identification of sites was significantly hampered by poor surface visibility.

Barber (1998) undertook a survey of an area proposed for a rural/residential subdivision on Lots 363 and 364 DP809776, Long Beach Road. The study area measured approximately fourteen hectares. Barber (1998) identified two open artefact scatters and one isolated find on a ridge crest adjacent to a wetland and a saddle overlooking the wetland. The scatters were low density with twenty artefacts found at one scatter and six at the other. Both assemblages were dominated by quartz and no specific formal tool types were identified. All three sites were found within two hundred and fifty meters of potable water with easy access to both wetland and land based resources. Barber (1998) comments that visibility was generally poor across the area with graded tracks and eroded surfaces providing the only areas of good visibility. Survey along the edge of the wetland and drainage gully provided very low visibility due to vegetation cover. The most effective survey coverage was over the main ridge and spurs which coincided to those areas which were most highly disturbed. The identification of sites along these areas alone may therefore be a product of visibility and effective survey coverage.

Officer (1998) surveyed the proposed eastern extensions to Ridge Road at Malua Bay. In addition areas for a water reservoir, water main and associated pump station and sections of Burri Road were surveyed. In total, a stretch measuring approximately 600 meters in length was surveyed. In addition to relocating one of two previously recorded sites Officer (1998) recorded one artefact scatter comprising three quartz flakes and one rhyolite flake and an isolated find. Both sites were found in areas that had been subject to extensive disturbance primarily from the construction and maintenance of the existing roads. These tracks are noted to traverse those areas of highest archaeological sensitivity such as the ridge crests and gentle slopes where the two sites were identified. Such disturbance is noted to have hindered the ability to identify sites and heavily reduced the possibility of *in situ* archaeological deposit being present.

Kuskie (1998a) investigated five sections of George Bass Drive between Surf Beach and Batehaven. A total of 3.9 km of the George Bass Drive was surveyed, with approximately 2.8 km covering the same ground Hughes (1983) surveyed previously. Kuskie (1998a) was unable to locate any additional sites during his survey, and attributes the lack of sites to a combination of high levels of disturbance and the low archaeological potential of the landforms surveyed in relation to predictive models for the Bateman's Bay coastal hinterland.

Within this same area Kuskie (1998b) surveyed a 4-5% sample of a 100 hectare area of the Surf Beach Waste Management Site. Only one Aboriginal site was identified, comprising a porphyrytic rhyolite flake located in an easement adjacent to George Bass Drive. Kuskie judged the artefact to be an isolated discard event lost during the movement of Aboriginal groups between the hinterland and coastline along the ridgeline (Kuskie 1998b). The low level of Aboriginal evidence identified was seen to reflect low intensity usage of the area in the past as well post European ground disturbance.

Nearer to the study area Kuskie (2002a, 2002b) undertook extensive survey of a number of areas in Murramarang National Park prior to the construction and rehabilitation of roads and the establishment of new walking tracks and installation of facilities. Sites were recorded in the localities of Pebbly Beach, Durras North, Durras Lake, Honeysuckle Beach, North Head and Acheron Ledge. Within these areas Kuskie (2002a) divided survey areas into forty six units, representing specific combinations of landform element and class of slope. Despite disturbance to the area imposed by the removal of vegetation, timber harvesting and the construction of roads and walking tracks, bioturbation and erosion, a number of sites were identified within the survey area. A total of fifty five stone artefacts were recorded during the survey with locally available volcanic materials such as rhyolite dominating the assemblages. Quartz and silcrete artefacts were also recorded. Cores and flakes tended to be

represented equally amongst the assemblages, representing an unusually high frequency of cores. Six retouched flakes were also recovered.

Kuskie (2002a) records that in general, sites were located on simple slopes of very low gradient, but he comments that surface visibility was influential in the location and identification of sites. Distance to multiple resources zones, potable water and stone raw materials are further argued to be major factors affecting the location of activities and sites. Each of the areas covered in the survey feature a range of resources, good proximity to water, and flat, elevated and well drained land.

Navin and Officer (1995) conducted a survey of Lot 24 DP777407 at Forster Drive Bawley Point. The study area comprised 39.56 ha of land located adjacent to the southern foreshore of Willinga Lake. The area consisted of two spurlines separated by a low lying area. Four stone artefact scatters, one isolated find and two possible scarred trees were recorded. Four zones of archaeological potential were defined. Subsurface test excavation was recommended however, this work may not have been carried out.

Robert Paton Archaeological Studies (1995) conducted a survey of a section of the North Durras Road in respect of proposed road works. Two artefact scatters and one isolated find were recorded.

Allen (2003) conducted a survey of Lot 100 DP 755904, Durras Lake Road, South Durras. The study area measured 9,250m² in area and is situated approximately 1.5 km north of the study area. The site consisted on a two linear sand dunes which run north-south parallel to the coast. The largest of these dunes slopes down to the west into a low swale which in the south west contains ephemeral sedgeland. No sites were found despite good effective coverage. Allen (2003) considered this result to be a reasonably accurate reflection of the status of the study area.

Saunders (2004) conducted a survey of Lot 2 DP243451 at Bawley Point in respect of a proposed subdivision. The study area comprised gently inclined south east facing basal slopes of a low spur. The area is located at ca. 0.6 km west of the coast. No Aboriginal sites or areas of archaeological potential were recorded. The site was assessed to be of low archaeological potential generally given its location away from resources which are likely to have resulted in concentrated occupation.

Dibden (2004) conducted an assessment of a proposed subdivision situated immediately west of Murramarang Resort. A number of stone artefacts were recorded. A program of subsurface test excavation was subsequently undertaken (Dibden 2006). Stone artefacts were found to be present on an east facing slope situated above a small wetland. Artefact density increased with decreasing distance from the wetland.

Based on the above review and a consideration of the elevation, geology, hydrology and topography of the study area the type of sites known to occur in the region and the potential for their presence within the study area are listed as follows.

Stone Artefacts

Stone are located either on the ground surface and/or in subsurface contexts. Typically stone artefacts recorded in open sites are representative of debris which results from flaking stone and will include unmodified flakes, cores and flaked pieces. Actual stone tools such as deliberately formed artefacts (such as scrapers, backed blades or adzes) or pieces which possess evidence of use are generally present in low frequencies only. The raw materials used for artefact manufacture in the local area include quartz, silcrete, volcanics, quartzite and chert.

Within the study area it is predicted that stone artefact occurrences will be assemblages of low density.

The detection of artefact scatters depends on ground surface factors and whether or not the potential archaeological bearing soil profile is visible. Prior ground disturbance, vegetation cover and sediment/gravel deposition can act to obscure artefact scatter presence.

Grinding Grooves

Grinding grooves are always located on sandstone exposures and are the result of the manufacture and maintenance of ground edge tools. Such tools were generally made of stone, however bone and shell were also ground to fine points.

The location of sites with grinding grooves is dependent on the presence of a suitable rock surface, usually fine grained homogeneous sandstone, and a water source. Grinding groove sites may consist of a single groove, or a large number which are sometimes arranged in groups. They commonly occur as an open site, however, are sometimes found in shelter contexts. Usually grinding grooves are located on horizontal sandstone exposures, however, they can occasionally be found on vertical surfaces.

Given the absence of large sandstone exposures in the study area this site type will not be found during the study.

Burials

Several Aboriginal burial sites are known to have been present within the wider region. Burials are generally only visible in areas where the deposit has been disturbed either by natural erosion or human activity. This site type is not usually found during field survey. The potential for burials to be present is assessed to be low.

Rock Shelter Sites

Rock shelter sites consist of any form of rock overhang which contains artefacts and/or art. Common archaeological features of rock shelter sites are: surface artefacts, occupation deposit such as stone artefacts, shell, bone and charcoal, rock drawings, paintings and stencils, engraved imagery, potential archaeological deposit and grinding grooves.

Given the absence of large vertical stone exposures in the study area this site type is unlikely to be recorded.

Scarred and Carved Trees

Scarred and carved trees result from the removal of bark from trees by Aboriginal people for either domestic or ceremonial purposes. These site types can occur anywhere that trees of sufficient age are present, however, in an Aboriginal land use context would most likely have been situated on flat or low gradient landform units in areas suitable for either habitation and/or ceremonial purposes.

Bark removal by European people through the entire historic period and by natural processes such as fire blistering and branch fall, make the identification of scarring from a causal point of view very difficult. Accordingly, given the propensity for trees to bear scarring from natural causes their positive identification is impossible unless culturally specific variables such as stone hatchet cut marks or incised designs are evident and rigorous criteria in regard to tree species/age/size and it specific characteristics in regard to regrowth is adopted.

Nevertheless, the likelihood of trees bearing cultural scarring remaining extant and *in situ* in the study area is low given events such as land clearance and bushfires. Generally scarred trees will only survive if they have been carefully protected such as the trees associated with Yuranigh's grave at Molong where successive generations of European landholders have actively cared for them.

While not out of the question, this site type is unlikely to have survived and therefore be extant in the study area.

Stone Quarry and Procurement Sites

Stone quarries are exposures of stone material which have been exploited by Aboriginal people as a source of raw material. These sites will commonly have evidence of exploitation including extraction and preliminary flaking preparation. The presence of these site types is dependent on the surface

exposure of suitable stone. Quarries are a rare site type in this region. They are unlikely to be recorded during the current study.

8. SURVEY RESULTS

8.1 Survey Coverage Variables

Survey Coverage Variables are a measure of ground surveyed during the study and the type of archaeological visibility present within that surveyed area. Survey coverage variables provide a measure with which to assess the effectiveness of the survey so as to provide an informed basis for the formulation of management strategies.

Specifically, an analysis of survey coverage is necessary in order to determine whether or not the opportunity to observe stone artefacts in or on the ground was achieved during the survey. In the event that it is determined that ground exposures provided a minimal opportunity to record stone artefacts it may be necessary to undertake archaeological excavation for determining whether or not stone artefacts are present. Conversely, if ground exposures encountered provided an ideal opportunity to record the presence of stone artefacts, the survey results may be considered to be adequate and accordingly no further archaeological work may be required.

Two main variables were used to measure ground surface visibility during the study; the area of ground exposure encountered and the quality and type of ground visibility (archaeological visibility) within those exposures.

The two visibility variables estimated during the survey are defined as follows:

Average Ground Exposure – a percentage estimate of the total area of ground inspected which contained exposures of bare ground; and

Average Archaeology Visibility – a percentage estimate of the average levels of potential archaeological surface visibility within those exposures of bare ground.

Based on the two visibility variables as defined above, a net estimate (Net Effective Exposure) of the archaeological potential of exposure area within a survey unit or set of units has been calculated. The Effective Survey Coverage (ESC) calculation is a percentage estimate of the archaeological potential of the ground surveyed; this calculation is defined and required by the NPWS.

Survey coverage is described in Table 1 below; the location of survey units is shown on Figure 3.

The survey area measured ca. 2200m². Approximately 2090²m of this area was subject to comprehensive survey. Ground exposure of the area surveyed is assessed to have been ca. 1045m², with 261.25m² of that area assessed to be archaeological visibility. Accordingly, effective survey coverage is calculated to have been ca. 11.9% of the total survey area.

The ESC provides an estimate of the proportion of the total study area which provided a net 100% level of ground surface visibility (with archaeological potential). The ESC achieved in during the survey was reasonably high and is assessed to have been adequate for determining the archaeological nature of the area in the survey unit.

Survey Unit	Landform	Survey Unit Area	Area surveyed	Ave. ground exposure	Ave. arch visibility %	Net effective exposure	Effective survey coverage %	No. of artefacts recorded	Predicted density of undetected artefacts
SU1	Ridge crest; aspect: Open; gradient: 0 - 5º	2200 m²	95 % 2090 m²	50 % 1045 m²	25 %	261.25 m²	11.9 %	2	Low; highly disturbed
Total		**2200 m²**	**2090 m²**	**1045 m²**		**261.25 m²**	**11.9 %**	**2**	

Table 1: Survey Coverage Data

Plate 1 South end of route on Skid Ridge Road taken from near junction with Durras Road looking 210°.

Plate 2 Corner of Skid Ridge Road and Durras Road looking 60°.

Plate 3 North end of route looking south.

8.2 Results: Aboriginal Heritage

One Aboriginal site was located during the field survey. This site is described further below and its location is shown on Figure 3.

Site 1 grid reference: 254462e 6050781n
(Hand GPS: WGS 84)

Two stone artefacts were recorded (Plate 4). The artefacts are situated on a graded vehicle track immediately adjacent to a substantial quarried area that was associated with a former tip. The area is disturbed by original clearance, road construction and maintenance, and grading.

The artefacts are described as follows:

1. Brown silcrete flake measuring 26 x 34 x 7 mm;
2. Quartzite blade core with 4 negative scars measuring 36 x 18 x 16 mm;

The artefacts were found distributed across an area measuring 40 x 3 (120 m²). Ground exposure in that area is estimated to be 80% with 60% of that exposure assessed to be archaeological visibility. The site is assessed to be a low density scatter of stone artefacts. There is low potential for the wider area to contain subsurface artefacts.

Plate 4. Site 1 looking 60°. Note high disturbance to left of track: excavation pit.

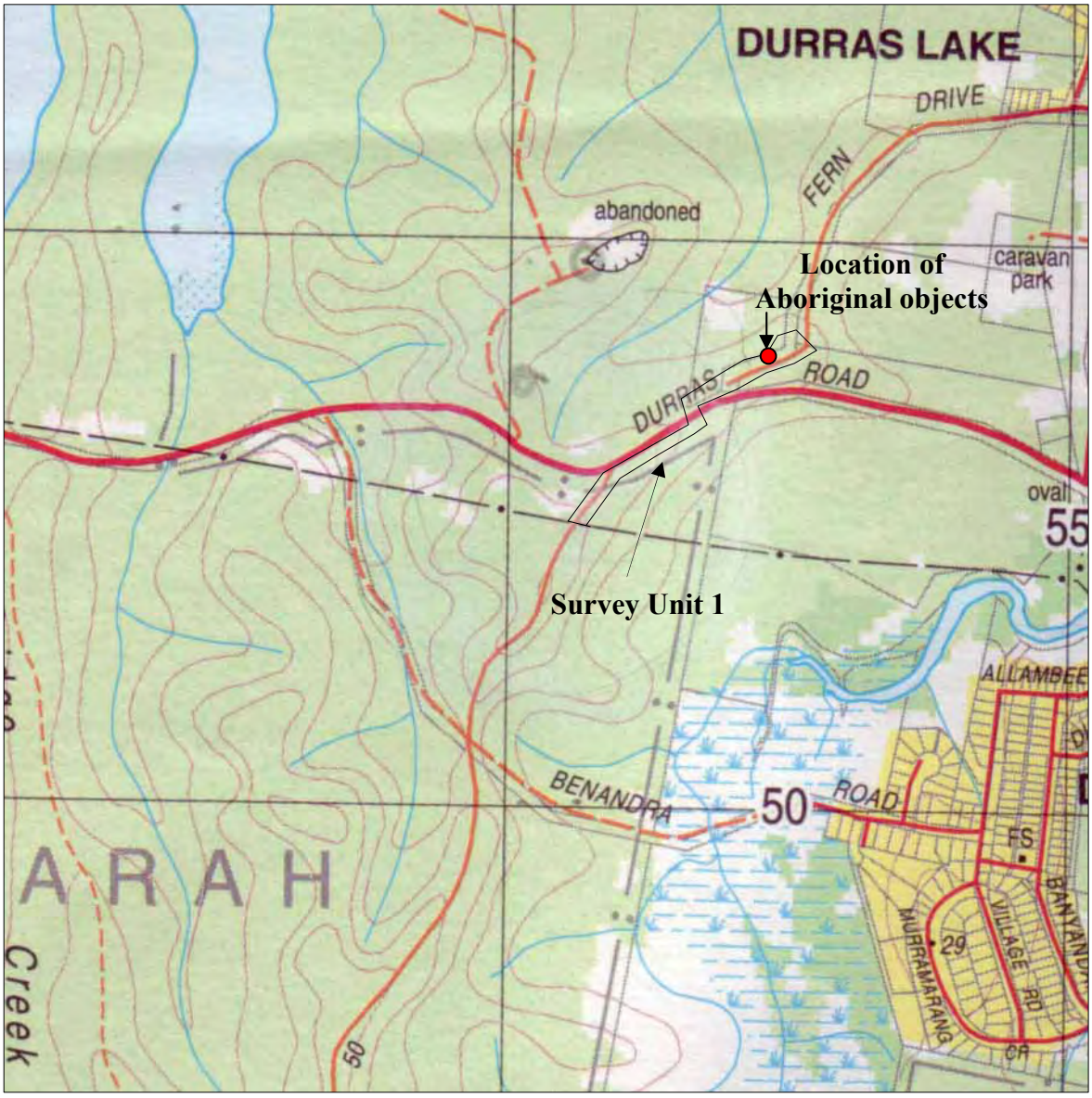

Figure 3 Location of Survey Unit and recorded Aboriginal objects (Durras 8926-1S 4th ed. 1:25,000 topographic map: GDA).

9. STATUTORY CONTEXT

Two pieces of legislation provide the primary basis for Aboriginal heritage management in NSW, the National Parks and Wildlife Act 1974 (NPW Act) and the Environmental Planning and Assessment Act 1979 (EP&A Act) (NPWS 1997).

The Environmental Planning and Assessment Act 1979 (EP&A Act), its regulations, schedules and guidelines provides the context for the requirement for environmental assessments to be undertaken during land use planning (NPWS 1997).

The NPW Act provides statutory protection for all Aboriginal objects and Aboriginal Places.

An 'Aboriginal object' is defined as

> 'any deposit, object or material evidence (not being a handicraft for sale) relating to Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.

Under s90 of the NPW Act a person must not knowingly destroy, damage or deface or knowingly cause or permit the destruction, damage or defacement of an Aboriginal object or Aboriginal Place without first obtaining the consent of the Director-General of the NSW DEC. Consents which enable a person to impact an Aboriginal object are issued by the NSW DEC upon review of a s90 Consent application.

Under s87 of the NPW Act a person must not excavate or disturb land for the purposes of discovering an Aboriginal object without first obtaining the consent of the Director-General of the NSW DEC. Permits which enable a person to excavate land for the purposes of determining whether or not an Aboriginal object is present are issued by the NSW DEC upon review of a s87 Permit application.

Statutory constraints arise from this assessment and the recording of Aboriginal objects in the proposal area. As noted above it is an offence to knowingly disturb Aboriginal objects under Part 6 – s90 of the National Parks and Wildlife Act (1974). An object is considered to be known if:

- It is registered on AHIMS;
- It is known to the Aboriginal community; or
- It is located during an investigation of an area conducted for a development application.

S90 Consent is required to be obtained from the Director-General NSW DEC prior to undertaking any impacts to the recorded Aboriginal objects.

10. SIGNIFICANCE ASSESSMENT

The information provided in this report and the assessment of significance of Aboriginal sites provides the basis for the proponent to make informed decisions regarding the management and degree of protection which should be undertaken in regard to the sites located within the study area.

10.1 Significance Assessment Criteria

The NPWS (1997) defines significance as relating to the meaning of sites: "meaning is to do with the values people put on things, places, sites, land".

The following significance assessment criteria is derived from the relevant aspects of ICOMOS Burra Charter and NSW Department of Urban Affairs and Planning's 'State Heritage Inventory Evaluation Criteria and Management Guidelines'.

Aboriginal archaeological sites are assessed under the following categories of significance:

- cultural value to contemporary Aboriginal people,
- archaeological value,
- aesthetic value,
- representativeness, and
- educational value.

Aboriginal cultural significance

The Aboriginal community will value a place upon a place in accordance with a variety of factors including contemporary associations and beliefs and historical relationships. Most heritage evidence is valued by Aboriginal people given its symbolic embodiment and physical relationship with their ancestral past.

Consultation with the local Aboriginal community is necessary to identify the cultural significance attached to heritage sites and the broader landscape.

Archaeological value

The assessment of archaeological value involves determining the potential of a place to provide information which is of value in scientific analysis and the resolution of potential archaeological research questions. Relevant research topics may be defined and addressed within the academy, the context of cultural heritage management or Aboriginal communities. Increasingly, research issues are being constructed with reference to the broader landscape rather than focusing specifically on individual site locales. In order to assess scientific value landforms are evaluated in terms of nature of the evidence, whether or not they contain undisturbed artefactual material, occur within a context which enables the testing of certain propositions, 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 part of a larger site complex. Increasingly, a range of site types, including low density artefact distributions, are regarded to be just as important as high density sites for providing research opportunities.

Representativeness

Representative value is the degree to which a "class of sites are conserved and whether the particular site being assessed should be conserved in order to ensure that we retain a representative sample of the archaeological record as a whole" (NPWS 1997). Factors defined by NPWS (1997) for assessing sites in terms of representativeness include defining variability, knowing what is already conserved and considering the connectivity of sites.

Educational value

The educational value of cultural heritage is dependent on the potential for interpretation to a general visitor audience, compatible Aboriginal values, a resistant site fabric, and feasible site access and management resources.

Aesthetic value

Aesthetic value relates to aspects of sensory perception. This value is culturally contingent.

10.2 Archaeological Significance Values

Distributions of stone artefact are common in the local area and wider region. Stone artefacts can be expected to be distributed in a virtual continuum across most landscape element contexts. The density of this background artefact scatter is related to factors such as terrain (landform element, gradient and slope), the permanence of the local water source and the proximity of other resource features.

Open artefact scatters will contain differences in terms of their artefact density and composition. These differences will potentially reflect differences in site function ie different activities undertaken in different places. Therefore, these site types, while common, will each have the potential to provide unique archaeological data and hence interpretive value within a research context.

Most Aboriginal heritage sites have cultural value to the local Aboriginal community given that they provide direct physical and symbolic linkages to their ancestral past and to the landscape. Written documentation from Batemans Bay Local Aboriginal Land Council which may address cultural value will accompany this archaeological report.

The recorded Aboriginal objects present in the proposal area are assessed to be of low archaeological significance. The objects are common in the local area. Furthermore they are disturbed and accordingly possess low research potential.

11. MITIGATION AND MANAGEMENT STRATEGIES

The aim of this study has been to identify Aboriginal archaeological sites and/or areas of archaeological potential which may be present in the study area, to assess their significance and thereafter, to give consideration to their management within the context of the proposed development. One low density artefact scatters (Site 1) has been identified to be located within the proposed powerline route.

In the following sections a variety of strategies that can be considered for the mitigation and management of development impact to the identified Aboriginal site present within the study area are listed and discussed.

11.1 Management and Mitigation Strategies

Further Investigation

The current field survey has been focused on recording artefactual material present on visible ground surfaces. Further archaeological investigation entails subsurface excavation which is generally undertaken as test pits for the purposes of identifying the presence of artefact bearing soil deposits and their nature, extent, integrity and significance.

Further archaeological investigation in the form of sub-surface test excavation can be appropriate in certain situations. Such situations generally arise when the proposed development is expected to involve ground disturbance in areas which are assessed to have the potential to contain moderate to high density artefactual material. Additionally subsurface investigation is increasingly being undertaken for the purposes of characterising spatial variation in subsurface deposits across a range of landform elements.

Such a strategy is pro-active and enables the proponent to properly manage archaeological sites and potentially sensitive landforms prior to development activity occurring. Subsurface investigation

provides a level of surety in regard to the archaeological status of a place so that informed management decisions can be duly made.

Test excavation can be undertaken in a variety of ways including hand excavation, shovel pits, auger holes, mechanically excavated trenches or surface scraps. Sub-surface test excavation can only be carried out after a Section 87 Permit is issued by the Director-General, NSW DEC.

Subsurface investigation is *not* considered to be warranted in respect of the proposal.

Conservation

Conservation is a suitable management option in any situation, however, is not always feasible. Such a strategy is generally adopted in relation to sites which are assessed to be of high cultural and scientific significance, but can be adopted in relation to any site type.

When conservation is adopted as a management option it may be necessary to implement various strategies to ensure sites and 'Aboriginal objects' are not inadvertently destroyed or disturbed during construction works or within the context of the life of the development project. Such procedures are essential when development works are to proceed within close proximity to identified sites.

The site recorded within the proposal area is suitable to be considered within a conservation management framework, however, it does not surpass a significance threshold whereby conservation is considered to be necessarily warranted.

Unmitigated Impact

Unmitigated impact of a site can be given consideration when a site is assessed to be of low or low/moderate archaeological and cultural significance and otherwise in situations where conservation is simply not feasible. In order to conduct unmitigated impact of a site the proponent must apply for and obtain a Section 90 Consent from the Director-General, NSW DEC. Section 90 Consent applications must be accompanied by documentation from the local Aboriginal community supporting site destruction.

In the case at hand unmitigated impact of Site 1 is considered to be justified given the low significance rating it has been accorded.

In order for the proponent to conduct unmitigated impact of the site, s90 Consent will need to be sought from the Director-General DEC. The proponent will need to consult further with the Batemans Bay Local Aboriginal Land Council in order to obtain its written endorsement of the s90 Consent application.

Mitigated Impact

Mitigated impact usually takes the form of partial site destruction and/or salvage prior to impact. Such a management strategy is appropriate when sites are assessed to be of moderate or high scientific significance to the scientific and/or Aboriginal community and when avoidance of the site is not feasible. Salvage can include the surface collection or sub-surface excavation of artefacts as a condition of a Section 90 Consent issued by the Director-General, NSW DEC.

The site present within the proposal area is not assessed to warrant partial conservation or salvage as a condition of a s90 Consent on the basis of the current assessment.

Monitoring

Monitoring during construction for the purposes of identifying cultural material that may be uncovered during earth disturbance can be implemented as a management strategy. Monitoring is a reactive rather than pro-active management strategy, and as such, is not an ideal management tool in cultural heritage management. Monitoring as a management strategy should only be adopted, if at all, when all other management options have been considered and implemented.

Monitoring for artefacts is not a widely accepted method of management because sites of significance can be destroyed as monitoring is taking place and because it can result in lengthy and costly delays to development works if significant cultural material is uncovered. It is assessed that there is no scientific justification for monitoring to take place in the proposal area.

12. RECOMMENDATIONS

The following recommendations are made on the basis of:

- Legal requirements as set out under the National Parks and Wildlife Act 1974 (as amended) which states that it is illegal to deface or destroy an Aboriginal object or Aboriginal place in NSW without first obtaining consent of the Director-General of the NSW Department of Environment and Conservation (see Section 10 Statutory Information).
- The results of the investigation as documented in this report.
- An analysis of the survey results.
- Consideration of the nature of proposed impacts.
- Consultation with the Violet Parsons, Batemans Bay Local Aboriginal Land Council.

The field inspection carried out in respect of the proposal is assessed to have been adequate for the task of establishing the archaeological status and significance of the impact area. Effective survey coverage achieved during the inspection was relatively high. Accordingly it is concluded that the survey results are reasonable accurate.

It is concluded and recommended that:

1. The proponent will need to undertake mitigation and management measures prior to development in regard to the Aboriginal site within the proposal area.

2. Sites 1 is assessed to be of low scientific significance only. The site does not surpass any significance criteria thresholds which would act to preclude impact. Accordingly, it is recommended that a management strategy of *unmitigated impact* is appropriate in regard to this site. Ms Violet Parsons, Batemans Bay Local Aboriginal Land Council, has indicated that this strategy is appropriate.

   Accordingly it is recommended that the proponent should seek s90 Consent from the Director-General Department of Environment and Conservation. Any s90 Consent application will need to be supported with written documentation from the Batemans Bay Local Aboriginal Land Council.

   The proponent is reminded that s90 applications are reviewed by the DEC in conjunction with the relevant archaeological report and correspondence from the Local Aboriginal Land Council. S90 applications take at least 8 weeks to be processed by DEC.

3. A bound copy of this report should be forwarded to:

   Violet Parsons
   Batemans Bay Local Aboriginal Land Council
   PO Box 542
   Batemans Bay NSW 2536

4. Three bound copies of this report should be sent to:

   Paul House
   Senior Aboriginal Heritage Officer
   South Branch
   Environment Protection and Regulation Division
   NSW Department of Environment and Conservation
   PO Box 2115
   QUEANBEYAN NSW 2620

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ATTACHMENT 9: LOCAL ABORIGINAL LAND COUNCIL LETTER