

# **MUNDAMIA INVESTIGATION AREA, WEST NOWRA: ABORIGINAL HERITAGE ASSESSMENT**

A report to

**Malbec Properties Pty Limited**

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by

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## EXECUTIVE SUMMARY

South East Archaeology was engaged in September 2007 by Malbec Properties, on behalf of the adjoining landowners, to undertake a preliminary Aboriginal heritage assessment of "New Living Area No. 5" at Mundamia, near West Nowra, on the south coast of New South Wales. As an outcome of the preliminary investigation, a detailed Aboriginal heritage impact assessment has been undertaken and is reported on herein.

The study area is located immediately north of the University of Wollongong (Shoalhaven Campus) at George Evans Road, West Nowra, and measures approximately 47 hectares in area. The landowners propose development of this new living area for urban development.

A Major Project application under Part 3A of the *Environmental Planning and Assessment Act 1979* has been lodged for a 303 lot residential subdivision over a substantial portion of the study area, with single rural and commercial lots. Undeveloped lands forming part of the study area may be subject to future utilisation for residential purposes.

The principal aims of the heritage investigation were to identify and record any Aboriginal heritage evidence and cultural values within the study area, assess the potential impacts of the proposal on this evidence, assess the significance of this evidence, and formulate recommendations for the conservation and management of this evidence, in consultation with the local Aboriginal community.

The investigation proceeded by recourse to the archaeological and environmental background of the locality, followed by a field survey undertaken in consultation with the Nowra Local Aboriginal Land Council. No Aboriginal organisations formally registered as stakeholders for the investigation.

The total survey coverage (ground physically inspected for heritage evidence) obtained during the survey equated to approximately 5% of the study area. The total effective survey coverage (*visible* ground surface physically inspected with potential to host evidence) equated to about 0.5% of the study area. In reality, inspection for obtrusive site types (eg. scarred trees) was undertaken over a much wider area, as these coverage calculations only refer to a two metre wide strip per person.

No Aboriginal heritage sites or cultural evidence or values are listed within the study area on any heritage registers or planning instruments or have been identified within the study area during the present investigation. It is inferred that the primary reasons for this result are the generally low intensity Aboriginal usage of the study area, along with the widespread and typically moderate to high levels of existing ground disturbance.

The potential for types of Aboriginal heritage evidence to occur other than stone artefacts is generally assessed as very low to negligible. Although there remains potential for a widespread low to very low density distribution of stone artefacts consistent with background discard, interspersed by a low number of activity areas, artefact deposits or sites that are of high local or regional research value or significance are not anticipated to be present.

A preliminary assessment undertaken by South East Archaeology identified that the study area does not contain any non-indigenous heritage items listed on any heritage registers or planning instruments. Relics over 50 years of age and subject to the provisions of the *Heritage Act 1977* and Shoalhaven LEP were not identified during the detailed field inspection conducted as part of the assessment reported herein.

It is assumed that in relation to the current concept plan for part of the property or in relation to future development of other portions of the study area, much of the study area will be subject to high-level impacts arising from earthworks associated with the provision of roads, essential services, drainage control measures, recreational facilities and/or housing. However, development impacts are also anticipated to be avoided to portions of the study area, including proposed conservation areas around the eastern and northeastern margins. In the absence of appropriate management and mitigation measures, it is concluded that the impacts of the proposal on Aboriginal heritage will be very low.

The primary recommendations made on the basis of legal requirements under the NSW *National Parks and Wildlife Act 1974* and *Environmental Planning and Assessment Act 1979*, the results of the survey and consultation with the local Aboriginal community include:

- For the land subject to Part 3A Application No. MP08\_0141, provisions relating to Aboriginal heritage should be included in an Environmental Management Plan for the project. These provisions should be formulated in consultation with the Nowra LALC and specify the policies and actions required to manage the potential impacts of the proposal on Aboriginal heritage after Part 3A approval is granted. The plan will include procedures for ongoing Aboriginal consultation, and management procedures for any previously unrecorded heritage evidence and skeletal remains. The Plan will comprise detail that, subject to Part 3A project approval, will guide management of the Aboriginal heritage resource *in lieu* of any Section 90 Consent;
- For any land within the study area that is subject to development, but not under a Part 3A Application, although there are presently no known heritage constraints to such development, the following provisions relating to Aboriginal heritage should be observed:
  - Should any skeletal remains be detected during the course of development, work in that location will cease immediately and the finds will be reported to the appropriate authorities, including the Police, DECC and Nowra LALC. Subject to the Police requiring no further involvement, the management of any Aboriginal skeletal remains identified must be determined in consultation with DECC and the Nowra LALC and a Section 90 Consent obtained from DECC where required; and
  - Should any other previously unrecorded heritage evidence be detected during the course of development, work in that location will cease immediately and the finds be reported to the Nowra LALC and DECC. Management strategies for any identified evidence must be determined in consultation with DECC and the Nowra LALC and a Section 90 Consent obtained from DECC prior to any impacts occurring; and
- Three copies of this report should be forwarded to DECC.

After implementation of these management and mitigation measures, it is concluded that the risk of residual impacts to Aboriginal heritage from the proposal will be very low.

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## 1. INTRODUCTION

South East Archaeology was engaged in September 2007 by Malbec Properties, on behalf of the adjoining landowners, to undertake a preliminary Aboriginal and non-indigenous heritage assessment of "New Living Area No. 5" at Mundamia, near West Nowra, on the south coast of New South Wales. As an outcome of the preliminary investigation (Kuskie 2008), a detailed Aboriginal heritage impact assessment has been undertaken and is reported on herein.

The study area is located immediately north of the University of Wollongong (Shoalhaven Campus) at George Evans Road, West Nowra, and measures approximately 47 hectares in area (Figure 1). The landowners propose development of this new living area for urban development.

The study area comprises eight separate parcels of land (Figure 2):

- ❑ Lot 3 DP 568613 of 21.63 hectares owned by L & J Griffiths;
- ❑ Lot 384 DP 755952 of 21.5 hectares owned by Malbec Mundamia Pty Ltd;
- ❑ Lot 2 DP 568613 of 0.1 hectares owned by A & Y Fleming;
- ❑ Lot 1 DP 568613 of 0.1 hectares owned by A & S Santos;
- ❑ Lot 458 DP 1063107 of 10.4 hectares owned by the NSW Aboriginal Land Council;
- ❑ Lot 1 DP 1021332 of 9.5 hectares owned by Shoalhaven City Council;
- ❑ Lot 6 DP 875956 of 0.8 hectares owned by the Crown; and
- ❑ Unidentified land of 7.3 hectares owned by the Crown;

A Major Project application under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) has been lodged for a 303 lot residential subdivision over a substantial portion of the study area (Application No. MP08\_0141), comprising Lot 3 DP 568613 and Lot 384 DP 755952 (refer to development concept plan in Figure 3), with single rural and commercial lots. The key Part 3A Environmental Assessment requirements issued by the Department of Planning (DoP) in relation to the "key issue" of "Heritage and Archaeology" for this application include:

- 8.1. Identify whether the site has significance to Aboriginal cultural heritage and identify appropriate measures to preserve any significance (Aboriginal community consultation should be undertaken in accordance with DEC's *Interim Community Consultation Requirements for Applicants*); and
- 8.2. Identify any items of European heritage significance and, where relevant, provide measures for the conservation of such items.

Other relevant Environmental Assessment requirements issued by the Department of Planning (DoP) for this application include:

- ❑ Description of the existing environment;
- ❑ Assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project;

- ❑ Consideration of any relevant statutory and non-statutory provisions; and
- ❑ Appropriate and justified level of consultation with relevant parties including the Department of Environment and Climate Change (DECC<sup>1</sup>) and the Nowra Local Aboriginal Land Council (LALC) and other Aboriginal community groups, with documentation of the consultation undertaken.

The principal aims of the Aboriginal heritage impact assessment are therefore to:

- ❑ Undertake research, register searches and an archaeological survey and consultation with the Aboriginal community to identify and record any Aboriginal heritage evidence, areas of potential evidence and cultural values within the study area;
- ❑ Assess the potential impacts of the proposal upon any identified or potential Aboriginal heritage evidence or cultural values;
- ❑ Assess the significance of any Aboriginal heritage evidence or cultural values identified;
- ❑ Provide details of any Aboriginal heritage evidence in accordance with DECC requirements;
- ❑ Consult with the local Aboriginal community as per the DECC policy entitled *Interim Community Consultation Requirements for Applicants*;
- ❑ Present recommendations for the management of any identified Aboriginal heritage evidence, potential heritage resources or cultural values; and
- ❑ Prepare a formal archaeological report to meet the requirements of DECC and DoP, including the draft DECC *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (2005) and *Aboriginal Cultural Heritage Standards and Guidelines Kit* (1997).

A preliminary assessment undertaken by South East Archaeology (Kuskie 2008) identified that the study area does not contain any non-indigenous heritage items listed on any heritage registers or planning instruments. Relics over 50 years of age and subject to the provisions of the *Heritage Act 1977* and Shoalhaven LEP have not been identified during the detailed field inspection conducted as part of the assessment reported herein. Therefore, Condition 8.2 of the DoP Environmental Assessment Requirements has been satisfied and the remainder of this report relates to the assessment of Aboriginal heritage.

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<sup>1</sup> The Department of Environment and Climate Change (DECC) changed its name from the Department of Environment and Conservation (DEC) in April 2007. Previously, DEC was known as the National Parks and Wildlife Service (NPWS).



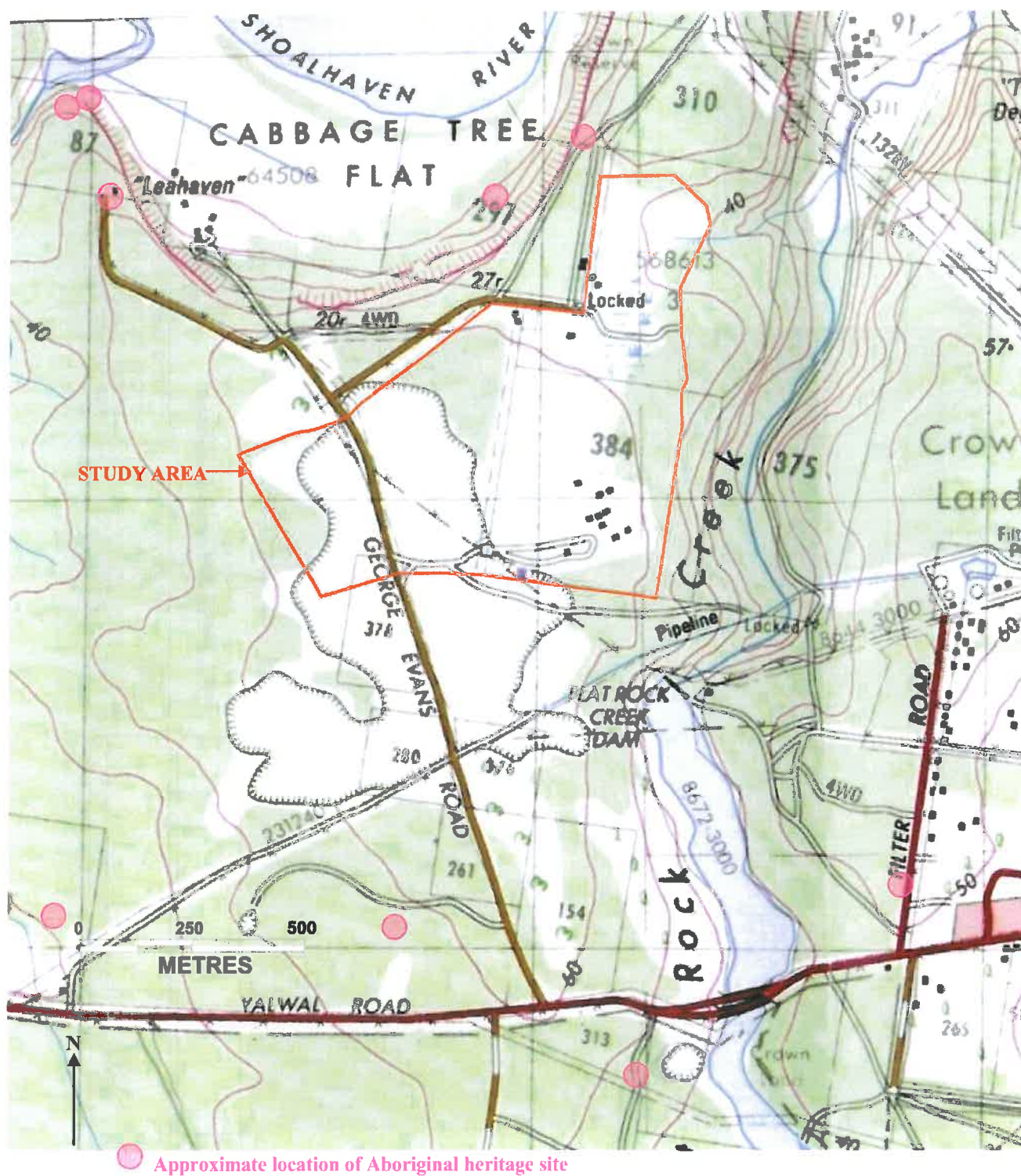
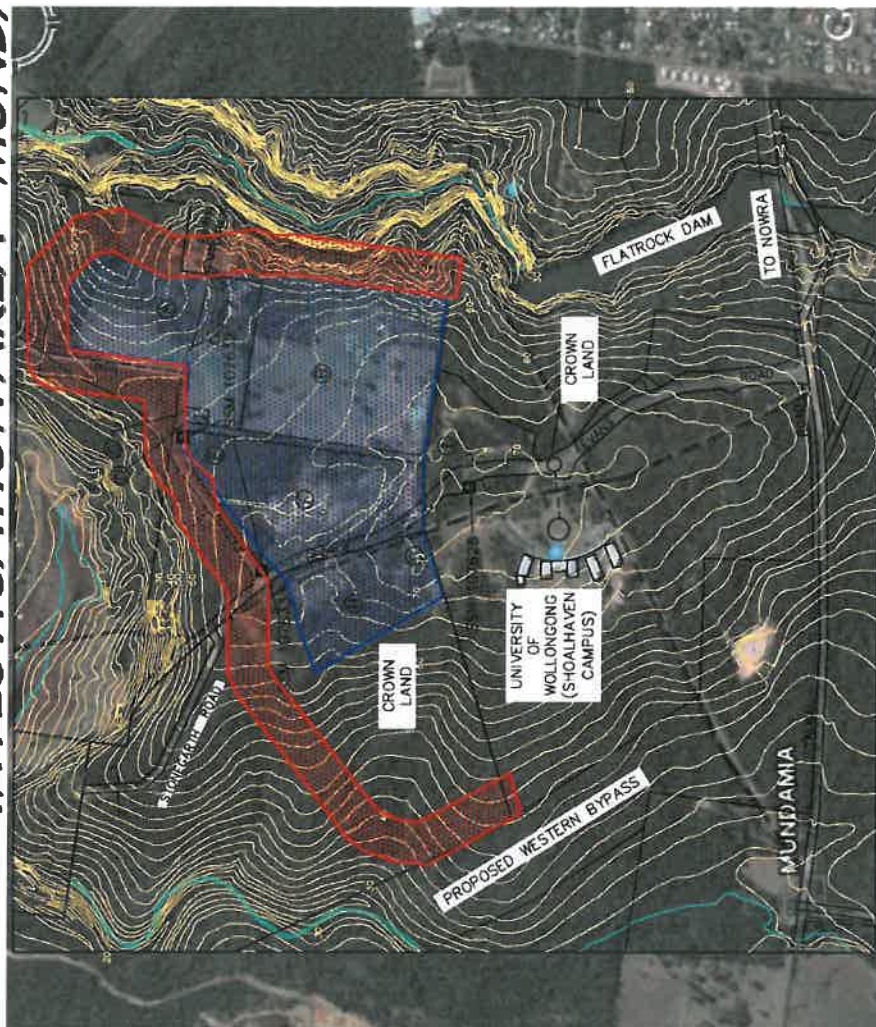


Figure 1: Location of study area and relevant previously recorded Aboriginal heritage sites (Nowra 9028-3S and Berry 9028-3N 1:25,000 AMG topographic maps, enlarged).



# INVESTIGATION AREA - MUNDAMIA



0 100 200 300 400 500 1000  
scale - 1:10000

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DATE: 18.10.07  
SCALE: 1:10000 (A3 SIZE)

NO	LOT/DP	PROPERTY	SCHEDULE	OWNER	TOTAL AREA	DEV. AREA
A	3/258813	LAU GRAPPLINS			21.63ha	10.2ha
B	38/773582	WALBEC MUNDAMIA P/L			21.5ha	17.8ha
C	2/258813	AGST FLEMING			1115m <sup>2</sup>	
D	1/258813	AGST SANTOS			1115m <sup>2</sup>	
E	435/1063107	NSW ABORIGINAL LAND COUNCIL			10.38ha	2.1ha
F	1/1021332	SHOALHAVEN CITY COUNCIL			9.485ha	9.1ha
G	9/875956	CROWN LAND			7588m <sup>2</sup>	
H	UNIDENTIFIED	CROWN LAND			?	
I	3/875956	MINISTER FOR EDUCATION AND TRAINING			53.27ha	7.3ha
						FUTURE SCHOOL SITE

DENOTES 100m WIDE  
EXTENSION AREA TAKEN  
FROM BES REPORT  
REF.04069-JULY 2004



DENOTES APPROXIMATE  
INVESTIGATION AREA



SURVEYORS (PRACTICE) REGULATION 1996: CLAUSE 32(2)				
MGA COORDINATES				
MARK	EASTING	NORTHING	ZONE	CLASS ORDER
SSM 107628	277909.549	6136915.886	56	C U
SSM 107632	278031.578	6137623.819	56	C U
SSM 107633	277702.557	6137428.385	56	C U
COMBINED SEA LEVEL & SCALE FACTOR = N/A				
SOURCE: MGA COORDINATES ADOPTED FROM LIC ON 31-OCT-2000				

PLAN SHOWING MUNDAMIA GROWTH AREA  
SHOWN ON SHOALHAVEN CITY COUNCIL'S  
NOWRA BOMADERRY STRUCTURE PLAN  
FOR MALBEC PROPERTIES PTY LIMITED

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DATE: 18.10.07  
SCALE: 1:10000 (A3 SIZE)

Figure 2: Plan of study area (shaded blue) showing property ownership (courtesy Malbec Properties and Allen, Price & Associates).





## 2. ENVIRONMENTAL CONTEXT

The Mundamia investigation area is located immediately north of the University of Wollongong (Shoalhaven Campus) at George Evans Road, West Nowra (Figure 1). The study area measures about 47 hectares in area and is situated between AMG grid coordinates 277300 and 278400 east and 6136800 and 6137800 north on the Nowra 9028-3-S 1:25,000 AMG topographic map (Figure 1).

The study area lies within the coastal hills of the South Coast, close to the Shoalhaven River and the coastal lowlands. It is elevated approximately between 40 and 70 metres Above-Height-Datum. The Shoalhaven River is located between 250 metres and 1.1 kilometres north of the study area (Figure 1). The Shoalhaven River has downcut the sandstone bedrock to form steep-sided gorges in this locality west of Nowra. It remains sub-tidal in the Nowra region and the river is variably affected by marine water as far west as Burrier, 13 kilometres west of Nowra. Flat Rock Creek, a higher order tributary of the Shoalhaven River, flows east of the study area to its confluence with the Shoalhaven River. At its closest point it is located approximately 150 metres east of the study area (Figure 1). It has also incised the sandstone bedrock and a number of rock shelters and overhangs have formed at the base of rocky outcrops on its margins.

Primarily the study area comprises part of the plateaux and adjacent eroded slopes that elsewhere have been more substantially downcut by erosion (eg. in the Shoalhaven River and its tributaries). In terms of landform unit and class of slope, the area predominantly comprises a level/very gentle ridge crest, with gentle slopes along the western and eastern borders and the uppermost portion of a gentle first order drainage depression in the northeastern corner (a first-order tributary of Flat Rock Creek) (Plates 1-6). A sizeable portion of the level/very gentle ridge crest has been extensively affected by quarrying operations (refer to Figures 1 and 4, Plate 3). This area, in which the A unit soil has been totally removed, has negligible potential for any Aboriginal heritage evidence to survive. As such, it can be classified as "modified" and was not subject to further detailed survey.

The geology of the study area consists of Permian era Nowra Sandstone, comprising quartzose sandstone, minor siltstone and conglomerate beds. Soils are typically a sandy loam and sand of the Nowra Soil Landscape. Sandstone bedrock is exposed as open surfaces within minor portions of the study area and with rock ledges and formations on the eastern margin of the study area near Flat Rock Creek.

The native vegetation has been extensively cleared from large portions of the study area and replaced by grasses (Figures 2 and 4, Plates 1-6). The western and eastern fringes and a central portion of the study area are dominated by Northern Coastal Hinterland Heath Shrub Dry Forest (Clarke and Kuskie 2006). Primarily this is regrowth, although several mature native trees are present.

In addition to the vegetation changes and quarrying operations, other recent human (non-indigenous) impacts to the study area include the construction, maintenance and use of George Evans Road and other access roads, rural residences and buildings, rural/pastoral use, fences, farm dams, electricity transmission lines, Telstra cables, pipelines, refuse disposal and recreational use. These may have affected the survival or impacted the integrity of any Aboriginal heritage evidence to varying extents.

### 3. ARCHAEOLOGICAL CONTEXT

#### 3.1 Heritage Register Searches

A search (#20015) was undertaken in September 2007 of the DECC Aboriginal Heritage Information Management System (AHIMS), between AMG grid coordinates 275000-281000 east and 6134000-6140000 north. A total of 40 Aboriginal sites are listed on the DECC register within this area of 36 square kilometres, which encompasses the present study area. The sites identified in the broad search area predominantly comprise rock shelters with deposit and/or art, and grinding grooves, with several artefact scatters, isolated artefacts and scarred trees, and single burial and stone arrangement sites also recorded.

No Aboriginal heritage sites are listed on the DECC AHIMS register within the study area (Figure 1). However, a rock shelter with deposit and art (DECC #52-5-25) and a rock shelter with art (DECC #52-5-26) occur within several hundred metres north of the study area.

No Aboriginal or non-indigenous heritage sites are listed within the study area on any other heritage registers or planning instruments, including the *Shoalhaven Local Environmental Plan 1985*, *Illawarra Regional Environmental Plan No. 1*, State Heritage Register, or other registers under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, the *Environment Protection and Biodiversity Conservation Act 1999* or the *Australian Heritage Council Act 2003* such as the Register of the National Estate, Commonwealth Heritage List and National Heritage List. No potential non-indigenous heritage items as listed in *Shoalhaven City Council Heritage Study 1995-1998* (Peter Freeman Pty Ltd and JRC Planning Services 2003) occur within the study area.

#### 3.2 Previous Archaeological Research

Several Aboriginal heritage investigations have been undertaken within the vicinity of the study area, principally for Environmental Impact Assessments relating to development proposals, but also for academic research or cultural heritage management purposes. Brief discussion of the most relevant investigations will highlight the range of site types and variety of site contents in the region, identify typical site locations, and assist with the construction of a predictive model of Aboriginal site location for the study area.

Several surveys (eg. Kuskie 1995, 2002, Kuskie and Ingram 2007, Paton 1990, Corkill 1986, Navin 1992) have been undertaken in the low-lying terrain of the coastal plain to the east of Nowra. This environmental context differs from the present study area. These studies have generally not resulted in the identification of any evidence of Aboriginal occupation.

In the more elevated Nowra Sandstone terrain of the Shoalhaven region (comparable to the present study area), numerous rock shelters with deposit and/or art have been recorded. Members of the Shoalhaven Antiquities Committee, established in 1963, recorded many sites within Shoalhaven Shire, including rock shelters with art, ceremonial grounds, stone arrangements and artefact scatters (Antill 1982). Bindon (1976) and Officer (1991) have conducted extensive research into the rock art of the region.

Lampert (1971a) excavated a rockshelter in 1970 on Bomaderry Creek (DECC #52-5-0035), about three kilometres northeast of the present study area, revealing a shallow occupation deposit, mostly containing a low density of artefacts. Lampert obtained two (uncalibrated) radiometric dates from charcoal within the archaeological deposit: 1410±60 years Before Present (BP) (ANU-1020) and 1930±60 BP (ANU-1021). While Lampert (1971a) noted the presence of a small number of mollusc remains from a wide range of habitats, terrestrial remains comprised a far more significant component of the deposit. Of particular relevance, Lampert (1971a) suggested that terrestrial resources in the immediate surrounds of the shelter were exploited in preference to the nearby primary resource zone of the Shoalhaven River.

Other Environmental Impact Assessment related studies around Nowra on elevated terrain have often related in the identification of artefact scatter evidence, where surface visibility conditions permit (eg. Williams and Barber 1993, 1995 at Tapitallee Creek, Kuskie *et al* 1995 around Nowra, Kuskie 1996 at Nowra). Several studies have reported on rock shelter and/or grinding groove sites (eg. Navin 1991, Navin Officer 2006). Many studies have not resulted in the identification of any Aboriginal evidence (eg. Rich 1990 at West Nowra, Colley 1988 at North Nowra, Kuskie 1998 at Albatross Aviation Technology Park southwest of Nowra).

Donlon (1991) reported on an Aboriginal burial (#52-2-0258) recorded on terraces associated with the Shoalhaven River at Cabbage Tree Flat, immediately northwest of the present study area. A cranium had become exposed through riverbank erosion, and was under threat of collapsing into the river. The burial was believed to be less than 2,500 years old as the terraces of the Shoalhaven River, composed of alluvium, formed around this time.

Studies in the immediate vicinity of the Mundamia study area are briefly discussed below.

Kuskie, Navin and Officer (1995) surveyed the route of the Eastern Gas Pipeline in this locality, recording several sites including a scarred tree (#52-5-0304), a rock shelter with deposit (#52-5-0305) adjacent to Cabbage Tree Creek, an artefact scatter (#52-5-0306) on a low broad crest on the southern side of the Shoalhaven River and an artefact scatter (#52-5-0307) near minor tributaries on the northern side of the Shoalhaven River (Kuskie *et al* 1995). The pipeline route traverses within a kilometre to the west of the Mundamia study area.

Marginally to the west of the gas pipeline route, Rich (1990) undertook investigations of proposed extensions to the West Nowra Waste Depot. Rich (1990) did not locate any evidence of Aboriginal occupation within the area of approximately 50 hectares. The area is comparable to the present study area and included large areas that had been subject to previous quarrying operations.

Paton (1994) investigated the Shoalhaven Water Supply Augmentation Scheme, including a new pumping station and reservoir at the Flatrock Creek Water Treatment Plant, nearby to the south of the Mundamia study area. No sites were located, a result attributed to the low archaeological potential and extent of ground disturbance (Paton 1994).

Attenbrow (1981) undertook an assessment of sections of pipeline works proposed by Shoalhaven City Council. This included a section (#1) from the Pitt Street reservoir in North Nowra south to Yalwal/Burrier Road, which traverses the Mundamia study area. This section was inspected on foot from the top of the escarpment to the river bank on both sides of the Shoalhaven River, with the remainder (inferred to include the Mundamia study area) not inspected on foot. No sites were identified in "Section 1".

A major regional study, the fourth stage of the *Lower Shoalhaven River Valley Aboriginal Heritage and Cultural Mapping Project*, has been undertaken by Clarke and Kuskie (2006) for DECC. Clarke and Kuskie (2006) developed a spatial model, using key environmental variables to predict Aboriginal site occurrence as a cultural thematic layer, for planning purposes. The model was tested on public land in consultation with the Aboriginal community, resulting in the recording of an additional eight artefact scatters and four rock shelters with artefacts around Nowra. Clarke and Kuskie (2006) also provided recommendations for further targeted archaeological surveys and, following the field assessment, the predictive model was refined. Further community consultation and field inspection was undertaken in 2007 (Clarke 2007).

Following the research of Boot (2002, refer below), Clarke and Kuskie (2006) identified two main resource zones in the Shoalhaven region and presented a predictive model for the region:

- ❑ Primary resource zones were defined in terrain units in close proximity to the major Shoalhaven and Crookhaven Rivers. These zones have a higher probability of containing evidence for a wide range of occupation types, including congregations of large groups of people, community base camps, nuclear/extended family base camps, camping by small hunting and/or gathering parties, hunting and/or gathering (without camping) and transitory movement. Occupation is likely to have been regular and potentially longer in duration in the primary zones;
- ❑ Secondary resource zones were defined in terrain units in close proximity to higher order creeks and/or wetlands and their associated flats, slopes and terraces. These secondary zones have a high probability of containing evidence of nuclear/extended family base camps, camping by small hunting and/or gathering parties, hunting and/or gathering (without camping) and transitory movement. Occupation is likely to have been sporadic and relatively short in duration in the secondary zones;
- ❑ Areas outside the primary and secondary resource zones included terrain units distant from higher order creeks and/or wetlands, such as lower order drainage depressions and associated slopes and crests. Occupation in these areas is likely to have involved hunting and/or gathering (without camping) and transitory movement and is likely to have been sporadic and very short in duration;
- ❑ A variety of Aboriginal heritage site types occur in the Shoalhaven region. Artefact scatters are likely to be the most common site type in the area. There remains potential for stone artefact evidence to occur across virtually the entire region, albeit typically in a low density consistent with background discard, interspersed by occasional areas of higher density in which localised activity areas have occurred;
- ❑ Grinding grooves and rock shelters occur relatively frequently in the region. Rock shelters are more likely to occur in moderate to steep drainage depression or spur crest units, although can also occur in gently sloping terrain where suitable stone outcrops occur. Larger rock shelters in close proximity to a wide variety of resources may well have served as base camps, with smaller shelters being utilised on an 'as needed' basis during the course of the normal daily or seasonal round. Art sites may occur in any area with suitable surfaces and may comprise several forms, including paintings, drawings, pecked engravings and stencils; and
- ❑ Grinding grooves sites may occur in any area with suitable relatively homogenous stone outcrops (such as sandstone), generally with a relatively close water source. Numerous sandstone outcrops and open surface exposures of bedrock suitable for grinding are located within the region (Clarke and Kuskie 2006).

The present study area was assessed as being an 'area outside of a primary or secondary resource zone' and therefore of lower archaeological potential. Clarke and Kuskie (2006) postulate that occupation in these areas is generally likely to have involved hunting and/or gathering (without camping) and transitory movement and is likely to have been sporadic and very short in duration.

Boot (2002) undertook extensive research into the hinterland of the South Coast. Using a variety of resources, including previous archaeological study results, ethnographic records, theoretical modelling, surface surveys and sub-surface excavations, Boot (2002:319-326) proposed a synthesis of South Coast hinterland occupation. The salient issues identified by Boot (2002) include:

- ❑ When Aboriginal people arrived in the area prior to 20,000 years ago, the (then) coastline may have been a marginal area in terms of the types of resources available. The coast may have been over 20 kilometres east of its present location and dominated by low-lying mud flats and a narrow range of estuarine resources (Boot 2002:321). The harsh Pleistocene environment may also have made occupation of inland rockshelter sites for longer periods of time favourable, with a greater range of resources available within the (then) hinterland;
- ❑ Between 17,000 and 11,000 years ago the intensity of occupation of the area was largely reduced and is associated with decreased rainfall, temperature and sea levels (Boot 2002:321). Fluctuations within this trend occurred (eg. occasional increases in occupation intensity) although this is attributed to higher rainfall episodes temporarily changing the hinterland forest environment;
- ❑ In the early part of the Holocene, the intensity of the (then) hinterland occupation was relatively low, with increased precipitation levels, rising sea levels and increased temperatures (Boot 2002:322). Coastal occupation may have increased with new littoral resources emerging; and
- ❑ By the mid-Holocene, with stabilising sea levels, reduced rainfall and warm and stable temperatures, significantly increased and widespread use of both the coastal and hinterland areas occurred. A range of complex environments developed in the hinterland, including open forests and woodlands with high biodiversity (Boot 2002:323). Small group mobility may have become lower, with the increase in resources available and exploitation of the hinterland by these groups for most of the year. However, congregations of much larger groups during warmer months also occurred. Camping sites for small extended family groups tended to be on open ridges and areas adjacent to creeks, rivers and swamps, especially in open woodlands and forests. Duration of local episodes of occupation is expected to have been less than a week, before people moved on to the next suitable area (Boot 2002:325).

Boot (2002:317-319) offers four new models of South Coast hinterland occupation in terms of temporal trends, subsistence strategies and intensity of site use, along with the types of evidence expected to occur and its locations:

#### 1. Pleistocene occupation:

Identifiable Pleistocene hinterland sites were expected to be in large rockshelters in close proximity to potable water. The sites would contain a variety of evidence, potentially increasing in occupational evidence towards the terminal Pleistocene. Evidence would include a range of artefacts, including large silcrete and volcanic cores, along with small implements. Hinterland occupation during the Pleistocene was extensive and evidence of Pleistocene near-coastal occupation is expected to be rare.



2. Holocene occupation:

Occupation during the Holocene differed somewhat, with less preference for particular habitation sites or seasonal exploitation, although types of preferred locations included flat open areas within river valley woodlands and dry open forests, broad ridges in well watered open forest, tall damp forests adjacent to rainforests and well drained elevated ground above wetlands and swamps. Occupation is expected to have occurred within all topographic contexts, although the intensity of occupation is expected to be lower during the early Holocene than in the late-Pleistocene or late Holocene. The increase of hinterland use during the mid-Holocene is underpinned by favourable changes in the environment leading to an increase in the diversity of resources available.

3. Patterns of resource exploitation:

Subsistence strategies would be reflected by patterns of resource exploitation within a few kilometres of habitation sites and the diversity of evidence at each site would reflect the diversity of resources in the surrounding environment. Small groups of people or family groups travelling in the hinterland are expected to have exploited resources from the immediate surrounds of a site and rarely exported these resources elsewhere. Larger groups of people congregated where abundant short term resources occurred, and subsequently, greater intensity of occupation occurred where these abundant short term resources occurred more frequently. These locations are likely to be in regions of greater biodiversity and may coincide with sacred landscape elements. The range of stone implement types is expected to be narrow, but diverse in potential uses.

4. Changes in intensity of site occupation:

The intensity of site occupation is underpinned by the favourability of an environment to provide reliable, exploitable resources. As locations changed in terms of sustainability, locations more amenable to exploitation were substituted. Higher diversity areas of the hinterland meant that the distance between suitable locations may have been relatively low. Cultural memory of abandonment may have been relatively brief and some locations are expected to have been abandoned for extensive periods of time, while others may have experienced relatively brief hiatuses between occupational episodes.

Boot (2002: 326) has suggested that further archaeological work in the South Coast hinterland is needed in order to test these models and more fully understand occupational use of the region. This work could be in the form of more detailed surveys, functional technological analyses of implements from both open artefact scatters and sub-surface deposits, excavation of open sites and rockshelter sites, mapping of stone material distributions and more detailed and localised environmental reconstruction. Notwithstanding arguments largely underpinned by material culture, environmental factors and resource variation, Boot (2002:334) observes that *"the economy was secondary to the sacred and that, ultimately, the primary purpose of economic life was to sustain the sacred worlds of the Yuin"*. Significantly, Boot (2002:vii) notes that the descendants of the original inhabitants of the region retain strong attachments to the hinterland's unique cultural heritage.

Lampert (1971b), after excavating a rock shelter on Burrill Lake, established that occupation on the South Coast commenced at least 20,000 years ago. A site excavated at Bass Point yielded a similar date of 17,000 BP (Flood 1980). Boot (1994) has excavated ten sites in the hinterland ranges. Bulee Brook 2 (#58-1-378), near Sassafras, yielded a date of 18,810±160 BP, which replaces Flood's (1980) 3,770±150 BP date at Sassafras 1 as the oldest evidence for occupation in the coastal ranges. These results indicate that from at least 20,000 years ago Aboriginal people were exploiting the coastal zone and from 18,000 years ago the coastal ranges.

### 3.3 Local Aboriginal Culture

The study area lies close to the boundary of the Wodi Wodi and the Wandandian people (Tindale 1974). Tindale (1974) describes the territory of the Wodi Wodi as extending from north of the Shoalhaven River at Nowra to Wollongong and inland to Moss Vale. The Wodi Wodi people spoke the Dharawal language (Eades 1976). The Wandandian people are described as extending from the Lower Shoalhaven to the Ulladulla area, and inland to the Shoalhaven River north of Braidwood.

Boot (2002) has undertaken a wide-ranging study of ethnohistorical observations relating to the south coast region, based on original archival sources. Boot (2002) lists the following faunal and floral species which have been recorded in the ethnohistorical sources as having been utilised: fish species including bream, trumpeter, whiting, salmon and shark, eel, whales, seals, marine worms, shellfish including oysters and mussels, possum, kangaroo, wombat, birds, goanna, grubs, honey, kangaroo apple, native cranberry, honeysuckle, pigface, macrozamia, cabbage tree, fruit and yams. Observations of use of these food sources were made within ten kilometres of the coast (Boot 2002).

The material culture of the local Aboriginal population would have included a range of items related to subsistence, cultural and social activities and shelter. Ethnohistorical observations along the coast have been made of the following items: huts, gunyahs, canoes, spears, shell-barbed spears, fishing spears, bark/wood shields, waddy/clubs, spear throwers, boomerangs, hatchets, fish-traps, stone heat retainers, kangaroo teeth adornments, pierced nose adornments, bark drawings, possum skin cloaks, shell fish hooks and grass tree resin (Boot 2002). In the archaeological record few of these items survive. Stone, bone and shell are the materials most frequently represented in archaeological sites.

Ethnographic evidence collected by Lampert and Sanders (1973) at Beecroft Peninsula suggests that dozens of local plants were utilised for food or implements, for example bracken fern (rhizome roasted in ashes and eaten), wattle (seeds roasted and gum eaten raw, leaves used as a poison in fishing), geebung (fruit eaten), burrawang (*Macrozamia communis*; nuts processed to remove poison and eaten), bangalay and stringybark (bark for canoes) and grass tree (stalks used for spears). Resources of the forest and Shoalhaven River and Flat Rock Creek would have been available for exploitation from within the immediate vicinity of the present study area.

The Shoalhaven region was frequented by non-indigenous people from 1770, following its sighting by Captain Cook. Aboriginal people were sighted by Captain Cook at Murramarang, 15 kilometres south of Burrill Lake, in 1770 (White 1987). During the contact period, Aboriginal people were described as being armed and numerous (Cane 1988:29). Cane (1988) characterises the period between 1810 and 1840 as one of exploitation and hostility. This occurred in relation to the early cedar-getting and occupation of Aboriginal land.

By the 1840s the Aboriginal population had been reduced to small remnant groups along the coast or subsisting around the fringes of the now permanent non-Aboriginal settlements. Coolangatta Estate, owned by the Berry family was one of these settlements. Later there were a number of substantial Aboriginal camps or reserves in the region, including ones at Orient Point, Wreck Bay, Currumbene Creek and Ulladulla.

Between 1840 and 1900 there is limited historical documentation of the Aboriginal people of the region (Cane 1988:30). Through disease and disintegration of their traditional social structure, the population rapidly declined. In three census returns of the entire Shoalhaven District in 1834, 1838 and 1839, the total Aboriginal population was recorded as 170, 242 and 180 respectively (Berry 1834, 1838:608, 1839).

A large and vibrant Aboriginal population remains on the South Coast and the Nowra region today, which is actively involved in the identification and management of their heritage.

### 3.4 Predictive Model of Site Location

A predictive model of site location is constructed to identify areas of high archaeological sensitivity (ie. locations where there is a high probability of archaeological evidence occurring), so it can be used as a basis for the planning and management of Aboriginal heritage. 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 provided distinctive sets of constraints that 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 evidence (Hall and Lomax 1993:26).

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 land use patterns;
- ☐ Known importance of any parts of the study area to the local Aboriginal community; and
- ☐ Results of a reconnaissance inspection (Kuskie 2008).

In certain circumstances, such as where low surface visibility or recent sediment deposition precludes effective assessment of the potential archaeological resource, sub-surface testing may be a viable alternative for further testing the predictive model and assessing the study area.

The following is a brief description of the site types that may occur within the study area.

**ARTEFACT SCATTERS:** In most archaeological contexts, an artefact scatter has been defined as either the presence of two or more stone artefacts within 50 or 100 metres of each other, or a concentration of artefacts at a higher density than surrounding low density 'background scatter'. The definition of an artefact scatter 'site' is often an arbitrary one, which can offer benefits from a heritage management perspective but is a source of theoretical/analytical debate for heritage practitioners.

Due to the nature of the underlying evidence, its identification only within exposures created by erosion or disturbance, and the limited suitability of existing definitions, artefact scatter sites are defined within this study as the presence of one or more stone artefacts within a *survey area* (cf. Kuskie 2000). The boundaries of the site are defined by the boundaries of the visible extent of artefacts within the survey area. The survey areas are based on discrete, repeated environmental contexts termed *archaeological terrain units* (eg. a particular combination of landform unit and class of slope).

An artefact scatter may consist of surface material only, which has been exposed by erosion, or it more typically involves a sub-surface deposit of varying depth. Other features may be present within artefact scatter sites, including hearths or stone-lined fireplaces, and heat treatment pits.

Artefact scatters may represent the evidence of:

- ❑ Camp sites, where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of stone or wooden tools, management of raw materials, preparation and consumption of food and storage of tools has occurred;
- ❑ Hunting or gathering events;
- ❑ Other events spatially separated from a camp site (eg. tool production or maintenance); or
- ❑ Transitory movement through the landscape.

The detection of artefact scatters depends upon conditions of surface visibility and ground disturbance and whether recent sediment deposition has occurred (cf. Dean-Jones and Mitchell 1993). Vegetation cover and deposition of sediments generally obscures artefact scatter sites and prevents their detection during surface surveys. High levels of ground disturbance can also obscure or remove evidence of a site.

Within the study area, there is potential for stone artefacts to occur in a widespread distribution of variable density across all landform units, apart from in areas which have been substantially impacted by recent land-use (eg. the former quarry and well-formed roads and residences). Typically, this evidence is anticipated to comprise a low to very low density of artefacts consistent with background discard, interspersed by a low number of activity areas. A higher density of evidence and potential deposits of research significance, which may occur where more focused and/or repeated Aboriginal occupation has occurred, are not anticipated to be present.

**BORA (BUNAN)/CEREMONIAL SITES:** Bora (*bunan*) grounds are a type of ceremonial site associated with initiation ceremonies. They are usually made of two circular depressions in the earth, sometimes edged with stone. Bora (*bunan*) grounds can occur on soft sediments in river valleys and elsewhere, although occasionally they are located on high, rocky ground where they may be associated with stone arrangements.

The potential for bora/ceremonial sites within the study area is assessed as being very low, due in part to the recent history of land use.

**BURIALS:** Human remains tended to be placed in hollow trees, caves or sand deposits. Usually burials are only identified when eroding out of sand dunes or creek banks, or when disturbed by development. Aboriginal communities are strongly opposed to the disturbance of burial sites.

Soft sandy deposits may occur within the study area and a burial has been reported on the nearby Shoalhaven River flats. Nevertheless, the potential for skeletal remains is considered to be low to very low. The probability of detecting burials during fieldwork is extremely low.

**CARVED TREES:** Carved trees were still relatively common in NSW in the early 20th century (Etheridge 1918). They were commonly used as markers for ceremonial or symbolic areas, including burials.

Both vegetation removal and the long passage of time since the practice of tree carving was prevalent have rendered this site type extremely rare. Consequently, the potential for carved trees within the study area is considered to be very low or negligible in the cleared areas and low in the areas retaining native vegetation.

**GRINDING GROOVES:** Grinding grooves are elongated narrow depressions in soft rocks (particularly sedimentary), generally associated with watercourses. The depressions are created by the shaping and sharpening of ground-edge hatchets.

Grinding grooves have potential to occur where sandstone bedrock is exposed, particularly in watercourses. Notwithstanding the underlying sandstone geology of the study area, the potential for grinding grooves is assessed on a preliminary basis as low.

**LITHIC QUARRIES:** A lithic quarry is the location of an exploited stone source (Hiscock and Mitchell 1993:32). Sites will only be located where exposures of a stone type suitable for use in artefact manufacture occur.

This potential is assessed as very low for the study area, due to the underlying geology.

**MIDDENS:** Shell middens are a common site type in the coastal region. Middens are deposits of shell, the remains of what formed part of the Aboriginal diet. Middens may also include stone, bone or shell artefacts, charcoal, or the remains of small terrestrial or aquatic fauna, which were also a part of the diet. Middens exhibit wide variation in terms of their size, preservation and contents, and can provide significant information on land-use patterns, diet, chronology of occupation and environmental conditions.

Middens have a very low potential to occur within the study area, due to the distance from the closest shellfish sources.

**MYTHOLOGICAL/TRADITIONAL SITES:** Mythological sites, or sites of traditional significance to Aboriginal people, may occur in any location. Often natural landscape features are the locations of mythological sites. Other sites of contemporary significance include massacre sites (the location of violent clashes between early settlers and local Aboriginals) and contact sites.

Consultation with the local Aboriginal community is essential to identify these site types within the study area.

**ROCK SHELTERS:** Rock shelters include rock overhangs, shelters or caves which were used by Aboriginal people. Rock shelter sites may contain artefacts, potential archaeological deposits and/or rock art. These sites will only occur where suitable geological formations are present (eg. sandstone rock formations).

Notwithstanding the presence of rock shelter sites in close proximity to the study area, given the topographic context, this potential is assessed as very low for directly within the study area.



**SCARRED TREES:** Scarred trees contain scars caused by the removal of bark for use in manufacturing canoes, containers, shields or shelters.

Mature trees, remnants of stands of the original vegetation, have the potential to contain scars. Considering the long time period elapsed since this practice was prevalent and the removal of native vegetation from within substantial portions of the study area, the potential for scarred tree sites to occur is assessed as very low or negligible in the cleared areas and low in the areas retaining native vegetation.

**STONE ARRANGEMENTS:** Stone arrangements include circles, mounds, lines or other patterns of stone arranged by Aboriginal people. Some were associated with bora grounds or ceremonial sites and others with mythological or sacred sites. Hill tops and ridge crests which contain either stone outcrops or surface stone, and have been subject to minimal impacts from recent land use practices are potential locations for stone arrangements.

This potential is assessed as very low for the study area, due in part to the recent history of land use.

#### 4. METHODOLOGY

During the initial stages of the investigation, research was conducted into the environmental, cultural and archaeological background of the study area, and a search was undertaken of the DECC 'Aboriginal Heritage Information Management System' and other relevant heritage registers and planning instruments (refer to Section 3.1).

Consultation and involvement of the Aboriginal community was undertaken as per the requirements of the DECC policy entitled *Interim Community Consultation Requirements for Applicants* (refer to Section 6).

A preliminary assessment was undertaken, including searches of relevant heritage registers and a reconnaissance inspection of the study area in October 2007 (Kuskie 2008).

Detailed field survey of the study area was undertaken by Michael Marsh of South East Archaeology between 28-30 May 2008, following a meeting with Mr Henry (Sonny) Simms of the Nowra Local Aboriginal Land Council (LALC). Mr Simms was unable to provide a representative to attend the survey, despite prior confirmation, however was satisfied for the survey to be conducted in the absence of a Land Council representative.

The study area was divided into particular combinations of environmental variables that are assumed to relate to Aboriginal usage of the area. These *archaeological terrain units* were defined on the basis of landform element and class of slope (following McDonald *et al* 1984). They 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. Therefore survey areas were defined as the individual archaeological terrain unit that is bounded on all sides by different archaeological terrain units (*cf.* Kuskie 2000).

Where parts of the study area were assessed as being highly disturbed and having negligible potential for any heritage evidence to survive, these areas were classified as *modified* and not subject to detailed survey. For example, much of the former quarry was classified as *modified* as the upper soil deposits have been totally removed and there is no potential for heritage evidence (refer to Figure 4).

Detailed recording of the archaeological survey areas was made on survey recording forms, including environmental variables and heritage resources identified or potentially present. Each survey area was assigned a unique reference code (M1, M2 etc.). Surveying was completed within a single survey area prior to commencing inspection of another area.

Each survey area was inspected on foot by the archaeologist, with the focus on areas of higher ground surface visibility. Conditions of surface visibility were typically moderate to high in parts of the study area due to the high levels of ground disturbance, but low in the areas of pastoral use due to the dense grass cover (Appendix 1).

Consultation was undertaken with Mr Simms of the Nowra LALC to identify any knowledge of areas of cultural significance within the study area, for example:

- ☐ Sites or places associated with ceremonies, spiritual/mythological beliefs and traditional knowledge, which date from the pre-contact period and have persisted until the present time;
- ☐ Sites or places associated with historical associations, which date from the post-contact period and are remembered by people today (for example, plant and animal resource use areas and known camp sites); and

- Sites or places of contemporary significance (apart from those areas for which Aboriginal objects remain, which are discussed above), for which the significance has been acquired in recent times.

Mr Simms advised that he knew the study area well, that substantial portions of it have had the soil and gravel removed and spoil/materials were dumped in other areas, and that there are no cultural values associated with the land.



## 5. RESULTS AND DISCUSSION

### 5.1 Survey Coverage

The study area can be subdivided into a number of environmental contexts, representing specific combinations of landform element and class of slope (Table 1 and Figure 4; cf. Kuskie 2000). These include the level-very gentle ridge crest, gentle drainage depression and gentle simple slope units. Samples totalling in the order of 5% were inspected of each environmental context during the archaeological survey (Table 1).

Survey coverage of visible ground surface within the study area is estimated to have been relatively comprehensive. However, the dense cover of vegetation and leaf litter substantially limited visibility throughout large portions of the study area, particularly the forested land and grassed land subject to ongoing pastoral use (Plates 1-6). Conditions of surface visibility were typically moderate to high in other parts of the study area due to the high levels of ground disturbance. However, where the A unit soil had been totally removed, the conditions of archaeological visibility (*visible* ground surface with potential to host evidence) were substantially lower.

The overall study area measures a maximum of approximately 47.5 hectares in size (as derived from two-dimensional base mapping). The total survey coverage (ground physically inspected for heritage evidence) equated to approximately 24,000 m<sup>2</sup> (2.4 hectares) or 5.1% of the total study area. In reality, inspection for obtrusive site types (eg. scarred trees) was undertaken over a much wider extent of the study area, as these coverage calculations only refer to a two metre wide strip per person. The total effective survey coverage of the study area (*visible* ground surface physically inspected with potential to host evidence) equated to about 2,451 m<sup>2</sup>, or 0.5% of the study area.

The survey is assumed to have resulted in coverage of a reasonably high sample of the visible ground present within the study area, particularly the surfaces with potential to host heritage evidence. Substantial areas of totally modified ground, with negligible potential to host any heritage evidence, were not subject to detailed survey.

Notwithstanding the generally low surface visibility and resultant small sample of effective survey coverage, the survey, in combination with other relevant information, is considered satisfactory to present an effective assessment of the heritage resources identified and potentially present within the study area. Therefore the survey provides a valid basis for determining the probable impacts of the proposal and formulating recommendations for the management of the identified and potential heritage resources.



Figure 4: Approximate location of archaeological survey areas (base map courtesy Malbec Properties).

Table 1: Environmental Contexts - Survey Coverage Summary.

Environmental Context	Survey Areas (refer to App. 1 and Figure 4)	Approximate Total Area of Context (hectares)	% Context Comprises of Total Study Area	Total Sample Area (m <sup>2</sup> )	% Sampled of Each Context	Effective Survey Coverage Total (m <sup>2</sup> )	% Effective Survey Coverage of Each Context	Total # Artefacts
level-very gentle ridge crest	M1	34.9 ha	73.5%	17,600	5.0%	2,316	0.67%	0
gentle drainage depression	M3	2.2 ha	4.6%	1,000	4.5%	5	0.02%	0
gentle simple slope	M2, M4, M5	10.4 ha	21.9%	5,400	5.2%	130	0.12%	0
		47.5 ha	100%	24,000	5.1%	2,451	0.52%	0

## 5.2 Aboriginal Heritage Evidence

No Aboriginal heritage sites are listed within the study area on any heritage registers or planning instruments (refer to Section 3.1).

No Aboriginal heritage sites were identified within the study area during the present investigation.

No other cultural evidence or cultural values (eg. historically known places, resource use areas, etc.) were identified to the consultant by the Aboriginal stakeholders during the course of the assessment. However, the possibility cannot be excluded that Aboriginal values or associations may exist that were not divulged to South East Archaeology by the persons consulted.

## 5.3 Discussion

The absence of identified Aboriginal heritage evidence within the study area could be a result of several factors, including:

- ☐ An absence or very low intensity of Aboriginal occupation;
- ☐ High levels of ground disturbance having obscured or removed evidence;
- ☐ Very low conditions of surface visibility preventing evidence (particularly stone artefacts) from being identified; and/or
- ☐ The sample size or extent not being sufficient to identify any evidence present.

These issues are discussed below.

Given the nature and extent of survey coverage (refer to Section 5.1 and Appendix 1 and Figure 4), including widespread inspection for obtrusive site types and coverage of many natural exposed surfaces for the less obtrusive evidence (ie. stone artefacts), it is inferred that the sampling strategy and level and nature of survey coverage is not a primary factor in the absence of evidence.

The study area is characterised by conditions of typically moderate to high surface visibility in parts, due to the high levels of ground disturbance, but low visibility in the areas of pastoral use due to the dense grass cover. Overall, this has resulted in a relatively small effective survey coverage sample. Nevertheless, within this sample, no stone artefact evidence was visible. It could be inferred that if dense artefact scatters were present, at least some evidence would have been intersected by this sample. Inspection for obtrusive site types (eg. scarred trees) was undertaken over a wide extent of the study area, but no such evidence was identified. No outcrops of sandstone were identified which may host evidence of rock shelters and few open surfaces were identified that may host grinding grooves. Few mature trees were identified and none of these hosted scars resulting from Aboriginal use. Hence, it is concluded that while the low conditions of visibility constrained the potential to identify heritage evidence, particularly the unobtrusive stone artefacts, this is not necessarily the sole or even primary factor in the absence of identified evidence within the study area.

Levels of ground disturbance are typically moderate to high in the study area, primarily from widespread vegetation removal and quarrying operations, along with the construction, maintenance and use of George Evans Road and other access roads, rural residences and buildings, rural/pastoral use, fences, farm dams, electricity transmission lines, Telstra cables, pipelines, refuse disposal and recreational use. Many obtrusive site types (eg. scarred trees, stone arrangements) may have been totally impacted by these activities, had they previously been in existence within the study area. Hence, for those portions of the study area that have been highly or totally impacted by recent land use, ground disturbance is inferred to be a potential factor in the explanation of the survey results.

Considering general models of Aboriginal occupation for the locality (eg. Clarke and Kuskie 2006) and the results of studies in similar contexts nearby (refer to Section 3.2), a total absence of Aboriginal use of the study area and resulting evidence is highly unlikely. However, given the general absence of potable water sources (apart from a minor first-order ephemeral drainage with a very small catchment area and which does not have a formed channel or ponds) and the distance and difficult access to the resources of the Shoalhaven River, it is unlikely that focused or intense Aboriginal occupation (eg. of long duration, or repeatedly over time, or of larger numbers of people, and generally associated with encampments) occurred directly within the study area. Focused and/or repeated Aboriginal occupation is more likely to have occurred closer to the margins of multiple resource zones (eg. along the flats and terraces adjacent to the river) and within close proximity of potable water, where level to gently inclined land was present.

Nevertheless, it is highly probable that Aboriginal people utilised the study area, at least for transitory movement and hunting/gathering, anticipated to typically involve sporadic visits of short duration (*cf.* Clarke and Kuskie 2006). The ridge crest/plateau which comprises much of the study area may have been used as a pathway for movement through the landscape.

Many surveys in eastern Australia have identified a virtually continual distribution of artefacts across the landscape, but at varying densities (*cf.* Hall 1991, 1992, Hall and Lomax 1993, Kuskie 2000, Packard 1991, 1992). The results of large area surveys and major excavation projects (*cf.* Kuskie and Kamminga 2000, Kuskie and Clarke 2004, Kuskie 2005a, 2005b) lend support to arguments that the landscape should be viewed as an archaeological continuum, in which 'sites' represent points where higher frequencies of activities have occurred (*cf.* Foley 1981). As such, there remains a potential for stone artefacts to occur in a widespread distribution of variable density across all landform units, apart from in areas which have been substantially impacted by recent land-use. Typically, this evidence is anticipated to comprise a low to very low density of artefacts consistent with background discard, interspersed by a low number of activity areas.



The results of the study are consistent with those of a number of investigations in the West Nowra locality within similar terrain, which have not identified any evidence of Aboriginal occupation (refer to Section 3.2, eg. Attenbrow 1981, Paton 1994, Rich 1990). Other studies in this locality have resulted in the identification of artefact scatter sites (eg. Kuskie *et al* 1995).

In view of the survey results, the predictive model of site location (refer to Section 3.4) can be reassessed.

The potential for bora (bunan) ground/ceremonial, carved tree, grinding groove, lithic quarry, rock shelter, scarred tree, shell midden or stone arrangement sites to occur within the study area can be reassessed as very low to negligible.

Sites of traditional cultural significance (eg. mythological sites) were not identified by the Aboriginal representatives involved in the investigation. The Aboriginal stakeholders also did not disclose any specific knowledge of other cultural values/places (eg. historically known places, resource use areas, etc.). However, the possibility cannot be excluded that Aboriginal values or associations may exist that were not divulged to South East Archaeology by the persons consulted, but is inferred to be very low.

The potential for skeletal remains is considered to be low to very low, although cannot be discounted.

In relation to stone artefacts, no evidence was identified during the survey, which is inferred to primarily be a result of the generally low intensity Aboriginal usage of the study area, along with the widespread and typically moderate to high levels of existing ground disturbance. However, there remains a potential for stone artefacts to occur in a widespread distribution of variable density across all landform units, apart from in areas which have been substantially impacted by recent land-use (eg. the former quarry and well-formed roads and residences). Typically, this evidence is anticipated to comprise a low to very low density of artefacts consistent with background discard, interspersed by a low number of activity areas. A higher density of evidence and potential deposits of research significance, which may occur where more focused and/or repeated Aboriginal occupation has occurred, are not anticipated to be present.

## 6. ABORIGINAL CONSULTATION

The Aboriginal heritage impact assessment has involved a comprehensive program of Aboriginal consultation that complies with the policy requirements of the Department of Environment and Climate Change (NSW) that were introduced on 1 January 2005. These requirements are specified in the policy entitled *Interim Community Consultation Requirements for Applicants* and involve the following procedures:

- 1) Providing written notification of the project to the Local Aboriginal Land Council, Department of Environment and Conservation (NSW), Registrar of Aboriginal Owners (Department of Aboriginal Affairs), NSW Native Title Services and relevant Local Councils, requesting that if they are aware of any Aboriginal persons/organisations who may wish to be consulted about the project to provide such advice in writing, with a minimum 10 day response period;
- 2) Providing written notification of the project directly to those Aboriginal persons/organisations that were identified in Step 1 above, requesting those who may be interested in participating in the project to register their interest in writing, with a minimum 10 day response period;
- 3) Placing a media advertisement to the same effect in the local press requesting any Aboriginal persons/organisations who may be interested in participating in the project to register their interest in writing, with a minimum 10 day response period;
- 4) Providing detailed information about the heritage impact assessment, including the proposed methodology, to the Aboriginal persons/organisations who registered their interest in writing in Steps 1-3 above, with a minimum 21 day response period for comments;
- 5) Comments received from registered Aboriginal persons/organisations in Step 4, including information on areas of cultural significance, potential culturally acceptable mitigation measures, the nature of the assessment methodology and any other relevant traditional knowledge or issues, must be considered in order to finalise the assessment methodology;
- 6) Field inspection in consultation with the registered Aboriginal stakeholders;
- 7) Notifying the registered Aboriginal stakeholders and the Local Aboriginal Land Council (even if not registered) of the availability of the draft Aboriginal heritage impact assessment report and their comments invited; and
- 8) Preparation of a final Aboriginal heritage impact assessment report that addresses and incorporates the input of the registered Aboriginal stakeholders.

Procedures #1-8 outlined above have been implemented, as documented in the consultation database in Appendix 3 and below.

Compliance with Procedure #1 was achieved through correspondence forwarded to the relevant organisations on 18 September 2007. Responses were received from the:

- ❑ Registrar of Aboriginal Owners, advising that there are no Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act 1983* known in relation to this area (Appendix 3);
- ❑ Department of Environment and Climate Change (DECC), advising that the Jerrinja LALC, Jerrinja Consultants, South East Coast Gadu Elders Aboriginal Corporation, Merrimans LALC, Ulladulla LALC, South Coast Aboriginal and Elders and Friends Group Organisation and Mr Lionel P Mongta should be contacted (Appendix 3); and
- ❑ Shoalhaven City Council, advising that the Nowra, Ulladulla and Jerrinja Local Aboriginal Land Councils should be contacted (Appendix 3).

Compliance with Procedure #2 was achieved by writing to the organisations named above on 10 October 2007 with an invitation to register an interest as per the DECC policy.

Compliance with Procedure #3 was achieved by placing an advertisement in the Public Notices section of the South Coast Register on 21 September 2007, requesting any Aboriginal persons/organisations who may be interested in participating in the project to register their interest in writing.

No Aboriginal organisations registered an interest in the assessment. The proponent has deemed the Nowra LALC to be a stakeholder for the purposes of the heritage assessment.

Compliance with Procedures #4 and 5 was achieved by writing to the Nowra LALC, providing them with a copy of the proposed methodology for the assessment and requesting their comment. No comments were received.

Compliance with Procedure #6 was achieved by undertaking a field survey of the study area in consultation with the Nowra LALC. Fieldwork was undertaken between 28-30 May 2008 by Michael Marsh of South East Archaeology. A meeting with Mr Henry (Sonny) Simms of the Nowra LALC immediately preceded the survey. Mr Simms was unable to provide a representative to attend the survey, despite prior confirmation, however was satisfied for the survey to be conducted in the absence of a Land Council representative. Further consultation was undertaken with Mr Simms during the course of the survey.

Compliance with Procedure #7 was achieved by providing copies of the draft archaeological assessment report to the Nowra LALC on 14 November 2008 with a request for their comment by 5 December 2008.

Compliance with Procedure #8 was achieved through preparation of a final Aboriginal heritage impact assessment report that addressed and incorporated any input received from the Nowra LALC. No comments had been received by 18 December 2008. Telephone discussions were held with Mrs Adell Hyslop, the new Chief Executive Officer of the Nowra LALC, who undertook to review the report and provide comment in future. If any comment is received it can be forwarded to DECC and DoP and the report revised where necessary. Copies of the final report will be forwarded to the Nowra LALC.

## 7. STATUTORY OBLIGATIONS

The *National Parks and Wildlife Act 1974* (as amended) provides the primary basis for the legal protection and management of Aboriginal heritage sites within NSW. Implementation of the Aboriginal heritage provisions of this Act is the responsibility of the Climate Change and Environment Protection Group and Cultural Heritage Divisions of the Department of Environment and Climate Change (NSW) (DECC). The rationale behind the Act is to prevent unnecessary or unwarranted destruction of Aboriginal objects and to protect and conserve objects where such action is considered warranted.

With the exception of some artefacts in collections, the Act generally defines all Aboriginal objects to be the property of the Crown. The Act then provides various controls for the protection, management and destruction of these objects. An 'Aboriginal object' is defined as

'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' [Section 5(1)].

In practice, archaeologists generally subdivide the legal category of 'object' into different site types, which relate to the way Aboriginal heritage evidence is found within the landscape. 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 objects under the Act.

Under the terms of the *National Parks and Wildlife Act 1974*, it is an offence for a person to:

- ❑ Knowingly destroy, damage or deface an Aboriginal object or place, or knowingly cause or permit the destruction, defacement or damage to an Aboriginal object or place, without first obtaining the consent of the Director-General of DECC;
- ❑ Disturb or excavate any land, or cause any land to be disturbed or excavated, for the purpose of discovering an object, without first obtaining the consent of the Director-General of DECC; and
- ❑ Collect on any land an object that is the property of the Crown, other than an object under the control of the Australian Museum, without obtaining appropriate authorisation from the Director-General of DECC.

Penalties for infringement of the Act include up to 50 penalty units or imprisonment for six months, or both (or 200 penalty units in the case of a corporation).

Consents regarding the use or destruction of objects are managed through a DECC permit system. The issuing of permits is dependent upon adequate archaeological assessment and review, together with an appropriate level of Aboriginal community liaison and involvement. To excavate or disturb land for the purposes of discovering an Aboriginal object, approval of a Section 87 'Preliminary Research Permit' application is typically required. To enable unmitigated destruction of objects, a 'Section 90 Consent' must normally be obtained (apart from Part 3A Major Projects). To enable the mitigated destruction of objects, involving measures such as collection and/or salvage excavation, a 'Section 90 Consent with Salvage Permit' is normally required. The Director-General may attach any terms and conditions seen fit to any Consent granted for the above activities. Failure to comply with a term or condition is deemed to be a contravention of the Act.



An appeals process is available whereby an applicant, dissatisfied with the refusal of the Director-General to grant Consent, or with any conditions or restrictions attached to Consent, may appeal to the Minister. The Minister may refuse to grant an appeal or partially or wholly grant an appeal. The decision of the Minister on the appeal is final and is binding on the Director-General and the appellant.

The Minister also has substantial powers under Section 12 to direct DECC to carry out works and activities, either generally or in a particular case, in relation to the identification, conservation and protection of, and prevention of damage to, Aboriginal objects and places.

Under the *National Parks and Wildlife Act 1974*, 'Aboriginal areas' may also be declared over private land, where Aboriginal objects or places are located, with the consent of the owner or occupier. The purpose of reserving land as an 'Aboriginal area' is to identify, protect and conserve areas associated with a person, event or historical theme, or containing a building, place, object, feature or landscape of natural or cultural significance to Aboriginal people, or of importance in improving public understanding of Aboriginal culture and its development and transitions (Section 30K).

Under Section 91AA of the Act, if the Director-General is of the opinion that any action is being, or is about to be carried out that is likely to significantly affect an Aboriginal object or Aboriginal place or any other item of cultural heritage situated on land reserved under the Act, the Director-General may make a stop-work order for a period of 40 days. A person that contravenes a stop-work order may be penalised up to 1,000 penalty units and an additional 100 units for every day the offence continues (10,000 units and 1,000 units respectively in the case of a corporation).

Under the Part 3A Major Project amendments to the *Environmental Planning and Assessment Act 1979* (EP&A Act), subsequent to approval being granted, Section 90 Consent to impact Aboriginal objects or a Section 87 Permit under the *National Parks and Wildlife Act 1974* may not be required. *In lieu* however, a Part 3A application involving a Statement of Commitments outlining proposed heritage management and mitigation measures must be approved. Also, under more recent Part 3A Major Project amendments (Section 75U{4}), a Section 87 Permit may not be required for investigation of artefact deposits where the investigation is being undertaken for the purpose of complying with environmental assessment requirements issued in connection with an application for approval to carry out a project or for a concept plan for a project.

While the primary legislation offering protection to Aboriginal heritage in NSW is enacted by the state, several Acts administered by the Commonwealth may also be relevant.

The *Aboriginal and Torres Strait Islander Heritage Protection Act, 1984*, provides for the protection of areas and objects which are of significance to Aboriginal people in accordance with Aboriginal tradition. The Act allows Aboriginals to apply to the Minister to seek protection for significant Aboriginal areas and objects. The Minister has broad powers to make such a declaration should the Minister be satisfied that the area or object is a significant Aboriginal area or object and is under immediate threat of injury or desecration. An 'emergency declaration' can remain in force for up to thirty days. It is an offence under the Act to contravene a provision of a declaration. Provisions are made for penalties of up to \$50,000 for a corporation found guilty of contravening the Act and up to \$10,000 and imprisonment for a maximum of five years, for a person found guilty of contravening the Act.

Under the Act, 'Aboriginal tradition' means:

'the body of traditions, observances, customs and beliefs of Aboriginals generally or of a particular community or group of Aboriginals, and includes such traditions, observances, customs or beliefs relating to particular persons, areas, objects or relationships' (Section 3).

A 'significant Aboriginal area' refers to:

An area of land or water in Australia being of 'particular significance to Aboriginals in accordance with Aboriginal tradition' (Section 3).

A 'significant Aboriginal object' refers to:

An object (including Aboriginal remains) of 'particular significance to Aboriginals in accordance with Aboriginal tradition' (Section 3).

For the purposes of the Act, an area or object is considered to be injured or desecrated if:

- a) in the case of an area, it is used or treated in a manner inconsistent with Aboriginal tradition; or the use or significance of the area in accordance with Aboriginal tradition is adversely affected by reason of anything done in or near the area; or passage through or over, or entry upon the area by any person occurs in a manner inconsistent with Aboriginal tradition; and
- b) in the case of an object, it is used or treated in a manner inconsistent with Aboriginal tradition (Section 3).

A new national heritage system commenced on 1 January 2004, largely replacing the previous *Australian Heritage Commission Act 1975*. Its primary features under the amended *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Australian Heritage Council Act 2003* include:

- ❑ A National Heritage List of places of national heritage significance;
- ❑ A Commonwealth Heritage List of heritage places owned or managed by the Commonwealth;
- ❑ Creation of the Australian Heritage Council – an independent expert body to advise the Minister on the listing and protection of heritage places; and
- ❑ Continued management of the Register of the National Estate, a list of more than 13,000 heritage places around Australia that has been compiled by the former Australian Heritage Commission since 1976.

The study area does not contain any heritage items registered for Aboriginal or non-indigenous values under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, the *Environment Protection and Biodiversity Conservation Act 1999* or the *Australian Heritage Council Act 2003* or any Aboriginal objects listed under the *National Parks and Wildlife Act 1974*.

Under the *Environmental Planning and Assessment Act 1979* the Minister may make various planning instruments such as Regional and Local Environment Plans. The *Illawarra Regional Environmental Plan No. 1 1986* (REP) and *Shoalhaven Local Environmental Plan 1985 (as amended)* (LEP) apply to the study area. These two Plans set out objectives and controls for the development of land in this area. Each plan that covers respective local government areas and regions lists items of heritage significance. No heritage items listed on either the REP or LEP occur within the study area.

Under Division 4A of the Shoalhaven LEP, an *Aboriginal object* is given the same definition as in the *National Parks & Wildlife Act 1974*. A *place of Aboriginal heritage significance* is defined as:

- (a) the site of one or more Aboriginal objects or a place that has the physical remains of pre-European occupation by, or is of contemporary significance to, Aboriginal people. It can (but need not) include items and remnants of the occupation of the land by Aboriginal people, such as:
  - (i) burial places, and
  - (ii) engraving sites, and
  - (iii) rock art, and
  - (iv) midden deposits, and
  - (v) scarred and sacred trees, and
  - (vi) sharpening grooves, or
- (b) a natural Aboriginal sacred site or other sacred feature. It includes:
  - (i) a natural feature such as a creek or mountain of long-standing cultural significance, or
  - (ii) an initiation, ceremonial or story place, or
  - (iii) an area of more contemporary cultural significance.

The objectives of the Shoalhaven LEP in relation to heritage conservation (Section 20D) are:

- (a) to identify and conserve the environmental heritage of the City of Shoalhaven, and
- (b) to conserve the heritage significance of existing significant fabric, relics, settings and views associated with the heritage significance of heritage items and heritage conservation areas, and
- (c) to ensure that archaeological sites and places of Aboriginal heritage significance are conserved, and
- (d) to ensure that the heritage conservation areas throughout the City of Shoalhaven retain their heritage significance.

In respect to development, Section 20E (1) (*Protection of heritage items and heritage conservation areas*) of the Shoalhaven LEP specifies that the following development may be carried out only with development consent:

- (a) demolishing or moving a heritage item or a building, work, relic, tree or place within a heritage conservation area,
- (b) altering a heritage item or a building, work, relic, tree or place within a heritage conservation area by making structural or non-structural changes to its exterior, such as to its detail, fabric, finish or appearance,
- (c) altering a heritage item by making structural changes to its interior,
- (d) disturbing or excavating a place of Aboriginal heritage significance or an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will, or is likely to, result in a relic or Aboriginal object being discovered, exposed, moved, damaged or destroyed,
- (e) moving the whole or a part of a heritage item,

- (f) erecting a building on, or subdividing, land on which a heritage item is located or that is within a heritage conservation area.

Section 20E (2) of the Shoalhaven LEP specifies that Development Consent is not required if:

- (a) in the opinion of the consent authority:
  - (i) the proposed development:
    - (A) is of a minor nature or consists of maintenance to the heritage item, place of Aboriginal heritage significance or archaeological site or of a building, work, relic, tree or place within a heritage conservation area, and
    - (B) would not adversely affect the significance of the heritage item, place of Aboriginal heritage significance, archaeological site or heritage conservation area, or
  - (ii) the proposed development consists of conservation works in accordance with a conservation policy or strategy contained in a conservation management plan endorsed by the consent authority, and
- (b) the proponent has notified the consent authority in writing of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development will comply with this subclause and that development consent is not otherwise required by this plan.

Section 20I specifies that before granting consent to development required by clause 20E that will be carried out in a place of Aboriginal heritage significance, the consent authority must:

- (a) consider the effect on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place, and
- (b) except where the proposed development requires the consent of the Director-General of the Department of Environment and Conservation under section 90 of the *National Parks and Wildlife Act 1974*, notify the local Aboriginal communities (in such way as it thinks appropriate) and the Director-General of its intention to do so and take into consideration any comments received in response within 28 days after the relevant notice is sent.

## 8. MITIGATION AND MANAGEMENT STRATEGIES

The Aboriginal heritage assessment reported herein has been commissioned in relation to a proposal by Malbec Properties, on behalf of the adjoining landowners, to develop "New Living Area No. 5" at Mundamia. The landowners propose development of this area for urban/residential purposes. A Major Project application under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) has been lodged for a 303 lot residential subdivision over a substantial portion of the study area (Application No. MP08\_0141), comprising Lot 3 DP 568613 and Lot 384 DP 755952 (refer to development concept plan in Figure 3), with single rural and commercial lots.

The study area measures approximately 47 hectares in area. It is assumed that in relation to the current concept plan for part of the property or in relation to future development of other portions of the study area, virtually the entire study area will be subject to high-level impacts arising from earthworks associated with the provision of roads, essential services, drainage control measures, recreational facilities and/or housing (eg. refer to Figure 3). However, development impacts are also anticipated to be avoided to portions of the study area, including proposed conservation areas around the eastern and northeastern margins (Figure 3).

No Aboriginal heritage sites or cultural evidence or values are listed within the study area on any heritage registers or planning instruments or have been identified within the study area during the present investigation (refer to Sections 3.1 and 5.2). The potential for types of Aboriginal heritage evidence to occur other than stone artefacts is generally assessed as very low to negligible. Although there remains some potential in areas not totally impacted by existing land use for a very low density distribution of stone artefacts consistent with background discard, artefact deposits or sites that are of high local or regional research value or significance are not anticipated to be present.

General strategies for the management of potential Aboriginal heritage resources are presented below. A key consideration in selecting a suitable strategy is the recognition that Aboriginal heritage is of primary importance to the local Aboriginal community, and that decisions about the management of the sites should be made in consultation with the registered Aboriginal stakeholders.

### Strategy A (Further Investigation):

In circumstances where an artefact site is identified, but the extent of the site, the nature of its contents, its level of integrity and/or its level of significance cannot be adequately assessed solely through surface survey (generally because of conditions of low surface visibility or sediment deposition), sub-surface testing may be an appropriate strategy to further assess the site. Testing is also appropriate in locations where artefact deposits are predicted to occur through application of a predictive model of site location, in order to identify whether such deposits exist and their nature, extent, integrity and significance.

Test excavations can take the form of auger holes, shovel pits, mechanically excavated trenches or surface scrapes. A Section 87 Permit is generally required from DECC to undertake sub-surface testing, unless Part 3A approval has been granted and *in lieu* a Statement of Commitments outlining such measures has been approved, or the investigation is being undertaken for the purpose of complying with environmental assessment requirements issued in connection with an application for Part 3A approval.

This is a pro-active strategy, which should result in the identification, assessment and management of the Aboriginal heritage resource prior to any development activity occurring. Following assessment of each Aboriginal site, management strategies as outlined below (B - E) can be applied.

In relation to the study area, the requirement for further investigation by sub-surface testing is limited by:

- ☐ The widespread and high levels of existing ground disturbance;
- ☐ The results of the survey;
- ☐ The model of Aboriginal occupation for the locality, supported by the survey results, indicating that Aboriginal occupation of the study area was generally of a low intensity, and probably related to transitory movement through the landscape and hunting/gathering by small groups of people during the course of the normal daily round; and
- ☐ Consequent low potential for sub-surface deposits of artefacts, particularly deposits that may be *in situ* and/or of research value.

The survey coverage is considered satisfactory enough to present an effective assessment of the Aboriginal heritage resources potentially present. Test excavations are unlikely to add significantly to the present assessment or lead to alternative management strategies, and on this basis, the imperative for further investigation is considered to be very low.

#### Strategy B: Conservation:

The suitability of conservation as a management option has long been recognised. This strategy is suitable for all heritage sites, but particularly those of high archaeological significance and/or high cultural significance. Conservation is also highly appropriate for specific archaeological resources and environmental/cultural contexts, as part of a regional strategy aimed at conserving a representative sample of identified and potential heritage resources.

Options exist within development proposals that can be utilised for the conservation of identified or potential Aboriginal heritage resources, including exclusion of development from zones of high heritage significance or potential, or preservation of areas within formal conservation zones.

As noted above, portions of the study area are anticipated to be subject to avoidance of intensive development impacts, through inclusion within conservation areas.

In relation to the study area, the imperative for implementing formal conservation measures for Aboriginal heritage is limited by the factors listed above, including the

- ☐ Widespread and high levels of existing ground disturbance;
- ☐ Low potential for sub-surface deposits of artefacts, particularly deposits that may be *in situ* and/or of research value, or other heritage site types of local or regional significance;
- ☐ Absence of identified heritage evidence; and
- ☐ Very low cumulative impacts of the proposal.



#### Strategy C: Mitigated Impact (Salvage):

In circumstances where a site is of moderate or high significance within a local context, but the options for conservation are limited and the surface collection of Aboriginal objects or excavation of deposits could yield benefits to the Aboriginal community and/or the archaeological study of Aboriginal occupation, the strategy of salvage can be considered.

Salvage may include the collection of surface artefacts or systematic excavation of artefact deposits, as part of a Section 90 Consent with Salvage Permit obtained from DECC or a Statement of Commitments for a Part 3A approved project. This strategy is the primary means of minimising impacts to Aboriginal heritage from development projects where the option of conservation is not feasible.

The specific aims of any salvage project and the methodology could only be finalised after consultation with the Aboriginal stakeholders and DECC, in relation to an application for a Section 90 Consent with Salvage Permit. The application would need to address the views and policy and legislative requirements of these key stakeholders. Consultation is required with the relevant Aboriginal stakeholders as per the relevant DECC policy. Alternatively, if Part 3A approval is granted, Section 90 Consent may not be required but *in lieu* a Statement of Commitments outlining proposed heritage management and mitigation measures must be approved.

In relation to the study area, salvage measures are not warranted as there are no identified heritage items.

#### Strategy D: Unmitigated Impact:

The strategy of unmitigated impact involves the proponent making application to DECC for a Section 90 Consent for any known Aboriginal objects that will be affected by a proposal. This Consent must normally be obtained prior to the commencement of works affecting the evidence, because all objects are protected under the terms of the *National Parks and Wildlife Act 1974*. Alternatively, if Part 3A approval is granted, Section 90 Consent may not be required, but *in lieu* a Statement of Commitments outlining proposed heritage management and mitigation measures must be approved and implemented.

The support of the Aboriginal stakeholders should be obtained, through further liaison, for any Section 90 Consent application or Part 3A Statement of Commitments. Consultation is required with the local Aboriginal community as per the relevant DECC policy. This strategy is typically suitable when a site is of low scientific significance, the local Aboriginal community holds no objections, and it is unfeasible to implement any other strategy.

In relation to the study area, unmitigated impact is not warranted as there are no identified heritage items.

#### Strategy E (Monitoring):

An alternative strategy for zones where archaeological deposits are predicted to occur is to monitor construction, particularly any initial earthmoving and soil removal works, for the presence of artefacts, shell or skeletal remains.

Monitoring is the primary strategy for managing the possible occurrence of Aboriginal skeletal remains. Monitoring for the presence of shell and stone artefacts is also often of value to the Aboriginal community, who may be seeking to identify and salvage material that was not visible on the surface during a preliminary study. The sieving of graded deposits is also a practical measure that enhances the benefits of monitoring for artefacts.

Monitoring for artefacts (in preference to sub-surface testing) is not a widely accepted method within the context of a scientific investigation, because it could result in substantial and costly delays to construction, late revisions to development plans, and/or cause undesirable impacts to sites of cultural or scientific significance. However, when Development Consent or Part 3A Approval is granted, monitoring for the presence of artefacts and other features during initial earthworks can be of scientific benefit and benefit to the Aboriginal community. Monitoring undertaken in this circumstance may enable the identification and retrieval of cultural evidence that may not otherwise have been recorded or salvaged.

In relation to the study area, considering the low potential for skeletal remains, monitoring is not required for this purpose. Considering the high levels of ground disturbance, low potential for sub-surface deposits of artefacts that may be *in situ* and/or of research value, and absence of identified evidence, monitoring does not represent a suitable strategy as a final salvage measure after Development Consent or Part 3A Approval is granted. The nature of construction methods (eg. use of earthmoving machinery to rapidly excavate large quantities of soil without scientifically appropriate spatial control) tends to limit the potential for successful identification of heritage evidence during monitoring of such work.



## 9. RECOMMENDATIONS

Malbec Properties proposes to develop part of the study area known as "New Living Area No. 5" for urban/residential purposes. A Major Project application under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) has been lodged for a 303 lot residential subdivision over a substantial portion of the study area (Application No. MP08\_0141), comprising Lot 3 DP 568613 and Lot 384 DP 755952 (refer to development concept plan in Figure 3), with single rural and commercial lots. Undeveloped lands forming part of the property may be subject to future utilisation for residential purposes. Portions of the 47 hectare property will not be subject to major development impacts, due to their inclusion within proposed conservation areas (Figure 3).

No Aboriginal heritage sites or cultural evidence or values are listed within the study area on any heritage registers or planning instruments or have been identified within the study area during the present investigation. A very low density distribution of artefacts may occur across the unmodified portions of the study area, however the potential for sub-surface deposits of artefacts that may be *in situ* and/or of research value is very low. Other types of heritage evidence are not anticipated to occur within the study area and other Aboriginal cultural values or associations have not been identified during the course of the assessment. In the absence of appropriate management and mitigation measures, it is concluded that the impacts of the proposal on Aboriginal heritage will be very low.

The following management and mitigation measures are proposed, with consideration of legal requirements under the NSW *National Parks and Wildlife Act 1974* and *Environmental Planning and Assessment Act 1979*, the results of the survey and consultation with the local Aboriginal community:

- ❑ For the land subject to Part 3A Application No. MP08\_0141, provisions relating to Aboriginal heritage should be included in an Environmental Management Plan for the project. These provisions should be formulated in consultation with the Nowra LALC and specify the policies and actions required to manage the potential impacts of the proposal on Aboriginal heritage after Part 3A approval is granted. The plan will include procedures for ongoing Aboriginal consultation, and management procedures for any previously unrecorded heritage evidence and skeletal remains. The Plan will comprise detail that, subject to Part 3A project approval, will guide management of the Aboriginal heritage resource *in lieu* of any Section 90 Consent. The primary elements of the Plan are outlined below:
  - Should any skeletal remains be detected during the course of development, work in that location will cease immediately and the finds will be reported to the appropriate authorities, including the Police, DECC and Nowra LALC. Subject to the Police requiring no further involvement, any Aboriginal skeletal remains identified will be retrieved by hand excavation and reburied outside of the impact zone at a location agreed to by the Nowra LALC; and
  - Should any other previously unrecorded heritage evidence be detected during the course of development, work in that location will cease immediately and the finds be reported to the Nowra LALC and DECC. Management of any identified objects will occur in accordance with procedures outlined in the Environmental Management Plan that are formulated in advance in consultation with the Nowra LALC;

- For any land within the study area that is subject to development, but not under a Part 3A Application, although there are presently no known heritage constraints to such development, the following provisions relating to Aboriginal heritage should be observed:
  - Should any skeletal remains be detected during the course of development, work in that location will cease immediately and the finds will be reported to the appropriate authorities, including the Police, DECC and Nowra LALC. Subject to the Police requiring no further involvement, the management of any Aboriginal skeletal remains identified must be determined in consultation with DECC and the Nowra LALC and a Section 90 Consent obtained from DECC where required; and
  - Should any other previously unrecorded heritage evidence be detected during the course of development, work in that location will cease immediately and the finds be reported to the Nowra LALC and DECC. Management strategies for any identified evidence must be determined in consultation with DECC and the Nowra LALC and a Section 90 Consent obtained from DECC prior to any impacts occurring;
- A copy of this report should be forwarded to the Nowra LALC; and
- Three copies of this report should be forwarded to:

Manager  
 South Branch  
 Environment Protection and Regulation Division  
 Department of Environment and Climate Change (NSW)  
 PO Box 2115  
 Queanbeyan NSW 2620.

After implementation of these management and mitigation measures, it is concluded that the risk of residual impacts to Aboriginal heritage from the proposal will be very low.

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## ACKNOWLEDGEMENTS

The consultant wishes to acknowledge the assistance of the following people:

- ☐ Alex Soovoroff and staff of Malbec Properties;
- ☐ Sharlene Freeburn, DECC;
- ☐ Matt Philpott and staff, Allen Price and Associates; and
- ☐ Henry Simms and Adell Hylsop, Nowra Local Aboriginal Land Council.

## DISCLAIMER

The information contained within this report is based on sources believed to be reliable. Every effort has been made to ensure accuracy by using the best possible data and standards available. The accuracy of information generated during the course of this field investigation is the responsibility of the consultant.

However, as no independent verification is necessarily available, South East Archaeology provides no guarantee that the base data (eg. DECC AHIMS) or information from informants (obtained in previous studies or during the course of this investigation) is necessarily correct, and accepts no responsibility for any resultant errors contained therein and any damage or loss which may follow to any person or party. Nevertheless this study has been completed to the highest professional standards.

## APPENDIX 1: ARCHAEOLOGICAL SURVEY COVERAGE DATABASE

Survey Area	Slope	Landform Element	Distance to Water (metres)	Vegetation	Total Sample Area (m <sup>2</sup> )	Surface Visibility (%)	Detection Limiting Factors	Archaeological Visibility %	Ground Disturbance	Effective Survey Coverage (m <sup>2</sup> )	# of Artefacts	Comments
M1	level-very gentle	ridge crest	>50	1, 2	17,600	1-90	vegetation	1-50	mod-high	2,316	0	very broad crest/plateau; most native vegetation removed, grass established and used for pastoral and rural/residential purposes; substantial areas totally impacted by quarrying and other topsoil removal; other impacts from timber harvesting, rural residences, buildings, roads, dams, powerlines, recreational use, refuse dumping, pipelines; minor sandstone exposed, open surfaces; abundant gravel; many exposures but A unit soil largely removed, lowering archaeological potential in places; very few mature trees, mostly dry sclerophyll regrowth, scribbly gum, box, banksia, casuarina and grass; grass lowers visibility in rural use areas east of quarry
M2	gentle	simple slope	>50	2	1,600	2	vegetation, leaf litter	1	mod-high	16	0	largely regrowth woodland/forest, gums, casuarina, banksia; very few mature trees; dense leaf litter and grass; thin topsoil and evidence of removal in places; vehicle tracks; refuse dumped; minor sandstone open surfaces
M3	gentle	drainage depression	<50	1, 2	1,000	0.5	vegetation, leaf litter	0.5	mod	5	0	dense tea-tree, bracken, grass; ephemeral first order drainage; wet/boggy in places
M4	gentle	simple slope	<50	1, 2	1,800	1	vegetation, leaf litter	1	mod	14	0	dense grass, bracken; bush in parts; minor sandstone open surfaces; refuse dumped; two water tanks; stock/horse agistment
M5	gentle	simple slope	>50	1, 2	2,000	5	vegetation, leaf litter	5	mod-high	100	0	slope towards Flat Rock Creek; dense grass, banksia, scribbly gum bush; east of study area slope increases and major sandstone outcrops, ledges, with evidence of quarrying; possible old survey mark immediately east of study area engraved on sandstone at MGA 278442:6136958; rockshelter with potential deposit also further east of study area at MGA 278480:6137380, potential deposit of about 10x4 metres and 0.2 metres depth, 3m roof height; typical of shelters to be expected along creek east of study area, with other shelters/overhangs nearby

Vegetation: 1 = cleared/grass/crop; 2 = regrowth bush/forest.

## APPENDIX 2: PLATES



Plate 1: View northwest along George Evans Road (survey area M1).



Plate 2: View of level/very gentle ridge crest (survey area M1) west of George Evans Road.





Plate 3: View north across former quarry, a totally modified area with negligible heritage potential, east of George Evans Road.



Plate 4: View east across level/very gentle ridge crest (survey area M1) east of George Evans Road to rural/residential buildings.



Plate 5: View south from northeastern corner of study area across level/very gentle ridge crest (survey area M1) and gentle simple slope (left - survey area M4).



Plate 6: Gentle simple slope (survey area M5) in eastern margin of study area.



## APPENDIX 3: ABORIGINAL COMMUNITY CONSULTATION

### Consultation Database:

Date	Person Contacted	Organisation	How Contacted	Contacted By	Organisation	Description
18/9/07	Joe Woodward	Exec. Director Operations, DECC	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy
18/9/07	Megan Mebberson	Office of the Registrar, Aboriginal Land Rights Act	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy
18/9/07	General Manager	Shoalhaven City Council	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy
18/9/07	CEO	NSW Native Title Services	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy
18/9/07	Sonny Simms	Nowra LALC	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy
21/9/07	General Public	-	Advertisement	P. Kuskie	SEA	Advertisement placed in Public Notices section of The Nowra South Coast Register calling for interested Aboriginal persons/groups to register an interest in the project.
2/10/07	P. Kuskie	SEA	Letter via email	Maurice Stewart	Office of the Registrar, Aboriginal Land Rights Act	Responded to request of 18/9/07 by advising that there are no Registered Aboriginal Owners within this specific locality.
3/10/07	P. Kuskie	SEA	Letter	Marie-Louise Clark	Shoalhaven City Council	Responded to request of 18/9/07 by advising that the Nowra, Ulladulla and Jerrinja LALCs should be consulted.
10/10/07	P. Kuskie	SEA	Fax	Stephen Free	DECC	Responded to request of 18/9/07 by advising that the Jerrinja LALC, Jerrinja Consultants, South East Coast Gadu Elders Aboriginal Corporation, Merrimans LALC, Ulladulla LALC, South Coast Aboriginal and Elders and Friends Group Organisation and Mr Lionel P Mongta should be contacted.
10/10/07	Adell Hyslop	Jerrinja LALC	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.
10/10/07	Graham Connolly	Jerrinja Consultants	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.
10/10/07	Maureen Davis	South East Coast Gadu Elders Aboriginal Corporation	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.
10/10/07	Manager	Merrimans LALC	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.
10/10/07	Shane Carriage	Ulladulla LALC	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.
10/10/07	Lena Bloxsome	South Coast Aboriginal and Elders and Friends Group Organisation	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.
10/10/07	Lionel Mongta	Yuin Traditional Owner	Letter	P. Kuskie	SEA	Official request to notify of Aboriginal stakeholders/register interest as per DECC policy and DECC advice of 10/10/07.



Date	Person Contacted	Organisation	How Contacted	Contacted By	Organisation	Description
26/11/07	Sonny Simms	Nowra LALC	Letter	P. Kuskie	SEA	Official notification of and request for comment on proposed investigation methodology as per DECC policy for those registrants wishing to be considered by Malbec Properties for participation in the field survey.
26/5/08	Sonny Simms	Nowra LALC	Telephone	P. Kuskie	SEA	Made arrangements for field survey.
27/5/08	Sonny Simms	Nowra LALC	Telephone	P. Kuskie	SEA	Reconfirmed arrangements for field survey.
28/5/08	Sonny Simms	Nowra LALC	Meeting - fieldwork	M. Marsh	SEA	Met Sonny Simms and discussed project. Sonny could not attend survey this day, but was satisfied for initial work to commence in his absence. Sonny undertook to attend Thursday and have someone else attend Friday.
29/5/08	Sonny Simms	Nowra LALC	Meeting Telephone	M. Marsh P. Kuskie	SEA	Sonny could not attend survey again and was unable to arrange a replacement. Sonny was satisfied for survey to proceed in the absence of a representative. Sonny advised that he knew the study area well, that substantial portions of it have had the soil and gravel removed and spoil/materials were dumped in other areas, and that there are no cultural values associated with the land.
14/11/08	Sonny Simms	Nowra LALC	Letter	P. Kuskie	SEA	Provided copy of draft report with request for review and comment.
4/12/08	Adell Hyslop	Nowra LALC	Telephone	P. Kuskie	SEA	Discussed draft report and requested written comment from LALC. Adell advised that as she is new to the Nowra CEO position, while she will endeavour to provide comment this matter is one of many to be addressed.

**Relevant Correspondence:**



11-15 Ashfield Street  
Cleeve NSW 2037  
PO Box 112, Cleeve NSW 2037  
P: 02 9562 1327 F: 02 9562 6350

Peter Kuskie  
South East Archaeology Pty Ltd  
24 Bamford Street  
Hughes ACT 2605

Dear Peter

**Re: Request - Search for Registered Aboriginal Owners**

I refer to your letter dated 18 September 2007 advising of your intention to undertake an Aboriginal Heritage Impact Assessment of "New Living Area No 5" at Mundamia near West Nowra, on the south coast of NSW.

The investigation area is located north of Wollong (Shoalhaven Campus) George Evans Road, West Nowra. The land owners propose development of this area for urban development.

I have searched the Register of Aboriginal Owners and the subject land does not have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act 1983 (NSW)*.

Regards

Maurice Stewart  
**Project Officer (Aboriginal Land Rights Act 1983)**  
2 October 2007



City Administrative Centre  
Bridge Road, Nowra NSW Australia 2541  
Phone: (02) 4429 3111 • Fax: (02) 4422 1816 • DX 5323 Nowra  
**Address all correspondence to**  
The General Manager, PO Box 42, Nowra NSW Australia 2541

COUNCIL REFERENCE: 35343  
CONTACT PERSON: Michael Park

3 October 2007

Peter J Kuskie  
Managing Director  
South East Archaeology  
24 Bamford Street  
HUGHES ACT 2605

Dear Mr Kuskie

**Proposed Development at Mundamia, West Nowra**

With regard to correspondence received by Council on the above matter, please be advised that Council is an interested party and wishes to be kept informed of the progress and outcomes of this study.

Listed below are the names of Aboriginal organisations that may wish to be consulted during the heritage assessment process.

- Nowra Aboriginal Land Council
- Ulladulla Aboriginal Land Council
- Jerringa Aboriginal Land Council

If you need further information about this matter, please contact Michael Park, Strategic Planning Group on (02) 4429 3139. Please quote Council's reference 35343 in any correspondence.

Yours faithfully

  
**Marie-Louise Clark**  
Strategic Planner

council@shoalhaven.nsw.gov.au • www.shoalhaven.nsw.gov.au

Our reference  
Contact

Letter 18 September 2007  
Stephen Free (02) 6298 0372

Mr Peter Kuskie  
Managing Director  
South East Archaeology Pty Ltd  
24 Bamford Street  
HUGHES ACT 2605

**FAXED**  
2:45pm

Dear Mr Kuskie,

**WRITTEN NOTIFICATION OF PROPOSAL AS REQUIRED UNDER DEC INTERIM  
COMMUNITY CONSULTATION REQUIREMENTS FOR APPLICANTS RE: NEW LIVING AREA  
NO. 5, MUNDAMIA, WEST NOWRA, NSW – CULTURAL HERITAGE ASSESSMENT**

I refer to your letter dated 18 September 2007 to the Department of Environment and Climate Change (DECC) regarding the above matter.

Attached is the list of known Aboriginal parties that DEC feels is likely to have an interest in the development. Please note this list is not necessarily an exhaustive list of all interested Aboriginal parties and receipt of this list does not remove the requirement of a proponent/consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties, in accordance with the Interim Requirements.

If you wish to discuss any of the above matters further please contact Stephen Free, Senior Aboriginal Heritage Officer on (02) 6298 0372.

Yours sincerely



**MICHAEL HOOD**  
Manager Planning & Aboriginal Heritage  
Climate Change & Environment Protection Group South  
10 October 2007

PO Box A290 Sydney South NSW 1232  
68-61 Goulburn St Sydney NSW 2000  
Tel: (02) 9995 5000 Fax: (02) 9995 5999  
TTY: (02) 9211 4723  
ABN 30 641 387 271  
[www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)

Department of Environment and Conservation NSW

Organisation/Individual Name	Address	Contact Details
<b>Jerrinja Local Aboriginal Land Council</b>	[REDACTED]	[REDACTED]
<b>Jerrinja Consultants PTY Ltd</b> Primary Contact: Graham Connolly, representing the Jerrinja Traditional	[REDACTED]	[REDACTED]
<b>South East Coast Gadu Elders Aboriginal Corporation (SECGEAC)</b> Secretary: Maureen Davis	[REDACTED]	[REDACTED]
<b>Marrimans Local Aboriginal Land Council</b>	[REDACTED]	[REDACTED]
<b>Ulladulla Local Aboriginal Land Council</b>	[REDACTED]	[REDACTED]
<b>South Coast Aboriginal and Elders and Friends Group Organisation</b> Secretary: Lena Bloksome	[REDACTED]	[REDACTED]
<b>South East Coast Gadu Elders Aboriginal Corporation</b>	[REDACTED]	[REDACTED]
<b>Mr Lionel P Mongta, Yun Traditional Owner</b>	[REDACTED]	[REDACTED]



