Gerringong upgrade
Princes Highway
Review of Environmental Factors
APPENDIX G - CULTURAL HERITAGE ASSESSMENT
JUNE 2010
Quality Information

Document: Cultural Heritage Assessment – Gerringong upgrade
Ref: DEVO6/04-HE-NO Rev.3
Date: 11 May 2010
Prepared by: Kelvin Officer
Reviewed by: Kerry Navin

Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Revision Date</th>
<th>Details</th>
<th>Authorised</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>11/05/2010</td>
<td>Final</td>
<td>Jon Williamson</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Signature: [Signature]

Cultural Heritage Assessment – Gerringong upgrade
# Cultural Heritage Assessment – Gerringong upgrade

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Executive summary</strong></td>
<td>6</td>
</tr>
<tr>
<td><strong>1.0 Introduction</strong></td>
<td>12</td>
</tr>
<tr>
<td>1.1 Proposal description</td>
<td>12</td>
</tr>
<tr>
<td>1.2 Background to the assessment</td>
<td>15</td>
</tr>
<tr>
<td>1.3 Legislative approval and requirements</td>
<td>16</td>
</tr>
<tr>
<td>1.4 Report outline</td>
<td>16</td>
</tr>
<tr>
<td><strong>2.0 Aboriginal consultation and participation</strong></td>
<td>17</td>
</tr>
<tr>
<td><strong>3.0 Study methodology</strong></td>
<td>20</td>
</tr>
<tr>
<td>3.1 Literature and database review</td>
<td>20</td>
</tr>
<tr>
<td>3.2 Fieldwork</td>
<td>20</td>
</tr>
<tr>
<td>3.3 Project personnel</td>
<td>21</td>
</tr>
<tr>
<td>3.4 Recording parameters</td>
<td>21</td>
</tr>
<tr>
<td>3.4.1 Aboriginal sites and potential archaeological deposit</td>
<td>21</td>
</tr>
<tr>
<td>3.4.2 Historical sites and features</td>
<td>25</td>
</tr>
<tr>
<td><strong>4.0 Environmental context</strong></td>
<td>27</td>
</tr>
<tr>
<td><strong>5.0 Aboriginal ethnohistorical context</strong></td>
<td>29</td>
</tr>
<tr>
<td>5.1 Regional overview</td>
<td>29</td>
</tr>
<tr>
<td>5.1.1 Ethnohistorical context</td>
<td>29</td>
</tr>
<tr>
<td>5.1.2 Tribal boundaries and social structures</td>
<td>29</td>
</tr>
<tr>
<td>5.1.3 Historical overview</td>
<td>31</td>
</tr>
<tr>
<td>5.1.4 Places of known or reported historical and cultural Aboriginal significance</td>
<td>40</td>
</tr>
<tr>
<td><strong>6.0 Aboriginal archaeological context</strong></td>
<td>43</td>
</tr>
<tr>
<td>6.1 Regional overview</td>
<td>43</td>
</tr>
<tr>
<td>6.2 The local area</td>
<td>45</td>
</tr>
<tr>
<td>6.2.1 Kiama</td>
<td>45</td>
</tr>
<tr>
<td>6.2.2 Foxground, Gerringong and Gerroa</td>
<td>46</td>
</tr>
<tr>
<td>6.3 The Princes Highway study area</td>
<td>47</td>
</tr>
<tr>
<td>6.3.1 Recorded Aboriginal archaeological sites</td>
<td>47</td>
</tr>
<tr>
<td>6.4 Predictive model for archaeological sites</td>
<td>52</td>
</tr>
<tr>
<td>6.4.1 Micro-topographic variables</td>
<td>52</td>
</tr>
<tr>
<td>6.4.2 General site location trends and patterns</td>
<td>53</td>
</tr>
<tr>
<td>6.4.3 Site types</td>
<td>54</td>
</tr>
<tr>
<td><strong>7.0 Non-Aboriginal context</strong></td>
<td>57</td>
</tr>
<tr>
<td>7.1 Historical overview</td>
<td>57</td>
</tr>
<tr>
<td>7.1.1 Early exploration</td>
<td>57</td>
</tr>
<tr>
<td>7.1.2 Nineteenth-century estates in the study area</td>
<td>58</td>
</tr>
<tr>
<td>7.1.3 Settlement and development of townships</td>
<td>65</td>
</tr>
<tr>
<td>7.1.4 The dairy industry</td>
<td>67</td>
</tr>
<tr>
<td>7.1.5 The development of the main road between Kiama and Bomaderry</td>
<td>68</td>
</tr>
<tr>
<td>7.2 Previous cultural heritage studies and inventory of listed heritage items</td>
<td>86</td>
</tr>
<tr>
<td>7.3 Predictive historical archaeology statement</td>
<td>88</td>
</tr>
<tr>
<td><strong>8.0 Results</strong></td>
<td>90</td>
</tr>
<tr>
<td>8.1 Summary</td>
<td>90</td>
</tr>
<tr>
<td>8.2 Aboriginal heritage recordings</td>
<td>90</td>
</tr>
<tr>
<td>8.2.1 Archaeological site recordings</td>
<td>90</td>
</tr>
<tr>
<td>8.2.2 Potential archaeologically sensitive areas (PASA)</td>
<td>95</td>
</tr>
<tr>
<td>8.3 Aboriginal cultural value recordings</td>
<td>104</td>
</tr>
<tr>
<td>8.3.1 Mature fig trees</td>
<td>104</td>
</tr>
<tr>
<td>8.4 Non-Aboriginal sites</td>
<td>108</td>
</tr>
<tr>
<td>8.4.1 Site recordings</td>
<td>108</td>
</tr>
<tr>
<td>8.4.2 Cultural landscape values</td>
<td>142</td>
</tr>
</tbody>
</table>
9.0 Significance assessment

9.1 Aboriginal heritage

9.1.1 Assessment criteria

9.1.2 The study area

9.2 Non-Aboriginal heritage

9.2.1 Assessment criteria

9.2.2 The study area

10.0 Statutory and policy context

10.1 National Parks and Wildlife Act 1974

10.1.1 General management constraints and requirements

10.1.2 Statutory constraints arising from artefacts which constitute background scatter

10.2 National Parks and Wildlife Amendment Act 2001


10.3.1 Overview

10.3.2 Protection of relics and archaeological deposits

10.3.3 Permits and approval requirements

10.3.4 Exemptions for works requiring Heritage Council approval

10.3.5 Exceptions from Excavation Permit requirements

10.3.6 The Heritage Council of NSW

10.3.7 Interim heritage orders

10.3.8 The State Heritage Register

10.3.9 Heritage agreements

10.3.10 Environmental planning instruments

10.3.11 Heritage and Conservation Registers

10.4 Environmental Planning and Assessment Act 1979

10.4.1 Part 3A of the Environmental Planning and Assessment Act 1979

10.5 Implications for the proposal

10.5.1 Aboriginal heritage

10.5.2 Non-Aboriginal heritage

11.0 Management of the potential impacts of the upgrade development

11.1 Aboriginal heritage

11.1.1 Development impact

11.1.2 Site management

11.1.3 Potential archaeologically sensitive area management

11.1.4 Mature fig tree management

11.1.5 Management of recovered artefacts

11.2 Non-Aboriginal heritage

11.2.1 Development impact

11.2.2 Site and landscape management

11.2.3 Management of recovered artefacts

12.0 Recommendations

12.1 Aboriginal heritage

12.2 Non-Aboriginal heritage

13.0 References

Appendix A Large scale mapping showing location of cultural heritage recordings within the Gerringong upgrade

Appendix B Proposed methodology for archaeological test excavation program

B.2 Environmental safeguards

B.3 Lithic analysis methodology

B.4 Report

Appendix C Registered Aboriginal Stakeholders

Appendix D Protocols to be followed in the event of an unanticipated discovery or the detection of suspected human remains
Executive summary

Introduction

The RTA is proposing to upgrade the Princes Highway between Mount Pleasant and Toolijooa Road. The proposal is part of the RTA’s program to upgrade the Princes Highway between Gerringong and Bomaderry, providing increased road safety and traffic efficiency in the South Coast region.

The upgrade of the Princes Highway between Gerringong and Bomaderry forms part of the RTA’s broader strategy of providing four lanes between Sydney and Jervis Bay Road, which includes the North Kiama Bypass; Oak Flats to Dunmore; South Nowra and the future bypass of Albion Park Rail. With the recent opening of the Oak Flats to Dunmore upgrade, the section of highway from south of Mount Pleasant to Nowra would remain the only two lane section of Princes Highway between Sydney and Nowra.

This working paper was commissioned by AECOM and presents an assessment of the potential environmental impacts on cultural heritage. It supplements the Review of Environmental Factors for the proposal as required under Part 5 of the Environmental Planning and Assessment Act 1979.

AECOM was engaged by the RTA in December 2006 to carry out an Options and Route Selection Study, Concept Development and Environmental Assessment for the upgrading of the Princes Highway between 42.6 km to 74.6 km south of Wollongong.

The cultural heritage assessment program for the project includes two main assessment streams, a cultural assessment and an archaeological assessment, as specified by Department of Environment, Climate Change and Water (DECCW) and RTA policy.

The following cultural heritage assessments / studies and Aboriginal consultation have been conducted to date:

- A Preliminary Aboriginal and Non-Aboriginal Heritage Assessment at the route options assessment stage.
- A Preliminary Landscape Review.
- An Aboriginal Cultural Values Study.
- Aboriginal consultation.

The proposal is being assessed under Part 5 of the Environmental Planning and Assessment Act.

Results

Twelve Aboriginal heritage recordings occur within or near the proposal study area. These consist of two sites with surface artefacts (G2B A6 and G2B A7), one with reported subsurface artefacts (G2B A5) and nine potentially archaeological sensitive areas (PASA 31 to PASA 39).

In addition to these recordings, the Aboriginal cultural value of mature fig trees across the Illawarra region is noted. There are five mature fig tree incidences, singly or in groups, in or near to the proposal study area.
Fourteen non-Aboriginal heritage recordings occur within or near the proposal study area. These consist of one cultural landscape description, and 13 specific site descriptions. The site recordings consist of four with standing structures (G2B H32, G2B H34, G2B H38, and G2B H40), three containing archaeological remains of former structures (G2B H31, G2B H37 and G2B H42), three disused highway remnants (G2B H33, G2B H39 and G2B H41), one surface dump of disused vehicles (G2B H35), one agricultural dry stone wall (G2B H36), and a property driveway entrance (G2B H43).

**Heritage significance**

Of the 12 Aboriginal heritage recordings, two sites (G2B A6 and G2B A7) are considered to have low, local significance, one (G2B A5) is considered to have moderate to high significance in a local context (subject to confirmation by archaeological test excavation).

The nine PASA locations within the proposal study area consist of landform types with predicted potential to have archaeological sensitivity. All of the landform types are well represented in adjacent areas and across the southern Illawarra coastal plain. Typically these comprise the riparian corridors of rivers and creeklines, and the basal slopes fringing valley floors and former wetland basins. The PASAs within the study area are therefore not considered to be rare or unique incidences.

Although locally representative of such contexts, the PASAs have undergone a high degree of landuse disturbance due to the proximity of the existing Princes Highway. In many cases the current highway occupies a section of spurline crest, and has consequently removed a portion of the PASA, which also extends to either side of the spurline. For this reason, many of the equivalent landforms situated in adjacent areas and across the local area, will display greater integrity and less landuse disturbance than the PASAs associated with the proposal.

The true significance of the nine potentially archaeological sensitive areas (PASA 31 to PASA 39) can only be determined following archaeological testing. Excavation would be undertaken to realise their archaeological potential and the REF would not be determined until the results of the investigations has been interpreted and level of impacts can be quantified with more vigour.

It can be surmised however, that while the identified PASAs have statutory, scientific and cultural value for the dual purposes of determining the presence and nature of Aboriginal objects, and for testing and refining the predictive local Aboriginal site model, it is probable that any archaeological material encountered, will also be present across similarly located landforms elsewhere across the region.

Of the 14 non-Aboriginal heritage recordings, 12 (G2B H31, G2B H32, G2B H34, G2B H36 to G2B H43 and the Southern Illawarra coastal plain and hinterland cultural landscape) are considered to be of local heritage significance, while the remaining two (G2B H33 – a 1990s highway remnant and H35 – a vehicle dump) are not considered significant.

**Development impact**

**Aboriginal**

Aboriginal heritage recordings which may potentially be subject to one or more of these impacts are sites G2B A5, G2B A6 and G2B A7, PASA 31 to PASA 39, and mature fig trees MTF2, MTF3, MTF4, MTF5, MTF9 and MTF10.
The potential impacts of the proposed Gerringong upgrade on non-Aboriginal heritage consist of:

1) Destruction or gross disturbance to: above and below-ground structures and relics, ground relief features, and archaeological deposits present within the direct construction footprint of the development. This can be expected to involve up to 100 per cent of the planned highway easement, although there may be some limited potential for site remnants to survive in undeveloped areas of the easement.

2) Destruction or gross disturbance to above and below-ground structures and relics, ground relief features, and archaeological deposits present within proposed construction and storage depots and other ancillary areas situated outside of the post-construction highway easement.

3) Destruction or gross disturbance to a margin or strip of land which forms part of the associated grounds or a property block within which a heritage item / place is situated, such as a homestead building, or associated tree(s).

4) Indirect impacts (such as to the contextual values of place(s) and/or item(s)) which are now adjacent to or closer to the upgraded highway; or to the overall values of the landscape through which the upgrade passes.

5) Indirect impact to items of movable heritage which may have been moved to avoid direct impact and as a consequence lost contextual integrity.

Of the 14 non-Aboriginal heritage recordings:

- Two would be located immediately adjacent to the upgrade, and although not directly impacted by earthworks, existing property boundaries may be affected to a minor extent by land acquisition depending on the width of the easement required (G2B H31 and G2B H40).
- Four may be marginally impacted by earthworks conducted within existing property boundaries, but in areas where the risk of impacting heritage values is low (G2B H32, G2B H33, G2B H35 and G2B H39).
- Five are likely to be directly impacted to a more significant, but still limited extent, within existing property boundaries (G2B H34, G2B H36, G2B H38, G2B H41 and G2B H42).
- One potential archaeological deposit (G2B H37) would be situated outside of the direct construction footprint but within a probable construction traffic and ancillary area.
- One would be fully impacted (G2B H43).
- The identified cultural landscape would be impacted significantly, but moderated by the already dominant presence of the highway, and the small proportion of land effected relative to the whole.

Strategies for managing the potential impacts on each Aboriginal and non-Aboriginal heritage site or features are detailed in the report, and reflected in the recommendations below.

**Recommendations**

**Aboriginal**

It is recommended that:

1) Aboriginal stakeholders should continue to have the opportunity to actively participate in an ongoing consultation program regarding the management of Aboriginal cultural heritage within the proposal areas.

2) A salvage program involving the recovery of all surface artefacts located within the construction footprint, including areas of construction depots and ancillary areas, should be conducted prior to the commencement of proposal related impact. This action relates to sites G2B A5, G2B A6 and
G2B A7. Subject to further liaison and approval, consideration should also be given to the recovery of artefacts encountered and collected by Mr and Mrs Graham from site G2B A5. A Section 87 permit and/or Section 90 consent (Aboriginal Heritage Impact Permit) would be required from DECCW as a prerequisite to the conduct of this program.

3) A systematic program of archaeological test excavation should be conducted within the potentially archaeological sensitive areas identified within the proposal area. Subject to DECCW approval it is proposed that a first stage of testing be conducted within a representative sample of the proposal area potentially archaeological sensitive areas. Based on the results of this program, archaeological interpretations and management recommendations can be drafted and applied to those untested potentially archaeological sensitive areas with corresponding traits. Where necessary additional potentially archaeological sensitive areas may be selected for further archaeological investigation in subsequent program stages. The following potentially archaeological sensitive areas are proposed for inclusion within a stage one testing program: PASA 32, PASA 33, PASA 34, PASA 35, PASA 37 and PASA 38. A Section 87 permit (Aboriginal Heritage Impact Permit) would be required from DECCW as a prerequisite to the conduct of this program.

4) Where the destruction of known Aboriginal objects or confirmed archaeological deposits is anticipated as part of the direct impact of proposal related actions, application should be made to DECCW for a Section 90 consent (Aboriginal Heritage Impact Permit) to undertake such impact. No impact can occur to Aboriginal objects prior to the receipt of the Aboriginal Heritage Impact Permit, and any impact must be consistent with the provisions of the Aboriginal Heritage Impact Permit.

5) The protocols provided in Appendix D should be adopted and followed in the event that proposal related disturbance involves the unanticipated discovery of Aboriginal objects or suspected human remains.

6) With regard to the management of mature fig trees within the proposal area:

   a) Wherever feasible, direct impact to mature fig trees should be avoided.

   b) The continued and sustainable health of near or adjacent trees should be considered in the detailed design of the upgrade. This action is relevant to MTF2 and MT5, and possibly other examples.

   c) In cases where direct impact to mature fig trees is unavoidable:

      i) Wherever feasible, trees with reduced health, condition or vigour are impacted in preference to examples displaying good condition, health and vigour.

      ii) Establish a management and impact mitigation program in consultation with the Aboriginal Focus Group. This action is relevant to the anticipated removal of MFT3 and MFT4.

   d) Consultation with Aboriginal stakeholder groups should be conducted with regard to all incidences of anticipated impact to mature fig trees (MTF3 and 4). The objective of this consultation is to propose strategies for the management of the Aboriginal cultural values which may be affected by the impact.

7) An appropriate means of commemorating the traditional Aboriginal culture of the country being traversed by the upgrade should be adopted where and as feasible. This may take the form of signage, adopted nomenclature for built structures or wayside stops, the use of motifs in any incorporated artwork, or the erection of commemorative markers and/or monuments. The development, source material, and approval of any such proposal should be the subject of continuing consultation with Aboriginal stakeholders.

8) Except in the event that all Aboriginal stakeholders agree on an alternative management strategy, all recovered artefacts, following completion of the archaeological analysis of the assemblage, must by law be lodged with the Australian Museum, Sydney. If Aboriginal stakeholders agree on an alternative, it is recommended that an application in support of the agreed proposal should be lodged with the relevant statutory authorities for their consideration.

9) Three copies of this report should be provided to DECCW and copies made available to Aboriginal stakeholders, as required by the Department of Environment, Climate Change and Water Interim Guidelines for Aboriginal Community Consultation.
Non-Aboriginal

It is recommended that:

1) Where feasible, direct impact to known sites and features with assessed heritage significance should be avoided, and where not feasible, that impact should be minimised and mitigated.

2) Consideration should be given to reducing the extent of the cuts required adjacent to Aorangi (G2B H34) and the dry stone wall (G2B H36), with the objectives of avoiding or reducing the extent of direct impact (including the loss of mature garden plantings at Aorangi), and the width of the required easement and consequential property acquisition.

3) The boundary of the upgrade easement should be defined so that the loss of freehold land is minimised in the area of the following sites G2B H31 (site of Harding tenant farm) G2B H32 (former Toolijooa school), G2B H32 (Aorangi), G2B H36 (dry stone wall), G2B H38 (Renfrew Park), G2B H40 (former Omega school) and G2B H42 (site of original Homeleigh).

4) Temporary fencing should be erected between the following sites / features and the zone of construction activity, for the duration of construction works: G2B H31 (site of Harding tenant farm), trees to be retained along the northern boundary of Aorangi (G2B H34), the dry stone wall (G2B H36), the portion of the Renfrew Park front enclosure not subject to impact (G2B H38), and the portion of the Homeleigh archaeological site not subject to impact (G2B H42). Fencing around trees should include a radius around the stem that includes the canopy. The fenced off areas should be identified as ‘no go’ areas for vehicles, and exclude materials storage or the conduct of ground surface disturbance.

5) An archival record should be prepared of the following sites prior to the commencement of construction impact:
   a) The front formal garden of Aorangi (G2B H34) if it is determined that significant plantings would be directly impacted (the recording of non impacted portions of the garden can be at a lesser detail and are required to provide a context for the impacted items).
   b) Items directly impacted at the disused vehicle dump (G2B H35), where and if further research indicates that recoding is justified.
   c) The agricultural dry stone wall (G2B H36), if it is determined that the wall would be directly impacted.
   d) The front grounds and enclosure of Renfrew Park (G2B H38).
   e) The 1940s highway remnant G2B H41 (consideration should be given to conducting a cross sectional excavation as part of this recording).
   f) The site of the original Homeleigh homestead (G2B H42).
   g) The Innisfail driveway entrance (G2B H43).

6) A program of archaeological test excavation, and where warranted, subsequent archaeological salvage excavation, should be conducted at relevant locations within the area of impact at sites G2B H32 (former Toolijooa school), and G2B H42 (site of the original Homeleigh homestead). The scope of excavations at G2B H42 may extend beyond the area of impact, depending on the management objectives of the program and the need to clarify the nature and extent of the site.

7) If it is the intention of the current owner of site G2B H35 (disused vehicle dump) not to recover effected items prior to RTA acquisition, then further research should be conducted regarding the origin and history of items to be impacted. In the event that significant heritage values are identified, then an appropriate management strategy should be developed and followed. This may consist of one or more of the following options: archival recording prior to disposal, selective salvage and curation and/or re-positioning of item(s) to a new location.

8) With regard to site G2B H37 (site of Omega Stationmasters residence), disturbance to the deposit should avoided below a depth of around 100 cm. If the area is required for ancillary activities (not associated with significant ground disturbance), then additional hard stand gravels should be applied to protect any remaining archaeological deposits. In the event that excavations below a depth of 100 cm are anticipated and unavoidable, then an archaeological test excavation should be
conducted to ascertain the nature, significance and management requirements of any potentially occurring archaeological deposits.

9) With regard to the Renfrew Park property (G2B H38), it is recommended that the following actions be undertaken in addition to the archival record outlined in recommendation No.16:
   a) Ensure that the palm tree remains undisturbed and viable.
   b) Develop and instigate, in consultation with the landowner and a heritage garden specialist, a landscaping plan for the remaining portion of the homestead front enclosure. The objective of the plan would be to integrate the upgrade batter and easement requirements with the redevelopment of the homestead frontage. Subject to owner and Kiama Municipal Council heritage requirements, it is recommended that the plan seek to retain the palm tree, to re-establish the formal and symmetrical garden schema, and to reposition the existing entrance posts and gateway in a new location along the central axis.
   c) Integrate the MFT2 fig tree on the west side of the highway with any planned, northbound exit, gateway installation for the Gerringong area.

10) With regard to site G2B H39 (1940s highway remnant north of Renfrew Park), impact to this feature should be minimised where feasible, and adjacent landscaping and other treatments within the easement adjacent to the site should take into account the desirability of maintaining the ability of the public to view the feature either from the road during travel, and/or via a pedestrian path.

11) With regard to the Innisfail property entrance feature (site G2B H43), and in addition to the archival record outlined in recommendation No.16, the following actions should be conducted subject to agreement by stakeholders:
   a) The feature should be appropriately dismantled.
   b) Temporarily stored (if necessary).
   c) Re-installed, and restored to its original form, at a new entrance location along the Innisfail property driveway.

12) A program of revegetation along the upgrade easement and associated works should be conducted with the aim of mitigating the impact to the cultural values of the immediate and larger surrounding landscape. The program should include the use of both native and exotic species. The latter should be representative of those already present in the landscape and be established in the proximity of towns, historical estates or where dictated by the surrounding landscape.

13) The protocols provided in Appendix D should be adopted and followed in the event that proposal related disturbance involves the unanticipated discovery of non-Aboriginal artefacts (relics) or suspected human remains.

14) A copy of this report should be provided to Heritage Branch of the Department of Planning, as part of the approvals process. Following publication of the Review of Environmental Factors, a copy of this report should be lodged with the Gerringong and District Historical Society and the Berry and District Historical Society, for their information.
1.0 Introduction

The Roads and Traffic Authority of NSW (RTA) is proposing to upgrade the Princes Highway between Mount Pleasant and Toolijooa Road (the proposal). The proposal is part of the RTA’s program to upgrade the Princes Highway between Gerringong and Bomaderry, providing increased road safety and traffic efficiency in the South Coast region.

This working paper was commissioned by AECOM and presents an assessment of the potential environmental impacts on cultural heritage. It supplements the Review of Environmental Factors for the proposal as required under Part 5 of the Environmental Planning and Assessment Act 1979.

1.1 Proposal description

The preferred option for the proposal has been selected on the basis that it best meets the proposal objectives and performs well across a combination of the technical input from investigations to date, community feedback and the findings of the value management process.

The northern extremity of the proposal is around 300 m south-west of the Mount Pleasant lookout (at the termination of the four lane configuration) and the southern extremity is around 250 m east of the Toolijooa Road intersection. (See Figure 1.1 and Figure 1.2). The length of the proposal is approximately 7.5 km.

The proposal would include the following key features:

- Construction of 7.5 km of two lanes in each direction between Mount Pleasant and Toolijooa Road.
- Grade-separated interchange at Rose Valley Road incorporating four-way traffic access to and from Gerringong via a two-way service road and overbridge spanning the South Coast Railway at Fern Street.
- Grade-separated interchange at Belinda Street providing four-way, flood free traffic access to and from Gerringong and incorporating a two-way service road connecting to Willowvale Road.
- Bridge structure spanning a realigned Crooked River, incorporating Bailey's Road and an existing cattle underpass.
- Northbound climbing lane between Rose Valley Road and the top of Mount Pleasant.
- Southbound climbing lane for approximately 800 m from Belinda Street on ramp.
- Property acquisition and the setting of corridor boundaries for the provision of future widening to six lanes (three in each direction).
- Extensive drainage structures maintaining cross drainage flow in the low lying area of Omega Flat.
- Incorporation of the provision for future widening now where the design is constrained by topography and alignment eg the ‘slot’ and bridge structure at the Rose Valley Road interchange.
Figure 1.1: Concept design for the Gerringong upgrade
Figure 1.2: Detail of concept design showing Rose Valley Road Interchange
Other design features would include areas of cuts and fills, possible redirection of minor tributaries (which would be confirmed during detailed design), less significant drainage culverts, soft soil treatments in the Omega Flat such as preloading and surcharging with wick drains to manage long-term settlement, local road and private road access treatments and cattle underpasses.

The proposal is expected to cost in the order of $230m and would be funded by the NSW State Government. Subject to funding, construction of the proposal is anticipated to commence in early 2011 and is expected to take up to two years to complete.

1.2 Background to the assessment

AECOM was engaged by the RTA in December 2006 to carry out an Options and Route Selection Study, Concept Development and Environmental Assessment (EA) for the upgrading of the Princes Highway between 42.6 km to 74.6 km south of Wollongong.

The cultural heritage assessment program for the project includes two main assessment streams, a cultural assessment and an archaeological assessment, as specified by Department of Environment, Climate Change and Water (DECCW) and RTA policy.

The following cultural heritage assessments / studies and Aboriginal consultation have been conducted to date:

- **A Preliminary Aboriginal and Non-Aboriginal Heritage Assessment at the route options assessment stage.**
  This study involved:
  - Literature and heritage database reviews.
  - Mapping of known sites.
  - Provision of a predictive model for Aboriginal and Non-Aboriginal heritage sites within the broad route options study area (Navin Officer Heritage Consultants 2007b).

- **A Preliminary Landscape Review**
  The review comprised:
  - Archaeological survey of limited ground surface exposures (most of which have occurred within the existing road reserve), and a predictive assessment of subsurface archaeological potential.

- **An Aboriginal Cultural Values Study.**
  This study involved:
  - A series of Aboriginal Focus Group (AFG) meetings conducted throughout the route selection process (which would continue for the duration of the project).
  - A series of meetings with (individual) Aboriginal stakeholders where they had an opportunity to provide relevant information regarding known cultural heritage values and places, issues, and potential constraints and opportunities concerning the route selection study and the upgrade.
  - A site walkover which included visits to selected areas and some limited field survey. The site visit facilitated stakeholders in gaining an appreciation of potential cultural significance with regard to the shortlisted route options.
  - Compilation of this information in an Aboriginal Cultural Values Report (Navin Officer Heritage Consultants 2008 and 2009a).
  - Utilisation of this data, where applicable, in the formulation of the subsurface testing methodology.
Aboriginal consultation

The RTA has undertaken Aboriginal community consultation and investigation consistent with the Department of Environment, Climate Change and Water Interim Guidelines for Aboriginal Community Consultation and the RTA Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI, June 2008) for this project.

A list of the Aboriginal stakeholders registered according to the Interim Guidelines is provided in Appendix C.

In addition to the consultation conducted for the Aboriginal Cultural Values Study the RTA has conducted numerous Aboriginal Focus Group meetings and a bus trip / field inspection (in June 2009) with nominated representatives from the Aboriginal Focus Group, as appointed by the Aboriginal Focus Group, to visit and review areas where investigative works are proposed.

1.3 Legislative approval and requirements

The proposal is being assessed under Part 5 of the Environmental Planning and Assessment Act.

1.4 Report outline

This report:
- Provides an outline of consultation with local Aboriginal organisations carried out in the course of the cultural heritage assessment.
- Describes the environmental setting of the study area.
- Provides a background of local and regional archaeology and history for the study area.
- Describes the results of field survey.
- Provides management recommendations based on the results of the investigation and the anticipated impacts of the proposed development on the archaeological resource.
2.0 Aboriginal consultation and participation

The RTA has undertaken Aboriginal community consultation and investigation consistent with the Department of Environment, Climate Change and Water Interim Guidelines for Aboriginal Community Consultation and the RTA Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI, June 2008) for this project.

A list of the Aboriginal stakeholders registered according to the Interim Guidelines is provided in Appendix C.

In addition to the required consultation actions defined in the Interim Guidelines, the RTA has conducted the following consultation components:

- An Aboriginal Cultural Values Study.
- A series of 10 (to date) Aboriginal Focus Group meetings. The periodic convening of the Aboriginal Focus Group would continue for the duration of the project.
- A ‘walk over’ conducted of the route selection study area on 23 June, 2008.
- A bus trip and inspection (in June 2009) with appointed representatives from the Aboriginal Focus Group, to visit known sites and review areas where investigative works are proposed.

The site ‘walkover’ of selected areas within the route selection study area was conducted on 23 June, 2008. The walkover comprised visits to selected areas and some limited field survey. Ground surface visibility in most areas was limited by thick groundcover (pasture grass) and in some areas by dense vegetation.

The aim of the site walkover was to gain an appreciation of potential cultural significance with regard to the shortlisted route options.

The site walkover was attended by:

Leeroy Boota (Gerringong Community)  Gwendolin Stewart (Gerringong Community)
Djarhn Blair (Gerringong Community)  Greg Davis (Gerringong Community)
Gwenda Jarrett (Gerringong Community)  Clayton Stewart (Gerringong Community)
Kristian Jarrett (Gerringong Community)  Elliot Stewart (Gerringong Community)
Michael Jarrett (Gerringong Community)  Lyle Davis (interested elder)
Stan Jarrett (Gerringong Community)  John Pagett (Yuin Traditional Owner)
Jason Davison (Dungarn)  Graham Connolly (Jerrinja Consultants)
Roy Stewart (Illawarra LALC)  
Ron de Rooy (NSW RTA)  Agnes Donovan (NSW RTA)
Jon Williamson (AECOM)

Kerry Navin (Navin Officer HC)  Kelvin Officer (Navin Officer HC)
Tom Taverner (Navin Officer HC)  Daniel Powell (Navin Officer HC)
Information relevant to the Gerringong upgrade region and provided during the June 2008 walkover consisted of:

- The Ooaree Creek area on the western portion of Omega Flat was identified as an area of cultural sensitivity.
- The presence of large fig trees were noted in the area of Renfrew Park homestead and options discussed to move proposed intersection works to protect the trees.
- Some participants remembered fishing in the nearby Werri Lagoon estuary and camping in the general area.
- Anecdotal information about the cultural significance of land in the vicinity of Fern Street and burials in the Fern Street area was discussed.

The purpose of the June 2009 bus trip was to visit known sites with Aboriginal Focus Group appointed representatives and review areas where archaeological investigative works are proposed. The aim was specifically to discuss and provide focused feedback into the finalisation of a proposed test excavation methodology. The trip was undertaken after registered stakeholders had been provided with a draft copy of the methodology and allowed time to review the document.

As a result of comments received from attendees of the June 2009 bus trip, three additional archaeological test locations were added to the proposed test excavation program (PASA 40, PASA 41 and PASA 42).

Consultation for the cultural values study was undertaken in accordance with discussions and agreements reached within the open forum of the Aboriginal Focus Group meetings, and in the context of the site walkover. Participants were nominated through the Aboriginal Focus Group, with key Aboriginal stakeholders and cultural knowledge providers identified through the Aboriginal Focus Group process. Consultation including a series of Aboriginal Focus Group meetings, interviews with individuals and groups, and the field visit.

Information and views were provided by the Wodi Wodi Elders, the Moran family, Graham Connolly (of Jerrinja Consultants), Richard Campbell, Aaron Henry and Steven Henry (representing the Campbell and Henry families), Sharralyn Robinson, Gwenda Jarrett (representing the Stewart family), and Deanna and Jim Davison (representing the Davison family) in a series of meetings. Unsuccessful attempts were made to contact and/or organise meetings with a number of other groups / individuals.

Many of the study participants, or their families and forbears, have lived and/or worked within the study area, or in areas surrounding the study area.

The area has broad cultural values and sensitivity, and knowledge exists in families about recent (within the past 50 years) use of the land and connections that are more distant in time.

All of the participating individuals or groups recognised the need for safety improvements to the Princes Highway in this area. They also recognised the importance of the subject country to Aboriginal people.

Six places of Aboriginal cultural significance were identified within the Gerringong to Bomaderry Princes Highway project area. None are located within the Gerringong upgrade study area. The six places are historical Aboriginal encampments at Berry, Boongaree and Broughton Village; the David Berry Hospital; the “Little Mountain” or “Dicky Wood’s Meadow” battle ground; and the Toolijoa Ridge.

General issues of concern relating to the retention of old-growth vegetation and potential burial locations were also identified.
Most participants did not have any problems with the construction of the road provided that a satisfactory level of heritage assessment was carried out. Participants requested that they continue to be involved in the project.

Participants suggested:

- A smoking ceremony be conducted for all field personnel who are working on the Gerringong to Bomaderry project to protect them.
- The RTA should respect the views of the families that had always lived in the area.
- Wherever feasible and consistent with RTA design and safety standards, direct impact to old-growth fig trees should be avoided.
- The RTA should consider commissioning a memorial of some kind (possibly a monument) to commemorate the Aboriginal connection with the land.
- Adequate archaeological assessment should be conducted prior to road construction.
- With regard to the potential discovery of Aboriginal human remains:
  - Conduct basic training of field-personnel on the recognition of burial sites.
  - Adopt a human remains discovery protocol.
  - In areas of increased potential, (such as locally elevated alluvial deposits), excavations into natural soil profiles should be monitored by an archaeologist and Aboriginal representative.
3.0 Study methodology

3.1 Literature and database review

A range of archaeological and historical data was reviewed for the study area and its surrounds. This literature and data review was used to determine if known Aboriginal and historical sites were located within the area under investigation, to facilitate site prediction on the basis of known regional and local site patterns, and to place the area within an archaeological and heritage management context. The review of documentary sources included heritage registers and schedules, local histories and archaeological reports.

Aboriginal literature sources included the Aboriginal Heritage Information Management System maintained by the NSW Department of Environment, Climate Change and Water (DECCW) and associated files and catalogue of archaeological reports; and theses held in the library of the School of Archaeology and Anthropology at the Australian National University. Sources of historical information included regional and local histories, heritage studies and theses; parish maps; newspaper articles, local museum displays and websites, and where available, other maps, such as portion plans.

Searches were undertaken of the following statutory and non-statutory heritage registers and schedules:

a) Statutory listings:
   - Aboriginal Heritage Information Management System (AHIMS) (DECCW).
   - World Heritage List.
   - National Heritage List (Australian Heritage Council).
   - Commonwealth Heritage List (Australian Heritage Council).
   - National Historical Shipwreck Register and Database (NSW Heritage Branch).
   - The State Heritage Register (NSW Heritage Branch).
   - Section 170 Heritage and Conservation Register(s) compiled by the RTA.
   - Heritage Schedule(s) from the Shoalhaven and Kiama Local Environmental Plans.

b) Non-statutory listings:
   - The Register of the National Estate (Australian Heritage Council).
   - The State Heritage Inventory (NSW Heritage Branch).
   - Register of the National Trust of Australia (NSW).
   - Royal Australian Institute of Architects Register.
   - Institute of Engineers (NSW) Heritage Register.
   - Professional Historians Association (NSW).
   - Art Deco Society Register.

3.2 Fieldwork

A field survey was conducted over a period of two months (February to April 2009) in multiple survey events according to property access availability and local weather conditions.

The survey involved inspection, both on foot and via vehicle, depending on property access and ground visibility constraints.
The field assessment involved the detection of any surface archaeological material and an assessment of the potential for subsurface archaeological material.

The area subject to survey and assessment (the study area) consisted of the study corridor of the preferred Gerringong upgrade alignment (Figure 1.1 and Figure 1.2).

3.3 Project personnel

The survey was conducted by archaeologists Kelvin Officer, Kerry Navin and Deirdre Lewis-Cook. The report was written by Kelvin Officer and Kerry Navin.

3.4 Recording parameters

3.4.1 Aboriginal sites and potential archaeological deposit

The archaeological survey aimed at identifying material evidence of Aboriginal occupation as revealed by surface artefacts and areas of archaeological potential unassociated with surface artefacts. Recordings fall into two broad categories: sites and potential archaeologically sensitive areas.

Sites

A site is defined as any material evidence of past Aboriginal activity that remains within a context or place which can be reliably related to that activity.

Most Aboriginal sites are identified by the presence of three main categories of artefacts: stone or shell artefacts situated on or in a sedimentary matrix; marks located on or in rock surfaces; and scars on trees.

Frequently encountered site types within south eastern Australia include: stone artefact occurrences - including isolated finds and open artefact scatters, coastal and freshwater middens; rock shelter sites - including occupation deposit and/or rock art; grinding groove sites; and scarred trees. For the purposes of this section, only the methodologies used in basic site identification are outlined, together with those for the recording types encountered by this investigation.

Stone artefact occurrences

Stone artefact occurrences are the most commonly recorded site type in Australia. They may consist of single artefacts (described as isolated finds) or as a distribution of more than one artefact (often described as an artefact scatter or ‘open camp site’ when recording surface artefacts, or as a subsurface artefact distribution when dealing with an archaeological deposit).

Where artefact incidence is very low, either in terms of areal distribution (artefacts per square metre) or density (artefacts per cubic metre) the differentiation of the recording from background artefacts counts or background scatter may be an issue.

Isolated finds

An isolated find is a single stone artefact, not located within a rock shelter, and which occurs without any associated evidence of Aboriginal occupation within a radius of 60 m. Isolated finds may be indicative of:

- Random loss or deliberate discard of a single artefact.
- The remnant of a now dispersed and disturbed artefact scatter.
- An otherwise obscured or sub-surface artefact scatter.
Except in the case of the latter, isolated finds may be considered to be constituent components of the background scatter present within any particular landform.

The distance used to define an isolated artefact varies according to the survey objectives, the incidence of ground surface exposure, the extent of ground surface disturbance and estimates of background scatter or background discard densities. In the absence of baseline information relating to background scatter densities, the defining distance for an isolated find must be based on methodological and visibility considerations. Given the varied incidence of ground surface exposure and deposit disturbance within the study area, and the lack of background baseline data, the specification of 60 m is considered to be an effective parameter for surface survey methodologies. This distance provides a balance between detecting fine scale patterns of Aboriginal occupation and avoiding environmental biases caused by ground disturbance or high ground surface exposure rates. The 60 m parameter has provided an effective separation of low density artefact occurrences in similar south-east Australian topographies outside of semi-arid landscapes.

**Background scatter**

Background scatter is a term used generally by archaeologists to refer to artefacts which cannot be usefully related to a place or focus of past activity (except for the net accumulation of single artefact losses).

There is no single concept for background discard or ‘scatter’, and therefore no agreed definition. The definitions in current use are based on the postulated nature of prehistoric activity, and often they are phrased in general terms and do not include quantitative criteria. Commonly agreed is that background discard occurs in the absence of ‘focused’ activity involving the production or discard of stone artefacts in a particular location. An example of unfocused activity is occasional isolated discard of artefacts during travel along a route or pathway. Examples of ‘focused activity’ are camping, knapping and heat-treating stone, cooking in a hearth and processing food with stone tools. In practical terms, over a period of thousands of years an accumulation of ‘unfocused’ discard may result in an archaeological concentration that may be identified as a ‘site’. Definitions of background discard comprising only qualitative criteria do not specify the numbers (numerical flux) or ‘density’ of artefacts required to discriminate site areas from background discard.

**Artefact distribution**

Artefacts situated within an open context are classed as an open artefact distribution, also known as artefact scatter (or ‘open camp site’) when two or more occur no more than 60 m away from any other constituent artefact. The 60 m specification relates back to the definition of an isolated find. The use of the term scatter is intended only to be descriptive of the current archaeological evidence and does not infer the original human behaviour which formed the site. The term open camp site has been used extensively in the past to describe open artefact scatters. This was based on ethnographic modelling suggesting that most artefact occurrences resulted from activities at camp sites. However, in order to separate the description from the interpretation of field evidence, the terms artefact scatter, artefact distribution or artefact occurrence are now more extensively used. The latter two options can also be used to categorise artefacts occurring in sub-surface contexts.

**Rock shelter sites**

In a rockshelter, a site is defined as one or more artefacts occurring within or immediately adjacent to the sheltered space. Unlike a single artefact in an open context, a rock shelter provides a probable occupational focus to the interpretation of a single artefact and can therefore be considered to be indicative of a site rather than a background occurrence. An exception would be a single artefact which may have been deposited in the shelter through natural processes.
Rock art

Any location containing one or more marks of Aboriginal origin on rock surfaces is classed as a site. Marks typically consist of grinding features, such as grinding grooves for hatchet heads, and rock art such as engravings, drawings or paintings. The boundaries of these sites are defined according to the spatial extent of the marks, or the extent of the overhang, depending on which is most applicable to the spatial and temporal integrity of the site.

Scarred trees

Trees with scars of Aboriginal origin form the other major type of artefactual evidence. Each tree is normally considered to be a separate site. The identification of a scar as Aboriginal in origin is dependent on a set of inter-related interpretive criteria. The credibility of alternative causal explanations such as natural traumas and other types of human scarring must be tested for each scar.

A range of diagnostic criteria has been developed to assist in the identification of Aboriginal scarred trees. The following criteria are based on archaeological work conducted by Simmons (1977) and Beesley (1989), and the field manual for Aboriginal scarred trees developed by Long (2005):

1. The scar does not normally run to ground level: (scars resulting from fire, fungal attack or lightning nearly always reach ground level). However, ground termination does not necessarily discount an Aboriginal origin (some ethno-historical examples of canoe scars reach the ground).
2(a). If a scar extends to the ground, the sides of the original scar must be relatively parallel: (natural scars tend to be triangular in shape).
2. The scar is either approximately parallel sided or concave, and symmetrical: (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular, and often adzed).
3. The scar should be reasonably regular in outline and regrowth: scars of natural origin tend to have irregular outlines and may have uneven regrowth.
4. The ends of the scar should be 'shaped', either squared off, or pointed (often as a result of regrowth): (a 'keyhole' profile with a 'tail' is suggestive of branch loss).
5. A scar which contains adze or axe marks on the original scar surface is likely to be the result of human scarring. Their morphology and distribution may lend support to an interpretation of an Aboriginal origin: (marks produced after the scarring event may need to be discounted).
6. The scar must date to the time of Aboriginal bark exploitation within its region: The traditional Aboriginal exploitation of bark probably ceased in most regions between 100 and 150 years ago. However, in some locations associated with Aboriginal settlement, the Aboriginal removal of bark may have continued to the present day, or restarted as part of new cultural movements.
7. The tree must be endemic to the region: (and thus exclude historic plantings).

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

- Aboriginal scar - This is a scar where an Aboriginal origin is considered the most likely. The scar conforms to all of the criteria and a natural origin is considered unlikely and improbable.
- Probable Aboriginal scar - This is a scar that conforms to all of the criteria and where an Aboriginal origin is considered to be the most likely. Despite this, a natural origin cannot be ruled out.
- Possible Aboriginal scar - This is a scar which conforms to all or most of the criteria and where an Aboriginal origin cannot be reliably considered as more likely than alternative natural causes. The characteristics of this scar would also be consistent with a natural cause.
Potential archaeological deposits

A potential archaeological deposit is defined as any location where the potential for subsurface archaeological material is considered to be moderate or high, relative to the surrounding study area landscape. The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region. Where necessary, potential archaeological deposits can be given an indicative rating of their ‘archaeological potential’ based on a combined assessment of their potential to contain artefacts, and the potential archaeological value of the deposit. Table 3.1 illustrates the matrix on which this assessment is based. Locations with low potential for artefacts fall below the threshold of classification. In such cases the potential incidence of artefactual material is considered to be the same as, or close to that for background scatter. Where there is moderate potential for artefacts, the predicted archaeological potential parallels the potential significance of the deposit. For deposits with high potential for artefacts, the assessed archaeological potential is weighted positively.

The boundaries of potential archaeological deposits are generally defined by the extent of particular micro-landforms known to have high correlations with archaeological material. A potential archaeological deposit may or may not be associated with surface artefacts. In the absence of artefacts, a location with potential would be recorded as a potential archaeological deposit. Where one or more surface artefacts occur on a sedimentary deposit, a potential archaeological deposit may also be identified where there is insufficient evidence to assess the nature and content of the underlying deposit. This situation is due mostly to poor ground surface visibility.

Table 3.1: Matrix showing the basis for assessing the archaeological potential (shown in bolded black text) of a potential archaeological deposit

<table>
<thead>
<tr>
<th>Potential archaeological significance</th>
<th>Potential to contain Aboriginal objects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

Potential archaeologically sensitive areas

Where a predictive model has been substantially tested and refined against a corpus of subsurface archaeological results, the resulting degree of certainty associated with areas of predicted potential allows the use of a term such as potential archaeological deposit. In contrast, where a model remains largely untested, as is the case for the Southern Illawarra coastal hinterland, it must necessarily be inclusive and general in its use of criteria. There is therefore a consequential level of uncertainty in the model’s predictions. On-going refinement of the model following the application of test results may well establish a more discriminatory and exclusive subset of archaeological predictions.

It is the intention of the highway upgrade assessment program to progressively test and revise the predictive model through successive stages of archaeological test pitting. Through the refinement of the model, locations that were identified using an early version, may no longer qualify after model refinement. In view of both the higher level of uncertainty associated with the current Southern Illawarra model, and the related risk of identifying areas as potential archaeological deposits in contexts which may subsequently be considered to have lesser or no potential, an alternative terminology has been adopted for this assessment. Those areas which are consistent with the current predictive criteria have been termed potential archaeologically sensitive areas. This term is intended to denote that the archaeological sensitivity of the identified area remains subject to confirmation and model refinement. The use of this term is deliberately distinct from potential archaeological deposit. In the context of the present investigation, the identification of a potential archaeologically sensitive area is more tentative, and based on a less tested regional model, than for a potential archaeological deposit.
At present some potential archaeologically sensitive areas include known site locations. This is not a contradiction. Despite the presence of one or more surface artefacts, a reliable prediction regarding the nature of any associated subsurface artefact distribution cannot yet be made for Southern Illawarra coastal plain sites. Elsewhere across NSW, a low incidence of surface artefacts is often associated with a higher subsurface incidence. However, within the Southern Illawarra, and especially within areas of former rainforest vegetation, low numbers of surface artefacts may yet be a reliable reflection of the below-ground resource. Given the regional uncertainty regarding the nature and incidence of archaeological deposits, a potential archaeologically sensitive area identification in association with surface artefacts (a site) should not be inferred to correspond to a potential archaeological deposit for that site.

The identification of Potential Archaeologically Sensitive Areas within the study area was based on the following:

- The predictive model criteria developed in the route options assessment stage of the project (see Section 6.4).
- Ethno-historical information.
- A review of landscape characteristics relative to known archaeological site patterning and landscape disturbance.
- Locations suggested by local Aboriginal community representatives.

### 3.4.2 Historical sites and features

Historical archaeology refers to the 'post-contact' period (at and following the start of the written record) and includes: domestic, commercial and industrial sites as well as most maritime sites. It is the study of the past using physical evidence in conjunction with historical sources. The three primary types of places or items that may form part of the historical archaeology context include:

1) Below ground evidence, including building foundations, occupation deposits, features and artefacts; and above ground evidence, including buildings, works, industrial structures and relics that are intact or ruined.

2) Areas of land that display evidence of human activity or occupation.

3) Shipwrecks, deposits and structures associated with maritime activities.

Within these broad parameters, an historical archaeological site may include:

- Topographical features and evidence of past environments (ie resident in pollens and diatoms).
- Evidence of site formation, evolution, redundancy and abandonment (ie features and materials associated with land reclamation, sequences of structural development, demolition / deconstruction, and renewal).
- Evidence of function and activities according to historical theme(s) represented (eg an industrial site may contain diagnostic evidence of process, products and by-products).
- Evidence associated with domestic occupation including household items and consumables, ornaments, personal effects and toys.
- Evidence of diet including animal and fish bones, and plant residues.
- Evidence of pastimes and occupations including tools of trade and the often fragmentary signatures of these activities and processes.
- Methods of waste disposal and sanitation, including the waste itself which may contain discarded elements from all classes of artefact as well as indicators of diet and pathology.
- Any surviving physical evidence of the interplay between site environment and people.
The information found in historical archaeological sites is often part of a bigger picture which offers opportunities to compare and contrast results between sites. The most common comparisons are made at the local level, however, due to advances in research and the increasing sophistication and standardisation of methods of data collection, the capacity for wider reference (nationally and, occasionally, internationally) exists and places added emphasis on identification and conservation of historical archaeological resources.
4.0 Environmental context

The proposal consists of a 7.5 km traverse across the valley floor and fringing spurs and slopes of the Southern Illawarra coastal plain.

The coastal plain consists of the rolling hills, littoral zone and valley floor topography situated downslope and downstream of the basal ranges and spurs of the Cambewarra Range (a southern extension of the Illawarra Escarpment). The boundary between the foothills and the coastal plain is not distinct and an approximate cut-off would be the 100 m to 140 m contour (AHD).

The basal slopes bordering the coastal plain have formed from the Berry Formation, the Broughton Tuff, and the Bombo Latite. The latter dominates the higher relief of the Kiama and Gerringong district and has formed the watershed ridges and higher spurs that subdivide the various catchments and valley floor basins. The lower slopes adjacent to the valley floor may have formed on the Kiama tuff.

The valley floor of the coastal plain presents a low relief topography of quaternary fluvial sediment deposits which typically includes a suite of depositional landforms such as colluvial fans, flood plain, terrace sequences, stream corridors, wetland basins and old delta deposits. The floor in the area of the proposal is dominated by the former wetland basin of Omega Flat in the north, and the upper reaches of the Crooked River flood plain in the middle and western portions.

The majority of the valley deposits were laid down some 20,000 to 30,000 years ago and the high terrace levels probably date to around 29,000 years ago (Walker 1962). There has been a marked increase in water runoff and the rate of sediment discharged from major Illawarra streamlines in the last 100 years (Wollongong City Council 1976). The increase in sedimentation is attributable to the great disruption of vegetative cover, and the consequent erosion caused by European clearing and agriculture. A consequence has been the deposition of sediment layers across the surface of the plain's basins and fans, causing pre-historic land surfaces to be buried and obscured. Another impact is increased rates of erosion and bank failure.

The sedimentary facies of the coastal margin are dominated by marine and aeolian sediments deposited as a result of prograding coastlines after high sea levels. These consist of estuarine deposits, as well as former sand barriers, dune and beach ridges.

The formation of sand barriers across drowned valley embayments following stabilisation of former, and the current sea level rise (the latter between 4500 and 5000 years ago), has created a series of estuarine environments which have variously filled with sediment. The Werri Beach barrier, and its past variants, caused the creation of an estuary in the semi-enclosed former coastal embayment behind it. This subsequently filled with sediment to form a freshwater wetland and the estuary retreated to the open water behind the barrier and the creeklines draining the basin. European drainage of the basin has now created a low lying flat, subject to periodic inundation. The Seven Mile Beach barrier created a series of estuaries and subsequent wetland basins (now drained flats), including the Crooked River estuary.

The proposal traverses a series of ridge and spurline slopes, interspersed by valley floor flats and fringing toe slopes. The northern end of the proposal traverses the south-eastern fall of the Mount Pleasant Ridge. This major watershed is part of the range that includes Saddleback Mountain, which is itself an eastern extension of the Cambewarra Range. Mount Pleasant Ridge reaches an elevation of 218 m (AHD) and effectively separates the Central and Southern Illawarra regions. The northern end of the proposal reaches an approximate elevation of 100 m (AHD) just before the highway reaches the crest of the ridgeline which descends steeply to the coast from this point.
Omega Flat is situated between the Mount Pleasant Ridge and the complex of low spurs formed from the Bombo Latite. This complex of low ridges and spurs provide the elevated ground on which the town of Gerringong is situated and extend in a south-easterly direction to terminate at Black Head, the northern extent of the Shoalhaven Bight. Omega Flat forms the lower reaches of the Ooaree Creek and is fed by a number of other adjacent unnamed tributaries.

The proposal traverses the southern fall of a low ridgeline on the west side of the Cooked River crossing, reaching an approximate elevation of around 70 m (AHD) just below the ridge crest. This ridgeline is one of several ridges extending to the south from Currys Mountain, a side spur of the Saddleback Mountain.
5.0 Aboriginal ethnohistorical context

5.1 Regional overview

5.1.1 Ethnohistorical context

References to Aboriginal history of the Illawarra district can be found in a large corpus of historical and ethno-historic documentary sources (Organ 1990), however most written references tend to be incidental in nature and vary in accuracy or perceived bias. Complementing (and sometimes also contradicting) the written record is an often rich body of oral history. Aboriginal oral histories relate to both distant and near past events and include references to places in the context of Aboriginal tradition as well as from archaeological perspectives. Places which remain within remembered tradition include nineteenth century and later camps and settlements, hunting, fishing and gathering grounds, burial grounds and story places. Reports of the locations of Aboriginal sites have also been provided by local European people with a long-term interest in the Aboriginal occupation and archaeology of the region. Various Aboriginal groups and individuals (some now sadly departed) have generously shared their knowledge of the region over the years with interested researchers.

The very nature of oral history means that it is an ever-changing and dynamic body of information. The core sources of tradition are constantly being reviewed and re-contextualised according to the motivations of the tellers and listeners. This means that the ‘truths’ or facts related in oral histories may not necessarily transpose accurately back to the transformed modern physical world. Place names and the meanings of words or actions change over time. As a consequence, the information can often only ever be considered ‘indicative’ or anecdotal until demonstrated otherwise. Often the confirmation of oral or written references is impossible due to the disparate or limited nature of potentially corroborative information. Despite these limitations, references to places in Aboriginal history and story tradition form a valuable corpus of information which has the potential to illustrate the Aboriginal cultural landscape which has largely been ignored by other forms of the historical record.

Places and events known from the oral record are often of considerable and continuing importance to the local Aboriginal community. Places identified from the historic written sources have sometimes fallen out of the oral tradition and provide a valuable means of re-identifying places of historical significance.

5.1.2 Tribal boundaries and social structures

Based on the gaps, inconsistencies and lack of detail within surviving records, it is now difficult to be certain about the location and nature of linguistic and tribal boundaries.

Tindale conducted a comprehensive review of boundary information across Australia in 1974 (Tindale 1974). Based on Tindale's work, the Gerringong to Bomaderry study area falls within the tribal area of the Wodi Wodi people. Tindale found that the Wodi Wodi occupied an area which extended from approximately Stanwell Park in the north, to the northern bank of the Shoalhaven River in the south, and west as far as Picton, Moss Vale and Marulan. In keeping with his view that natural topographic boundaries were likely to coincide with cultural ones, Tindale considered the Shoalhaven River to form the boundary between the Wodi Wodi and the W andandian people to the south.

These groups are distinguished by different languages, with the Wodi Wodi speaking Dharawal (Thuruwal) and the W andandian speaking Dhurga. Howitt however, refers to the language of the Shoalhaven area as Gurungada (Howitt 1883, 1904). Dharawal was spoken as far north as the southern side of Botany Bay (Eades 1976). Both the D harawal and Dhurga languages form part of the Yuin linguistic group which extends southward from Sydney to almost the Victorian border (Schmidt 1919).
Contrary to Tindale's river boundary, ethnographers and other historic sources have tended to describe the Aborigines and linguistics of the lower Shoalhaven in terms of a single cultural character, one district, and one dialect (Capell 1963:S36; Dixon in Eades 1976:4). There is no mention of differences amongst the 'Shoalhaven Aborigines' according to which bank of the Shoalhaven River they came from. In all references, the Shoalhaven tribes are treated collectively. It seems therefore more probable that the tribal boundary on the coastal plain was further south, and concomitant with linguistic evidence, adjacent to Jervis Bay. A boundary in this region would roughly be equivalent with the Shoalhaven-Jervis Bay watershed (Sefton 1980, Officer 1991a).

The term Wodi Wodi is first recorded by Ridley in 1875, who based it on the testimony of Lizzy Malone, the daughter of a woman of the Shoalhaven tribe. She stated that Wodi Wodi was the name of the language spoken by the Aboriginal people of the Illawarra (Ridley 1875, Organ 1990:xlii). Janet Mathews noted the name ‘Illawarra Tribe’ in 1960 stating that ‘old inhabitants around the lake swear that their tribe was called this, and it was bounded by the shores of the lake’ (Mathews c1960:1). She adds that ‘their language appears to be Dharawal, but the Aborigines never use or have heard of that word. They say there was a separate tribe at Shellharbour but that cannot be checked as they appear to have been extinct there for some time (Mathews c1960:1).

Many modern researches use the term Dharawal or Tharawal to refer to the tribal group within the Illawarra. Amongst contemporary local Aboriginal people the term Wodi Wodi is often preferred. However, some groups now identify the Illawarra tribe(s) as the Elouera, possibly guided by early references to the pronunciation of Illawarra as ‘Eloura’ or ‘Ellowera’ meaning a pleasant place (Thornton’s 1896 word list in Organ 1990:358, also McCaffrey’s notebook 13, 1910-1930 in Organ 1990:486). The Aborigines of the Nowra region refer to themselves as the W andiwanian people (pers. comm. Sonny Simms 2007).

Within these broad language and tribal groupings were smaller social divisions, perhaps consisting of different family groupings, which appear to have been associated with local areas or home territories. European observers tended to identify these groupings as ‘tribes’ and associated them with localities which may have related to home territories. Examples from the study area include the Shoal Haven (Nowra and the adjacent area south of the Shoalhaven River), Murro (Meroo Meadow region), Broughton Creek (lower Broughton Creek and coastal plain north of the Shoalhaven River) and Gerringong (Seven Mile Beach hinterland to Gerringong) (Egloff, Navin and Officer 1995:41, Organ 1990:c.f.190).

Howitt records the name of the Yuin ‘clan’ inhabiting the Lower Shoalhaven District as Gurungatta-manji (Howitt 1904:82).

Generally speaking, the term ‘tribe’ is employed to describe a large group of people who, for the most part, speak a common language and occupy a broad tract of land within which ‘clans’ consisting of loosely-related families own the land, and smaller groups referred to as bands perform the daily tasks of group maintenance. Matthews and Everitt (1900:264) described the clan organisation of the Shoalhaven as consisting of related males with married women joining the band of their husband but maintaining an affiliation with their clan of birth. Children belong to the father’s clan with both sons and daughters receiving the totem of their father’s clan.

Bands frequently change composition in what is referred to as a ‘fusion and fission’ model of local group organisation. The Aboriginal people of the Shoalhaven banded together for specific activities, were together for a time, and then split apart; later they formed new groups which most likely had at their core a number of closely-related families. Leadership was assigned to experienced elders with the males being predominant. Alexander Berry (1838: letter 2, in Andrews 1979:6) described a band which was camping near his house as ‘natives who were all sitting in groups with their different families’.
Boundaries between local bands and clans were flexible and permeable, allowing groups to move about (Poiner 1976). Where resources, food or materials, were particularly rich, it is likely that use of those goods was controlled and permission had to be obtained from the custodians of that place. Where resources were widely distributed across the landscape, movement of people was less controlled. Disputes did occur, particularly between the coastal people and the mountain groups, but the nature of these arguments is not well recorded, generally speaking, conflict was ascribed to clashes by men over possession of women. It is known that there was armed conflict in the Shoalhaven district, but it is not certain how this impacted on Aboriginal patterns of land-use (Egloff, Navin and Officer 1995).

It is likely that Aboriginal groups were able to maintain their structure throughout the early period of European settlement. Later responses may have include seeking refuge and establishing camps either at a distance or close to European properties, being partially integrated into maritime or pastoral activities, or dwelling on the fringes of European communities. As the land-use patterns of the new colonists intensified, there would have been a demand on natural resources, and the food sources of the Aboriginal people would have diminished radically. In the 1840s and 1850s, the introduction of dairy farming (Bell 1960) further reduced the availability of game in the Shoalhaven District. The issuing of rations by the government encouraged a clustering of people into camps, which would have caused some breaking down of the previous marriage patterns where polygamy (male having more than one wife) was the economically preferred strategy. It is thought that rations were issued to discourage multiple partners (Andrews 1979:9).

New camps frequently were situated close to towns, and most likely contained members of a number of different clans and bands. The camps became more or less permanent, much more fixed on the landscape than the hunting and gathering camps which had provided the primary locus in previous times. In the Shoalhaven district, camps were found at Bilong, near Currambene Creek, and at Coolangatta Mountain on the Berry property. Camp life, with a mixed population from a number of groups, broke down established patterns of local organisation. As the numbers of children with White fathers being born to Aboriginal women became more common, the practice of the offspring being absorbed by the mother's clan increased. Descent came to be reckoned through both lines and support for child-raising was more likely to come from the mother's family. Ceremonies and group activities which once bonded together the clan groups began to weaken and take on new forms. The institution of Christmas was of particular importance, not for its religious connotation, but more for the social meetings which were permitted during the times when other kinds of gatherings of Aboriginal people for more traditional activities were actively discouraged (Egloff, Navin and Officer 1995).

Mobility, particularly among males seeking employment, increased as kinship ties become more extended through interclan marriages. Bell (1960) reported an incident which occurred in 1878 when a group of Aborigines from the South Coast camped in a disused structure at Circular Quay. When asked to leave, 26 people stated that they wished to remain. They formed the nucleus of the first Black settlement in Sydney, at La Perouse.

By the 1880s, it appears as if most of these arrangements were weakening and Aboriginal people were being pressed into reserves or missions. Although the missions provided places for ration distribution they also may have been appropriately sited or offered constraints and other forms of control such as the infamous removal of mixed-blood children (Egloff, Navin and Officer 1995).

5.1.3 Historical overview

The first European sightings of the Shoalhaven region were made by Captain Cook in April of 1770. He noted a protected bay which would later be named Port Jervis, and on 26 April 1770 'several smokes along shore before dark'. This observation may relate to Aboriginal campfires in the vicinity of Bass Point.
The earliest contacts between Europeans and local Aborigines were amicable (Grant 1801). He recorded large numbers of unarmed Aborigines whom he described as ‘more robust than Sydney Blacks’. Friendly relations continued and in 1811 Governor Macquarie recorded that the population was numerous and disposed to trading for biscuits and tobacco.

First reference to interaction between the Shoalhaven tribes and Europeans comes from the recollections of survivors of the wreck of the ‘Sydney Cove’ who walked up the South Coast from Gippsland to north of the Illawarra before being picked up. As the exhausted party came towards the Shoalhaven they met with ‘unfriendly natives, at whose hands it is thought some of the exhausted ones lost their lives’ (Cambage 1916).

In 1805 James Meehan reached the Shoalhaven River on an exploratory trip and noted the existence of considerable stands of red cedar along the lower reaches (Antill 1982). The cedar getters, both legal and illegal, quickly followed and were almost certainly the first Europeans to venture into the coastal escarpment of the Illawarra Range. The first official shipment of cedar from the Shoalhaven, cut from its lower reaches, was in 1811. A year later seven ships were engaged in the trade.

Early cedar getting followed the accessibility of the river into Kangaroo Valley. At Burrier in 1818, Throsby was informed that a boat, probably of cedar-getters, had reached Bendeela (Parronrah) ‘some time ago’ previous to his entry into the valley (Griffith 1978:18).

An undocumented and probably violent story of culture contact and exploitation followed the cedar cutters. The conduct of the cutters was mostly beyond the control of Colonial Officials. There is evidence to suggest that the Shoalhaven Aborigines were not friendly toward the newcomers. The timber getters were obliged to fell their timber near the river banks, not only due to transport limitations, but partly for fear of the natives who were described as never having been ‘otherwise than inimical to us’ (Perry 1954:30). It is possible that conflict between the cedar getters and the Aborigines led Governor Macquarie in 1814, to forbid vessels to enter the Shoalhaven to cut timber, a directive which appears to have been ignored. Such conflict is hinted at in a statement by Macquarie referring to the ‘abuse’ occasioned by cedar getters whilst logging and extracting timber:

‘There being reason to believe that the Indulgence which has occasionally been granted to Masters and Owners of Vessels to resort to and bring Timber from Shoalhaven is subject to considerable Abuse...’ (Sydney Gazette 3/12/1814).

Shortly afterwards, in 1815, a party of three cedar cutters were found to have been murdered by natives ‘soon after their arrival at Shoal Haven’ (Perry 1954:30). One body was eventually located. This incident made the new White inhabitants afraid of the Aborigines for 10 years (Bayley 1975).

Breton tells of an early Shoalhaven incident where, ‘Three natives persuaded a convict servant to accompany them in search of cedar...’ The natives pushed him over a precipice and cut out the dead man’s tongue in the hope that eating it would enable them to speak English (Breton 1834:168).

On 4 June 1816, Governor Lachlan Macquarie issued a proclamation which prohibited Aborigines from approaching towns or farms if they were armed or if in a group of more than six. All large gatherings were forbidden regardless of their proximity to any British settlement. This proclamation was seen as sanctioning actions of colonists in allowing them to fire on groups of Aborigines. Prisoners could be taken and those who refused could be shot and their bodies hung in ‘public’ places. These rules applied to men, women and children (Cleary 1993).

In 1812, the Surveyor George Evans made the first recorded European explorations on the Cambewarra and Illawarra Ranges. Following completion of a survey of the Jervis Bay foreshores, Evans intended to return overland to Appin. The difficulty of his party’s ascent of Good Dog Mountain changed his mind, but before descending to the coast he camped overnight on Tapitalee Mountain. Evan’s exploration was assisted by a local Aboriginal he called Bundle (Griffith 1978:12).
In 1818, Charles Throsby and Deputy Surveyor James Meehan were commissioned to locate an overland route between Sydney and Jervis Bay. They were accompanied by Hamilton Hume. The party split into two groups after encountering the barrier of the Shoalhaven Gorge. Throsby, and two others returned to Bundanoon Creek accompanied by two Aborigines 'a native boy' called Broughton and Bundle (probably Evan's guide). There they met two Aborigines both known to Throsby from Lake Illawarra, one called 'Mamaa' the other 'Timelong'. Timelong was later known to the Europeans as 'King of the Kangaroo Ground' probably signifying both his co-operative position with the Whites and possible high standing within the local Kangaroo Ground Aborigines (letter from Mrs Brooks 1827 quoted in Griffith 1978:13). The two Illawarra Aborigines guided Throsby's party into Kangaroo Valley via Meryla Pass to a place on the Kangaroo River identified as Yarranghaa.

Meehan's party notes meeting frightened family parties of Aborigines near Burrier and on the lower reaches near Tarranarrar:

'We met five native women and three children, at our approach they were extremely frightened' (field book 143 1/4/1818, in Flood 1980:287).

'We fell in with several families of natives in all about thirty men, women and children who would all have run away' [they had been fishing] (field book 143 1/4/1818, in Flood 1980:287).

During 1819, John Oxley and Meehan were returning from Jervis Bay to the Shoalhaven with the aid of a local guide, Broughton:

'We fell in with five natives who were friends of our guide, Broughton, and at his request they joined us, and when we had recrossed the waterfall, guided us to a high conical forest Hill, being the highest of the tract of country lying between Shoalhaven River and Jervis Bay [Nowra Hill], the country in its immediate neighbourhood, better clothed with grass, heavily timbered, the soil a stiff mould, with abundance of Indigofera and various species of Acacias. On the top of this hill was a native tomb, decorated with boughs; Broughton informed us it contained an infant daughter of his' (Cambage 1916:9).

The surveyor Throsby returned to the Shoalhaven from Kangaroo Valley in 1821 and went to a place he called 'Nou-woo-ro', now known as Nowra (Griffith 1978).

From around 1820, Kangaroo Valley was being used as a protected region to graze cattle. An early group of cattle belonging to a Captain Brooks were brought into the valley from Dapto by a cattleman led by an Aborigine over the mountains east of Carrington Falls (Griffith 1978:15).

Early in 1822, on returning from verifying the existence and source of the Clyde River, Alexander Berry spent several days exploring the Shoalhaven River, up as far as Burrier. Six months later Berry returned with the aim of establishing a permanent settlement. He was in receipt of a government grant of 10,000 acres on the Shoalhaven River, and a labour force of 19 convicts. This marked the start of permanent European settlement in the Shoalhaven River valley.

Berry chose for the site of his settlement an area of elevated ground at the foot of a hill variously referred to as Coolungatta, Cullengatty, Coloongatty (Antill 1982:10, Bayley 1975:24,27), and Cooloomgatta (Mitchell 1834 N SW Map). The name was recorded by Surveyor James McBrien in 1824 as Aboriginal, meaning 'high hill' (Antill 1982:10). It is now known as Coolangatta. Howitt records the name of the Yuin 'clan' inhabiting the Lower Shoalhaven District as Gurungatta-manji (Howitt 1904:82). 'Coolangatta' may therefore be a derivation of the name used by the original Aboriginal social groups who lived in the Nowra region.
Berry's selection of this location was apparently treated with apprehension by the local Wodi Wodi. Berry notes that in June of that year, during construction of a hut and a canal near the Shoalhaven Heads a native called Wagin (a local chief) confronted the workers and claimed the ground where they had been working (in Jervis 1942:235). This action falls into context when it is acknowledged that the Coolangatta Mountain was a place of ancestral significance to local Aboriginal people. Another early project of Berry's was the cutting of a track from Illawarra in order to drive cattle from Bong Bong to the Shoalhaven. It is probable the track traversed the Saddleback Ridge, which forms the eastern spur extending from Barren Grounds (Bayley 1975:24).

Berry's settlement grew steadily with the immediate introduction of herds of cattle and the establishment of plant crops at Numbaa. Berry initially considered the local Aboriginals to be ferocious and his timber workers tried to drive them away. For several years potatoes and maize was 'stolen' from the fields (Bayley 1975). Several weeks after Berry's arrival a party of 20 Aboriginals camped near his settlement. Berry notes that there were two chiefs, Wagin, chief of Numba (Lower Shoalhaven), and Yagen chief of Jervis Bay. He also describes Broger (or Broger), the brother of Broughton (an Aboriginal guide employed by Berry), as a native chief (probably of area north of Coolangatta). These probable band groupings suggest that most of the Aboriginal population was centred on the more fertile coastal plains.

In 1824 Berry employed seven men to cut cedar from the Broughton Creek (Berry) and Morow (Meroo) regions to supply the growing market demand in Sydney (Antill 1982).

Other grants followed including the first land grants within the Kiama hinterlands in the early to mid 1820s (Jervis 1942). From this period, settlers furnished brief descriptions of Aboriginals in the Shoalhaven particularly those which settled on pastoral properties and gained employment (Berry 1834). Aboriginal people also gained employment in fledgling local industries such as the failed whaling station at Jervis Bay.

The population of the local Aboriginal groups was estimated in 1826-27 to be 68 for the 'Bundgong' (or Bridgong) and Shoalhaven (the lower Shoalhaven River), and 71 for Kangaroo Ground (Evidence given to Committee of Enquiry into Immigration 1841, in Ellis 1989, Science of Man 4(4):71).

In 1827, the majority of the cedar arriving in Sydney came from Kiama, and the 'Long Brush', an area rich in cedar stretching 10 km from Jerram (just west of Kiama), to Jamberoo. Equally abundant were the gullies feeding Broughton Creek in the Jasper's Brush district (Griffith 1978).

In 1828 two employees of Alexander Berry crossed Bellawongarah Mountain and reported extensive cedar on the hillsides above Broger's Creek.

In 1828 the 'Astrolobe', a French ship under the command of Dumont d'Urville landed at Jervis Bay. In his diary of November he remarks to the effect that the paucity of insects and animal life at Jervis Bay surprised him and that this lack could be due to the practice of the inhabitants of burning the bush each year (Rosenman 1988). Joseph Paul Gaimard, the ship's surgeon and naturalist, published a vocabulary in 1834 of the local language (Organ op cit 1990: 147-148).

In 1829, a cedar cutter engaged by Berry named John Rivett, was reported as murdered at Broughton Creek by Broger (Brogher) a local Aboriginal 'chief' (Antill 1982).

In 1830 Alexander Berry testified in the trial of Broger, who was a brother of his long-standing friend Broughton. It was alleged that Broger, offered to show a party of cedar cutters some trees and then killed John Rivett, an employee of Berry. The trial took place in Campbell Town, and was reported in the Sydney Gazette of 26 August 1830 (Organ 1990:159). A plea of self-defence was entered by the defendant, which was also held to be common knowledge shared amongst the local Aboriginals, but this did not mitigate the sentence, and Brogar was convicted of murder and subsequently hanged in Sydney.
In 1830, Hoddle and a gang of 20 men cut a bridle track from the area of the present village of Robertson via Noorinan Mountain (the eastern spur of Barren Grounds) and the Saddleback to Kiama. The route however proved unpopular and was not regularly used (Jervis 1942:357).

In 1831, Robert Anderson applied for ‘two sections of land in the district of Shoalhaven known by the native name of Nowry’ (Jervis 1942:246).

In 1835, a number of European settlers complained of the ‘great and grievous losses’ they had suffered from the depredations of the Blacks at Kiama. Whole acres of corn were removed in one night and two of the complainants had lost 20 pigs in three months (Sydney Morning Herald Aug 20 1835).

In December of the same year, the convict transport ship the ‘Hive’ was wrecked off Bherwerre Beach. Ensign Kenny managed, with Aboriginal assistance, to reach Alexander Berry’s estate for help (Navin and Officer 1995). This is not the only documented instance of local Aboriginal groups providing assistance to Europeans in distress. In 1805 the cutter ‘Nancy’ was wrecked and the crew was successfully rescued and travelled overland to Sydney (Organ 1990op cit:29).

There are a number of historical accounts of enmities in the early to mid nineteenth century between tribal groupings of the northern and Southern Illawarra Dharawal speakers. These consist of clashes between the ‘Ilawarra’ tribes and apparent northward offensives of the Bong Bong, Broughton Creek, Kiama and Shoalhaven tribes. This has been interpreted as a consequence of changes in social order, resource distribution and political alliances brought about by the European settlement and occupation of tribal lands (DEC 2005:16). Examples are the battle of Fairy Meadow in 1830 between the Bong Bong and Illawarra groups (involving 1500 participants and 100 deaths), and a battle at Albion Park in around 1842 between the Broughton Creek and King Hooka’s Illawarra tribes (DEC 2005:18).

The Albion Park battle occurred somewhere in the area between the present Albion Park railway station and Albion Park township. The battle involved more than 400 individuals and was reportedly precipitated when the ‘Coolangatta Blacks’ moved into the Illawarra with the intention of attacking the White settlements. The Coolangatta force was repelled after a day of combat and the death of many participants, including King Hooka who was reportedly buried in a variety of locations around Lake Illawarra (Young in Organ 1990:375, Dollahan in Organ 1990:492 & 494, Thomas 1975:12).

In 1836, James Backhouse toured the Australian Colony and passed through the study region, travelling from the Five Islands (Wollongong), through Colomgatta (Berry’s estate on the Shoalhaven) and Kangaroo Ground (Kangaroo Valley) to Bong Bong (Backhouse 1843). Backhouse encountered many parties of Aborigines, often describing them as partly clothed in European clothes and subsisting according to both traditional and European sources of food and materials. When at Dapto, Backhouse engaged an Aborigine known as ‘Tommy, of the Kangaroo Ground’ to guide the party to Bong Bong. As part of his wages he was provided with a shirt, a pair of canvass trousers and a woollen jacket to replace his ‘ragged’ suit. Tommy left the party ‘without notice’ at Shoal Haven and was met up again on the Kangaroo Ground where ‘he had been engaged in a fight’ (Backhouse 1843:435).

On the 1 October, Backhouse’s party crossed the Shoalhaven with John and William Berry being rowed by three Blacks, one of whom named Lewis recognised us, having met us at John Batman’s in Van Diemans Land. He is one of those who were employed in collecting the natives of that Colony and was dressed in an old suit of Colonel Arthur’s clothes.
Backhouse goes on to recount that ‘A Black came from a sawing establishment of Alexander Berry’s where he had learned to work and said he had cleared a piece of land and sowed some pumpkins. He asked also for some seed potatoes to plant, and said he thought it much better to have settled habitation than to lead a wandering life like his countrymen. Alexander Berry was much pleased with this spontaneous attempt on the part of the Black to settle, having often in vain tried to persuade some of these people to adopt such a course’ (in Organ 1990:205, and in Egloff, N avin and O ficer 1995:37). This passage is revealing for its indication of Aboriginal employment in the Berry Estate industries, and the provision of space for vegetable gardens tilled by Aboriginal employees.

At the foot of the Cambewarra Mountains, he met a group of six Aborigines dressed in blankets and old European clothes. ‘These people were accoutred with hunting and fishing spears, and weapons of war’ including a death spear barbed with ‘pieces of glass’ and a shield painted in white with red lines (Backhouse 1843:433).

On the Kangaroo Ground (Kangaroo Valley) Backhouse noted an assembly of about 200 Aborigines. It seems probable from his description that he observed the end of a ceremonial gathering amongst some of the southern groups of the Wodi Wodi people:

‘Three tribes of Blacks were assembled here last night; one belonging to the neighbourhood, and the others to Shoal Haven and Bong Bong. There were 40 men in one of these tribes; they were going to Cow-Pastures, [Camden district] to learn a new song, that had been invented by some of their country people there!... All the men had undergone the ceremony of having one front tooth knocked out, on being admitted to the privileges of manhood; and they had the cartilages of their noses perforated, and bones, the thickness of a quill, and about four inches long, through them. They wore fillets of net-work around their heads, and beads, formed of short pieces of reed, around their necks’ (Backhouse 1843:435).

Perhaps in response to his need for cheap manual labour, Alexander Berry conducted a census of Aboriginal people in the immediate proximity to his estate in 1838. He remarked that the numbers had decreased in the last 16 years. His collation identifies the individual bands in the region:

<table>
<thead>
<tr>
<th>Tribe</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerongong Tribe</td>
<td>21</td>
</tr>
<tr>
<td>Uurro Tribe</td>
<td>24</td>
</tr>
<tr>
<td>Numba Tribe</td>
<td>25</td>
</tr>
<tr>
<td>Jervis Bay</td>
<td>62</td>
</tr>
<tr>
<td>Broughton Creek</td>
<td>26</td>
</tr>
<tr>
<td>Shoalhaven Tribe</td>
<td>39</td>
</tr>
<tr>
<td>Wooragee Tribe</td>
<td>45</td>
</tr>
<tr>
<td>Jervis Bay</td>
<td>62</td>
</tr>
</tbody>
</table>

(By Burton Papers NSW Archives, in Egloff 1981:13)

By the late 1830’s the majority of the lower coastal plain between Gerringong and the mouth of the Shoalhaven River had been taken up as land grants. Major land grants covered some of the best grazing land in Kangaroo Valley and by 1840 permanent European settlement of the valley was well established with around 10 to 20 resident Europeans (Antill 1982, Griffith 1978:27).

By 1840 the Coolangatta Estate had a population of 270 people.

Through the 1840s and 1850s Aboriginal communities were increasingly impacted by the spread and consolidation of European settlement. In response, Aboriginal people either settled on the pastoral stations, in ‘fringe camps’ adjacent to European settlements, or were forced into adjacent rough and mountainous country. In the mid 1840s it was recorded that there were five Aboriginal camps in Kangaroo Valley, ‘each camp in a separate gully’ (Griffith 1978:9). Egloff (1981) concludes that by the 1840s the Shoalhaven Aborigines had been reduced to remnant groups either wandering large tracts of the coast, or subsisting at the edge of the now permanent European settlements.
Reports from the 1850s onwards suggest a trend in Aboriginal occupation and subsistence such that camps and most food gathering and hunting became concentrated along the coast. This pattern was shaped by European settlement which pushed Aboriginal people onto country unsuitable for agriculture, notably the coast and the adjacent wetlands (DEC 2005:25). Permanent Aboriginal camps became established on Broughton Creek (Berry), Crooked River (also referred to as Black Head or Gerongong), around Jervis Bay (notably Bilong on Currambene Creek), and in a gully on the northern side of the Coolangatta Mountain on the Berry Estate (Egloff 1981). The Coolangatta camp had grown with the Berry Estate, and a number of the residents there were employed as labourers and to grow vegetables (Egloff 1981).

Other encampments known from the later half of the nineteenth century include the banks of Broughton Creek at Broughton Village (Donlon 1991a:12), and the banks of Broughton Mill Creek adjacent to Berry (Barbara Timberry in DEC 2004:39-41).

In 1850 a newspaper article on the Shoalhaven region noted that:

‘Bacchus has many more votaries than he used to have and aboriginal tribes have become great drunkards, yet there is only one public house in the neighbourhood’ (Sydney Morning Herald Oct 5 1850, in Jervis 1942).

The first European house in Nowra is reported to have been built on the edge of the swampy plain by John Smith in 1855 (Bayley 1975). The proposed government township of Nowra was approved by the Governor in 1852 and the sale of town lots began in January 1857. By 1875 the township of Nowra had a population of 120.

By the 1860’s the potential refuge posed by the remaining mountainous and forested slopes was being eroded by closer European land settlement and consequential reductions in bush foods and game from forest clearance and the pasturage of herds of cattle and sheep.

In 1867, the death of an Aborigine known as ‘Commodore’ or ‘Commandant’ was noted ‘from the effects of exposure and want’ at the Aboriginal encampment on the Minnamurra Estuary, on the then Eureka Estate. ‘Commandant’, or Jaunda, had been listed in the 1837 blanket return at Shoalhaven (Coolangatta) as a member of the Gerongong tribe, then aged 14 (in Organ 1990:214, 321). This is suggestive of considerable movement of Aborigines between the main encampments in this part of the Illawarra, namely between Coolangatta (on the Berry Estate), Crooked River, and the Minnamurra River Estuary.

Reclamation of the Shoalhaven wetlands began on a major scale from 1873. By 1909 a total of 600 km of drains had been constructed. The draining of the wetlands effectively alienated the last terrestrial wild food areas open to the remaining local Aborigines.

Following cholera and typhoid epidemics in the Coolangatta camp in the late 1890’s, The Board for the Protection of Aborigines moved residents to a newly proclaimed Reserve at Roseby Park (Orient Point) in 1900 (Antill 1982, Bayley 1975).

The last remembered initiation ceremony staged in the region was conducted in the late 1880’s by ‘the Shoalhaven River tribes’ on the south-western side of Moeyan Hill, a low hill to the north of Coolangatta Mountain (Mathews 1896).

Aboriginal groups responded to the dispossession of their lands in a variety of ways including fostering camps close to pastoral properties, as well as at places of refuge away from settlement. Some people moved into areas of settlement and communities grew on the edges of rural towns. In response to moves into areas of settlement, the NSW Government established a system of Aboriginal reserves in the 1880’s.
In 1881, a Protector of Aborigines was appointed. The report of the Protector, George Thorton provides the first comprehensive census since the blanket issue returns of the 1840s. It gives the following information with respect to the people of Shoalhaven and Jervis Bay (Thorton cited by Organ 1990:339-341).

Shoalhaven - Most of the half casts are employed. The Jervis Bay people live by fishing and government rations. The Jervis Bay Blacks get government rations. This is necessary as there are few White people in that locality. Three boats in the district - one at Terrara, one Broughton Creek, one Jervis Bay. All in good order. Provided by Government. About thirty half-cast children are at school at Coolangatta, five at Jervis Bay and three Blacks. [Blanket] issue necessary and not in any way misappropriated. [Supply of clothing needed] at Jervis Bay. A number of them given to drink. But since the Act of 1882 came into force drunkenness has ceased. [Medical] own expense.

The Protector was replaced in 1883 by the Aborigines Protection Board which by the turn of the century had established 133 reserves across the State. Aboriginal reserves were sited to allow for the exploitation of natural resources (marine and estuarine) at a distance from White rural centres (Goodall 1982).

Missionaries were allowed to live on many of the reserves and in popular terms Aboriginal people came to refer to the reserves as 'missions'. Reserves to which managers were assigned were referred to as 'stations'. Like the many small reserves created in the nineteenth century these places were regarded by the government as temporary arrangements to be altered or closed on the advice of the Board.

Prior to 1890 at least two petitions were presented to the government of NSW requesting a reserve within the Shoalhaven district and at Jervis Bay (Navin 1995:46). These were refused by the government.

The pattern of later nineteenth century Aboriginal occupation on the lower Illawarra coastal plain can be characterised by an early evolution of non-government or mission-aided encampments, and later enforced translocation onto government reserves and mission institutions. Prior to the establishment of government reserves, most Aboriginal settlements developed around the remaining access to coastal resources such as at Crooked River (Gerringong), or sources of employment and/or provisions such as Berry's Coolangatta Estate, and towns such as Broughton Creek (Berry). All of these areas of encampment appear to have been established or continued, despite the alienation of the lands to European freehold owners. Their location may have been determined by a variety of factors, including established seasonal camping locations, proximity to food resources, friendly (or non-hostile) White settlers/landholders, and proximity to European settlements, rations and employment.

Toward the latter part of the nineteenth century, government authorities placed pressure on Aborigines to re-settle within government reserves. This effectively removed local Aboriginal groups from freehold and crown lands, and concentrated the remaining populations onto reserve lands. Reserves were often situated on marginal land, away from people's traditional lands and forced peoples of differing tribal affiliation into close contact. Despite this, the occupation of coastal and fringe camps continued, especially as part of the required movement of people looking for seasonal work.
In 1886, an Aboriginals Protectorate existed in Kangaroo Valley and two places were allocated for the few remaining Aborigines, one near Trimble's Creek at Barrengarry and the other on Chittick's Farm, on the southern bank of the Kangaroo River, one mile from the township (Griffith 1978:10). In 1889 a small privately instigated Aboriginal settlement was established, but by the end of 1890 Hughie Anderson, the Aboriginal Director, claimed his mission was starved out of the valley (Bayley 1975:123). McGuigan (n.d:32) notes that a reserve of 370 acres was set aside in 1890. It is not clear if this relates to any of the reserves otherwise mentioned in the literature.

A description of the Kangaroo Valley published in 1889 stated that:

‘there is still a settlement two miles from Barrengarry, where the queen of the tribe lives. When I visited the camp, it was occupied by a dozen Aborigines including three handsome children, who were extremely shy, and rolled themselves in blankets the moment our party approached. The “homes” are as described by early writers – consisting of large sheets of bark propped up with sticks, a fire being kept burning day and night. This is the only shelter’ (Morris 1889:224).

By 1891, a census recorded only 11 resident Aborigines within Kangaroo Valley (Griffith 1978:10 -11).

In 1899, a government Aboriginal reserve of 43 acres was established near the northern end of Seven Mile Beach (see Figure 5.1). The reserve was revoked in January 1953 (AR 29911, McGuigan no date:39). Although the exact nature of Aboriginal occupation on this reserve is not well documented, its location and duration supports the documentary evidence for a historical focus of Aboriginal occupation in the Crooked River (Black Head / Gerringong) area.

In a census conducted by the Commonwealth in 1901 the Aboriginal population of the Illawarra was distributed across seven camps with 33 at Port Kembla, 13 at Minnamurra River, eight at Dapto, 18 at Bombo, 20 at Gerringong, three at Jamberoo and three at Kiama, giving a total of just 98 (DEC 2005:24). Noted by the census at Coolangatta were the Amatto, Ardler, Ferguson, Judson, Methven, Nipple and Steel families. Families at Roseby Park were Bundle and Carpenter (State Archives NSW in DEC 2005:25).

In 1903 there were 100 people living at Roseby Park. Other local Aboriginal camps and reserves included: Bilong on Currambene Creek at Jervis Bay, Beecroft Peninsula, Orient Point, and Wreck Bay. The old Wreck Bay and Orient Point reserves are now Aboriginal owned land.

From 1940 to 1969 the Aborigines Protection Board vigorously pursued a policy of assimilation. Reserves were reduced in size or were revoked (Long 1970). Houses and facilities were allowed to deteriorate in an attempt to force Aboriginal people to move off the reserves.

Goodall considered that the pattern of reserve establishment reflected changes in European land-use more than it does the distribution of the people they were supposed to be servicing (Goodall 1982:58):

‘South Coast Guris continued in the 1900s to use both reserved and non-reserved land as a residential base. Some gained casual or seasonal work with White dairy or crop farmers while others were employed in the continuous work of the timber industry, either felling or in sawmills. Many South Coast Guris, however, continued to support themselves fishing, some at a subsistence level but others increasingly selling their catch in competition with White fishermen. A total of 37 Board-provided boats were in use by the turn of the century; more than half had been supplied to South Coast Guris who used them for fishing ...’

Town expansion caused the revocation of the Ulladulla reserve in 1922 and that at Tomakin near Moruya in 1925.
In 1935, Shoalhaven Council received a petition signed by 64 citizens requesting that the Aboriginal people who had established ‘shanty’ dwellings in the public reserve be removed to Roseby Park. It was claimed that the living conditions were unsanitary. The Board responded that it could not force the people to move to the reserve. By March of 1937 all informal dwellings, those erected without council approval, had been demolished throughout the township and the squatters removed to the reserve. However this did not meet fully with the needs of the town citizens and further complaints were lodged against an Aborigine who had erected a dwelling with council approval (Antill 1982:104 in Organ 1990:381, Goodall 1982:306). Council was wise enough not to heed the citizens demand for removal (Egloff, Navin and Officer 1995).

A Directorate was established in 1969 to control reserves and an advisory council with Aboriginal members was appointed. In 1979 the NSW Aborigines Welfare Board, the successor to the Aborigines Protection Board, was abolished and the reserves transferred to the Aboriginal Lands Trust. To meet the new policy of self-determination, steps were then taken to consolidate, revitalise and upgrade reserves. Reserve ownership has for the most part been transferred to Local Aboriginal Land Councils.

Today, Aboriginal people live throughout the Illawarra and South Coast as residents of the larger towns and cities - Bega, Nowra and Wollongong, as well as maintaining communities on former reserves, and are found throughout the region in family groups. Communities of Aboriginal people are located at La Perouse, Orient Point (Jerrinja), Wreck Bay, and Wallaga Lake, as well as on ‘informal reserves’ such as Browns Lane near Nowra and Murray's Flats outside of Bega.

5.1.4 Places of known or reported historical and cultural Aboriginal significance

The Yaroma

The Yaroma was one of a number of potentially treacherous creatures believed to inhabit the mountain ranges and forests of Australia’s south-east coast. A traditional story recorded by Mackenzie (1874) from a ‘word for word’ narration by ‘a native of Shell Harbour’ and later reworded by Mathews (1994), makes a direct association between the Yaroma and fig trees. Mackenzie subtitled the account ‘The spirit of the Fig Tree’. The story relates how a Yaroma hides in the hollow of a base of a fig tree, and catches an unsuspecting gatherer of figs by swallowing him whole. The victim eventually escapes by pretending to be dead after being vomited up and then running away.

The following description of the Yaroma comes from Mathews (1904):

‘This is a creature closely resembling a man, but of greater stature and having hair all over the body. Its mouth is large, which enables it to swallow a Blackfellow whole, without mastication. There are generally two of these monsters together and they stand back to back, so that they can see in every direction. Their method of locomotion is by a series of long jumps and at every jump their genital appendages strike the ground, making a loud, sudden noise, like the report of a gun or the cracking of a stockwhip.

‘Yaromas have short legs and large, long feet, of a different shape to the feet of a human being. When one of these monsters is heard in the vicinity of a native camp during the evening, the people keep silent and rub their genitalia with their hands, and puff or spit in his direction. Some of the headmen or doctors shout out the name of some locality a long way off and the Yaroma is supposed to depart to that place. If they cannot be dispersed by this means, the men take sticks which have been lighted in the fire - a stick in each hand - and strike them together to throw out sparks. This usually causes the Yaroma to disappear into the ground, making a flash of light as he does so’ (Mathews 1904:361-2).

In a story recorded by Lampert from David Carpenter in 1972 (Cane 1987:47), the Yaroma is associated with the rugged and relatively inhospitable east coast of Beecroft Peninsula and directly linked to the Devil's Hole, a powerful and dangerous site where the spirit of Bundoolo resides. Bundoolo's original Peninsula cave was called yerrowa (Mackenzie 1874:258-260).
Crooked River

There are a small number of references in official and ethno-historic documentation which indicate that the Crooked River estuary at Gerroa was a focus for Aboriginal occupation following European settlement of the Illawarra (see Figure 5.1). This location appears also to have been referred to in a general sense as Black Head and Gerringong.

There was also a long established historic encampment by local Aborigines under fig trees towards the southern end of the Werri Beach sand barrier (between the estuary and ocean beach and at the edge of the European settlement of Gerringong) (pers. comm. January 2010, Mr Geoff Bailey of Homeleigh Gerringong).

The 1834 Return of Aboriginal Natives taken at Shoal Haven identifies eleven people, including five male adults, three 'wives' and three children, belonging to the 'Gerongong' tribe. The return notes that the Gerongong tribe reside at Black Head (in Organ 1990:189). Given the absence of water on the point itself, it is probable that the encampment was sited on the Crooked River estuary, in the general area of present day Gerroa. Local oral history indicates that the encampment was focused on the southern side of the estuary near its mouth (pers. comm. Margaret Weir Feb. 2007).

In the 1836 Return at Shoalhaven (Coolangatta), the Gerongong tribe included 14 people, and by 1837, 21 people, including 11 male adults, five wives and five children (in Organ 1990:201,214). A similar number was indicated in Berry's Census of Natives in 1838 (in Organ 1990:240). Berry's blanket return for 1840 lists 34 recipients, including 11 adult males, 11 adult women and 12 children (in Organ 1990:264-5).

Two references to the Crooked River encampment date to the 1890s. Bayley notes that following the extension of the railway to Gerringong in around 1893,

’t a buggy met the trains to take tourists to the beauty spots of the district, sometimes as far as Crooked River, where the aborigines had boats and fishing nets and Chinese collected mutton fish for export to China’ (Bayley 1976:142).

In September of 1897, Archibald Campbell made the following notes:

‘Saw a Black Jin at Kiama Railway station today - who stated as follows in reply to questions by me:
That she was one of the Crooked River Encampment Blacks, and her name Janie - her husband's name "Tom".
That she was the only pure Aboriginal in the encampment, which included five men; four women; 10 children - or 19 altogether - 18 being half castes’ (in Organ 1990:464).

These references suggest that the settlement was in place from at least the 1830s to the turn of the century and probably beyond. The encampment appears to have developed as a non-government sponsored settlement, centred on the amenity and resources of the river estuary. The settlement may have been reliant upon fishing, occasional government rations such as blankets and the provision of boats, and possibly casual employment from local farmers and/or the Chinese abalone collectors mentioned by Bayley.

Some local Aboriginal families have maintained their association with the Crooked River area throughout the twentieth century, using the area for hunting, fishing and bush camping. Many of these activities and associations continue to the present day.
Seven Mile Beach Reserve

The establishment in 1899 of a government reserve on 43 acres just one kilometre west of the Crooked River estuary mouth suggests an intention by the Aborigines Protection Board to support, and/or impose a level of control over the existing Cooked River settlement (McGuigan n.d:39). It is not known if the reserve location is indicative of the original settlement, or an attempt to move the settlement away from the general recreation reserve which occupied the southern bank closer to the estuary mouth. The reserve was revoked on 25 January 1953 (McGuigan n.d:39). It is not known to what extent the reserve lands were occupied or utilised (see Figure 5.2).

Figure 5.1: View of Gerroa and the mouth of the Crooked River estuary in 1920, looking west. The Aboriginal encampment was reportedly located on the far side of the river.

Figure 5.2: Extract from Parish of Broughton Map 4th Ed 1893-1898, (Lands Dept ID 10353801), showing the location of the Seven Mile Beach Aboriginal Reserve which was gazetted in 1899 and revoked in 1953.
6.0 Aboriginal archaeological context

6.1 Regional overview

The NSW South Coast and its hinterlands has been the subject of extensive archaeological research and impact assessments over the last 30 years, much of it concentrated along the coastline and estuaries. This work includes excavations of sites, mainly shell middens and rock shelters, and systematic surveys conducted within a variety of geographic scales and sampling strategies. The majority of archaeological sites located in this region date from the last 6000 years, following the stabilisation of the sea level to approximately the present level (the Holocene Stillstand).

Stable sea levels promoted the formation of estuaries, mangrove flats and coastal sand barriers which in turn increased the biomass, ecological diversity, and resource predictability for the Aboriginal residents of the coast and hinterland. It is likely that this evolution of coastal environments promoted higher population densities and more intensive exploitation patterns. In contrast, occupation in the same areas during the late Pleistocene, that is prior to 10,000 years BP (before present), may have been sporadic and the Aboriginal population relatively small. However, Boot suggests that coastal hinterland sites older than 6000 years BP are more common than previously suggested, and that Pleistocene occupation may not have been as sporadic as previously thought (Boot 1996a).

Sites older than 6000 years are rarely detected by archaeologists and are mostly limited to deep deposits surviving either in rock shelters or stable aggrading landforms. Occupation in these times may similarly have focused on the coast, which was then lower and situated further east. Sites relating to this occupation have now either been destroyed by rising seas, or are now submerged. To date, two coastal sites, Bass Point (Bowdler 1976) and Burrill Lake (Lampert 1971), provide evidence of Pleistocene Aboriginal occupation of the NSW South Coast dating to 17,000 and 20,000 years BP respectively. Prior to the rise in sea levels these sites would have been located some 14 km inland. Excavation of rockshelters near Currarong provided potential occupation to 7000 BP (Lampert 1971).

Many Aboriginal sites have been located in the course of archaeological surveys on the NSW South Coast and its immediate hinterland. Site types recorded in this region include rock shelters with art and/or cultural deposit, grinding grooves, artefact scatters, scarred trees, coastal and estuarine middens and burials.

Shell middens are the most commonly recorded Aboriginal site type along the coast. These sites are generally located on rocky headlands, on coastal sand dunes adjacent to rock platforms, or creek and estuary entrances. Navin has noted that coastal sand dune middens contain comparatively large amounts of stone in a variety of raw materials (Navin 1987:50). Further inland the most frequently encountered site types are small surface scatters of stone artefacts, referred to sometimes as ‘open camp sites’ and more recently as surface artefact occurrences. A growing corpus of evidence from archaeological test excavations indicates that most surface scatters are indicative of larger subsurface artefact occurrences. Both surface and subsurface artefact occurrences are closely related to locally elevated, well-drained and low gradient ground adjacent to freshwater sources. Based on present evidence, the most common lithic materials utilised by the Aborigines of the Southern Illawarra and Shoalhaven districts were chert, quartz, silcrete, silicified wood and ‘indurated mudstone’ (the latter rock type has often been miss-identified in the past and most recordings are probably a form of tuff).

Investigations into the occupation of the hinterland have been undertaken with major studies such as those by Bindon (1976), Poiner (1976), Byrne (1983), Sefton (1984), Boot (1993, 1994, 1996a, 1996b) and Knight (1996). Boot (1994) concluded that all areas of the hinterland were accessed, but that the major river valleys were favoured over other environments. Major ridgelines were also the focus of activity. He argues that the character of this early inland occupation on the NSW South Coast was based on long-term residence rather than “fleeting forays” from the coast.
The stone technologies used by Aborigines on the NSW South Coast have not remained static and a sequence of broad-scale changes through time has been identified. This has been known as the Eastern Regional Sequence and can be applied, with various degrees of success and allowances for regional differences, to sites throughout the eastern seaboard of Australia.

The sequence can be characterised using the following terminology and phases (based on McDonald 1994):

**The Capertian:** Artefacts from this period consist mostly of large heavy artefacts including unifacial pebble tools, scrapers, core tools, denticulate saws and hammerstones. Some bipolar tools and burins also occur. The Capertian is present up to around 5000 years BP.

**The Early Bondaian:** Within this phase characteristics of the Capertian continue but tools on smaller blades are introduced and become predominant. Blades which are backed (one edge blunted by fine trimming) and ground edge implements are notable introductions. There is a major shift in the type of rocks used for tool manufacture to fine-grained siliceous materials (such as silcrete, chert and tuff / indurated mudstone). The Early Bondaian has been identified in deposits dating between around 5000 and around 3000 years BP.

**The Middle Bondaian:** In this phase the percentage of Bondi points (a type of backed blade) increases and remains greater than the percentage of bipolar artefacts. Edge ground artefacts are present in higher proportions, as are quartz artefacts. This phase dates from around 3000 to as late as 1000 years BP.

**The Late Bondaian:** This phase is characterised by quartz either becoming the predominant rock type used or markedly increasing in proportion. Bondi points and most types of backed blades become rare or are no longer found. Eloueras, bipolar artefacts and edge ground hatchets are the predominant tool types. Bone and shell implements including fishhooks appear in this phase, particularly in some coastal sites. This phase dates from around 1600 (Attenbrow 1987), or 1000 years BP (McDonald 1994), to the cessation of stone working following contact with European Society.

McDonald notes that the introduction of ground implements around 4000 years BP and shell fishhooks in the last 1000 years were major technological innovations (McDonald 1994:69). The significance and possible reasons for the technological changes in the Eastern Regional Sequence has been the subject of considerable research and debate since their identification. Contemporary theories postulate various changes in social behaviour, group interactions and population dynamics either as contributing causes or as consequences of these technology changes.

Recent reviews of this sequence have called into question the accuracy of the divisions, pointing out that many of the diagnostic elements, such as bipolar flaking and microlith production, cross the temporal boundaries and vary across regions (Mulvaney and Kamminga 1999). As an alternative, the broad technological changes which were associated with the introduction of a microblade based technology and a smaller tool kit are identified as the ‘Late Phase’ or the Australian Small Tool Phase, which began around 5000 to 6000 years ago.

This phase was characterised by the successive introduction of different technological innovations which spread or appeared in differing parts of the continent at different times. Tools with a ground edge such as stone hatchets first appear at least 4300 years ago. The occurrence of microblades and retouched microliths dates to about 3000 to 4000 years ago in the NSW South Coast.
From about 2000 years ago bipolar flaking of quartz begins to increase within south-eastern Australian sites, and intensifies over the last 1000 years. A corresponding trend is the disappearance of microblade technologies over this time, however both trends are uneven and are not consistent across and within regions. The Elouera, a thick-backed blade, resembling an orange segment appeared around about 1600 years ago. Shell fish hooks used for line fishing first appeared before 700 years ago, and possibly as early as 1100 years (Mulvaney and Kamminga 1999).

6.2 The local area

A range of archaeological investigations have been conducted within the Southern Illawarra coastal plain. These include studies conducted within an academic research framework, recordings by interested amateurs and surveys and assessments of areas under consideration for development. The results of these surveys vary according to macro and micro topographic and environmental factors, ground surface visibility and the degree of previous landscape disturbance.

To date 74 Aboriginal sites have been recorded in area 26 km x 19 km around and including the Gerringong to Bomaderry upgrade study area. Sites comprise 32 artefact scatters, 19 shell middens, seven isolated finds, seven rock shelters with art and/or deposit and/or rock engravings, one natural mythological site, one bora / ceremonial site, one midden / artefact scatter, one potential archaeological deposit, four axe grinding groove sites and one Aboriginal place at Foxground.

A review of previous studies, organised by local areas, is provided below.

6.2.1 Kiama

A number of small scale systematic archaeological surveys have been undertaken in the area around Kiama. None of the studies relate directly to the south Kiama area.

Assessments have been conducted of the banks of the Minnamurra estuary either side of the Princes Highway (Kamminga 1985), of an alternative route for the Princes Highway from Willow Gully (north-west of Kiama) north to the intersection of the Highway and Swamp Road (Koettig 1988), and the North Kiama bypass between Dunmore and Bombo (Silcox 1990).

In 1995, a Local Environmental Study was prepared for an area of land at West Kiama. There is no 'stand alone' archaeology report for the study and no documentation about a field survey conducted for the Local Environmental Study. Consequently it is not known how much of the West Kiama Local Environmental Study area was subject to inspection for Aboriginal sites.

An archaeological survey was conducted of an approximately 15 ha of land located approximately 1.5 km inland from the coastline at Kiama in 1998 (Navin 1998). The area was situated on the foothills of the Illawarra Range, on a south-west - north-east orientated descending ridgeline from Saddleback Mountain which formed the watershed between Spring Creek and the coastal catchment of the immediate Kiama hinterland. Gradients within the study area are relatively low, being situated on spur and ridgeline crests, and upper slopes. Field survey resulted in the location of one isolated find (a single stone artefact) and one area of archaeological potential.

An archaeological survey of the approximately four kilometre long 33kV Feeder 7007 which runs from Kiama Zone Substation to the Jerrara Switching Station was conducted in 2007 (Navin Officer Heritage Consultants 2007). No Aboriginal sites were identified in the course of the survey of the line, which mostly traversed low gradient grazing land.
6.2.2 Foxground, Gerringong and Gerroa

Further south, Caryll Sefton carried out an archaeological survey for a proposed extension to a gravel quarry at Foxground located eight kilometres inland from the coast (Sefton 1988). No archaeological sites were identified in Sefton’s survey.

Officer (1991a) conducted a detailed recording of the Foxground engraving site.

Investigations in the Gerringong and Gerroa areas have included assessments for recreational and residential developments, road improvements, sewerage schemes, and sand mining at the Cleary Brothers property at Gerroa.

In 1987, Dallas conducted an investigation of a midden and a camp site at Werri Beach at Gerringong. Both sites were located during construction of a water pipeline and were severely disturbed.

Human skeletal remains were encountered in Gerringong in 1991 during construction of a carpark next to tennis courts at the southern end of Werri Beach (Feary 1992). It appeared that the burial had been placed within previously excavated shell midden (NPWS Site # 52-5-215). Due to the extent of disturbance to the site and the fragmented nature of the remains it was not possible to collect any information about the context or the nature of the burial. The remains were handed back to the Aboriginal community for reburial in December 1991 (Feary 1992).

The resource use and occupation of Seven Mile Beach was the subject of an honours thesis by Emma Lee in 1996. Analysis was carried out on excavated material and she concluded that the beach represented an important ceremonial and resource gathering area.

In 1999, Officer conducted an archaeological survey of the existing Gerroa camping ground prior to its redevelopment by the NPWS into a day use area. No sites were located by Feary.

In 2000, Officer Heritage Consultants (2000a) conducted a survey for a proposed subdivision, the Elambra Estate, located just south of Gerringong. Two isolated finds were located in the course of the survey.

In 1999, McDonald conducted a cultural heritage assessment for the proposed Gerroa Gerringong sewerage scheme. Twelve sites comprising shell middens, artefact scatters and scarred trees (later discounted) were identified in the course of the study (McDonald 1999). She recommended that further archaeological assessment, specifically subsurface testing, be conducted at the sewerage treatment plant and the five sewerage pump station sites.

In 2000, Officer Heritage Consultants (2000b) conducted a program of subsurface archaeological testing for the Gerroa Gerringong sewerage scheme. Sixty one test pits were excavated and 2601 lithic artefacts were recovered from 42 pits. A program of archaeological salvage was then conducted in 2001 for the Gerroa Gerringong Sewerage Scheme. Six areas were excavated during the salvage program, five of these areas were located in the sewerage treatment plant area and one was located in the area of a sewerage pump station. Eight pits were excavated in the sewerage treatment plant area and one pit was excavated at sewerage pump station 682. A total of 2100 artefacts were identified from all of the excavated pits in the salvaged Gerroa stone artefact assemblage. Midden shell was identified in each of the nine salvage excavation pits and a total of 7.9 kg of midden shell was recovered from the excavations (Navin Officer Heritage Consultants 2001).
An archaeological survey of a parcel of land in East Gerringong was conducted in February 2002 and one Aboriginal site, East Gerringong 1 (EG1), and one potential archaeological deposit (PAD1) were recorded within the study area (Navin Officer Heritage Consultants 2002). Subsequently a program of subsurface testing was conducted at East Gerringong and 27 lithic items were recovered from eight of the 16 test pits. Eight test pits had no lithic items (Navin Officer Heritage Consultants 2003).

The majority of archaeological investigation work conducted in the Gerringong / Gerroa area has taken place within the Cleary Brothers Blue Angle Creek property and relates to sand mining in the area. The area has a long and complicated history of archaeological survey and assessment carried out over a period of 19 years. This work has been summarised elsewhere and the reader is referred to reports by Navin (1992) and Navin Officer Heritage Consultants (2000b) for a detailed summary of investigations in the Cleary Brothers' Blue Angle Creek property.

More recently assessments have been conducted for the upgrade of the intersection of Beach Road and Gerroa Road (Navin Officer Heritage Consultants 2004), a proposed golf course at Gerroa (Navin Officer Heritage Consultant 2005) and archaeological test excavations were carried out for a proposed expansion to the Gerroa sand quarry (Navin Officer Heritage Consultants 2006).

6.3 The Princes Highway study area


6.3.1 Recorded Aboriginal archaeological sites

There are 19 previously recorded Aboriginal archaeological sites within the Gerringong to Bomaderry Princes Highway upgrade study area, 18 of which are recorded on the DEC Aboriginal Heritage Information Management System (see Figure 5.1).

Five sites are the result of separate development-related impact assessments. Fourteen recordings have resulted from investigations related to the Eastern Gas Pipeline, however data for the latter sites is available only from site cards, interim reports and DEC consent or permit documentation. Thus it tends to be cursory, preliminary in nature, and inconsistent in the variables reported.

Table 6.1 tabulates the data which was available to the consultants. From this tabulation the following points can be concluded:

a) Of the eight subsurface testing locations within the study area, all but two returned subsurface artefacts. Test sites consisted almost exclusively of locally elevated topographies adjacent to major creeklines. A test excavation was also conducted on the Toolijooa Ridge crest.

b) The test locations which did not reveal artefacts were located on the bank of Ooaree Creek on Omega Flat, and the bank of Broughton Creek near Broughton Village.

c) Only two sites were known from surface artefacts prior to construction within the study area.

d) The absence of surface artefacts recorded during surface survey did not reflect the nature of the subsurface archaeological resource. Only one of the test locations (on a small spurline crest adjacent to Broughton Creek) included visible artefacts prior to the conduct of test pitting or subsequent construction works.

e) Six additional subsurface artefact occurrences were revealed following the conduct of trenching.

f) Most of the archaeological deposits encountered appeared to consist of very low to low density distributions of stone artefacts, situated within or near riparian corridors. Low density artefact occurrences were also revealed on major ridge crests, such as Toolijooa Ridge.
<table>
<thead>
<tr>
<th>DEC site no.</th>
<th>Site name</th>
<th>Site type</th>
<th>No. of surface artefacts pre-const'n</th>
<th>No. of test pits</th>
<th>No. of artefacts recovered from test pits (permit docs)</th>
<th>No. of recovered artefacts (DECCW site card)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>52-5-0308</td>
<td>EGP 3-29, Connollys Creek</td>
<td>surface artefact occurrence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0399</td>
<td>TPA 9 [Toolijooa Ridge]</td>
<td>subsurface artefact occurrence</td>
<td>18</td>
<td>0 (but see site card note)</td>
<td>Site card states low density subsurface material present</td>
<td>DEC site card states artefacts were recovered from the flat spine of a spur, and that low density <em>subsurface</em> artefactual material was present along 100 m section of route across spur. This is the spurline between Toolijooa and Harley Hills.</td>
<td></td>
</tr>
<tr>
<td>52-5-0395</td>
<td>TPA 7, Duke 8 [Gembrook]</td>
<td>surface and subsurface artefact occurrence</td>
<td>8</td>
<td>39</td>
<td>1</td>
<td>DEC site card states ‘artefacts were recovered from the raised river bank. The scatter appeared to be around 50 m back (N) of Crooked River’, also ‘a very low density of subsurface artefacts present along 100 m section of route immediately west - east of Cooked River’</td>
<td>Artefacts exposed along vehicle track on small spur adjacent to Broughton Creek.</td>
</tr>
<tr>
<td>52-5-0401</td>
<td>TPA 10 [Crooked R]</td>
<td>subsurface artefact occurrence</td>
<td>24</td>
<td></td>
<td>1</td>
<td>Site card states very low density subsurface material present</td>
<td>DEC site card states ‘artefacts were recovered from the raised river bank. The scatter appeared to be around 50 m back (N) of Crooked River’, also ‘a very low density of subsurface artefacts present along 100 m section of route immediately west - east of Cooked River’</td>
</tr>
<tr>
<td>52-5-0410</td>
<td>TPA 6 [Broughton Mill Creek]</td>
<td>subsurface artefact occurrence</td>
<td>12</td>
<td>6</td>
<td></td>
<td>A test pitting location on the west of Broughton Creek near Broughton Village</td>
<td></td>
</tr>
<tr>
<td>no DEC site no.</td>
<td>TPA 8 [Broughton Creek]</td>
<td>not a site</td>
<td>6</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEC site no.</td>
<td>Site name</td>
<td>Site type</td>
<td>No. of surface artefacts pre-const’n</td>
<td>No. of test pits</td>
<td>No. of artefacts recovered from test pits (permit docs)</td>
<td>No. of recovered artefacts (DECCW site card)</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------</td>
<td>----------------------------</td>
<td>--------------------------------------</td>
<td>------------------</td>
<td>---------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>no DEC site no.</td>
<td>TPA11 [Ooaree Creek]</td>
<td>not a site</td>
<td></td>
<td>12</td>
<td>0</td>
<td>12</td>
<td>A test pitting location on the southern bank of Ooaree Creek on Omega Flat</td>
</tr>
<tr>
<td>52-5-0396</td>
<td>TPA4 [Bundewallah Creek]</td>
<td>subsurface artefact occurrence</td>
<td>pits on both banks of creek</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>DEC site card states pits dug on the north and south banks of Bundewallah Creek</td>
</tr>
<tr>
<td>52-5-0370</td>
<td>TPA3 [Flying Fox Creek]</td>
<td>subsurface artefact occurrence</td>
<td>pits on west and south side of creek</td>
<td>4</td>
<td>'A number of artefacts' recovered subsurface; Two artefacts salvaged from surface after pipeline trenching</td>
<td>4</td>
<td>Site card states artefacts recovered from test pits on the west and south side of an ephemeral [Flying Fox] Creek</td>
</tr>
<tr>
<td>?</td>
<td>NO.LC6 [Jaspers Creek tributary]</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td>1</td>
<td>25 salvaged from surface after pipeline trenching</td>
<td>25</td>
<td>Site situated between two minor creeklines, 25 artefacts collected across a 300 m section of pipeline trench works</td>
</tr>
<tr>
<td>52-5-0421</td>
<td>NO.LC1 [Abernethys Creek spurline]</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td>1</td>
<td>Four salvaged from surface after pipeline trenching</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>DEC site no.</td>
<td>Site name</td>
<td>Site type</td>
<td>No. of surface artefacts pre-const'n</td>
<td>No. of test pits</td>
<td>No. artefacts recovered from test pits (permit docs)</td>
<td>No. of recovered artefacts (DECCW site card)</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------</td>
<td>-----------</td>
<td>-------------------------------------</td>
<td>-----------------</td>
<td>---------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>52-5-0422</td>
<td>NO.LC2</td>
<td>subsurface artefact occurrence</td>
<td>Seven salvaged from surface after pipeline trenching</td>
<td>Artefacts collected from south side of tributary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0423</td>
<td>NO.LC3</td>
<td>subsurface artefact occurrence</td>
<td>One salvaged from surface after pipeline trenching</td>
<td>Located on flat land adjacent to, and 30 m away from north creek bank</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0424</td>
<td>NO.LC4</td>
<td>subsurface artefact occurrence</td>
<td>10 salvaged from surface after pipeline trenching</td>
<td>Located on large spur line crest, sloping to the north-east</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0425</td>
<td>NO.LC5</td>
<td>subsurface artefact occurrence</td>
<td>Two salvaged from surface after pipeline trenching</td>
<td>Basal slopes on south side of, and adjacent to, unnamed creekline</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0426</td>
<td>Test Pitting Area 9 (TPA9), northern section [Toolijooa Ridge]</td>
<td>subsurface artefact occurrence</td>
<td>Six salvaged from surface after pipeline trenching</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEC site no.</td>
<td>Site name</td>
<td>Site type</td>
<td>No. of surface artefacts pre-const’n</td>
<td>No. of test pits</td>
<td>No. artefacts recovered from test pits (permit docs)</td>
<td>No. of recovered artefacts (DECCW site card)</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------</td>
<td>----------------------------------</td>
<td>----------------------</td>
<td>-------------------------------------</td>
<td>------------------</td>
<td>------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>52-5-0287</td>
<td>Abernethys Creek 1</td>
<td>surface artefact occurrence</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td>On low gradient slopes adjacent to tributary stream</td>
</tr>
<tr>
<td>52-5-0351</td>
<td>Berry 1</td>
<td>surface isolated find</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Located on spoil heap adjacent to excavated creek channel</td>
</tr>
<tr>
<td>52-5-0380</td>
<td>Woodside Park 1</td>
<td>surface artefact occurrence</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>Located on spurline crest to east of Broughton Creek, Berry</td>
</tr>
<tr>
<td>52-5-0382</td>
<td>SPS 685, Werri Creek</td>
<td>subsurface artefact occurrence</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td>Site situated on eastern bank of W erri Creek estuary, W erri Beach; Investigation conducted for Gerringong sewerage scheme</td>
</tr>
<tr>
<td>no DEC site no.</td>
<td>Isolated Find [Toolijooa Ridge]</td>
<td>surface isolated find</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>A hammerstone located on an eroded bank above a dry gully, on the west side of Toolijooa Ridge; Information from Donlon (1991)</td>
</tr>
</tbody>
</table>
6.4 Predictive model for archaeological sites

Based on the results of previous archaeological investigations within the study area, the broader region and comparable landforms elsewhere on the NSW South Coast, a set of predictive statements can be made about the nature and incidence of the Aboriginal archaeological resource within the proposal study area.

The review of previous archaeological assessments across the Southern Illawarra coastal plain reveals that the conduct of subsurface testing programs as part of environmental assessments has not been consistent across the plain’s landforms. Most excavations have been conducted in rock shelters or within sand bodies along coastal and estuarine margins. Little information exists for the hinterland and basal slopes adjacent to the escarpment. The limited and largely unreported data from an archaeological testing program conducted for the Eastern Gas Pipeline is a notable exception.

As a consequence, the following model is necessarily broad, and tends to be inclusive and generic. There are few locally specific or characteristic criteria but many unknowns associated with the model. In particular, the potential affect of formerly dense rainforest vegetation on the position, formation and preservation of Aboriginal occupation sites. How did the formerly dense forest vegetation of the district affect the intensity of occupation, and thus the density and distribution of archaeological material?

Of particular interest, and still amongst the unknowns is the possible function or occupation associated with the hinterland ‘Meadows’. Originally thought by Europeans to be useful as natural pastures for their grazing animals, they were found to be low lying and poorly drained, treeless and grassy swamp basins, surrounded by dense forest, subject to permanent or intermittent inundation. Alexander Berry in his diary of 30 June 1822 noted that:

“All my expected fine meadows now only turn out to be brown reedy swamps, many of them however may be drained” (during expedition to Shoalhaven River June 21 – July 23 1822, from Berry Museum display 2009).

Despite this, the Illawarra meadows appear to have been a focus for early European occupation, and at least in some instances, this appears to have been prior to construction of drainage works. An example is ‘The meadow’ near the confluence of Broughton and Broughton Mill Creek. This was the site of the first European settlement in the Berry area, and was based around an early cedar getters camp (Berry Museum display 2009). This introduces the possibility that some of the meadows were periodically dry and may have acted as natural and habitable clearings within the otherwise dominant forests. As such some of the meadows may have acted as foci for Aboriginal occupation and/or social aggregation. There is some ethnographic evidence to support this proposition, such as at Dicky Woods Meadow where tribal battles were conducted and burials performed (refer Navin Officer Heritage Consultants 2009a).

6.4.1 Micro-topographic variables

Aboriginal archaeological material is likely to be present in varying densities across all broad topographic zones. This material commonly consists of surface or subsurface stone artefacts, but may also include other occupational remains, such as shell midden or hearth material. Sites where camping or food and other resource processing occurred are often characterised by higher densities of archaeological material and the location of such sites can be predicted by the presence and combination of specific micro-topographic traits. These may include:

a) Low gradient or relatively level ground.
b) A sheltered context from prevailing harsh weather conditions, such as wind or heat.
c) The absence of significant surface rock or gravels.
d) Proximity to a freshwater source.
e) Proximity to resource zones (such as a littoral or freshwater shoreline).
f) A well drained and locally elevated context.

The following landforms are consistent with some or all of these traits and can be classed as archaeologically sensitive:

a) Low gradient basal slopes (including colluvial deposits and alluvial fans) adjacent to the valley floor.
b) The lower elevation or terminal section of major spurs and ridgelines where they adjoin or traverse the valley floor.
c) Level or low gradient ground on the crests of spurs and ridgelines.
d) The downslope margin of alluvial terraces.
e) The banks of rivers and creeks where they are locally elevated and well drained.
f) The locally elevated margins of wetland basins. This criteria may be of particular relevance to the margins of the former ‘meadow’ areas (now drained swamp basins).
g) Locally elevated sand bodies outside of coastal barrier or dune systems, such as fossil beach ridges on the margins and flats of infilled estuaries, and source bordering dunes.

6.4.2 General site location trends and patterns

Due to dense grass cover and low ground surface visibility, most archaeological deposits present within the proposal study area would not be evidenced by visible surface artefacts.

Most Aboriginal archaeological sites tend to be situated at or close to ecotones – the boundaries where different environmental zones meet. This probably relates to the need to find amenable campsites with access to water and to minimise distances to exploitable resources.

Ridges and spurlines which due to their length, elevation, gradient and alignment, provide effective through-access corridors within and across the coastal plain, are likely to have been used as pathways by travelling Aboriginal people.

As a consequence of transit and interim camping activity, level ground on the crests of these spurs and ridges are likely to include low to moderate density artefact occurrences. The larger and more dominant ridgelines (such as watersheds) are likely to contain more continuous and higher density artefactual material compared to lesser landform corridors. The incidence and density of archaeological material on ridge and spurline crests may increase with proximity to freshwater and the coastal plain.

The crests of ridgeline saddles are likely to contain artefact occurrences, especially where a saddle provides an efficient cross-country travel route due either to its low elevation, or strategic position relative to ridgelines.

The crests and basal slopes of low relief spurs which extend into and across the flood and wetland basins of the lower Shoalhaven valley were likely to have been a focus for Aboriginal occupation. This is due to their well drained and elevated context in close proximity to a range of resource zones and water sources. Sites most likely to occur in these contexts consist of stone artefact occurrences.

Older archaeological deposits including middens and artefact occurrences may occur subsurface on remnant or aggrading landforms such as dunes, fossil beach ridges and shoreline features, alluvial terraces and fans, colluvial slope deposits, and source bordering dunes. Where these deposits occur on or near the boundary between the valley floor and the adjacent bedrock slopes there is potential for archaeological deposits to date from the period when this boundary marked a coastal and then estuarine shoreline following the sea level rise between 6000 and 5000 years ago.
6.4.3 Site types

Artefact occurrences

Artefact occurrences may consist of a surface and/or subsurface distribution of artefacts, which in nearly all cases are limited to stone artefacts. In exceptional cases, (such as in swamp deposits) artefacts made of organic materials such as wood or bone may be present. Subsurface artefacts may be associated with features such as hearth remains. Surface artefact occurrences may be further categorised as isolated finds, or artefact scatters. Subsurface distributions of artefacts, by definition comprise an archaeological deposit. Artefact occurrences outside of rock shelters are sometimes referred to as open camp sites.

Artefact occurrences may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, domestic camps, or the manufacture and maintenance of stone tools. The density of artefacts represented in these scatters can vary considerably between and across individual sites.

Artefact occurrences, detectable as isolated finds, scatters of surface artefacts, or subsurface distributions (archaeological deposits), are likely to be the most common site type within the proposal study area.

Artefact occurrences are most likely to occur on level and well drained ground, and situated adjacent to a source of freshwater (such as a river, creek or wetland), to a resource zone such as a marine or estuary shoreline, or along the crests of spurs and ridgelines.

Isolated finds can occur anywhere in the landscape and may represent the random loss or deliberate discard of artefacts, or the remains of dispersed artefact scatters. Given the low levels of ground surface visibility in the proposal study area, an isolated surface find may be indicative of a larger and subsurface distribution within the underlying soil profile.

Coastal middens

Coastal middens are defined as a concentration of artefactual debris that includes a substantial proportion of marine shellfish species. They are usually the result of interim or base camp activity and are normally located close to the littoral environment. Midden deposits may also include a wide range of other food and cooking remains such as fish, bird and mammal bone, charcoal and crustacean remains. Middens are typically dominated by shell species collected from nearby environments such as rocky or sandy shorelines. Estuarine species may also be included. Where middens are located adjacent to a sandy shore environment, they may be dominated or exclusively made up of bivalve species such as pipi.

Coastal middens are dominated by shell species from rocky and/or sandy shorelines and are most likely to occur on locally elevated, well drained and low gradient, ground which was formerly, or is currently situated close to a marine shoreline. Typically, coastal middens are situated on headlands, adjacent to the mouths of creeks and estuaries, and within fore and hind dune deposits. They are generally present close to the environment from which the shellfish were collected, namely rock platforms or extensive sandy beaches.

A high proportion of coastal midden deposits on the NSW South Coast include stone artefacts. Midden deposits may also be associated with a subsurface distribution of stone artefacts situated adjacent to and on the inland margin of the midden concentration.

Estuarine middens

Estuarine middens are defined as a concentration of artefactual debris that includes a substantial proportion of estuarine shell species. They are located mostly in close proximity to estuarine environments. These middens generally contain a restricted range of shell species and limited stone and faunal material (Navin 1987).
Estuarine middens are most likely to occur on locally elevated, well drained and low gradient, ground which was formerly, or is currently situated close to an estuarine shoreline, especially when in proximity to a freshwater source.

**Burials**

Burials consist of buried human skeletal remains. They may occur singly or in groups and may display a range of body arrangements, grave goods or associated features such as earth mounding or stone cairns. Some burials of high status individuals were associated with the creation of carved trees and particular grave goods.

Burials of Aboriginal people in the historical period may be associated with encampments, fringe settlements and mission or reserve lands. European cultural influences may be seen in burial orientation, arrangement and surface features, such as marker stones and ground borders.

The remains of prehistoric burials are most likely to be found in locally elevated landforms with a relatively deep profile of soft sediments such as aeolian dunes, beach ridges and alluvial deposits, such as levees, terraces and creek or river flats. Burials may also occur in association with midden or rockshelter deposits and are mentioned in historic accounts as being placed in hollow trees. Burials are frequently encountered on the South Coast in sand deposits near the entrance to major estuaries.

**Stone arrangements and ceremonial grounds**

This site type includes the grounds and remains of ceremonial activities, an example being the bunan, a male initiation ceremony (Mathews 1896). This ceremony included the construction of two earthen ring mounds separated by a pathway, along which carved trees and ground sculptures were constructed to instruct the initiates.

The potential archaeological remains from an Aboriginal ceremony may consist of hearths, a low incidence of discarded stone artefacts or ochre, arrangements of stones, low-relief ground features such as ditches, earthen mounds or rings, and scarred or carved trees. All but the stone artefacts are fragile in nature and highly vulnerable to natural processes of erosion, fire, and to gross disturbance from European land-use practices such as logging, vegetation clearance, ploughing, fencing and the clearing of surface rock from paddocks. All of these factors have resulted in the archaeological manifestation of these sites being very rare.

It is more common on the NSW South Coast for ceremonial sites to be known and identified from oral history or documentary accounts, than from archaeological evidence. If evidence of a ceremonial ground were to survive to the present day it may take the form of an arrangement of stones (but only where that land had not been subject to vegetation clearance, ploughing, cropping or other than low intensity stock grazing), or traces of former ground relief features (such as ring mounds, either as ground relief or a subsurface feature manifest as a crop or pasture mark).

Based on ethnohistoric accounts and oral tradition, ceremonial grounds in Southern Illawarra and Shoalhaven regions were situated on a variety of landform types, including coastal dunes, river flats, sandstone rock platforms, spurlines at the base of hills and ranges, and the tops of mountains.

**Historical occupation sites**

These sites contain evidence of Aboriginal occupation since the time of European occupation and are typically manifest by the presence of camping and occupation debris in industrial materials such as metal, ceramic and glass. Many of these sites would be indistinguishable from European sites in the absence of oral or documentary evidence.
Sites dating from the late eighteenth to early nineteenth century are sometimes called ‘contact’ sites. This term refers to the short period when traditional Aboriginal society encountered and interacted with the European community and responded with changes in social, economic and occupational patterns. This response included the use and adaptation of new materials, reacting to the loss of territory, resources, and population loss. Evidence from this period could potentially include Aboriginal flaking of glass, art motifs depicting European people or objects, burials with historic grave goods or markers and debris from ‘fringe camps’.

Historical occupation sites typically consist of the remains of encampments, some of which were located adjacent to early European towns or homesteads. Sometimes referred to as fringe camps, these settlements were generally sited adjacent to a fresh water source such as a creekline, and adjacent but separate to the European settlements.