5.0 Indigenous heritage – archaeological context

5.1 Regional review

The New South Wales South Coast and its hinterlands have been the subject of extensive archaeological research and impact assessments over the last thirty 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 6,000 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 6,000 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 South Coast dating to 17,000 and 20,000 years BP (before present) 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 7,000 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), Selton (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 1,000 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 5-6000 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 3-4000 years ago in the NSW South Coast.
From about 2000 years ago bipolar flaking of quartz begins to increase within southeastern 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).

5.2 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 seventy four Aboriginal sites have been recorded in area 26 x 19 km around and including the Gerringong to Bomaderry Upgrade study area. Sites comprise thirty two artefact scatters, nineteen 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 (PAD), four axe grinding groove sites, and one Aboriginal Place at Foxground.

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

5.2.1 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 (northwest 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 (LES) 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 LES. Consequently it is not known how much of the West Kiama LES area was subject to inspection for Aboriginal sites.

An archaeological survey was conducted of an approximately 15 ha of land located approximately one and a half kilometres inland from the coastline at Kiama in 1998 (Navin 1998). The area was situated on the foothills of the Illawarra Range, on a southwest-northeast 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.
5.2.2 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 Feary 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 Navin 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 (STP) and the five Sewerage Pump Station (SPS) sites.

In 2000 Navin 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 forty two 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 STP area and one was located in the area of an SPS. Eight pits were excavated in the STP area and one pit was excavated at SPS 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 twenty seven lithic items were recovered from eight of the sixteen 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 nineteen 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).

5.2.3 Berry

Four archaeological sites were recorded by Corkill in the vicinity of Berry during fieldwork associated with her thesis on the lower Shoalhaven Valley (Corkill 1986). Three were situated in the area of Moeyan Hill and consisted of an artefact scatter of ten small flakes, a grinding groove and a scarred tree. Another site was identified approximately one kilometre north of the town on Connolly’s Creek. This was described as an open camp site consisting of five flakes found in disturbed contexts on a site measuring 100 m x30 m.

In 1991 Donlon conducted a preliminary archaeological survey of the proposed routes for the upgrading of the Princes Highway between Gerringong and Berry (Donlon 1991a). Targeted survey was conducted along portions of the route options considered to be archaeologically sensitive. One site, an isolated find (a hammerstone) was identified in an upper gully on Toolijooa ridge.

An isolated find was recorded by Kuskie (1998) during the survey of a proposed subdivision on the southwestern margin of Berry. The find was located on a spoil heap adjacent to a channelised and unnamed ephemeral watercourse.

Paton carried out an archaeological study for the Berry sewerage overflow development in 1999. No sites were located during the study.

Surveys for the Environmental Impact Statement (EIS) for the Eastern Gas Pipeline were conducted to the north and west of Berry in 1995 (Kuskie, Navin & Officer 1995). An artefact scatter, NPWS site #52-2-308, was recorded near Connolly’s Creek in the course of the survey.

Subsequent works relating to the Eastern Gas Pipeline were conducted by Australian Archaeological Survey Consultants (AASC). These included extensive archaeological survey, subsurface testing and salvage. However little or no information is available documenting these works and the Department of Environment and Conservation (DECC) states that final reports for the subsurface investigation and salvage programs for the EGP have not been provided.

In 1998 ERM Mitchell McCotter prepared an EIS for a North Berry Bypass (1998 draft). An archaeological survey was conducted for the study, however no Aboriginal sites were identified and this was considered to be a product of poor ground surface visibility. It was concluded that there was moderate to high potential for Aboriginal sites to remain undetected in the study area.

In 2000 Navin Officer Heritage Consultants undertook a survey of Woodside Park, a dairy farm of 120 ha located to the east of the township of Berry. One Aboriginal site, a very low density scatter of stone artefacts (referred to as ‘Woodside Park 1’), was located in the course of the survey. The artefacts were visible on an unformed farm track on the upper slopes and crest of a major spurline.

No Aboriginal sites were located in the course of an archaeological survey for the proposed upgrade of the intersection of the Princes Highway and Tindalls Lane, just north of Berry (Navin Officer Heritage Consultants 2006c).
5.2.4 Bomaderry and North Nowra

There has been no systematic research into the prehistory of the area around north Nowra and Bomaderry. The present limited level of knowledge for the area is based primarily on the research results of a single academic test excavation, sites located by Shoalhaven Council and local amateur groups, rock art recording work and isolated contract surveys. These somewhat disparate studies, summarised below, provide us with a general picture of the known archaeological resource of the Bomaderry/north Nowra area.

During the 1960’s and 70’s the Shoalhaven Antiquities Committee sponsored by the Shoalhaven Council recorded artefacts, sites and other ‘memoria’ associated with the area’s prehistory. The Committee was responsible for collating much of the local knowledge about archaeological sites and instigated the first serious attempts at site protection.

In the late 1960’s R. J. Lampert excavated several test pits in a sandstone rock shelter situated on Bomaderry Creek, NPWS Site No 52-5-0035, within one kilometre of the Shoalhaven River. The excavation was conducted in order to ascertain the type of resources utilised in the Nowra region. The excavation and analysis remains exploratory, however Lampert concluded that the deposit was rich in the remains of land mammal and flaked stone. There were no fish remains and only a few estuarine shells. The site appeared to represent a solely inland type, with the occupants concentrating on terrestrial forest resources.

Bindon (1976) recorded seven rock art sites in the Nowra region in the mid-1970’s as part of his survey of the Shoalhaven region. In 1989, Officer relocated and recorded in detail nine of the twelve known art sites in the Nowra region as part of research into the rock art of southeastern NSW (Officer 1991a and b).

In 1986, Corkill developed a predictive model of Aboriginal occupation and archaeological sites across the deltaic and infill deposits of the former Holocene embayment and subsequent estuary of the lower Shoalhaven river valley (Corkill 1986). Limited field survey provided tentative confirmation that sites would be located on remnant landscape features associated with Holocene embayment infill.

The remains of an Aboriginal burial located on the banks of the Shoalhaven upstream of Nowra were inspected by Donlan in 1991 (Donlan 1991b).

Navin (1991) surveyed the North Nowra-Bomaderry Creek link road and three bridge alignments, locating two rockshelter sites with archaeological deposits in the course of the survey.

Two isolated finds, (one hatchet head and one alluvial pebble) were located in the course of an archaeological investigation of lands associated with Associated Pulp and Paper Mill’s (APPM) Shoalhaven Paper Mill on Bolong Road, Bomaderry (Navin 1993).

Navin and Officer (1994) undertook a heritage assessment of the Jasmine Drive Subdivision at Bomaderry, 5 km north of Nowra. One Aboriginal site, Abernathys Creek 1, was located in the course of the field survey. The site comprised seven stone artefacts.

Five rockshelter sites were recorded by Barratt in 2000 while undertaking a study of the Bomaderry Creek Bushland. One of these rockshelters contained charcoal anthropomorphs and indistinct motifs in yellow, white and red ochre. The other four contained stone artefacts and cultural deposits.

In 2001 the NPWS conducted an assessment of Aboriginal cultural values associated with bushland on crown land along Bomaderry Creek (Boot 2001). The study involved consultation with members of the local Aboriginal community. The study found that eleven recorded sites (eight rockshelters - two with art, two grinding grooves and an artefact scatter) had been located during previous surveys of the area. The bushland areas were found to have high heritage and social significance for the Aboriginal community based on a complex inter-relation of archaeological sites, historic occupation, social practice and cultural values.
Navin Officer Heritage Consultants completed a survey of a proposed residential subdivision at Jamison Road, North Nowra in 2006. Five Aboriginal sites were recorded during this investigation. The sites comprised a rock shelter with remnant Aboriginal art and potential archaeological deposit (JR1); a European gunflint was also found in this shelter; a rock shelter with an artefact scatter, Aboriginal art, and potential archaeological deposit (JR2); a previously recorded group of grinding grooves (JR3, DEC site no. 52-5-84); and two isolated artefacts (JR4 and JR5).

Both shelters contained surface artefacts and deposits with archaeological potential for subsurface and *in situ* material. In JR1 the deposit was limited in size and had low to moderate *in situ* potential. The deposits in JR2 were substantial in area and had moderate to high *in situ* potential. It was concluded that the scientific value of JR1 was moderate within a local context, and JR2 was moderate to high within a local context.

The grinding groove site displayed characteristics that provided for a high assessment of scientific value and this site was considered to have high significance within a local context. Its rare and uncommon characteristics also had regional significance, supporting a moderate level of significance within a regional context.

Four rock shelters with potential Aboriginal archaeological deposit were also identified in the Jamison Road study area.

### 5.3 The Princes Highway study area


#### 5.3.1 Recorded Aboriginal archaeological sites

There are nineteen (19) previously recorded Aboriginal archaeological sites within the Gerringong to Bomaderry Princes Highway Upgrade study area, eighteen of which are recorded on the DEC Aboriginal Heritage Information Management System (AHIMS). (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 5.1** 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; and
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.

In addition, a number of reported, but as yet unconfirmed, archaeological sites have been recorded from local oral sources (refer Section 6.3.3).

5.3.2 Reported Aboriginal archaeological sites

Information collected from a local community questionnaire for a previous highway upgrade option analysis (Donlon 1991:12-13) revealed the following unconfirmed reports of archaeological finds:

a) Aboriginal artefacts have been observed and collected along the banks of Broughton Creek in the vicinity of ‘Brookside’, Broughton Village;

b) A stone arrangement and bora ring is reportedly located in a ‘fairly open area associated with Lilli Pilli trees on Toolijooa Hill;

c) Aboriginal stone artefacts have been found by locals on the north saddle of the Toolijooa ridge, [close to the cattle trail on the crest];

d) Stone artefacts have been observed along the railway corridor about 10 m west of the rail line and 350 m north of ‘Valley View’ homestead; and

e) Stone artefacts and a possible midden have been observed in the region where Toolijooa Road meets the railway.
Figure 5.1: Previously recorded Aboriginal archaeological sites (Western study area)
Figure 5.1 cont’d.  Previously recorded Aboriginal archaeological sites (Eastern study area)
Table 5.1: Information relating to Aboriginal sites and archaeological subsurface investigations recorded within the study area

<table>
<thead>
<tr>
<th>DEC site no.</th>
<th>Site name</th>
<th>Site type</th>
<th>AMG reference (AGD)</th>
<th>No. of surface artefacts pre-construction</th>
<th>No. of test pits conducted</th>
<th>No. of artefacts recovered from test pits (permit/consent documents)</th>
<th>No. of recovered artefacts (DEC site card)</th>
<th>Comments</th>
<th>DEC permit/consent ID</th>
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<tr>
<td>52-5-0308</td>
<td>EGP 3-29, Connollys Creek</td>
<td>surface artefact occurrence</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0399</td>
<td>TPA9 [Toolijooa Ridge]</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td>18</td>
<td>0</td>
<td>(but see site card note)</td>
<td>site card states low density subsurface material present</td>
<td>This is the spurline between Toolijooa and Harley Hills</td>
<td>SZCHU00 37</td>
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<tr>
<td>52-5-0395</td>
<td>TPA7, Duke 8 [Gembrook]</td>
<td>surface and subsurface artefact occurrence</td>
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<td>8</td>
<td>39</td>
<td></td>
<td>1</td>
<td></td>
<td>SZCHU00 39</td>
</tr>
<tr>
<td>52-5-0401</td>
<td>TPA10 [Crooked R]</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td>24</td>
<td>1</td>
<td></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</td>
<td>SZCHU00 40</td>
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<tr>
<td>52-5-0410</td>
<td>TPA6 [Broughton Mill Creek]</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td>12</td>
<td>6</td>
<td></td>
<td>Site content information on DEC site card has been lost</td>
<td></td>
<td>SZCHU00 41</td>
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<td>No DEC site no.</td>
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<td>A test pitting location on the west of Broughton Creek near Broughton Village</td>
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<td>No DEC site no.</td>
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<td>A test pitting location on the southern bank of Ooaree Creek on Omega Flat</td>
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<td>No. of recovered artefacts (DEC site card)</td>
<td>Comments (Some comments not included because of data base licensing restrictions)</td>
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<tr>
<td>52-5-0396</td>
<td>TPA4 Bundewallah Creek</td>
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<td></td>
<td>pits on both banks of creek</td>
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<td>10</td>
<td>DEC site card states pits dug on the north and south banks of Bundewallah Creek</td>
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<td>52-5-0370</td>
<td>TPA3 Flying Fox Creek</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td>pits on W and S side of creek</td>
<td>4</td>
<td>'a number of artefacts' recovered subsurface; 2 artefacts salvaged from surface after pipeline trenching</td>
<td>site card states artefacts recovered from test pits on the W and S side of an ephemeral [Flying Fox] Creek</td>
<td></td>
<td>SZCHU0035</td>
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<td>?</td>
<td>NO.LC6 Jaspers Creek tributary</td>
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<td>1</td>
<td></td>
<td></td>
<td>SZCHU0036</td>
</tr>
<tr>
<td>52-5-0419</td>
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<td>subsurface artefact occurrence</td>
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<td></td>
<td></td>
<td>25</td>
<td>site situated between two minor creeklines</td>
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</table>

Recordings made during survey and salvage programs for the Eastern Gas Pipeline

Navin Officer
<table>
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<th>DEC site no.</th>
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<th>Site type</th>
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<th>No. of test pits conducted</th>
<th>No. of artefacts recovered from test pits (permit/consent documents)</th>
<th>No. of recovered artefacts (DEC site card)</th>
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<td></td>
</tr>
<tr>
<td></td>
<td>[Abernethys Creek spurline]</td>
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<tr>
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<td></td>
<td></td>
<td>7 salvaged from surface after pipeline trenching</td>
<td>artefacts collected from S side of tributary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Abernethys Creek tributary]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0423</td>
<td>NO.LC3</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td></td>
<td></td>
<td>1 salvaged from surface after pipeline trenching</td>
<td>located on flat land adjacent to, and 30m away from N creek bank</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Abernethys Creek tributary]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0424</td>
<td>NO.LC4</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td></td>
<td></td>
<td>10 salvaged from surface after pipeline trenching</td>
<td>located on large spur line crest, sloping to the NE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Tandingulla Creek spurline]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52-5-0425</td>
<td>NO.LC5</td>
<td>subsurface artefact occurrence</td>
<td></td>
<td></td>
<td></td>
<td>2 salvaged from surface after pipeline trenching</td>
<td>basal slopes on S side of, and adjacent to, unnamed creekline</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Jaspers Valley]</td>
<td></td>
<td></td>
<td></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>AMG reference (AGD)</td>
<td>No. of surface artefacts pre-construction</td>
<td>No. of test pits conducted</td>
<td>No. of artefacts recovered from test pits (permit/consent documents)</td>
<td>No. of recovered artefacts (DEC site card)</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------</td>
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<td>-----------------------------------------</td>
<td>---------------------------</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>Not included due to sensitive nature of site</td>
<td></td>
<td></td>
<td>6 salvaged from surface after pipeline trenching</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>
<td></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>
<td></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>
<td></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 Werri Creek estuary, Werri Beach; Investigation conducted for Gerringong sewerage scheme</td>
<td></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>
<td></td>
</tr>
</tbody>
</table>
5.4 Predictive model for Aboriginal 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 project study area.

5.4.1 Predicted site types, locations and distribution patterns

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 these 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); and

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:

g) Low gradient basal slopes (including colluvial deposits and alluvial fans) adjacent to the valley floor;

h) The lower elevation or terminal section of major spurs and ridgelines where they adjoin or traverse the valley floor;

i) Level or low gradient ground on the crests of spurs and ridgelines;

j) The downslope margin of alluvial terraces;

k) The banks of rivers and creeks where they are locally elevated and well drained;

l) The locally elevated margins of wetland basins; and

m) 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.

5.4.1.1 General site location trends and patterns

Due to dense grass cover and low ground surface visibility, most archaeological deposits present within the project study area will 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 6 and 5000 years ago.

5.4.1.2 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 project 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 project study area, an isolated surface find may be indicative of a larger and subsurface distribution within the underlying soil profile.
5.4.1.3 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.

5.4.1.4 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.

5.4.1.5 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.
5.4.1.6 Scarred trees

Scarred trees are the result of the Aboriginal removal of bark (and possibly also wood) from a living tree. Bark was used in the manufacture of various structures, implements and materials such as living shelters, shields, canoes, coolamons, sculptures and twine. Scars may also be the result of making footholds in a tree to collect food or facilitate the removal of bark. This site type occurred wherever suitable trees within the region's extensive prehistoric forests were exploited by Aboriginal people.

Some scarred trees may date to the historic period when bark was removed by Aborigines for both their own purposes and for roofing and cladding material on early European houses. Consequently the distinction between European and Aboriginal scarred trees is sometimes blurred.

Extensive vegetation clearance for agriculture, and logging in the remaining forest areas has substantially reduced the potential occurrence of this site type across the project study area. Aboriginal scarred trees are a diminishing component of the archaeological resource and surviving examples are limited to suitable tree species of mature age.

Scarred trees may occur in all topographies where old growth trees survive, either as isolated trees or as part of remnant or continuous forest. Potential locations include road reserves, remnant riparian or steep slope vegetation on farmlands, forests in crown reserved lands, and isolated or scattered trees within pasture grasslands. In particular areas, such as around historic encampments, fringe camps and travel routes, the removal of bark by Aborigines probably continued into the early twentieth century. Given the high number of causes for tree scarring, including both natural and man-derived, scarred tree recordings with a high confidence interpretation of an Aboriginal origin are likely to be rare.

5.4.1.7 Rock shelters and art sites

Rock shelter sites consist of rock overhangs which contain evidence of Aboriginal occupation. Evidence of occupation may be in the form of an archaeological deposit, grinding grooves, other ground or pecked features, and pigment or engraved art. Some shelter deposits have been found to contain burials. Rock shelters may occur wherever the suitable bedrock and weathering conditions exist to support rock overhangs. Within the project study area, rock shelters may be present in high gradient slopes formed on sandstone or conglomerate, and rarely in volcanic rocks such as latite.

Rock shelters are most likely to contain evidence of Aboriginal occupation if they are relatively dry, have a level floor with a significant proportion of sediment rather than rock, are at least 1 m high, and are close to a water source or major ridgeline. Shelters with larger internal spaces which comply with these criteria are more likely to have occupation evidence, than smaller shelters. In topographies where rock overhangs are rare, even small sheltered spaces may have been occupied.

Engraved (carved) art motifs are a rare artefact type in the Southern Illawarra. Engravings in open contexts (i.e. not in a rock shelter) are even rarer than those within rock shelters. Open context engravings become more frequent to the north of Helensburgh where they typically occur on relatively level sandstone platforms, situated either on crests or on streambed rock exposures. Rock types which weather to form a smooth and even surface are favoured for engravings.
5.4.1.8 Grinding grooves

Grinding groove sites consist of single or grouped occurrences of abraded grooves which have been created through the manufacture of ground edges on tools such as stone hatchets. Water is a desirable part of an efficient grinding method and most grooves are found in close proximity to, or within a local water source such as a streamline or pothole. Sandstone is almost exclusively the only rock type utilised for grinding and only fine grained and even-surfaced platforms are used. Grinding grooves may also occur in close association with rock shelters with occupation deposit. Grinding grooves typically occur in upper or mid-catchment contexts where streamlines or soaks cross sandstone benches and platforms. In topographies where sandstone is scarce, any suitable surface exposure may be utilised, regardless of its proximity to water.

5.4.1.9 Stone quarry or procurement sites

Quarry or stone procurement sites are places where stone has been procured for the making of stone tools. Sites of this type are uncommon and likely to be found wherever surface outcrops or cobble and gravels beds of suitable rock types occur. Rock types known to be used within the study area include chert, silcrete, quartz, quartzite, silicified wood, and rhyolite. Exposures of conglomerate or latite, tertiary gravel deposits, fluvial channel gravels and high energy shoreline cobbles are the most likely stone sources exploited within the project study area.

5.4.1.10 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 landuse 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 the Southern Illawarra and Shoalhaven regions were situated on a variety of landform types, including coastal dunes, river flats, sandstone rock platforms, spur lines at the base of hills and ranges, and the tops of mountains.
5.4.1.11 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.

5.4.2 Predictive mapping of archaeological sensitivity

Following on from this model, various landforms and combined topographic characteristics can be mapped according to varying archaeological sensitivity and the predicted resource. This mapping, and an interpretive key in table form is presented below in Figure 5.2 and Table 5.2.
Figure 5.2: Predictive mapping of potential for Aboriginal archaeological sites (Western study area)
Figure 5.2 Cont’d.  Predictive mapping of potential for Aboriginal archaeological sites (Eastern study area)
### Table 5.2: Predictive model for potential Aboriginal archaeological resource

<table>
<thead>
<tr>
<th>Map key</th>
<th>Generalised archaeological sensitivity rating</th>
<th>Large scale landform description</th>
<th>Small scale landforms with archaeological potential</th>
<th>Most likely potential site types</th>
<th>Predicted site type incidence</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Urban landscape</td>
<td>open space reserves with relatively low levels of landsurface disturbance</td>
<td>surface artefact occurrence</td>
<td>uncommon</td>
<td>likely to be in a disturbed condition</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Former (now drained) wetland basin (infilled estuary basin)</td>
<td>locally elevated features such as levee deposits and sand bodies</td>
<td>subsurface artefact occurrence</td>
<td>uncommon</td>
<td>likely to be in a disturbed condition</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td>surface artefact occurrence</td>
<td>rare</td>
<td>likely to occur only on existing, or now buried but formerly, locally elevated topography</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td>subsurface artefact occurrence</td>
<td>rare</td>
<td>may occur only where old growth native trees remain</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>Riparian corridor</td>
<td>locally elevated river, creek, estuary, lake and billabong banks, levee deposits, alluvial terraces, and benches, locally elevated sand bodies, spurline crests and low gradient slopes,</td>
<td>surface artefact occurrence</td>
<td>uncommon</td>
<td>density of pasture grasses mostly prevents discovery</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td>subsurface artefact occurrence</td>
<td>common</td>
<td>likely to occur in varying artefact densities discontinuously across defined corridor, higher densities most likely in relative proximity to water</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td></td>
<td></td>
<td>scarred tree</td>
<td>rare</td>
<td>may occur only where old growth native trees remain</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>grinding grooves</td>
<td>rare to uncommon</td>
<td>may occur only where suitable surface outcrops of sandstone occur (esp. in ck bed)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>burial</td>
<td>rare</td>
<td>may occur in deep alluvial or aeolian deposits</td>
<td></td>
</tr>
<tr>
<td>Map key</td>
<td>Generalised archaeological sensitivity rating</td>
<td>Large scale landform description</td>
<td>Small scale landforms with archaeological potential</td>
<td>Most likely potential site types</td>
<td>Predicted site type incidence</td>
<td>Comments</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------------------------</td>
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<td>--------------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td>Moderate</td>
<td>Former coastal embayment, estuary and wetland margin</td>
<td>spurline (and former headland) crests and low gradient slopes, locally elevated (fossil) beach and dune rises, locally elevated (fossil) deltaic deposits</td>
<td>surface artefact occurrence</td>
<td>uncommon</td>
<td>density of pasture grasses mostly prevents discovery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>subsurface artefact and/or midden occurrence</td>
<td>common to rare</td>
<td>deposits relating to the wetland margin likely to be common, deposits relating to former estuary and embayment shoreline are likely to be rare, and limited to relict landforms</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>scarred tree</td>
<td>rare</td>
<td>may occur only where old growth native trees remain</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>burial</td>
<td>rare</td>
<td>may occur in deep alluvial or aeolian deposits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low to Moderate</td>
<td>Spur and ridgeline crest (excluding those in riparian corridors)</td>
<td>relatively level ground on crest and upper slopes, especially saddles and shoulders</td>
<td>surface artefact occurrence</td>
<td>uncommon</td>
<td>density of pasture grasses mostly prevents discovery, isolated finds and low density scatters most likely</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>subsurface artefact occurrence</td>
<td>common</td>
<td>likely to occur in low artefact densities discontinuously across defined areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>scarred tree</td>
<td>rare</td>
<td>may occur only where old growth native trees remain</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>quarry</td>
<td>very rare</td>
<td>may occur where suitable rock types (such as some forms of latite) occur at surface</td>
<td></td>
</tr>
<tr>
<td>Map key</td>
<td>Generalised archaeological sensitivity rating</td>
<td>Large scale landform description</td>
<td>Small scale landforms with archaeological potential</td>
<td>Most likely potential site types</td>
<td>Predicted site type incidence</td>
<td>Comments</td>
</tr>
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<td>-----------------------------------------------</td>
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</tr>
<tr>
<td>Low to Moderate</td>
<td>High gradient slopes with potential to contain rock outcrops and shelters</td>
<td>cliffs, escarpments and rock outcrops and platforms</td>
<td>rock shelter with occupation deposit and/or rock art</td>
<td>rare</td>
<td>most rock shelters are known to occur in the higher elevation and younger sandstone facies, but some may occur in older sandstones or the latites within the study area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>grinding grooves</td>
<td>rare</td>
<td>may occur only where suitable surface outcrops of sandstone occur (esp. in ck beds, on the margins of bogs/soaks, or in or above rock shelter sites)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>quarry</td>
<td>very rare</td>
<td>may occur where suitable rock types (such as some forms of latite or tuff) occur at surface</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Landforms not yet described (especially those situated away from local water sources) including upper and mid-slopes, moderate to high gradient spurline crests</td>
<td>landforms described above which cannot be effectively mapped at 1:25,000 scale</td>
<td>surface artefact occurrence</td>
<td>uncommon</td>
<td>density of pasture grasses mostly prevents discovery, isolated finds and low density scatters most likely</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>subsurface artefact occurrence</td>
<td>uncommon</td>
<td>likely to occur in low artefact densities discontinuously across defined areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>scarred tree</td>
<td>rare</td>
<td>may occur only where old growth native trees remain</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>quarry</td>
<td>very rare</td>
<td>may occur where suitable rock types (such as some forms of latite) occur at surface</td>
<td></td>
</tr>
</tbody>
</table>