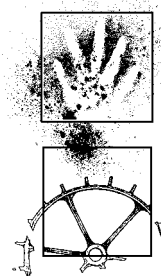




Proposed Subdivision of Lots 682, 705 and 810, Manyana, NSW

Aboriginal Cultural Heritage Assessment

October 2005



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A Report to Watkinson Apperley Pty Limited

EXECUTIVE SUMMARY

An Aboriginal archaeological assessment including literature and database review, Aboriginal consultation and field survey, was conducted for a proposed subdivision of Lots 682 (DP 568678), 705 (DP 613881) and 810 (DP 247285) at Manyana, on the south coast of NSW.

These three lots are residual lots from previous subdivision development of an area that has been progressively developed over the last 45 years. The current proposal forms an infill development to complete the subdivision of the area and is approximately 10 hectares in size.

The Manyana study area is located within the boundaries of the Jerrinja Aboriginal Land Council which was not operational at the time of this investigation. However a representative of a traditional owners group from Jerrinja community was available to assist in the survey and participate in the project.

Field survey of the study area located five new Aboriginal artefact scatters (MS1-5) and re-recorded two previously identified sites (CS14, CS25). The survey found that there was potential for artefacts to be located across most of the study area.

The significance of the Aboriginal sites could not be determined based on current surface manifestations. It is considered that further archaeological assessment in the form of subsurface testing would be required to more accurately identify the nature and extent of the sites.

It is recommended that:

1. No development should occur within the study area that would impact the identified Aboriginal sites without a section 90 permit from the DEC.
2. A program of archaeological subsurface testing should be conducted within the study area. The testing program would aim to identify the extent, nature and significance of the archaeological deposits and sites across the study area.

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1. INTRODUCTION

This report documents the results of an Aboriginal archaeological assessment of a parcel of land located at the small village of Manyana about 10 km north of Ulladulla and one kilometre north of Cunjurong Point at the entrance of Conjola Lake on the south coast of NSW (Figures 1 and 2).

The area under consideration is a proposed subdivision of Lots 682 (DP 568678), 705 (DP 613881) and 810 (DP 247285) at Manyana. These three lots are residual lots from previous subdivision development of the area that has been progressively developed over the last 45 years.

The current proposal forms an infill development to complete the subdivision of the area and is approximately 10 hectares in size. The development includes construction of roads and other infrastructure and 51 lots with Torrens title and 20 lots with community title. The latter back onto an area that is zoned 7d for Environmental Protection. This area will not be developed and kept as open space. It will however have a cleared fire break around the back of the house lots and a detention basin (Figure 3).

This report was commissioned by Watkinson Apperley Pty.

1.1 Report Outline

This report:

- Documents consultation with the Local Aboriginal community 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 for the study area.
- Describes field survey, strategy and results.
- Provides management recommendations based on the results of the investigation and the anticipated impact of the proposed subdivision on the known and potential cultural heritage resource.

2. ABORIGINAL PARTICIPATION

The study area is situated within the boundaries of the Jerrinja Local Aboriginal Land Council. At the time of the field survey the LALC was not operating and was in administration. However, the Manyana survey was conducted at the same time, and in the vicinity of, a subsurface testing program that was being undertaken by Navin Officer Heritage Consultants near Lake Conjola. That project had made contact with Aboriginal representatives who were in the process of forming a traditional owners group to represent Aboriginal people of the district.

It was subsequently arranged with Mr Graham Connolly of the traditional owners group to have Mr Bruce Farrell assist in the survey at Manyana.

At completion of the survey the results and preliminary recommendations were discussed with Mr Farrell. It was agreed that a copy of this report should be sent to the group for consideration.

A Record of Aboriginal Participation is provided in Appendix 1.

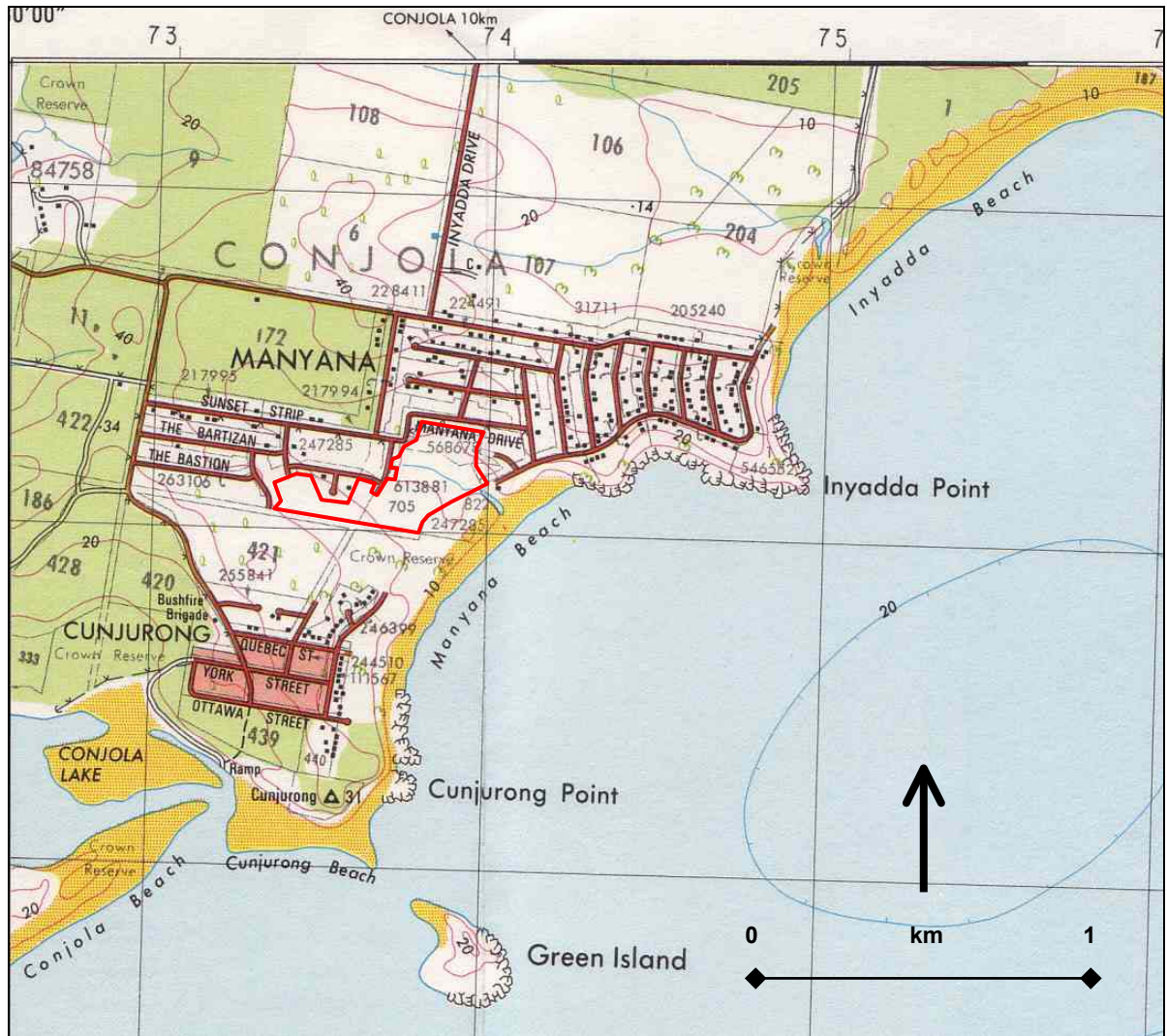


Figure 1 Location of the Manyana Study Area.
Cunjurong Point 1:25,000 topographic map 2nd edition.



Figure 2. Aerial photo of study area.
Photo supplied by Watkinson Apperley.



Figure 3 Titling scheme showing areas proposed for development (blue and orange)
Plan supplied by Watkinson Apperley



3. STUDY METHODOLOGY

3.1 Literature and Database Review

The general area of Lake Conjola including Manyana has been the subject of a number of previous archaeological investigations as part of the assessments relating to the Conjola Regional Sewerage Scheme (Navin Officer Heritage Consultants 1998, 1999a, 1999b, 2001a, 2001b, 2002, 2004).

This material was used in assessing archaeological knowledge for the Lake Conjola/Manyana area and the surrounding region. Literature sources included the NSW Department of Environment and Conservation Aboriginal Heritage Information Management System (AHIMS), associated files and catalogue of archaeological reports and theses held in the library of the Department of Archaeology and Anthropology, Australian National University.

This background research was used to determine if known Aboriginal 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 research management context.

3.2 Fieldwork

Fieldwork was conducted over a period of one day in September 2005. The study area was inspected on foot. All areas of ground surface visibility were inspected for the presence of Aboriginal artefacts. Old and mature native trees were inspected for possible Aboriginal scars and an assessment was made of the potential archaeological sensitivity and previous landscape disturbance of each area.

3.3 Project Personnel

Field survey was conducted by archaeologists Matthew Barber and Vanessa Myles and Bruce Farrell of the Jerrinja Aboriginal community. This report was prepared by Matthew Barber.

3.4 Recording Parameters

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. Potential recordings fall into four categories: isolated finds, background scatter, sites and potential archaeological deposits.

3.4.1 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 metres. 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 are 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 metres 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 metre parameter has provided an effective separation of low density artefact occurrences in similar southeast Australian topographies outside of semi-arid landscapes.

3.4.2 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 however 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 'focussed activity' are camping, knapping and heat-eating 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.

3.4.3 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.

Frequently encountered site types within southeastern Australia include open artefact scatters, coastal and freshwater middens, rock shelter sites including occupation deposit and/or rock art, grinding groove sites and scarred trees.

Most Aboriginal sites on the south coast of NSW 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. Artefacts situated within, or on, a sedimentary matrix in an open context are classed as a site when two or more occur no more than 60 metres away from any other constituent artefact. The 60 metre specification relates back to the definition of an isolated find (*Refer above*).

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.

3.4.4 Potential Archaeological Deposits

A potential archaeological deposit, or PAD, 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. Archaeological potential is assessed using criteria developed from the results of previous surveys and excavations relevant to the region. The boundaries of PADs are generally defined by the extent of particular landforms known to have high correlations with archaeological material. A PAD may or may not be associated with surface artefacts. In the absence of artefacts, a location with potential will be recorded as a PAD. Where one or more surface artefacts occur on a sedimentary deposit, a PAD may also be identified where there is insufficient evidence to assess the nature and content of the underlying deposit. This is mostly due to poor ground surface visibility.



4. ENVIRONMENTAL CONTEXT

The Manyana study area comprises an approximately 10 ha parcel of gently sloping ground on the eastern side of a broad, low gradient spurline that forms Cunjurong Point. The ground slopes in a north easterly direction into a shallow drainage line that, at the time of the field survey for this project, contained running water, leading east to Manyana Beach. The northern part of the study area comprises gently sloping ground at generally lower elevation that slopes into the drainage line that runs through the centre of the study area. This area also contains flatter, swampy ground.

The geology of the areas consists of conglomerates, sandstones and silty sandstones of the Conjola Formation, a component of the Permian Shoalhaven Group.

Of relevance to this study is the presence of silcrete in the local area as this material has been exploited by both Aboriginal and European inhabitants in the past. Silcrete is a brittle, intensely indurated rock composed mainly of quartz clasts and cemented by a matrix which may be well-crystallised quartz, cryptocrystalline quartz clasts or amorphous (opaline) silica (Langford-Smith 1978:3). The texture of silcrete reflects that of the host rock and clasts may range in size from very fine grains to boulders. Silcrete is produced by an absolute accumulation of silica, which is made available by chemical weathering.

The silcrete on the coastal lowland is confined to a 'discontinuous belt of flat to undulating terrain extending 2 to 3 km from the sea' (Young 1978). Callender (1978:216) notes that the Milton district silcretes are typically grey and highly indurated with poorly-sorted angular clasts grading into a fine-grained authigenic quartz cement. The coastal silcretes are chemically and morphologically identical to silcretes found in the high plain west of the coast. Young (1978:195) describes them as 'thick, *in situ* chemically indurated cappings resting on thoroughly leached substrata' which appear to date to the early Tertiary. At Bendalong, siliceous solutions weathered from the intensely rotted basalt may have provided much of the matrix for the underlying silcrete (Young 1978).

The vegetation within the study area is determined mainly by the elevation. The lower sections have more swampy type vegetation such as reeds, paperbarks and Casuarinas. The more elevated portions have a more open ground cover with ti-tree and Eucalypts such as Scribbly Gum and Stringybarks.



5. ARCHAEOLOGICAL CONTEXT

5.1 Tribal Area and Language

Tindale's compendium of tribal boundaries places the Manyana area in the Wandandian tribal territory, which extended from Ulladulla to the Shoalhaven River and Nowra (Tindale 1974:199-200 & Map). A more recent summary of tribal distributions (Horton 1994) includes this group within the larger Yuin territory, which extended in a narrow strip from about Jervis Bay south to Eden on the coast, and up to the coastal mountain range. This generally follows the scheme of Howitt (1904:81-82, 823), who distinguished the northern Yuin of the study region as the Kuriel-Yuin. The language throughout the Jervis Bay-Narooma region was probably Dhurga, and a dialect of this appears to have been spoken in the study area (Tindale 1974, Eades 1976).

European expansion in Yuin territory began with whaling in the 1790s, and intensified as a result of the good timber and pastoral resources of the region (Horton 1994:1235). On initial white settlement the total Aboriginal population of the Milton/Ulladulla region was estimated to be about 600 (Cambage 1916). There is little reference to the relations between the Aboriginal and colonising European cultures. Thomas Kendall stated that the region's Aboriginal population was divided into two tribes, the Coastal tribe and the Pigeon House tribe, whose territory extended inland to include Braidwood (Hilder 1982, Cambage 1916).

By the mid-19th century Aboriginal groups had in many cases shifted to the margins of permanent European settlements, although large Koori populations have remained in the region into the present (Egloff 1981).

5.2 Regional Overview

The south coast of New South Wales has been the subject of extensive archaeological research over the last thirty years, with much of it concentrated along the coastline and estuaries. This includes investigations of specific areas prior to development, excavations of Aboriginal sites, mainly shell middens and rock shelters, and detailed and systematic regional surveys (Navin Officer Heritage Consultants, 2001:14).

The majority of archaeological sites located in this region date to the last 6,000 years, when the sea levels stabilised at about the present level (the Holocene stillstand). Sites older than 6,000 years are rare, as rising seas would have submerged most of them. To date two coastal sites, Bass Point and Burrill Lake, 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.

Archaeological investigations in the broader Milton/Ulladulla and Conjola/Bendalong/Manyana region include studies carried out in an academic research framework (eg Lampert 1971, Bindon 1976, Officer 1991a, Boot 1994), management plans (eg. Officer 1991b) and commercial consulting investigations (eg Attenbrow 1981, Cane 1985a & b, Lance 1987, Silcox 1990, Kuskie 1994, 1995, 1996, 1997a & b, Heffernan & Klaver 1996, Navin 1996a & b, Navin & Officer 1997).

Attenbrow (1981) surveyed pipeline routes and reservoir sites for the Northern Shoalhaven Water Supply project including sections of a pipeline between Bendalong and Lake Conjola. A shell midden with *in situ* deposit (NPWS Site #58-2-241) was located on the northern bank of the lagoon behind Inyadda Beach. Sites were also located at Berrara Creek (#58-2-238) and Nerrindillah Creek at North Bendalong (#58-2-240).

Cane (1985a) carried out a survey of proposed reservoir sites and four water supply pipeline routes between Lake Conjola and Lake Tabourie. Cane (1985b) also surveyed a 20 km long pipeline from Porters Creek Dam to Conjola Inlet and Ulladulla, along a route which principally followed existing easements. No sites were located by Cane in either of these surveys although he noted that visibility was poor and sites may be present along the ridgeline and hilltop south of Fishermans Paradise.



Lance (1987) surveyed a proposed electricity transmission line easement between Nowra and Ulladulla located mostly on the western side of, and parallel to, the Princes Highway. Lance located one artefact scatter and four isolated finds in the course of his survey.

In 1990 Silcox recorded two artefact scatters (MG1 and MG2) in the course of survey and subsurface investigations for a proposed deviation of the Princes Highway at Myrtle Gully, several kilometres southwest of Fishermans Paradise. The artefacts recovered from the test excavations comprised mostly quartz and silcrete (Silcox 1990).

A preliminary archaeological survey of the Milton Ulladulla Expansion Area was undertaken by Stone in 1995. The subject area comprised a strip of land approximately 5 km wide extending from Croobyar Creek in the north to Burrill Lake and Lagoon Head in the south. Stone located five open camp sites and two isolated finds. The sites were located near Stony Creek (NPWS Site #58-1-635 & 638), Burrill Lake (#58-1-636), Lagoon Head (#58-1-637) and Croobyar Creek (#58-1-639) (Stone 1995).

Navin (1996a) conducted a survey of a proposed Sewage Treatment Plant (STP), access road and a pipeline from the existing Sewage Treatment Plant to the proposed STP, located west of Ulladulla. The STP area consisted of approximately 23 ha of forested ridgeline crest and mid-slopes and the proposed road and pipeline easements had a combined length of 2.25 km. Two possible Aboriginal scarred trees, Racecourse Creek 1 (NPWS Site #58-1-643) and Racecourse Creek 2 (#58-1-644), were identified within the general area of the proposed access road and pipeline easements.

A survey for an upgrade and extension to facilities at the West Ulladulla Sporting Complex located within the northern catchment of Racecourse Creek did not locate any Aboriginal sites (Navin 1996b).

A route selection study for the proposed Milton-Ulladulla Bypass (Navin & Officer 1997) resulted in the recording of four Aboriginal sites (two scarred trees and two artefact scatters) and the identification of four areas of potential archaeological deposit in the proposed road easement.

Kuskie (1994, 1995) conducted a survey and program of subsurface testing in a 66 ha parcel of land located immediately south of Fishermans Paradise. Surface survey resulted in the location of one artefact scatter (NPWS Site # 58-1-583) and one isolated find (#58-1-584). Sixty seven artefacts were recovered as a result of the subsurface testing, with raw material predominantly quartz and silcrete and lesser quantities of volcanics, siltstone and crystal quartz.

Kuskie also conducted a survey of zones of predicted high archaeological sensitivity in forest compartment #1087 in Conjola State Forest. A small artefact comprising three silcrete artefacts and an isolated find were recorded in the compartment which was located between Red Head Road and Nerrindillah Road (Kuskie 1996).

An archaeological assessment of approximately 26 km of roads within Cudmirrah National Park resulted in the location of fifteen artefact scatters and eight isolated finds (Sites #58-2-314 to 58-2-336). Two of the artefact locations were associated with shell fragments. Artefacts comprised mostly grey silcrete flakes and flaked pieces with some pink and red silcrete, quartz, rhyolite, volcanics and quartzite artefacts (Kuskie 1997a).

Kuskie (1997b) surveyed an 80 ha property, the site of a proposed golf course, between Manyana and Bendalong and west of Inyadda Beach. Five artefact scatters and one shell midden (#58-2-241) previously recorded by Attenbrow in 1981 were located during the field survey. Flakes and flaked pieces comprised almost half of the artefact assemblage with silcrete dominating the assemblage (95%) (Kuskie 1997b:31).

No sites were located by Navin (1992) in a survey of a 2.1 ha area of land located northwest of the township of Cunjurong and in Portion 420, Parish of Conjola. The area was situated on the north facing mid-slopes of a low and evenly graded ridgeline which terminated at Cunjurong Point. Similarly no Aboriginal sites were located by Heffernan and Klaver in a 1996 survey for a power route and communications tower site south of Fishermans Paradise.



A cultural heritage study was undertaken in 1998 to assess eight potential STP sites and two potential exfiltration sites for the Lake Conjola Sewerage Scheme. The study included Aboriginal consultation, literature research, field survey and a program of monitoring of geotechnical test pits (Navin Officer Heritage Consultants 1998).

One Aboriginal site (Pattimores 1) was located in STP Area 4 and two isolated finds (single artefacts) were located in STP Areas 5 and 7. One Aboriginal site (Conjola Beach 1) was located in the course of the geotechnical test pit monitoring program in Exfiltration Area 2. These sites were assessed as low-moderate local significance based on their potential to be larger.

In 1999 STP Site 9 was surveyed (Navin Officer Heritage Consultants 1999a), and a few months later STP Site 8a was also surveyed and assessed (Navin Officer Heritage Consultants 1999b). No Aboriginal sites were located in area 9 and one Aboriginal site, an artefact scatter referred to as *Conjola Spur 1*, was recorded in STP 8a.

In June 2000 a program of geotechnical test pitting was conducted as part of investigation work for the proposed dune exfiltration area behind Conjola Beach. An archaeologist and a representative of the Jerrinja Local Aboriginal Land Council monitored this work. A proposed access track and the exfiltration site were surveyed in the same field trip (Navin Officer Heritage Consultants 2000).

An assessment of a possible alternative pipeline route from Fishermans Paradise to Conjola Park was conducted in July 2001. The approximately 4.5 km pipeline route ran from Conjola Park north to the southern extent of Fishermans Paradise. One possible Aboriginal scarred tree, *Myrtle Gully Scarred Tree* (CS18), was recorded during the survey (Navin Officer Heritage Consultants 2001a).

The results of these studies were included, as necessary, into the cultural heritage component of the Conjola Regional Sewerage Scheme EIS in 2001 (Navin Officer Heritage Consultants 2001b). In summary, this report documented that:

- Twenty two Aboriginal sites/isolated finds - CS1, LCIF1, CS2, CS3, CS4, CS5, CS6, CS7, CS8, CS9, CS10, CS11, CS12, CS13, CS14, CS15, CS16, CS17, CS18, NPWS #58-2-337, NPWS #58-2-231 and NPWS #58-2-241 - were identified along, or in the near vicinity of, various proposed pipeline routes and waste water treatment plants.
- Two areas of Aboriginal archaeological potential (PAD1 and PAD2) were identified along the proposed pipeline routes.
- Eight areas requiring monitoring for Aboriginal archaeological sites (M1-M8) were identified along the proposed pipeline routes.

In 2002 an archaeological survey was conducted for proposed pumping stations and pipeline easement locations that had been revised since the 2001 assessment (Navin Officer Heritage Consultants 2002). Six new Aboriginal recordings were made within the amended development areas. These consisted of two scarred trees (CS21 & CS22), two artefact scatters (CS19, CS20), one isolated find (CS23), and one potential archaeological deposit (PAD3).

No Aboriginal objects or sites were identified in the course of archaeological monitoring for geotechnical investigation at Southern WwTP Site in 2003 (Navin Officer Heritage Consultants 2003).

Modifications to the design of the sewerage scheme were subject to further archaeological assessment by Navin Officer Heritage Consultants (2004). This targeted survey resulted in the identification of four new sites (CS24, CS25, CS26, CS27) and two new PADs (PAD 4 and PAD5).

Sites CS25 and CS14 and PADs 1 and 4, which were recorded in the context of the Conjola Regional Sewerage Scheme investigations, are located within the current Manyana study area. At the time of the current study, Navin Officer Heritage Consultants was undertaking a subsurface testing program for the Conjola Sewerage project. The testing utilised a 45 cm diameter mechanical auger to drill a series of test holes along the pipeline easements and at other identified locations of



sites and PADs. PAD 1 and PAD 4 were included in the subsurface testing program. These sites and PADs and the results of the testing program are discussed below in Section 5.3.

In summary, thirty nine Aboriginal sites have been recorded on the DEC AHIMS in an area 6 x 5 km (30 km²) surrounding and including the present study area. Site types listed include open camp sites including isolated finds (67%), shell middens (13%), quarry sites (10%), burials (8%) and scarred trees (2%).

5.3 The Study Area

The archaeological assessments carried out for the Conjola Regional Sewerage Scheme have included several areas that are located within the present investigation area at Manyana. The areas include waste water pumping station M2, a pipeline from Austen Street Cunjurong Point to Manyana and a revised sewer main from Alaska Street, Cunjurong Point, to Manyana.

Two artefact scatters (CS14 and CS25) and two PADs (PAD 1 and PAD 4) were recorded within the present study area during field survey of these areas (Navin Officer Heritage Consultants 2004).

CS14 was recorded as a large low to high density surface artefact scatter (c.500 artefacts) located on low gradient, north to northeast facing mid-slopes on the spurline which forms Cunjurong Point. Exposures of artefacts occurred within the northern and southern road reserve extensions of Austen Street and Manyana Drive (maximum area dimensions: 175 x 60+m).

Artefacts were visible in eroded road easements, gullies and extensive areas of sheet erosion. Artefacts included flakes, cores, flake fragments, backed blades and retouched flakes. Artefact densities varied from 1/m² to 20/m². The site was associated with potential archaeological deposit.

This site was assessed as having high potential to be larger and high potential to be associated with subsurface archaeological deposit (PAD). The site was tentatively assessed as having moderate local significance but it was noted that subsurface testing would be required to make a complete assessment (Navin Officer Heritage Consultants 2001b).

Site CS25 was a low density scatter of two visible artefacts located 5 m apart in an exposure (60 x 80+m) approximately 10 m west of the proposed sewer main alignment from the northern end of Alaska Street to Sunset Strip. The exposure was part of complex of exposures that adjoined site CS14. The area was very eroded, with lag gavels lying on top of a trampled clay horizon.

It was considered that site CS25 may be an extension of site CS14, which was located about 140 m to the west of the proposed new sewer main. Both sites were located on the same topographic feature, ie a low gradient, north to northeast facing mid-slopes on the spurline which forms Cunjurong Point. Taking account of the numbers of artefacts visible at CS14, it was considered likely that artefactual material would be present across this entire landscape feature. The area around CS25 was consequently identified as PAD 4. The significance of the site was not determined due to the lack of information about the true nature and extent of the site (Navin Officer Heritage Consultants 2004).

PAD 1 was located on the alluvial flats adjacent to a tributary creekline and small estuary lagoon behind Manyana Beach. The PAD was located on the proposed pipeline route along alluvial flats at Manyana (Navin Officer Heritage Consultants 2001b).

PAD 4 was identified along the pipeline easement associated with the site CS25. The assessment mapped the PAD dimensions as confined to the pipeline easement (50 m) but is highly likely to expand beyond this corridor (Navin Officer Heritage Consultants 2004).

An extensive subsurface testing program for the Conjola Regional Sewerage Scheme was being undertaken at the time of the current survey (Navin Officer Heritage Consultants in prep). Two PADs within the study area, PAD1 and PAD4, were part of the testing program.

Four auger holes were excavated at PAD 1. The deposit was wet sieved but no cultural material was located. It was concluded in the field that this was most likely due to the low lying nature of the



topography. The vegetation was also quite thick and infested with ticks and leeches, probably contributing to a poor occupation locale.

Fourteen auger holes were excavated along a proposed pipeline route at PAD 4. Artefacts were retrieved from two of the auger holes which were situated on the crest and upper northern spur slope of the spurline.

The archaeological potential of the study area has already been shown to be high, based on previous archaeological assessments. It is highly likely that additional Aboriginal sites would therefore be located within the broader study area of the proposed subdivision at Manyana.



6. RESULTS

6.1 New Aboriginal Sites

The field investigations recorded five new Aboriginal sites and extended the boundaries of the two previously recorded sites CS14 and CS25. The new sites are identified with the prefix MS (**M**anyana **S**ubdivision) in order to differentiate them from sites recorded during the Conjola Sewerage project.

Site and PAD locations are shown in Figure 4.

Manyana Subdivision 1 (MS1) AGD 273523. 6095021

MS1 is an artefact scatter comprising two artefacts situated on a foot track that ran along the southern boundary of the study area. The track followed the alignment of a water pipeline and provided good visibility in otherwise heavily vegetated ground. The site was on the gentle north facing slope of the main spurline that forms Cunjurong Point. (Plate 1)

The track was about 1.5 m wide and ran the almost the length of the study area boundary. Visibility was about 40% but reduced to 0% off the track due to vegetation and leaf litter (Plate 1). The artefacts were found in a 2 x 1 m area and there is very high potential for the site to be larger. The deposits of the site were characterised by a grey sandy deposit overlying more compact sandy clay. Off the track, the deposits appeared to be relatively intact and therefore there is high potential for subsurface deposits to occur.

Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
grey quartzite	flake	24 x 12 x 4	focal platform, step termination
grey silcrete	flaked piece	34 x 22 x 12	



Plate 1 View of MS1 looking west along the track



Manyana Subdivision 2 (MS2) AGD 273374. 6095041

MS2 is an isolated artefact located at the junction of walking tracks at the western boundary of the study area, where the walking track meets an existing roadway. The artefact was located on the continuous exposure of the walking track where the track widened to about 4 m wide. Visibility was about 75% but off the track visibility reduced to about 2%. (Plate 2).

The site was on a gentle north facing slope of the main spurline and the deposits were typically a sandy upper level over a more clayey deposit. There is very good potential for the site to extend off the track into the relatively undisturbed ground within the study area. The deposits present would also suggest that there is high potential for subsurface cultural deposits.

Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
pink silcrete	flaked piece	54 x 45 x 12	20% vein cortex, 1 negative scar and is probably a potlid



Plate 2 View of MS2 looking east along the walking track

Manyana Subdivision 3 (MS3) AGD 273405. 6095133

MS3 is an artefact scatter comprising five artefacts located on gently sloping north facing lower slopes of the main spurline of Manyana – Cunjurong Point. The site was found in an area of sheet erosion and disturbed ground at the end of a street named The Barbette. The site area was disturbed through dumping of some road gravel, small burnt pieces of a car and clearing of trees. The artefacts were found over an area of 20 x 5 m but the site would likely extend beyond this across the undisturbed slopes to the south. The visibility within the erosion area was generally low at about 20% but reduced even further outside the erosion scour where thick grass was prevalent. (Plate 3).



The soils at the site appeared to be a sandy clayey deposit, most likely with a sandy upper horizon that has now eroded away. However, where relatively undisturbed deposits remain there would be high potential for subsurface cultural material.

Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
grey silcrete	flaked piece	20 x 13 x 6	
grey silcrete	broken flake	19 x 15 x 4	
grey silcrete	core	35 x 35 x 20	9+ negative scars from 3 platforms, attempted blades
red & grey banded quartzite	flake	30 x 20 x 7	
grey quartzite	flake	7 x 40 x 27	flaked through thickness of tabular core



Plate 3 View of MS3 looking south upslope to site

Manyana Subdivision 4 (MS4) AGD 273509. 6095072

MS4 is a small scatter of two artefacts was located on a narrow walking track behind existing houses on the boundary of the study area. The artefacts were found within one metre of each other on a track that offered 50% visibility. Outside the track, the visibility declined to less than 5% due to grass cover. (Plate 4).

The site was on the same north facing lower slope as site MS3 and the deposits were grey sandy loam. There is high potential for this site to be larger and extend across the undisturbed, vegetated lower to upper slopes of the study area.



Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
grey silcrete	broken flake	30 x 27 x 9	
white quartz	broken flake	10 x 10 x 3	



Plate 4 View of MS4 looking east along track to site

Manyana Subdivision 5 (MS5) AGD 273861. 6095117

MS5 is an artefact scatter comprising six artefacts located in a large erosion exposure that was used as a bike track. The exposure was divided into two, with an area of about 30 x 25 m with 90% visibility and a secondary exposure to the south of about 20 x 15 m with 90% visibility. The site was low density, given that there was very high visibility within the exposures. (Plate 5).

The site area was almost level but slightly elevated above the drainage line located about 50 m to the north. It was situated at essentially the basal slope of the main spurline that forms Cunjurong Point. The exposed deposits were mainly yellow brown sandy clay with some ironstone gravels also evident. There is moderate to high potential for subsurface deposits to occur within the site area and also outside the exposure. The surrounding vegetation consisted of mainly juvenile regrowth Casuarinas and therefore it is possible that the exposure was once larger.

Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
milky quartz	broken flake	22 x 15 x 4	
grey (very fine) silcrete	core	32 x 25 x 5	large cortical flake, about 50% at least one negative scar resulting from secondary use as a core



Raw Material		Artefact Type	Dimensions L x W x Th (mm)	Comments
secondary use as a core				
creamy silcrete	grey	flake	44 x 45 x 15	
grey quartzite		core	70 x 55 x 25	80% cortex, large flake used as core, four negative scars struck from dorsal to ventral face through the thickness of the flake
pink/grey silcrete		flaked piece	42 x 25 x 10	possible mid section of flake
grey silcrete		flaked piece	38 x 31 x 15	broad platform, feather termination



Plate 5 View of MS5 looking south across exposure

6.2 Previously Recorded Aboriginal Sites

Two previously recorded sites were re-examined and recorded as part of the current survey.

Conjola Sewerage 14 (CS14) (AHIMS# 58-2-0375) AGD 27365.609505 – 27355.609490

The extent of this site was extended to the north and west of the previously defined area. The site dimensions are now in the order of 230 x 100 m. Artefacts are exposed in the eroded foot and vehicle tracks that traverse the gently sloping upper spur slopes (Plate 6). Visibility within the exposures is very high, up to 90%, limited only by natural ironstone gravels that are a lag deposit.

There is differential erosion across the terrain, with some areas exhibiting a yellow sandy clay and others an orange to red clay, the latter being a lower soil horizon (Plate 7). Off the tracks, vegetation is likely to have kept some of the deposits more intact and therefore there is a high potential for additional artefacts and subsurface deposits to occur across the entire landscape feature.



The original recording noted about 500 artefacts but the current survey did not note as many. It is probable that the vegetation has regrown over part of the site and covered some of the artefacts.

A select number of artefacts were recorded as a sample to represent the type of material and artefacts observed.

Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
grey silcrete	flake	18 x 15 x 3	
grey fine silcrete	flake	14 x 12 x 3	
mottled grey silcrete	flaked piece	26 x 9 x 5	
pink very fine silcrete	flake	25 x 12 x 4	
grey silcrete	broken flake	15 x 11 x 2	
grey silcrete	broken flake	24 x 20 x 5	40% pebble cortex
grey silcrete	flake	8 x 30 x 6	
red silcrete	backed flake	24 x 15 x 5	backed on 1 margin, semi-geometric
grey silcrete	core fragment	28 x 14 x 11	has negative blade scar
grey silcrete	flaked piece	34 x 20 x 12	
grey silcrete	flaked piece	60 x 41 x 23	
purple volcanic	flake	43 x 20 x 10	30% weathered cortex
red silcrete	core	55 x 45 x 24	30% pebble cortex, 4 negative scars from 3 platforms

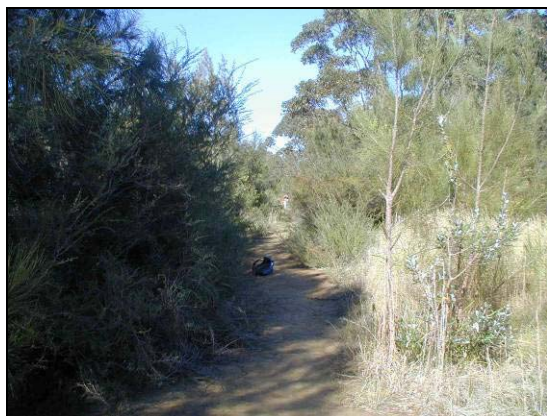


Plate 6. Extension of CS14 looking south



Plate 7. Exposure of CS14 showing different soil types



Conjola Sewerage 25 (CS25) (AHIMS# 58-2-0397) and PAD4 GDA: 0273789.6095009

The present survey identified six artefacts within a broad, meandering erosion exposure identified from the previous survey. The six artefacts were different to the two originally recorded. There was also a small broken piece of *Cabestana* shell, a rocky shore species that is commonly found in Aboriginal shell middens. Most of the artefacts were found at the eastern end of the exposure complex (Plate 8), where both yellow sandy clay and orange/red clay horizons were evident. Interestingly, a broad exposure with a lag deposit of ironstone gravels contained no artefacts or other cultural material (Plate 9). This may suggest that artefacts have been removed by erosional processes.

The original exposure was recorded as 60 x 80 m with 40% exposure incidence and 70% visibility, similar to the values found during the present survey. However, the present survey included a broader survey area and the exposures extend at varying degrees over a 150 x 60 m area, linking with the exposures identified within site CS14.

Raw Material	Artefact Type	Dimensions L x W x Th (mm)	Comments
grey silcrete	flaked piece	55 x 50 x 18	
red silcrete	flaked piece	42 32 x 12	
tan silcrete	flake	15 x 20 x 6	
grey silcrete	flake	26 x 20 x 9	
grey silcrete	lithic fragment	30 x 11 x 8	no definitive marks
red and grey silcrete	flake	58 x 43 x 30	



Plate 8 Looking northwest across eastern end of site exposures



Plate 9 Looking west across exposure with gravels. No artefacts were observed in this exposure.

The subsurface testing within PAD4 undertaken at the time of the current survey revealed artefacts in two of the 14 pits. The general low number of artefacts from the testing may be due to a very low density of artefacts at the site. It is possible the auger size was below the threshold for detecting additional artefacts. It is also possible that the area was heavily disturbed and artefacts have been



removed by human or erosional processes. The third possibility is that there were environmental reasons for the small number of artefacts. For instance the original vegetation or the aspect and location of the area were not as conducive to occupation as other sections of the study area.

Potential Archaeological Deposit 1 (PAD1) (AHIMS# 58-2-0398) GDA: 274020.6095120

PAD1 was located on alluvial flats adjacent to a tributary creekline and small estuary lagoon, behind Manyana Beach. The PAD was identified during surveys for the proposed Conjola Sewerage pipeline project (Navin Officer Heritage Consultants 2001b).

The area was inspected as part of the current study and the area was found to be well vegetated, mostly low lying ground adjacent to the creekline. Visibility was 0% due to the vegetation and grass cover (Plate 10).



Plate 10 View north across PAD1, note poor visibility.

The archaeological subsurface testing of PAD 1 undertaken for the Conjola Sewerage project did not locate any cultural material in the auger pits. The identification of the level of archaeological sensitivity of this area may consequently be re-evaluated in the light of these results..

6.3 European Sites

Although the study concentrated on Aboriginal heritage, a European scarred tree was also observed and recorded.

European Scarred Tree 1 (EST1) GDA: 273579.6095007

The tree was a mature Scribbly gum, approximately 10m tall, alive and apparently healthy (Plate 11). The scar dimensions were as follows.

Tree girth:	2.23m
Height of scar above the ground:	58cm
Inside scar length:	69cm
Inside scar width:	21cm
Length of regrowth:	110cm
Thickness of regrowth:	20cm
Depth of scar:	10cm



The face of the shield-shaped scar was partially painted yellow with engraved "42", and this was partly grown over (Plate 12).

The tree likely represents a survey marker for the water line that runs along the southern boundary of the study area.



Plate 11 European scarred tree



Plate 12 Close up of scar

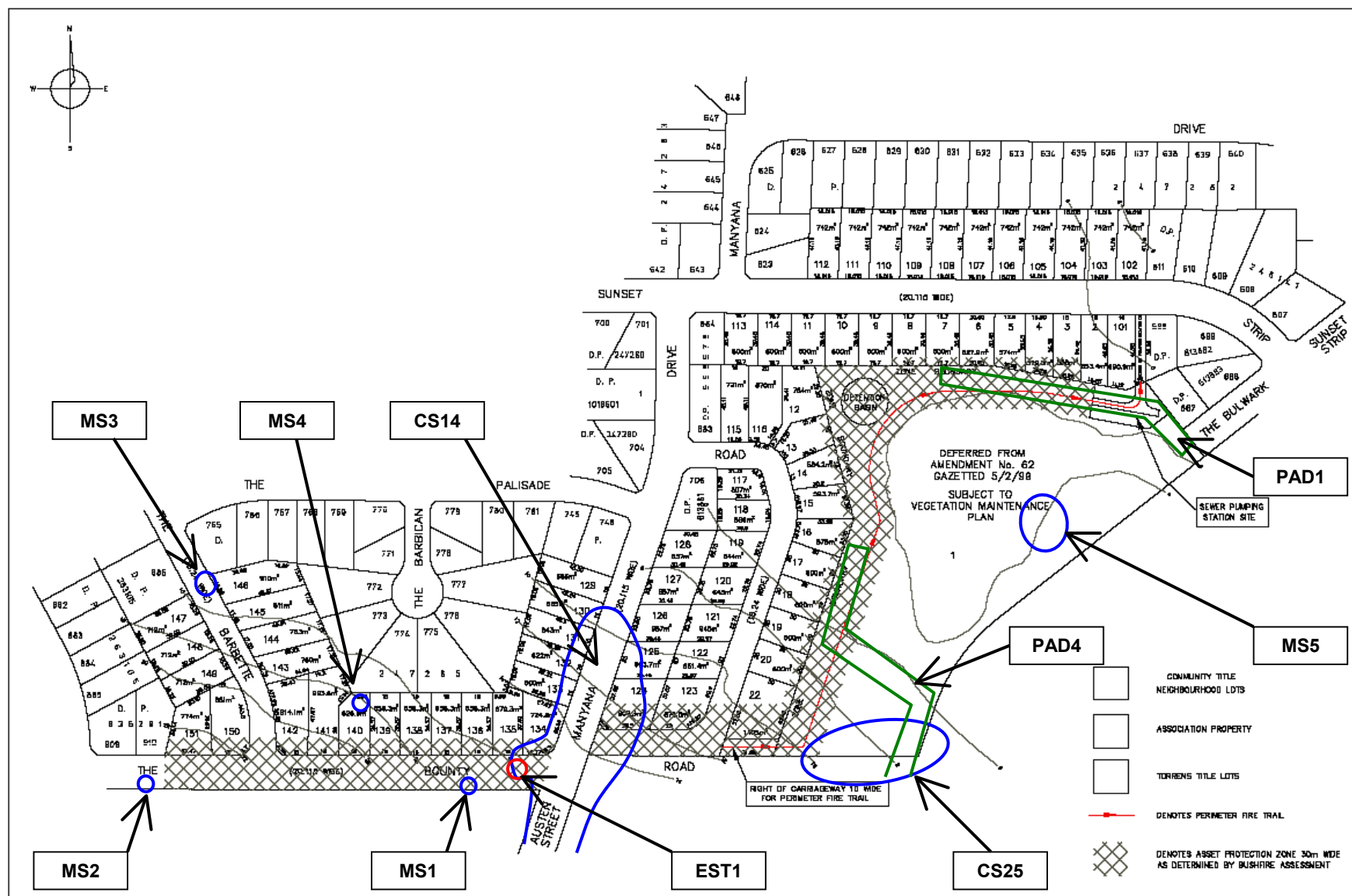


Figure 4 Location of Aboriginal sites and PADs within the study area



6.4 Survey Coverage and Visibility Variables

The effectiveness of archaeological field survey is to a large degree related to the obtrusiveness of the sites being looked for and the incidence and quality of ground surface visibility. Visibility variables were estimated for all areas of comprehensive survey within the study area. These estimates provide a measure with which to gauge the effectiveness of the survey and level of sampling conducted. They can also be used to gauge the number and type of sites that may not have been detected by the survey.

Ground surface visibility is a measure of the bare ground visible to the archaeologist during the survey. There are two main variables used to assess ground surface visibility, the frequency of exposure encountered by the surveyor and the quality of visibility within those exposures. The predominant factors affecting the quality of ground surface visibility within an exposure are the extent of vegetation and ground litter, the depth and origin of exposure, the extent of recent sedimentary deposition, and the level of visual interference from surface gravels. Two variables of ground surface visibility were estimated during the survey:

- a percentage estimate of the total area of ground inspected which contained useable exposures of bare ground
- a percentage estimate of the average levels of ground surface visibility within those exposures. This is a net estimate and accounts for all impacting visual and physical variables including the archaeological potential of the sediment or rock exposed.

The obtrusiveness of different site types is also an important factor in assessing the impact of visibility levels. Sites based on rock exposures, such as rock shelters, open engravings and grinding grooves are more likely to be encountered than sites with no surface relief located on, or within, sedimentary matrices.

In another example, artefacts made from locally occurring rock such as quartz may be more difficult to detect under usual field survey conditions than rock types that are foreign to the area. The impact of natural gravels on artefact detection was taken into account in the visibility variables estimates outlined above.

The natural incidence of sandstone platforms suitable for grinding grooves or engraving, together with the incidence of old growth trees, are important considerations in identifying both survey effectiveness and site location patterns outside of environmentally determined factors.

Table 1 summarises estimates for the degree to which separate landforms within the study area were examined and also indicates the exposure incidence and average ground visibility present in each case. A total of 13% of the ground area in the study area was inspected during the survey, with 53.8% providing useable archaeological exposures.

A graphic approximation of the surface survey coverage achieved within the study area is shown in Figure 5.

Taking into account survey coverage, archaeologically useable exposures, and visibility variables, the effective survey coverage (ESC) was 5.5% of the total survey area. The ESC attempts to provide an estimate of the proportion of the total study area that provided a net 100% level of ground surface visibility to archaeological surveyors.

The ESC calculation is defined and required by the NPWS and stated to be of use in assessing and cross comparing the adequacy of archaeological surface surveys. The actual utility of the ESC calculation however is challenged by many archaeologists. The limitations of the ESC calculation are emphasised by differences in the subjective assessment of exposure and visibility levels, variations in how survey units are defined and measured, and differences in how and which variables are estimated and combined. In reality, ESC results tend only to be meaningful when compared across surveys conducted by the same surveyors and ESC measurers.

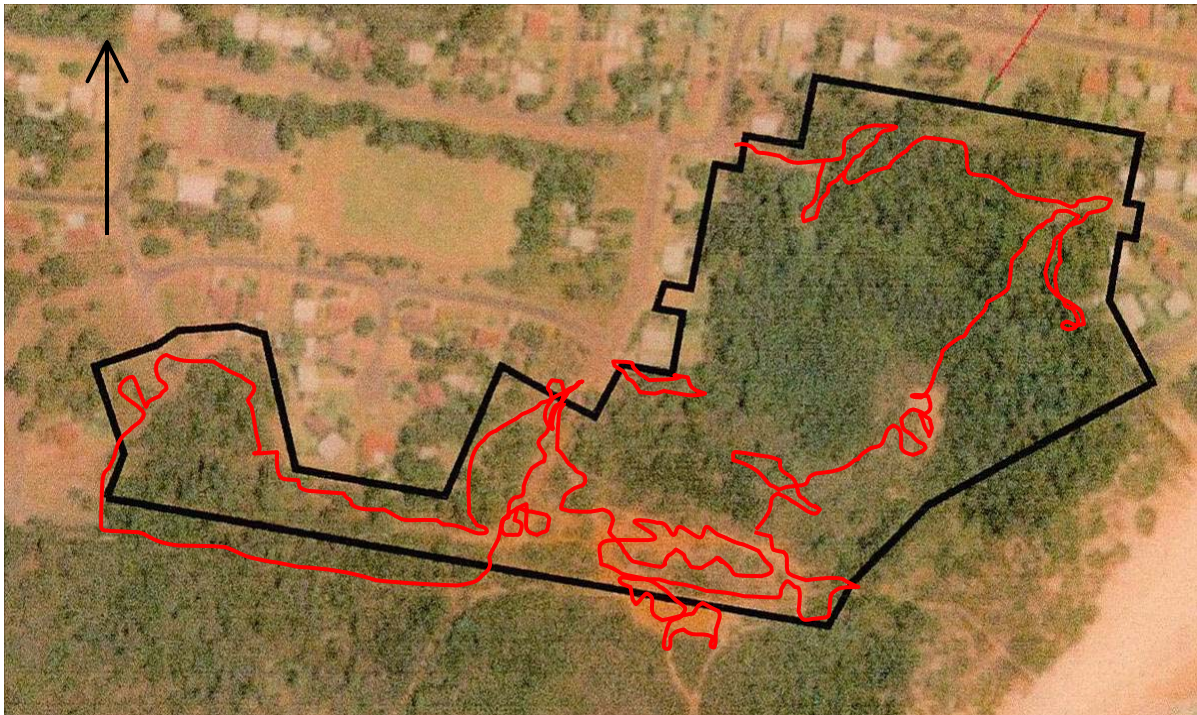


Figure 5 A graphic approximation of the surface survey coverage achieved within the study area.



Table 1: Survey Coverage Data

Survey division	Survey unit	Landform	Survey mode	Main exposure types	Estimated Survey Unit area (ha)	Proportion of unit surveyed %	Area of unit surveyed (ha)	Exposure incidence %	Average exposure visibility %	Net effective exposure (ha)	Effective survey coverage of survey unit %	Aboriginal Archaeological recordings
Manyana	A	spur slope	foot	erosion, vehicle track	1.2	40	0.48	75	80	0.2880	24.0	CS14
	B	spur slope	foot	foot track	3.4	5	0.17	10	30	0.0051	0.2	MS1, MS2, MS3, MS4
	C	Drainage depression, low flats	foot	foot track	3.75	5	0.1875	5	25	0.0023	0.1	
	D	lower spur slopes	foot	foot & bike track, erosion	1	5	0.05	5	30	0.0008	0.1	MS5
	E	upper spur slope	foot	erosion	0.7	60	0.42	75	80	0.2520	36.0	CS25
<i>Total</i>					10.05		1.3075			0.5482	5.5	



7. SIGNIFICANCE ASSESSMENT

7.1 Aboriginal Heritage

7.1.1 Assessment Criteria

The Burra Charter of Australia defines cultural significance as 'aesthetic, historic, scientific or social value for past, present and future generations' (Aust. ICOMOS 1987). The assessment of the cultural significance of a place is based on this definition but often varies in the precise criteria used according to the analytical discipline and the nature of the site, object or place.

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

- significance to contemporary Aboriginal people,
- scientific or archaeological significance,
- aesthetic value,
- representativeness, and
- value as an educational and/or recreational resource.

Many sites will be significant according to several categories and the exact criteria used will vary according to the nature and purpose of the evaluation. Cultural significance is a relative value based on variable references within social and scientific practice. The cultural significance of a place is therefore not a fixed assessment and may vary with changes in knowledge and social perceptions.

Aboriginal significance can be defined as the cultural values of a place held by and manifest within the local and wider contemporary Aboriginal community. Places of significance may be landscape features as well as archaeologically definable traces of past human activity. The significance of a place can be the result of several factors including: continuity of tradition, occupation or action; historical association; custodianship or concern for the protection and maintenance of places; and the value of sites as tangible and meaningful links with the lifestyle and values of community ancestors. Aboriginal cultural significance may or may not parallel the archaeological significance of a site.

Scientific significance can be defined as the present and future research potential of the artefactual material occurring within a place or site. This is also known as archaeological significance.

There are two major criteria used in assessing scientific significance:

1. The potential of a place to provide information which is of value in scientific analysis and the resolution of potential research questions. Sites may fall into this category because they: contain undisturbed artefactual material, occur within a context which enables the testing of certain propositions, are very old or contain significant time depth, contain large artefactual assemblages or material diversity, have unusual characteristics, are of good preservation, or are a constituent of a larger significant structure such as a site complex.
2. The representativeness of a place. Representativeness is a measure of the degree to which a place is characteristic of other places of its type, content, context or location. Under this criteria a place may be significant because it is very rare or because it provides a characteristic example or reference.

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

The principal aim of cultural resource management is the conservation of a representative sample of site types and variation from differing social and environmental contexts. Sites with inherently unique



features, or which are poorly represented elsewhere in similar environment types, are considered to have relatively high cultural significance.

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

The following assessments are made with full reference to the scientific, aesthetic, representative and educational criteria outlined above. Reference to Aboriginal cultural values has also been made where these values have been communicated to the consultants. It should be noted that Aboriginal cultural significance can only be determined by the Aboriginal community, and that confirmation of this significance component is dependent on written submissions by the appropriate representative organisations.

7.1.2 The Study Area

Isolated finds are not normally considered significant based on any of the criteria defined above. In this study therefore, site MS2 is not considered to have any archaeological significance.

The remaining sites within the study area, MS1, MS3, MS4, MS5, CS145 and CS25 all have typical characteristics of sites in the region. They are small to large artefact scatters, revealed in exposed ground on foot and vehicle tracks and erosion. At each location there is high potential for the site to be larger and to extend beyond the exposures. In particular, sites MS1, MS2, MS3, MS4 and CS14 are likely to extend across the northern slopes of the spurline to form one large site. Indeed there is also good potential that sites CS25 and MS5 could extend across the intervening vegetated areas to form a large site.

Although not unique, there is potential for the sites to represent a major occupation site and therefore to be of archaeological importance. There is also potential for intact subsurface deposits to be present within the undisturbed vegetated areas of the study area. Such deposits would potentially have high research value.

The true significance of the sites and the wider study area cannot be determined from the current available data. Further investigations would be required to determine the exact nature and extent of the sites and their significance.

7.2 European Heritage

7.2.1 Assessment Criteria

The NSW Heritage Office has defined a methodology and set of criteria for the assessment of cultural heritage significance for items and places, where these do not include Aboriginal heritage from the pre-contact period (NSW Heritage Office & DUAP 1996, NSW Heritage Office 2000). The assessments provided in this report follow the Heritage Office methodology.

The following heritage assessment criteria are those set out for Listing on the State Heritage Register. In many cases items will be significant under only one or two criteria. The State Heritage Register was established under Part 3A of the Heritage Act (as amended in 1999) for listing of items of environmental heritage that are of state heritage significance. Environmental heritage means those places, buildings, works, relics, moveable objects, and precincts, of state or local heritage significance (section 4, Heritage Act 1977).

An item will be considered to be of State (or local) heritage significance if, in the opinion of the Heritage Council of NSW, it meets one or more of the following criteria:

- Criterion (a)** an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);



- Criterion (b)** an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (c)** an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
- Criterion (d)** an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;
- Criterion (e)** an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (f)** an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (g)** an item is important in demonstrating the principal characteristics of a class of NSW's
- cultural or natural places; or
 - cultural or natural environments.
- (or a class of the local area's
- cultural or natural places; or
 - cultural or natural environments.)

An item is not to be excluded from the Register on the ground that items with similar characteristics have already been listed on the Register. Only particularly complex items or places will be significant under all criteria.

In using these criteria it is important to assess the values first, then the local or State context in which they may be significant.

Different components of a place may make a different relative contribution to its heritage value. For example, loss of integrity or condition may diminish significance. In some cases it is constructive to note the relative contribution of an item or its components. The following table provides a guide to ascribing relative value:

7.2.2 The Study Area

The age of the European scarred tree is not known but if over 50 years in age would not meet any of the criteria listed above. The site does not therefore reach the threshold for listing at the local or State level.



8. STATUTORY OBLIGATIONS¹

8.1 The National Parks and Wildlife Act 1974

The following summary is based on:

- the provisions of the current National Parks and Wildlife Act 1974 (as amended). It should be noted that amendments to this Act were passed by both houses of the NSW State Government in 2001 (no.130, assented 19/12/2001). Some of these amendments are yet to be proclaimed.
- Department of Environment and Conservation policy as presented in the 1997 Standards and Guidelines Kit for Aboriginal Cultural Heritage provided by the NSW NPWS, and as communicated orally to the consultants on a periodic basis. The 1997 Standards and Guidelines Kit is currently under review and subject to change in the near future.

The guideline documents presented in the 1997 Standards and Guidelines Kit were stated to be working drafts and subject to an 18 months performance review. The Standards Manual was defined not to be a draft and subject to periodic supplements.

The National Parks and Wildlife Act 1974 (as amended) provides the primary basis for the legal protection and management of Aboriginal sites within NSW. The implementation of the Aboriginal heritage provisions of the Act is the responsibility of the Department of Environment and Conservation (DEC).

The rationale behind the Act is the prevention of unnecessary or unwarranted destruction of relics, and the active protection and conservation of relics that are of high cultural significance.

With the exception of some artefacts in collections, or those specifically made for sale, the Act generally defines all Aboriginal artefacts to be 'Aboriginal Objects' and to be the property of the Crown. An Aboriginal object has a broad definition and is inclusive of most archaeological evidence. The Act then provides various controls for the protection, management and disturbance of Aboriginal Objects.

An Aboriginal object is defined as:

'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.' [Section 5(1)].

In practice, archaeologists use a methodology that groups 'Aboriginal Objects' into various site classifications according to the nature, occurrence and exposure of archaeological material evidence. The archaeological definition of a site may vary according to survey objectives, however a site is not recognised or defined as a legal entity in the Act. It should be noted that even single and isolated artefacts are protected as Aboriginal Objects under the Act.

Generally it is an offence to do any of the following without a Permit from the Director-General of the Department of Environment and Conservation under Section 87: disturb or excavate any land for the purpose of discovering an Aboriginal Object; disturbing or moving an Aboriginal Object; take possession of or removing an Aboriginal Object from certain lands; and erecting a building or structure to store Aboriginal Objects on certain land (Section 86). The maximum penalty is \$11,000 for individuals and \$22,000 for corporations. Section 175B outlines circumstances where corporation

¹ The following information is provided as a guide only and is accurate to the best knowledge of Navin Officer Heritage Consultants. Readers are advised that this information is subject to confirmation from qualified legal opinion.



directors may be taken to have contravened these provisions, based on the acts or omissions of that Corporation.

Consents regarding the use or destruction of Aboriginal Objects are managed through a system of Permits and Consents under the provisions of Sections 87 and 90 of the Act. The processing and assessment of Permit and Consent applications is dependent upon adequate archaeological review and assessment, together with an appropriate level of Aboriginal community liaison and involvement (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).

The Minister may declare any place which, in his or her opinion, is or was of special Aboriginal significance with respect to Aboriginal culture, to be an Aboriginal place (Section 84). The Director-General has responsibility for the preservation and protection of the Aboriginal place (Section 85). An area declared to be an Aboriginal place may remain in private ownership, or be acquired by the Crown by agreement or by a compulsory process (Section 145).

The Director General may make an interim protection order and order that an action cease where that action is, or is likely to, significantly affect an Aboriginal object of Aboriginal place. Such an order is current for 40 days (Section 91AA, Schedule 3[10]). Such an order does not apply to certain actions, such as where they are in accordance with development consents or emergency procedures.

General Management Constraints and Requirements

The Act, together with the policies of the Department of Environment and Conservation provide the following constraints and requirements on land owners and managers:

- It is an offence to knowingly disturb an Aboriginal Object (or site) without an appropriate permit or consent (Sections 87 and 90);
- Prior to instigating any action which may conceivably disturb an Aboriginal Object (this generally means land surface disturbance or felling of mature trees), archaeological survey and assessment is required (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).
- When the archaeological resource of an area is known or can be reliably predicted, appropriate landuse practices should be adopted which will minimise the necessity for the destruction of sites/Aboriginal Objects, and prevent destruction to sites/Aboriginal Objects which warrant conservation (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).
- Documented and appropriate consultation with relevant Aboriginal Community representatives is required by the Department of Environment and Conservation as part of the prerequisite information necessary for endorsement of consultant recommendations or the provision of Consents and Permits by the NPWS (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).

8.2 The National Parks and Wildlife Amendment Bill 2001

Although this Act was passed by both houses of the NSW parliament in 2001, a number of its provisions with regard to Aboriginal cultural heritage have yet to be gazetted and are not yet law. These include the following provisions:

- The requirement for a section 90 'Consent to Destroy' from the Director General will be replaced by a 'heritage impact permit' (Schedule 3[1], 3[3-8]).
- The offence under section 90 of the Principal Act of 'knowingly' destroying, defacing or damaging Aboriginal objects and Aboriginal Places without Consent will be changed so that the element of knowledge will be removed (Schedule 3 [2]). The amended section 90, subsection 1 will read:



'A person must not destroy, deface, damage or desecrate, or cause or permit the destruction, defacement, damage or desecration of, an Aboriginal object or Aboriginal place.'

- Section 90 subsection 1 will not apply when an Aboriginal object or Aboriginal place is dealt with in accordance with a heritage impact permit issued by the Director-General (Schedule 3[3], Section 90(1B) in amended Act).
- It will be a defence to a prosecution for an offence against subsection 1 if the defendant shows that:
 - (a) 'he or she took reasonable precautions and exercised due diligence to determine whether the action constituting the alleged offence would, or would be likely to, impact on the Aboriginal object of Aboriginal place concerned, and
 - (b) the person reasonably believed that the action would not destroy, deface, damage or desecrate the Aboriginal object or Aboriginal place.' (Schedule 3[3], Section 90(1C) in amended Act)
- A court will be able to direct a person to mitigate damage to or restore an Aboriginal object or an Aboriginal place in appropriate circumstances when finding the person guilty of an offence referred to in section 90 of the Principal Act (Schedule 3[9]).
- Schedule 4[8] of the Bill provides for the Director-General to withhold in the public interest specified documents in the possession of the NPWS which relate to the location of Aboriginal objects, or the cultural values of an Aboriginal place or Aboriginal object.

8.3 Statutory constraints arising from artefacts which constitute background scatter

Background scatter is a term used generally by archaeologists to refer to artefacts that cannot be usefully related to a place or focus of past activity. There is no single concept for background 'scatter' or discard, and therefore no agreed definition. The recognition of background material within a particular study area is dependent on an appreciation of local contextual and taphonomic factors. Artefacts within a 'background' scatter can be found in most landscape types and may vary considerably in density.

Standard archaeological methodologies cannot effectively predict the location of individual background scatter artefacts. Surface survey may detect background material either as individual artefacts ('isolated finds'), or even as small, low-density 'sites'. Subsurface testing may sample, and through analysis, characterise background material. However, beyond the scope of archaeological sampling, the potential to encounter background artefacts within the context of development related ground disturbance will always remain.

Most previous cultural resource management archaeological methodologies have acknowledged that there is little scientific justification for the conduct of archaeological salvage or ground disturbance monitoring to effect the recovery of background artefacts. The intrinsic scientific value of any recovered artefacts does not, in general, outweigh the expense of conducting the monitoring. However, low density distributions of artefacts are a current subject of interest by some heritage practitioners and DEC policy regarding this issue may change in the future. The monitoring of construction related ground works by Aboriginal groups is now increasingly practiced. The recovery of background scatter artefacts is often a probable outcome of such monitoring exercises.

Given the nature of statutory and DEC policy requirements in NSW (refer Section 9), the detection of background artefacts during monitoring can be problematic. Unless the Aboriginal object is covered by a current Consent or Permit (or Heritage Impact Permit (HIP)), from DEC, all further impact to the find, and the ground in its immediate vicinity, must cease until one is gained. It may take up to eight weeks for this to occur. In the past, however, DEC has not as a general rule granted Consents to cover artefacts within background scatters. This is because DEC only provide Consents where the



significance and location of the Aboriginal Objects to be impacted can be reliably defined. By their very nature, this cannot be done for artefacts that constitute a background scatter.

The present policies of DEC do not provide an effective or proactive means of dealing with the statutory constraints posed by the detection of background scatter artefacts during development works. It should therefore be noted, that in the event that an Aboriginal artefact ('Aboriginal object') is detected during monitoring of ground disturbance within a development study area, and that area is not covered by a Consent to Destroy (or Heritage Impact Permit), there may be considerable delays to development works while an application for a Consent to Destroy is processed.

8.4 Implications for the Manyana Subdivision Proposal

Aboriginal 'objects' as defined under the National Parks and Wildlife Act 1974 have been identified within the proposed Manyana Subdivision area.

It is an offence to knowingly disturb an Aboriginal Object (or site) without an appropriate permit or consent (Sections 87 and 90). Consequently, no development or other activity can occur in the areas of the identified Aboriginal sites in the Manyana subdivision area until the DEC has issued the appropriate permit or consent.



9. MANAGEMENT CONSIDERATIONS

The field survey of the Manyana subdivision area identified seven occurrences of Aboriginal archaeological material within the subject area. Two of the sites are situated within the area zoned for Environmental Protection and are not therefore likely to be impacted by housing development or other infrastructure.

The remaining five sites and their associated potential archaeological deposits would be impacted by the current proposal. Although there is considerable disturbance from erosion within site CS14, the potential is high that there would be relatively undisturbed cultural material across other portions of the study area. It is not possible at the present stage of investigation to identify the true extent and significance of the sites.

Testing of PAD 4 on the north facing slopes of the main spurline forming Cunjurong Point has shown that there may be only sparse artefacts across this landform. However, the limited nature of the testing is not sufficient to extrapolate across the entire study area. By contrast, the original recording of CS14 identified over 500 artefacts within a large exposure. There are therefore questions relating to the nature of the archaeological record of the study area that cannot be answered on the present available information.

The preservation of a large tract of ground within the Environment Protection zoning is not sufficient at this stage to allow development to proceed without further archaeological study. Although the zoning means that some archaeological material is potentially preserved, the nature of this material and its preservation status is unknown. The preservation area includes low-lying ground associated with the drainage line which has been shown to have low archaeological potential. The upper slopes in this section are heavily eroded and do not contain the same level of undisturbed ground as observed in the western part of the study area.

Without further studies in the form of a program of archaeological subsurface testing, the impact of the proposed development on the archaeological record within the study area cannot be adequately assessed.



10. RECOMMENDATIONS

Based on the results of the present study, combined with the results of other studies carried out within the general area, the following recommendations are provided in relation to the proposed subdivision at Manyana.

1. No development could occur within the study area that would impact the identified sites without a section 90 permit from the DEC.
2. A program of archaeological subsurface testing should be conducted within the study area. The testing program would be conducted under a permit issued under section 87 of the National Parks Act and would aim to identify the extent, nature and significance of the archaeological deposits and sites across the study area.
3. The testing should be conducted with the participation of representatives of the local Aboriginal community.
4. Three copies of this report should be provided to the DEC at the following address:

Dr. Phil Boot
Archaeologist
South Branch
Environment Protection and Regulation Division
Department of Environment and Conservation
PO Box 2115
QUEANBEYAN NSW 2620

5. A copy of this report should be provided to:

The Administrator
Jerrinja LALC
c/- RSM Bird Cameron Partners
GPO Box 200
CANBERRA ACT 2601



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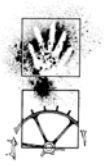


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APPENDIX 1

RECORD OF ABORIGINAL PARTICIPATION



Record of Aboriginal Representative Participation*

Name(s) of Aboriginal Representative: BRUCE ~~SMITH~~ FARRELL

Name of Aboriginal Organisation:

Archaeologist(s): name & address MATTHEW BARBER

Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street, Kingston, ACT 2604

Project Name: MANYANA SUBDIVISION

Client: name & address: DAVID CANNON
(please send your WATKINSON APPERLEY PTY LTD
invoice to this address)

PO BOX 495, NOWRA NSW 2541

- Type of participation:
- ☐ Guided inspection of study area and sites
 - ☒ Accompanied/participated in archaeological survey/salvage
 - ☐ Separate inspection or survey
 - ☐ Accompanied/participated in excavation program

Period of participation:

Date(s)	Start	Finish
7-9-05	8.00	2.00

Issues raised:

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.....
.....
.....

Signed (archaeologist): M. Barber

Signed (Aboriginal representative(s)): B. Farrell

* please note this form is not an invoice. For payment, please send an invoice from your organisation to the client name and address provided above.

