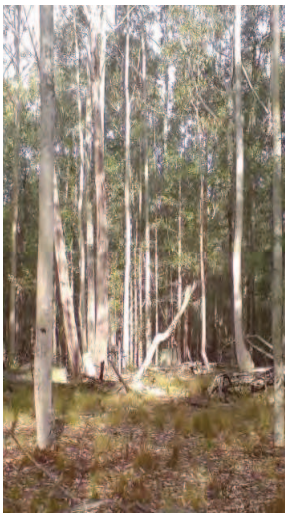

Shaolin Temple and Academy
Comberton Grange
Jervis Bay, NSW

Aboriginal Cultural Heritage Assessment

July 2012

A Report to Conybeare Morrison International Pty Ltd for the Shaolin Temple Foundation (Australia)

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EXECUTIVE SUMMARY

Project Background

The Shaolin Temple Foundation (Australia) has recently acquired 1200 ha of land south of Nowra NSW referred to as Comberton Grange. The Shaolin Temple Foundation proposes to construct a tourist and residential development on this land. Conybeare Morison International Pty Ltd has been appointed by the Shaolin Temple Foundation (Australia) to prepare a Part 3A Concept Plan Application.

The proposed development would include construction of a temple, temple garden, academy, hotel and residential housing lots. The area potentially identified for this development covers the western portion of the Comberton Grange study area and largely corresponds to ridge and spur crests along the western side of Georges Creek (Figures 1.1 and 1.2).

A cultural heritage assessment of areas potentially affected by the proposed Shaolin Temple development was conducted in July 2009. The assessment included literature review and database searches, field inspections and Aboriginal consultation.

Previously Recorded Aboriginal Sites

A search of the OEH AHIMS database identified nine Aboriginal sites within the current study area (GC1, CG1 - CG7 and CGIF3). In addition, there are seven other previously identified sites (CGIF1, CGIF2, B27, Isolated Find 1 and Comberton Grange 1 in the former pine plantation and Isolated Finds 1 and 2 on Bid Bid Creek), that are not on the AHIMS database (Cane 1988; Navin 1993b; Navin Officer Heritage Consultants 2000). Several areas of potential archaeological deposit have also previously been identified on landforms adjoining Currambene and Georges Creeks (Navin and Officer 1998, Navin Officer Heritage Consultants 2000).

Survey Results

The locations of most of the previously recorded sites were revisited for this project; however the only sites that could be identified in the field were CG4, CG5 and B27.

In the course of field survey for this project an additional five sites were identified, these consist of four isolated finds (CGIF4, CGIF5, CGIF6 and CGIF7) and one artefact scatter (CG8). An area of PAD was also identified in association with CG8. Additional notes were also made regarding the previously recorded areas of PAD. For the purposes of this study, the previously identified PADs are dealt with as a series of four areas of archaeological sensitivity (CGSA1 – CGSA4).

An archaeologically sensitive area consists of a landscape portion in which there is an assessed potential for potential archaeological deposits to occur. As such, a sensitive area recording is more general in nature than a PAD, and likely to relate to a larger landscape area.

Potential Impacts

Two of the sites identified during the current study are within the potential footprint of the proposed development at Comberton Grange:

- Isolated find CGIF4; and
- Isolated find CGIF6.

There are also two previous recordings within the proposed development footprint and/or areas encompassed by the current masterplan (Figure 8.1):

- Comberton Grange 1 – Former Pine Plantation; and
- Isolated find 1.

The remainder of the identified sites within the Comberton Grange study area will not be impacted by the proposed development.

All of recordings that will be impacted by the proposed development have been assessed to be of low archaeological significance.

Conclusions and Recommendations

It is concluded that there are no absolute constraints to the Shaolin Temple and Academy.

The following recommendations have been formulated on the basis of the results of the current survey and the results of previous heritage studies within the Comberton Grange study area.

It is recommended that:

- The previously recorded sites Comberton Grange 1 (former pine plantation), and Isolated Find 1 could not be relocated during survey for this project; it is unlikely that the artefacts at these sites could be found without recourse to vegetation clearance and/or excavation. The location of each site should be inspected by a qualified archaeologist, together with selected representatives from the registered Aboriginal stakeholders, immediately after initial clearance and ground disturbance works. Any artefacts visible at that time should then be collected/moved from the area of impact.

- Isolated finds CGIF3 and CGIF6 are located within the proposed development area and will be directly impacted. Prior to the commencement of ground disturbance works, the artefacts should be collected/moved from the area of impact by a qualified archaeologist together with representatives from the registered Aboriginal organisations.

- With respect to the current development proposal, the following recordings are situated outside the potential impact area:

    - Scarred trees GC1, CG1 and CG2;

    - Artefact scatters CG3-6 and CG8;

    - Reported Aboriginal burial CG7;

    - Isolated finds CGIF1-2, 4-5 and 7, Isolated Finds 1 and 2 – Bid Bid Creek;

    - Rockshelter B27; and

    - Archaeologically sensitive areas CGSA1 - CGSA4.

- The protocols for the unanticipated discovery of archaeological material and suspected human remains (presented in Appendix 2) be adopted and complied with during construction activities involving ground surface disturbance and excavation.

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1. INTRODUCTION

1.1 Project Description

The Shaolin Temple Foundation (Australia) has acquired 1200 ha of land south of Nowra NSW referred to as *Comberton Grange*. The Shaolin Temple Foundation proposes to construct a tourist and residential development on this land. The proposal would involve construction of a Shaolin temple and academy in the western portion of the study area (Figure 1.1). An Independent Panel has been consulted with regard to the location of the proposed development. The footprint for the development area recommended by the Panel is shown in Figure 1.2.

The Masterplan for the project has been developed to avoid any areas of archaeological sensitivity in the area therefore negating any need for subsurface archaeological investigations and limiting impacts to Aboriginal sites.

Conybeare Morison International Pty Ltd has been appointed by the Shaolin Temple Foundation to prepare a Part 3A Concept Plan Application. The NSW Director General has issued requirements for the project that include:

> Identify whether the site has significance to Aboriginal cultural heritage and identify appropriate measures to preserve their significance. The assessment must address the information and consultation requirements of the draft *Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation* (DEC 2005) and *Interim Community Consultation Requirements for Applicants* (DEC 2004). The cultural heritage assessment should include areas not previously surveyed including the former pine plantation.

This report documents the results of an Aboriginal cultural heritage assessment of Comberton Grange. The report was commissioned by Conybeare Morison International Pty Ltd for Shaolin Temple Foundation (Australia).

1.2 Legislative Approval and Requirements

The proposed Shaolin Temple and Academy will be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A ACT).

1.3 Report Outline

This report:

- Describes the proposed development (Section 1);
- Documents consultation with local Aboriginal organisations carried out in the course of the cultural heritage assessment (Section 2);
- Describes the methodology implemented for the project (Section 3);
- Describes the environmental setting of the study area (Section 4);
- Provides a background of local and regional archaeology for the study area (Section 5);
- Describes the results of the data review and field survey (Section 6);
- Provides an assessment of the significance of recorded sites (Section 7);
- Provides an overview of relevant legislation (Section 8); and
- Provides management recommendations based on the results of the investigation and the anticipated impacts of the proposed development on the archaeological resource (Section 9).

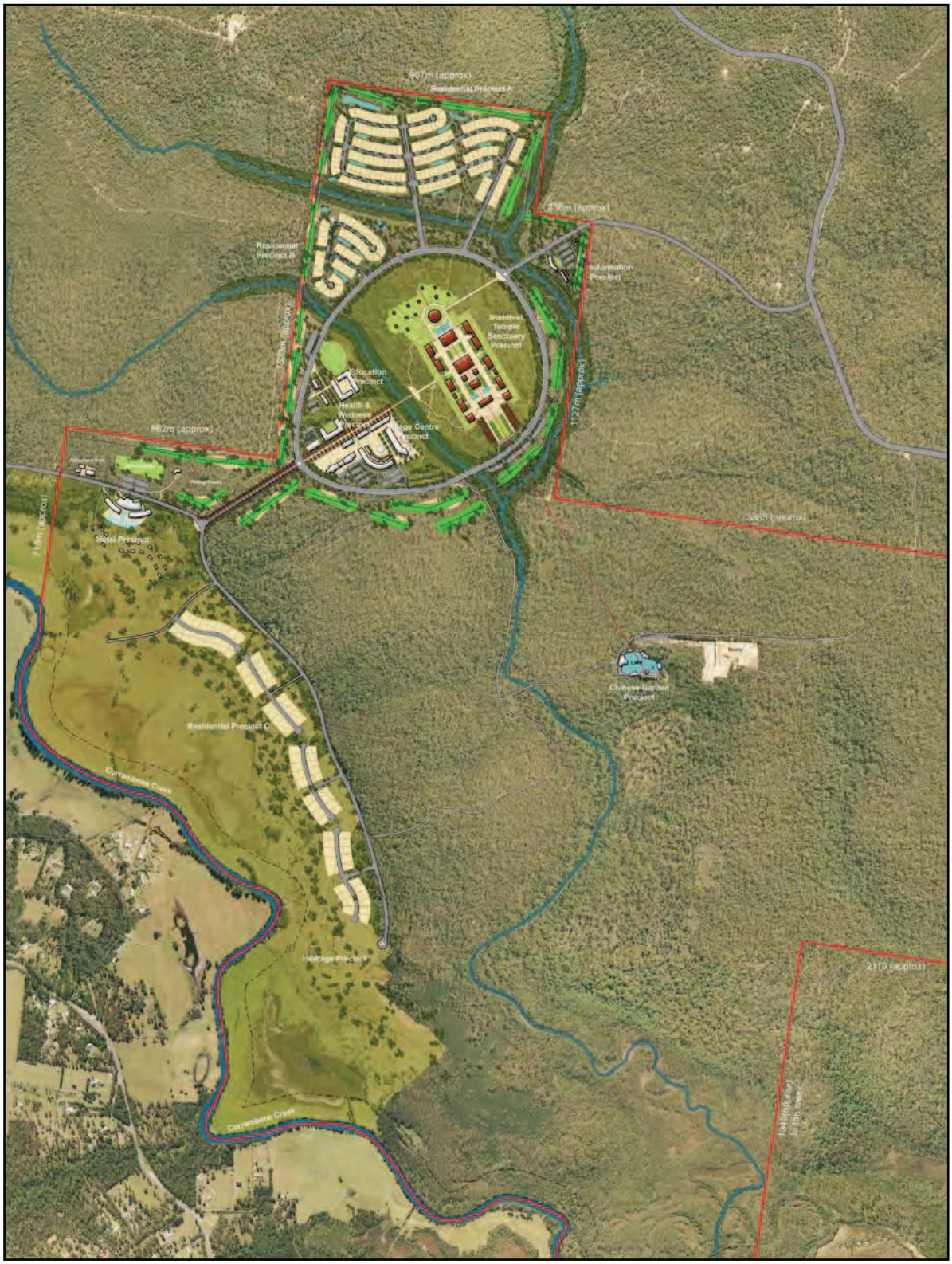

Figure 1.1 Masterplan for the proposed Shaolin Temple and Academy
(Mapping provided by Conybeare Morrison International Pty Ltd)

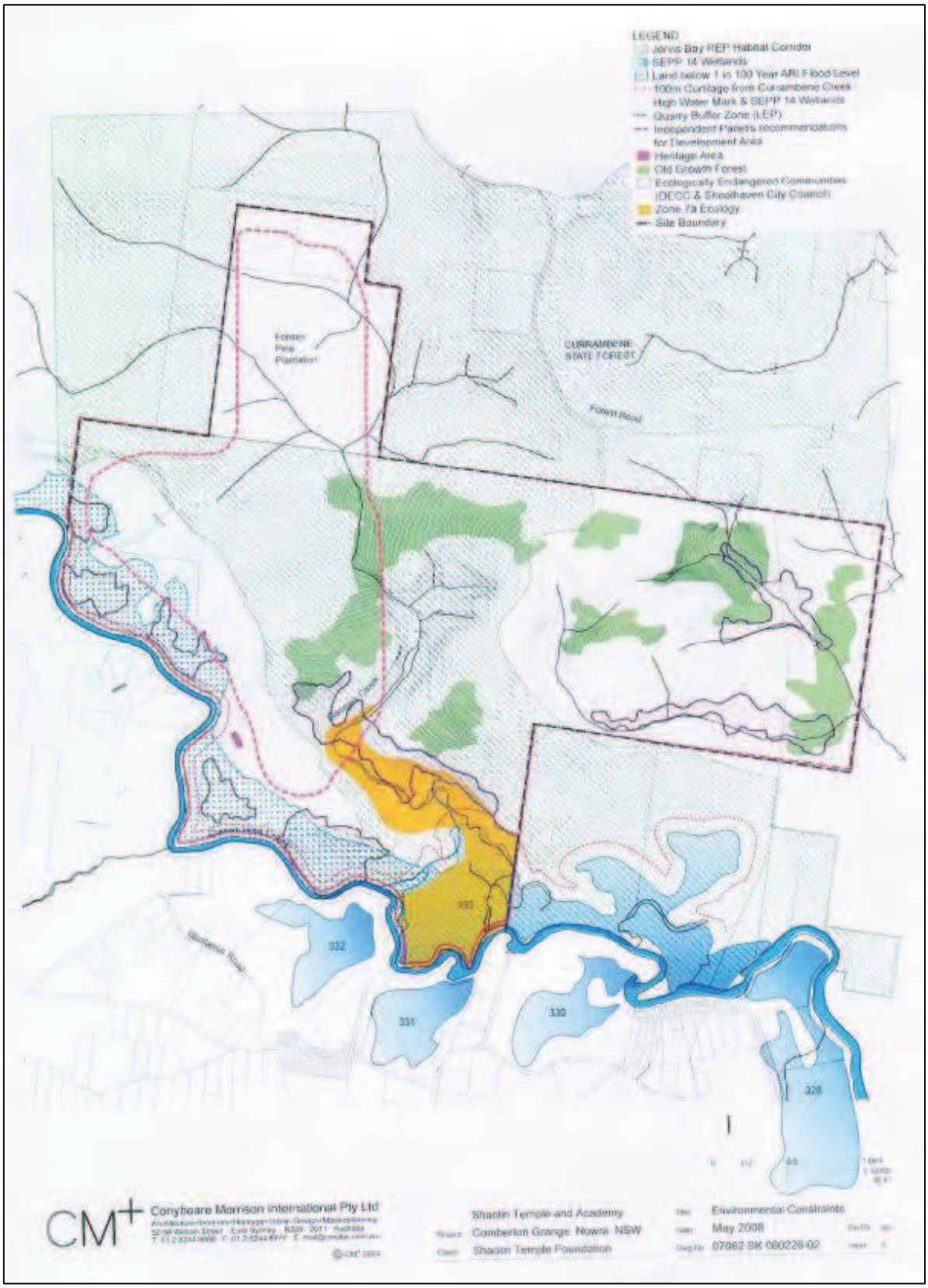

Figure 1.2 Location of the development area recommended by the Independent Panel (Mapping provided by Conybeare Morrison International Pty Ltd)

2. ABORIGINAL CONSULTATION AND CULTURAL VALUES

2.1 Aboriginal Consultation

The OEH *Interim Guidelines for Aboriginal Community Consultation* were followed for this project. An advertisement was placed in the:

- *South Coast Register* (13 May 2009).

Letters were sent to the Jerrinja Local Aboriginal Land Council (LALC), Ms Elaine Sturgeon (member of the Wreck Bay Aboriginal Community (WBAC), Office of the Registrar Aboriginal Land Rights Act 1983, NSW Native Title Services, NSW OEH and Shoalhaven City Council

The closing date for expressions of interest was 22 May 2009.

Responses to the advertisement and letters were received from:

- Ms Delia Lowe, Jerrinja LALC;
- Ms Elaine Sturgeon (WBAC);
- Mr Jason Davison;
- Mr Graham Connelly, Jerrinja Consultants;
- Shoalhaven City Council; and
- Office of the Registrar Aboriginal Land Rights Act 1983.

Contact was made with the Jerrinja LALC and WBAC to inform them of the field work and to organise representation during the field survey.

Subsequently, a representative from the Jerrinja LALC and WBAC attended and actively participated in the field program. The representatives were:

- Gerald Carberry (JLALC); and
- Elaine Sturgeon and Daniel McConnell (WBAC).

Records of Aboriginal Field Participation are provided in Appendix 1.

Mr Reuben Ardler also contacted the consultants (post-fieldwork) and expressed an interest in the project on behalf of the Wreck Bay Aboriginal Council and Community.

2.2 Aboriginal Cultural Values

Comments and input regarding the Aboriginal cultural heritage values at Comberton Grange were invited from the representatives who participated in the field survey.

A draft copy of this report will be provided to each of the Aboriginal stakeholders for their information, accompanied by a request for views/comments on the project and development.

3. STUDY METHODOLOGY

3.1 Literature and Database Review

A range of archaeological and historical data was reviewed for the Comberton Grange study area and its surrounds. This literature and data review 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 heritage management context.

Aboriginal literature sources included the Aboriginal Heritage Information Management System (AHIMS) maintained by the NSW Department of Environment and Climate Change (OEH) and associated files and catalogue of archaeological reports.

3.2 Fieldwork and Project Personnel

Field work was conducted over four days in July 2009 by archaeologists Rebecca Parkes and Deirdre Lewis Cook, and the representatives of Jerrinja LALC and WBAC (refer to Section 2).

Survey was targeted on areas that afforded good ground exposure, such as vehicle and animal tracks. It was however found that some of the tracks marked on the topographic maps are either no longer in existence or were so overgrown that visibility was severely limited. As a result, most of the survey was undertaken on the tracks that are currently in use, some of which do not appear on the most recently published topographic map.

Field survey involved:

- comprehensive inspection on foot, of all areas of significant surface visibility within the proposed impact area across the western half of the study area;
- sampling of areas outside the proposed development footprint, with a focus on areas of high sensitivity and/or areas with significant ground visibility;
- revisiting and re-recording, where possible, of previously identified sites; and
- systematic assessment of landscape disturbance and archaeological potential across the entire study area.

This report was prepared by Rebecca Parkes.

3.3 Project Limitations

Due to the fact that the study area has been subject to various phases of previous archaeological survey (Lance 1987, Scott 1988, Navin 1993a, Navin and Officer 1998, Navin Officer Heritage Consultants 2000), together with the fact that the proposed development will impact less than half of the 1200 hectare study area, the primary focus of survey for this project was within the footprint of the development area recommended by the Independent Panel (Figure 1.2).

It should however be noted that the development area indicated on the masterplan (Figure 1.1) differs from the Independent Panel's recommended footprint. In particular, the masterplan design indicates that development would be concentrated within the former pine plantation and that some sections of the development in that area would be outside the footprint recommended by the Independent Panel. Where appropriate, a distinction has been made between the *masterplan* (Figure 1.1) and the *proposed development footprint* (Figure 1.2).

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 two broad categories: sites and potential archaeological deposits.

Sites

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

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

Frequently encountered site types within southeastern Australia include stone artefact occurrences - including isolated finds and open artefact scatters, coastal and freshwater middens, rock shelter sites - including occupation deposit and/or rock art, grinding groove sites and scarred trees. For the purposes of this section, only the methodologies used in the identification of these site types are outlined.

Stone Artefact Occurrences

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

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

Isolated finds

An isolated find is a single stone artefact, not located within a rock shelter, and which occurs without any associated evidence of Aboriginal occupation within a radius of 60 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; and
- An otherwise obscured or sub-surface artefact scatter.

Except in the case of the latter, isolated finds may be considered to be constituent components of the *background scatter* present within any particular landform.

The distance used to define an isolated artefact varies according to the survey objectives, the incidence of ground surface exposure, the extent of ground surface disturbance, and estimates of *background scatter* or *background discard* densities. In the absence of baseline information relating to background scatter densities, the defining distance for an isolated find must be based on methodological and visibility considerations. Given the varied incidence of ground surface exposure and deposit disturbance within the study area, and the lack of background baseline data, the specification of 60 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.

Background scatter

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

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

Artefact scatters

Artefacts situated within an open context are classed as an open artefact scatter (or ‘open camp 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*). The use of the term *scatter* is intended only to be descriptive of the current archaeological evidence and does not infer the original human behaviour which formed the site. The term *open camp site* has been used extensively in the past to describe open artefact scatters. This was based on ethnographic modelling suggesting that most artefact occurrences resulted from activities at camp sites. However, in order to separate the description from the interpretation of field evidence, the terms *artefact scatter*, *artefact distribution* or *artefact occurrence* are now more extensively used. The latter two options can also be used to categorise artefacts occurring in sub-surface contexts.

Rock shelter sites

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

Rock art

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

Scarred Trees

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

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

1. The scar does not normally run to ground level: (scars resulting from fire, fungal attack or lightning nearly always reach ground level). However, ground termination does not necessarily discount an Aboriginal origin (some ethno-historical examples of canoe scars reach the ground);

1(a). If a scar extends to the ground, the sides of the original scar must be relatively parallel: (natural scars tend to be triangular in shape;

2. The scar is either approximately parallel sided or concave, and symmetrical: (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular, and often adzed);

3. The scar should be reasonably regular in outline and regrowth: scars of natural origin tend to have irregular outlines and may have uneven regrowth;

4. The ends of the scar should be 'shaped', either squared off, or pointed (often as a result of regrowth): (a 'keyhole' profile with a 'tail' is suggestive of branch loss);

5. A scar which contains adze or axe marks on the original scar surface is likely to be the result of human scarring. Their morphology and distribution may lend support to an interpretation of an Aboriginal origin: (marks produced after the scarring event may need to be discounted);

6. The scar must date to the time of Aboriginal bark exploitation within its region: The traditional Aboriginal exploitation of bark probably ceased in most regions between 100 and 150 years ago. However, in some locations associated with Aboriginal settlement, the Aboriginal removal of bark may have continued to the present day, or restarted as part of new cultural movements.

7. The tree must be endemic to the region: (and thus exclude historic plantings).

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

- Aboriginal scar - This is a scar where an Aboriginal origin is considered the most likely. The scar conforms to all of the criteria and a natural origin is considered unlikely and improbable;

- Probable Aboriginal scar - This is a scar that conforms to all of the criteria and where an Aboriginal origin is considered to be the most likely. Despite this, a natural origin cannot be ruled out; and

- Possible Aboriginal scar - This is a scar which conforms to all or most of the criteria and where an Aboriginal origin cannot be reliably considered as more likely than alternative natural causes. The characteristics of this scar will also be consistent with a natural cause.

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. The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region. Where necessary, PADs can be given an indicative rating of their 'archaeological potential' based on a combined assessment of their potential to contain artefacts, and the potential archaeological value of the deposit. Table 3.1 illustrates the matrix on which this assessment is based. Locations with low potential for artefacts fall below the threshold of classification. In such cases the potential incidence of artefactual material is considered to be the same as, or close to that for background scatter. Where there is moderate potential for artefacts, the predicted archaeological potential parallels the

potential significance of the deposit. For deposits with high potential for artefacts, the assessed archaeological potential is weighted positively.

The boundaries of PADs are generally defined by the extent of particular micro-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 situation is due mostly to poor ground surface visibility.

In the case of rock shelters contexts, the following criteria are used as guidelines for identifying the presence of potential archaeological deposits:

- Shelter should contain a sediment floor at least around one square metre in area;
- Deposit must be at least 15 cm deep (determined by inserting tent pegs);
- Deposit should be relatively compact and show evidence for a significant period of accumulation (deposit should not be spongy and contain only clean sand derived from recent stone weathering);
- The shelter space should be at least one metre high and one metre deep (but exceptions may occur, such as where the deposit is deep); and
- The shelter should be relatively dry.

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

		Potential to contain Aboriginal objects		
		Low	*Moderate*	*High*
Potential archaeological significance	*Low*	---	**low**	**moderate**
	Moderate	---	**moderate**	**high**
	High	---	**high**	**high**

4. ENVIRONMENTAL CONTEXT

The study area comprises approximately 1200 ha of largely forested land that is bounded to the south by Currambene Creek. At its widest points the study area extends around four kilometres from north to south and just over five kilometres from east to west. It borders the Currambene and Nowra State Forests in the north and encompasses the majority of the catchment for Georges Creek and the headwaters of Bid Bid Creek (Figure 4.5).

The study area is situated within the lower reaches of the Currambene Creek catchment, approximately five kilometres from its entry into Jervis Bay. Currambene Creek is the only major watercourse which enters Jervis Bay, and is estuarine along the entire study area boundary. It follows a generalised northwest–southeast alignment along the southern boundary of the study area, which may relate to an underlying joint or faultline (Taylor et al. 1995). Bid Bid Creek and its tributaries comprise second and third order drainage lines in the far eastern portion of the study area. This creek is a tributary of Callala Creek, which flows into Jervis Bay four kilometres east of the study area. The section of Bid Bid creek that flows through the study area is likely to have provided an intermittent source of fresh water. Georges Creek however has a much larger catchment area and appears to be a semi-permanent stream along the majority of its course through the study area. Georges Creek flows from north to south through the middle of the study area and joins Currambene Creek in the southeast corner.

The underlying bedrock geology is Permian in age and consists of:

- Nowra Sandstone (quartzose – lithic sandstone), on the lower valley slopes;
- Wandrawandian Siltstone (siltstone and lithic sandstone), on the upper ridge slopes at the northern end of the study area and on the Comberton Grange homestead spurline;
- Currambene Dolerite (porphyritic dolerite) on portions of the ridgeline to the east of Georges Creek; and
- the Snapper Point Formation (quartz-pebbly sandstone and minor conglomerate) on the upper ridge slopes in the middle section of the study area (Taylor et al. 1995).

Within the study area, sandstone outcrops as cobbles, pieces of shatter and gravels in most landforms. Larger exposures of bedrock occur along Georges Creek and some sections of Bid Bid Creek. Substantial sandstone escarpments are relatively rare. There are occasional outcrops up to 5 m high on the uppers slopes overlooking Georges Creek (Figure 4.1) and at least one extensive escarpment on the northern boundary of the study area adjacent Bid Bid Creek.

The geomorphology of the study area can be characterised by three broad topographic units: the quaternary alluvium of the valley floor; the adjoining low gradient spurlines and slopes of the adjacent bedrock topographies; and the crest and upper slopes of the watershed ridgelines to the northeast. The landforms of the valley floor have formed from Quaternary alluvium and include:

- relatively recent and narrow alluvial terrace formation between the levee bank and creek bank;
- a relatively continuous levee deposit bordering the Currambene Creek bank and forming a locally elevated mound of sandy loams;
- a series of four back swamp wetland basins formed by the impoundment of runoff from the adjacent slopes by the levee bank deposits;
- discontinuous benches and low spurlines, adjoining bedrock and colluvial slope deposits, which have probably formed from remnant alluvial terrace deposits, the upper examples probably being of Pleistocene age.

Bank erosion is commonly evident along Currambene Creek and has resulted in the undercutting of remnant creek side vegetation and the loss of levee deposits. The wetland basins appear to have

formed extensive bodies of freshwater and marsh prior to their partial or complete drainage by the excavation of agricultural drainage channels. The channels may have been excavated as part of the early agricultural development of the lands in the mid nineteenth century. The most downstream channel originally incorporated a series of saltwater barriers or weirs to prevent the tidal incursion of brackish water into the reclaimed flats. Possibly the most recent of these consisted of a moulded concrete weir which has now failed due to channel erosion. As a consequence of this failure, a proportion of the basin lands upstream of the channel have reverted to salt marsh.

The Currambene Creek valley floor and adjoining basal slopes contain considerable archaeological potential due to the diversity of resources zones, locally elevated contexts adjacent to water sources, and predominantly aggrading sedimentary landforms. The valley floor alluvium consists of sandy silts and clays derived from both freshwater and estuarine contexts.

With the exception of the grassed paddocks bordering Currambene Creek (Figure 4.2), the majority of the study area consists of regenerating bushland dominated by Spotted Gum forest (Figure 4.3). Much of the study area has been impacted by bushfires in recent years. As a result, the understorey in the affected areas tends to be quite dense with regrowth. Tea-tree and tick bush are both common across the crests and adjoining slopes, while the margins of the creeks are thick with *garnia* and other sedges and grasses (Figure 4.4). Casuarinas are also growing along sections of Currambene Creek and on some of the basal slopes along the lower portion of Georges Creek.

Figure 4.1 Example of sandstone exposures on Georges Creek, looking south.

Figure4.2 Open pastures in the southwestern portion of the study area, looking southeast.

Figure 4.3 Example of the Spotted Gum forest that covers the majority of the study area.

Figure 4.4 View to south along Georges Creek.

The northernmost section of the study area corresponds to a former pine plantation. This area is currently vegetated with a mixture of native and introduced species comprising regenerating bushland interspersed with occasional pine trees.

There is evidence of logging throughout the study area. While there are occasional specimens of mature trees, most of these appear to be less than 100 years old. That is, the majority of trees

postdate the arrival of Europeans and the beginning of farming and associated clearance activities. There have been a variety of other impacts resulting from non-indigenous landuse including: creation and use of various vehicular tracks; construction of fences, stock yards, sheds and a homestead complex; grazing and other agricultural activities; quarrying of sandstone in the centre of the study area, and installation of a pipeline through the eastern section.

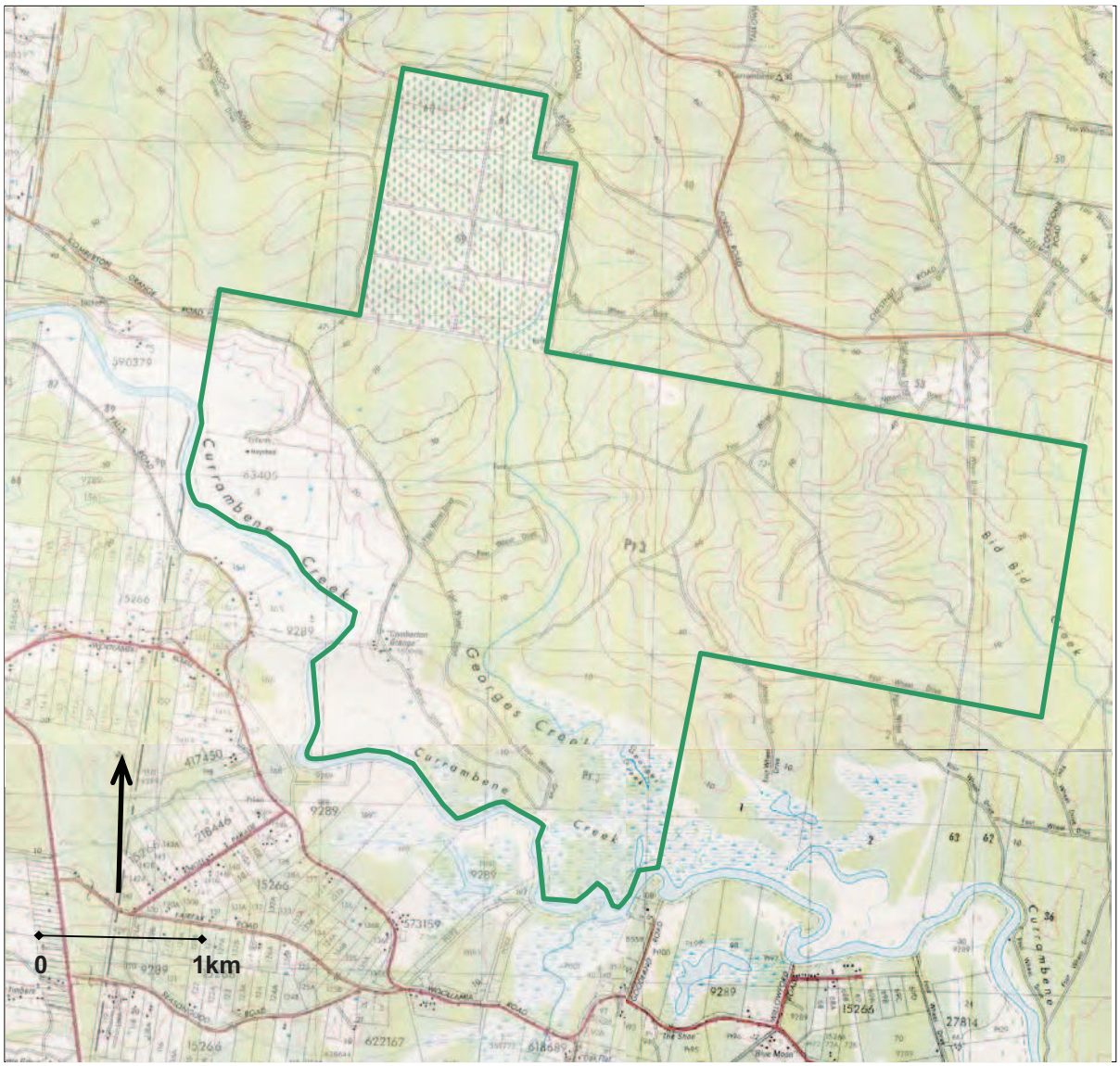

Figure 4.5 Map showing boundaries of the Shaolin Temple and Academy study area at Comberton Grange, Jervis Bay (Extracts from Nowra and Huskisson 1:25,000 topo maps 2nd Editions)

5. ABORIGINAL CONTEXT

5.1 Language Boundaries

In many of the ethnographic descriptions, the language of the Jervis Bay region is considered to be Dhurga or Thurumba (Mackenzie 1874; Mackenzie [in Ridley 1877]; Ridley 1875, 1877; Mathews [in Capell 1963]). According to these sources, the Jervis Bay coast and hinterland was included in the distribution of the Dhurga language. Dhurga extended down the coast to around Narooma. Thurumba is now considered to be a northern dialect of the Dhurga Language (Eades 1976).

Contrary to the above, Mathews (1901), Morton (1929) and Eades (1976) place the northern boundary of the Dhurga language at Jervis Bay, effectively placing the area on a linguistic boundary between two main groups.

Considering the limitations of surviving records, it is impossible to be accurate about the placement and nature of linguistic boundaries. Given the associations to both the north and the south, it seems probable that both languages were understood within the Jervis Bay region. The Aboriginal name for Jervis Bay was Koorumbun (Mackenzie 1874).

Both the Dharrawal and Dhurga languages form part of the Yuin linguistic group that extends southward from Sydney to almost the Victorian border (Schmidt 1919).

5.2 Tribal Boundaries

Tindale's compilation of tribal boundary information broadly agrees with the linguistic boundaries (Tindale 1974). Tindale, however, places the tribal boundary, equivalent to the Dharrawal-Dhurga division, along the Shoalhaven River. Currambene Creek is then placed solely within the Wandandian tribal territory, which extends from the Shoalhaven River down the coast to the Ulladulla region.

The Wandandian spoke Dhurga and were part of a larger inter-tribal group which formed a community with shared ceremonial obligations, and a common initiation lore and cosmology (Howitt 1883; 1904). Howitt termed this group the Murring and described its distribution as extending up the NSW coast, northward from around Double Bay to the Shoalhaven, and inland to the Wiradjuri eastern boundary.

Contrary to Tindale's boundary along the river, ethnographers have tended to describe the Aborigines and linguistics of the lower Shoalhaven in terms of one district (Capell 1963:S36; Dixon in Eades 1976:4). It seems more probable that the tribal boundary on the coastal plain was further south and, concomitant with the linguistic evidence, adjacent to Jervis Bay. A boundary in this region would be roughly equivalent with the Shoalhaven-Jervis Bay watershed.

In a compilation of more recent oral traditions amongst the South Coast Koori, J.E. Mathews records that there is now no recollection of 'Wandandian' as a tribal name. Locations for different local 'tribes' are remembered as: the Coolangatta, the south bank of the Shoalhaven River, Huskisson (Bilong), Wreck Bay, and St Georges Basin (Mathews c1960). These appear to parallel the locations of the later, post-European contact Aboriginal camps which formed following the European incursion into Wandandian land.

5.3 Aboriginal Stories and Story Places

The Aborigines of the Jervis Bay area have knowledge of many myths and stories relating to their tribal area. Three literature references have been found which relate to the mythology of the general Currambene Creek area.

The Bipbip Women

There is only a remnant knowledge amongst the Jervis Bay Koori communities of a story about the 'Bipbip women' (Cane 1987:47-8). These women looked normal except for their pointed toes. The

women used to come down from the mountains and lure Aboriginal men from their families onto Beecroft Peninsula. Unfortunately the activities of the Bipbip women and their associated sites are largely forgotten, although a Bipbip women's site has been recorded at Orient Point (Cane 1987:47).

Bid Bid Creek is a major tributary of Callala Creek, and drains part of the immediate hinterland behind the township of Callala Bay. Callala Creek enters Jervis Bay at Callala Point adjacent to Hare Bay. There are no recorded sacred stories which relate to Bid Bid creek, but it is probable that its name preserves some record of the original Bipbip women story. The possibility exists that the creek was part of the original `dreaming path' or track, travelled by the women (Cane 1987:48).

The Wild Women

A story told to Roland Robinson by Percy Mumbulla concerns the 'Wild Women'. These women lived in the bush and beguiled men.

> '...Old Jimmy chased her away into the bush. But the wild woman was too clever. She could turn into mist or a wallaby doe. Old Jimmy chased her and chased her but she got away from him into some caves.
>
> Old Jimmy was clever too. He could feel when they were near. Those wild women want you for a husband. They take you away into the bush and the mountains for six months. They make you stupid. You can't hear anything. There is always six of them. They come down to Currambene Creek near Huskisson. ...Those wild women are very good to look at. They are a white colour. They have long hair' (Robinson 1958:133).

It is possible that these 'wild women' and the 'Bipbip women' are one and the same.

Tutawa

Two Wandandian stories, recorded by Mackenzie in 1872, relate the hunting prowess of a game hunter called *Tutawa* and how he created the four winds by spitting blood from rage (Mackenzie 1874). This name is the same as the phonetic 'Too-too-ah' recorded as the name for Currambene Creek. The explorer Charles Throsby noted that the natives called the Inlet 'Coorunbun', (later writing 'Coorumbun') and the presently named Currambene Creek was known as 'Too-too-ah' (in Jervis 1936:123).

Jennings (n.d) states that the waterfall at the junction of the Parma and Currambene Creeks was known in ‘the early days’ as Horseshoe or Tootawah Falls, Tootawah being an Aboriginal name meaning ‘The meeting of the waters’. This information is also reported by Bayley, but no source is given (Bayley 1975:103). Jennings also states that in the 1890s Tootawah was used as a name for local? milk factory and saw mill.

There was no 't' sound in the Dharrawal and Dhurga languages. The word 'dudawa' is recorded on a tape source which could be an example of either of these languages. The recorded meanings of the word are pipe and whip bird (Eades 1976:77). Dudawa and Tutawa are very likely the same word.

Summary

According to the documentary evidence Currambene Creek and its immediate surroundings are associated with two traditional mythological stories, Tutawa the hunter and the Wild Women. It seems probable that the 'Wild Women' are the Bipbip women who are remembered in the oral traditions of the Jerrinja community. Similarly, the name 'Bid Bid Creek' is most likely to be an historical indication of the association of this tradition with the Currambene hinterland.

While this demonstrates that the study area falls within a region with a broadly defined traditional significance, there is as yet no evidence identifying specific sites or landscape features beyond the creek itself.

5.4 Regional Overview

The south coast region of New South Wales has been the subject of extensive archaeological research over the last thirty years, much of it concentrated along the coastline and estuaries. This includes excavations of Aboriginal sites, mainly shell middens and rock shelters, and detailed and systematic regional surveys.

The majority of archaeological sites located in this region date to the last 6,000 years, when the sea levels stabilised to approximately the present level (the Holocene Stillstand). Sites older than 6,000 are rare, as most sites would have been submerged by rising seas. To date two coastal sites, Bass Point and Burrill Lake, provide evidence of Pleistocene Aboriginal occupation dating to 17,000 and 20,000 BP (Before Present) respectively. Prior to the rise in sea levels these sites would have been located some 14 km inland.

The Jervis Bay area has been the subject of numerous systematic archaeological surveys, the majority of which have been carried out on a commercial contract basis. Fewer studies have been conducted within an academic research framework. To date hundreds of Aboriginal archaeological sites have been located in the general vicinity of Jervis Bay.

Archaeological research has determined that Aboriginal occupation of the area extends back at least 3000 years (Barz 1977; Collier 1975; Lampert 1971a; Paton & MacFarlane 1988). However this association may well be much longer, as Pleistocene sites may yet be located in the area.

Most of the recorded sites in the Jervis Bay region are the result of exploitation of the marine and nearshore environments. The hinterland areas still remain comparatively unsurveyed and the distribution of archaeological sites in these areas is still not fully understood. The picture of Aboriginal utilisation and occupation of the south coast hinterland areas is constantly being revised and refined as archaeological methods improve and more archaeological data becomes available for the area.

5.5 The Comberton Grange Study Area

A number of archaeological projects have been carried out within or near the current study area (Lance 1987; Cane 1987 and 1988; Colley 1988; Officer 1986; Navin 1990, 1992 and 1993a and b; Officer 1997, Navin & Officer 1997 and 1998, Navin Officer Heritage Consultants 2000).

In 1986, Officer carried out a baseline study for a proposed armaments depot situated in the region of the Currambene State Forest. He concluded that:

a). the potential for archaeological sites to occur in the coastal foreshore zone, which included the immediate coastal reaches of Currambene Creek, was high;

b). the potential for archaeological sites to occur in the creeks, estuaries and wetlands zone, which included the major part of Currambene Creek was moderate to high; and

c). the potential for sites to occur in hinterland zones characterised by ridgetops, moderate to steep slopes and narrow ephemeral creek lines was low (Officer 1986:9).

A survey of a preferred site for the proposed armaments depot was subsequently conducted by Cane (1988). One site was located within the current study area, a sandstone rock shelter with deposit located in the upper catchment of Bid Bid Creek (B27). No open artefact occurrences were identified, however poor ground surface visibility was encountered over much of the study area.

In 1987 Lance conducted a survey of a section of land on Georges Creek for a proposed dolerite quarry. This area included escarpment zones identified by Officer (1986) as having potential for rock shelter sites, however Lance (1987:2) reports that the only slopes with this potential had been disturbed by road construction. No evidence or discussion of possible Aboriginal utilisation of the exposed dolerite rock was presented. Taylor et al. (in Cho et al. 1995:51) noted that to date, the Comberton Grange quarry had exploited only the overlying sandstone and not the dolerite resource.

Surveys by Cane (1987), Lance (1987), Colley (1988) and Navin (1989) revealed low site numbers in the hinterland (>1km from coast), immediately north and west of Jervis Bay. The four surveys sampled a total area of around 10 km^2 and located three sites: one rock shelter containing sparse evidence of occupation, one artefact scatter and a grinding groove site. In each survey ground visibility was low. The low site density was however, considered to reflect a real distribution pattern and an economic emphasis on coastal and estuarine zones.

However Navin's surveys for a proposed Currambene Creek bridge near Myola (1991a), and St Georges Basin/Jervis Bay sewerage scheme (1993a) clearly indicated that site densities in areas away from tidal influence were probably higher than once predicted. Four scarred trees, two artefact scatters, two isolated finds and a site complex were located in the course of the investigation for a proposed Currambene Creek crossing and associated road routes from Woollamia to Callala Beach. A consistent local site distribution pattern was identified, with isolated finds and open artefact scatters occurring on the south facing slopes of ridgelines adjacent to wetlands or major creek corridors.

Two areas surveyed for the regional effluent management scheme (Navin 1993a) coincide with sections of the present study area. These comprise a former pine forest, located on approximately 185 ha of undulating country, and a section of existing water pipeline easement adjacent Bid Bid Creek. One site, an artefact scatter comprising two artefacts (Comberton Grange 1), and one isolated find were located in the pine forest (Isolated Find 1). Two isolated finds were located in the relevant section of pipeline easement (Isolated Finds 1 and 2).

In 1992 Navin surveyed a 3.6 ha parcel of land on Goodlands Road at Woollamia affected by a proposed urban development. One possible Aboriginal scarred tree was identified on spurline slopes in the area (Woollamia 1 - AHIMS #58-2-0296). As ground visibility was nil over most of the study area a limited program of subsurface testing was carried out in the area (Navin 1993b). A low to moderate density artefact scatter (Woollamia 2 - AHIMS #58-2-0295) was located as a result of the testing program - the site was on a section of a terrace that was closest to Currambene Creek.

A preliminary overview of the route selection study for a road to link the Huskisson/Vincentia and St Georges Basin areas to Callala, Currarong and Culburra was undertaken in 1997 (Navin & Officer 1998). These areas are currently geographically separated by Currambene Creek. Previous investigations into an earlier proposal for a road and bridge crossing approximately two kilometres downstream of the present study area identified major and significant cultural heritage constraints (Navin 1990, 1991a and 1991b). Subsequently a detailed cultural heritage assessment was undertaken for the proposed Currambene Creek crossing and associated road route from Snowwood Road to Woollamia (Navin & Officer 1998). This road alignment crosses through the middle of the Comberton Grange study area.

Nine Aboriginal sites, comprising five low density artefact scatters and four possible Aboriginal scarred trees, and an isolated find were located in, or close to, the proposed road easement. Five areas of potential archaeological deposit (PADs) were also identified in the easement.

Three of the identified scarred trees were located on or adjacent the section of road easement that traverses the present study area (GC1, CG1 and CG2). In addition, four of the areas of archaeological potential (PAD1, PAD3, PAD4 and PAD5), and one area which would require monitoring if disturbance was anticipated (M1), were identified in the present study area (see Section 5.6 below).

In 2000 Navin Officer Heritage consultants undertook a cultural heritage assessment of an approximately 219 ha area of land within the current study area. Four Aboriginal artefact scatters (CG3-6), and three isolated finds (CGIF1-3) were identified in the course of the field survey of the study area. An Aboriginal burial ground was also reported as occurring in the study area (CG7).

Three landform categories with Aboriginal archaeological potential were identified in the study area, these consist of: the Currambene Creek levee bank deposit; basal slopes adjacent to wetlands or estuaries; and relatively undisturbed sections of ridgeline crest.

5.6 Summary of Previously Recorded Sites

A search of the OEH AHIMS database identified nine Aboriginal sites within the current study area (Table 5.1 and Figure 5.1). In addition, there are seven other sites previously identified that are not on the AHIMS database (Cane 1988; Navin 1993b; Navin Officer Heritage Consultants 2000). These additional sites comprise five isolated finds (CGIF1, CGIF2, Isolated Find 1, IF1 and IF2), one small artefact scatter (Comberton Grange 1) and a rockshelter (B27) for which there is only limited information regarding site location (Cane 1988). A summary of all 16 sites known to occur within the current study area is provided in Table 5.1 and their locations are shown in Figure 5.1

Table 5.1 Previously recorded sites with the Comberton Grange study area

AHIMS Site ID	Site Name	Site Type	AGD Grid Reference
52-5-0365	Comberton Grange 1 (CG1)	scarred tree	285380.6126160
52-5-0366	Comberton Grange 2 (CG2)	scarred tree	285150.6125570
52-5-0367	Georges Creek 1 (GC1)	scarred tree	284400.6125100
52-5-0402	Comberton Grange 7 (CG7)	Reported Aboriginal Burial Ground	282270.6126240
52-5-0403	Comberton Grange Isolated Find 3 (CGIF3)	isolated find	283240.6126050
52-5-0406	Comberton Grange 6 (CG6)	artefact scatter	283140.6125570
52-5-0407	Comberton Grange 4 (CG4)	artefact scatter	283200.6125180
52-5-0408	Comberton Grange 3 (CG3)	artefact scatter	283130.6125020
52-5-0414	Comberton Grange 5 (CG5)	artefact scatter	282220.6126200
NA	Comberton Grange Isolated Find 1 (CGIF1)	isolated find	283250.6124950
NA	Comberton Grange Isolated Find 2 (CGIF2)	isolated find	283650.6125000
NA	Isolated Find 1 (Former Pine Plantation)	isolated find	283350.6128400
NA	IF1 (Bid Bid Creek)	isolated find	286910.6125110
NA	IF2 (Bid Bid Creek)	isolated find	286450.6125440
NA	Comberton Grange 1 (Former Pine Plantation)	artefact scatter	284310.6128400
NA	Beecroft 27 (B27)	rockshelter	not provided

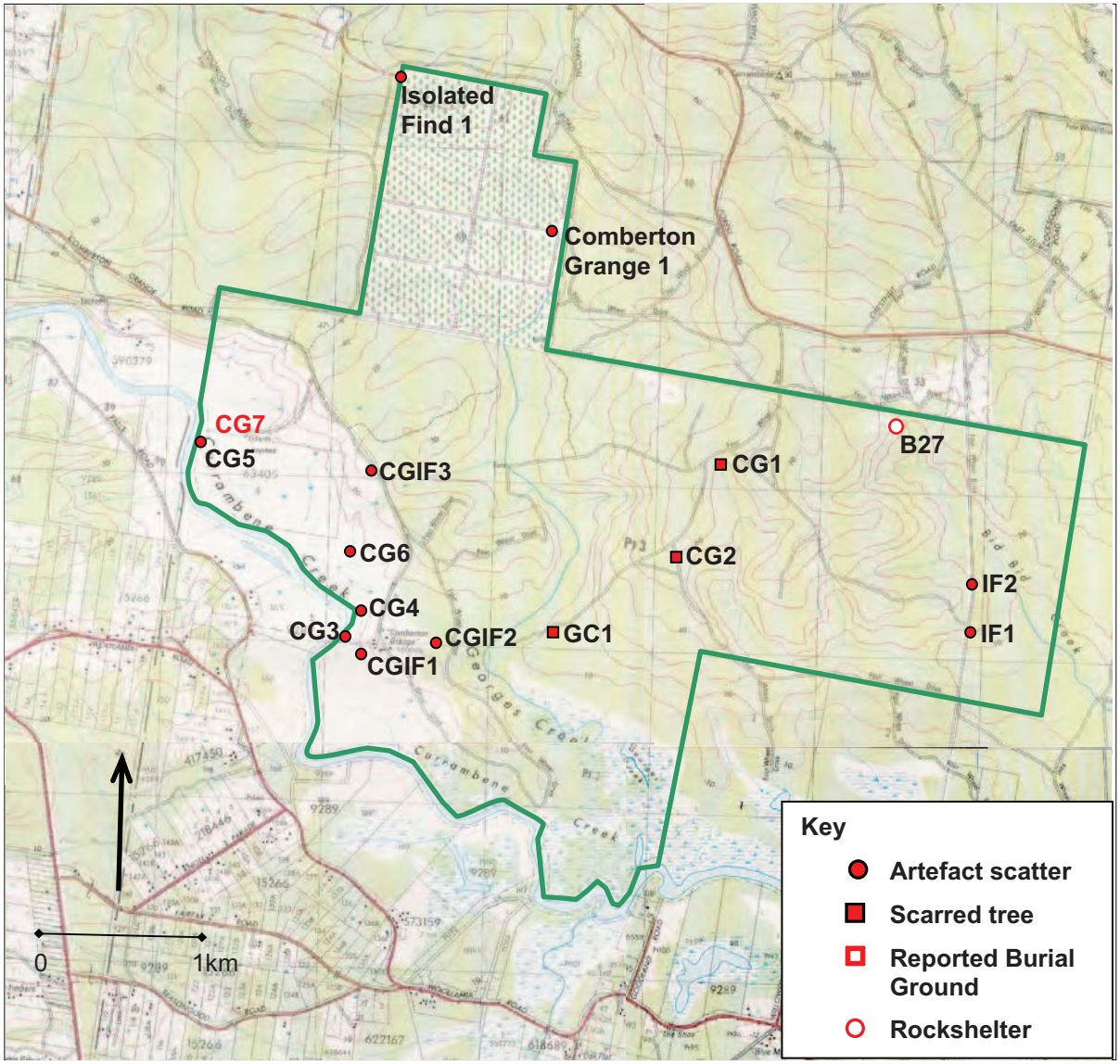

Figure 5.1 Map showing study area boundary and locations of previously recorded sites (Extracts from Nowra and Huskisson 1:25,000 topo maps 2nd Editions)

In addition to the listed sites several PADs have been previously identified in the present study area, they are described as (Figure 5.2):

- *PAD1:* This PAD comprises a locally elevated, distinct bank adjacent to creek flats associated with the eastern side of Georges Creek. The bank is situated at the start of the slope of a spurline. This micro-topographic unit is considered to have moderate archaeological potential (Navin & Officer 1998:17).

- *PAD3*: This PAD comprises an alluvial terrace remnant located on the northern side of Currambene Creek, and forming a small bench on the basal spurline slopes which extend southeast of the Comberton Grange homestead site. This terrace is considered to have low-moderate archaeological potential (Navin & Officer 1998:17).

- *PAD4*: This PAD comprises locally elevated basal slopes located adjacent to the southern bank of Georges Creek. This PAD is considered to have low-moderate archaeological potential (Navin & Officer 1998:17).

- *PAD5*: This PAD is situated on a spurline crest which forms the watershed between Georges Creek and Currambene Creek. The potential for subsurface artefactual material to occur in this

area is considered to be moderate to high, however based on sites in similar contexts elsewhere in the region, artefact densities are likely to be low. In addition, some artefactual material is likely to have been disturbed as a result of past land clearance (Navin & Officer 1998:17).

- *M1:* One area in the present study area, the levee bank 'M1' on the northern side of Currambene Creek, was identified as requiring monitoring as a precautionary measure to take account of the (limited) possibility of Aboriginal burials being present in this landform (Navin & Officer 1998)

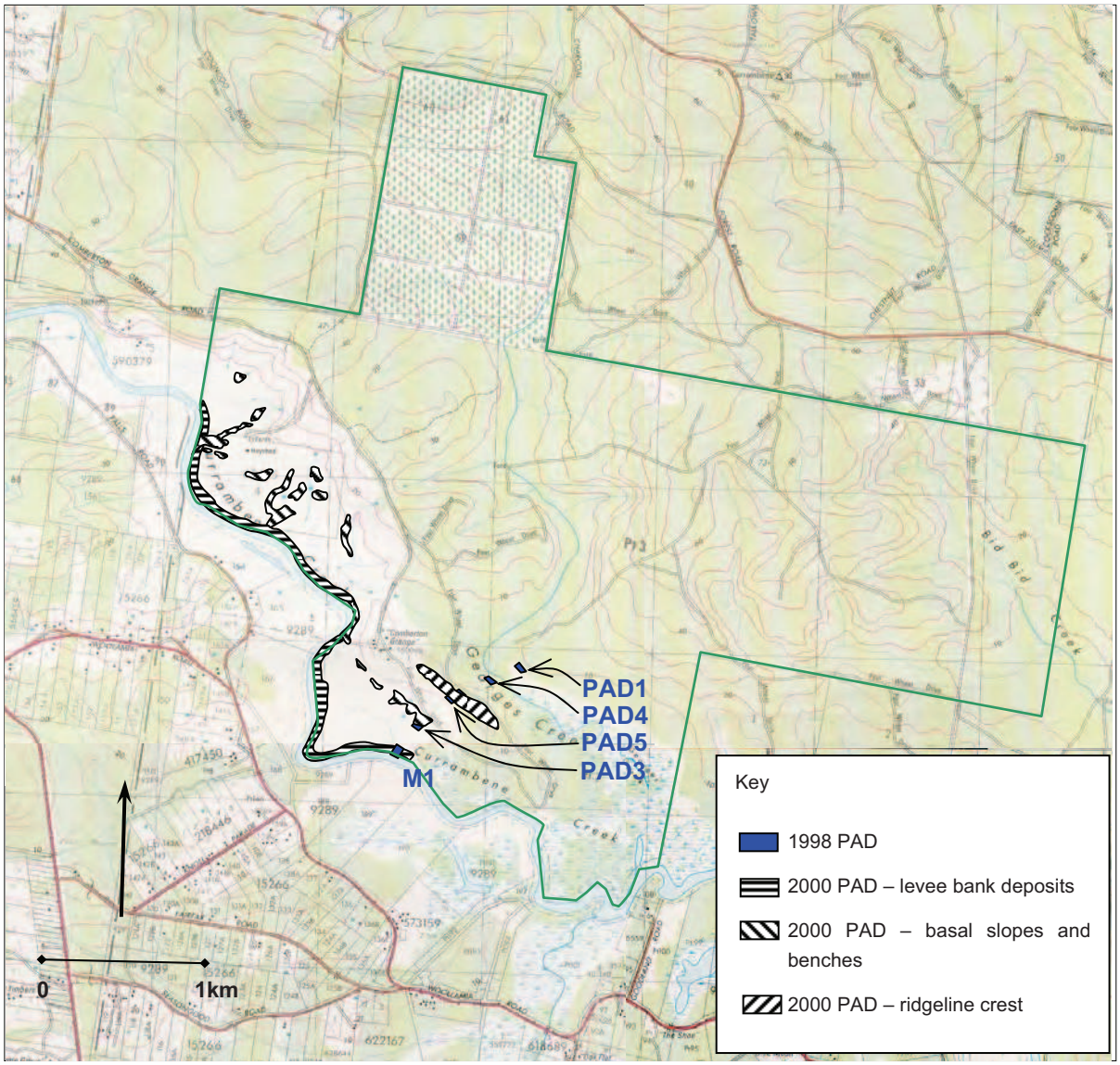

Figure 5.2 Map showing study area boundary and previously recorded PADs
(Extracts from Nowra and Huskisson 1:25,000 topo maps 2nd Editions)

- *Currambene Creek levee bank*: This landform consists of the locally elevated alluvial levee bank deposits which make up the majority of the northern bank of Currambene Creek within the study area. The levee sediments are comprised of sandy silts and clayey silts. The levee extends almost continuously for the length of the study area, interrupted only by the intersection of the creek bank with spurline basal slopes, where in each case surface artefacts were identified. The width of the elevated levee deposits extend up to 150 m away from the present bank. (Navin Officer Heritage Consultants 2000)

  Apart from a narrow margin of trees along the immediate creek bank, the levee is vegetated by dense pasture grasses. Ground surface visibility on this landform was limited to an incidence level of around 1%, with no evidence of artefactual stone or shell occurring within these exposures. Despite this, there is considered to be low to moderate potential for subsurface archaeological material within the levee landform. Site types may include low density stone artefacts, shell

midden and burials. The main criteria for identifying this landform zone are: its locally elevated and well drained context, its proximity to the resources of the Currambene Creek estuary, and its easily dug alluvial sediments. (Navin Officer Heritage Consultants 2000)

- *Basal slopes and benches*: This landform category consists of level and locally elevated ground situated in basal slope contexts adjacent to wetland basins or estuaries. Identified landforms include low spurline crests, low gradient spurline basal slopes, and benches which are probably remnant portions of an upper terrace, possibly of Pleistocene age. With the exception of those lands situated adjacent to Currambene Creek, these areas were characterised by poor levels of surface exposure incidence and visibility at the time of survey. All major ground exposures on landforms within this category contained varying densities of stone artefacts, three sites on the banks of Currambene Creek (CG3, CG4 & CG5), and one on a spurline adjacent to a wetland basin (CG6). (Navin Officer Heritage Consultants 2000)

  This category includes previously identified PAD3, situated on the proposed route between Woollamia and Snowwood Road (Navin & Officer 1998).

  These areas are considered to have moderate or moderate to high archaeological potential, with the most likely site types being subsurface distributions of lithic artefacts. The main criteria for identifying this landform zone are: its locally elevated and well-drained context, the level or low gradient character of the ground, and its proximity to the resources of the adjacent wetland basins. (Navin Officer Heritage Consultants 2000)

- *Ridgeline crest*: This category includes lesser disturbed sections of level ground on the crest and upper slopes of the watershed ridgeline between Currambene and Georges Creeks. Most of this ridgeline has been extensively disturbed as a result of vegetation clearance, multiple vehicle track creation and erosion, and agricultural development. As a result of these activities, the remaining far southeastern forested section is the only surviving area of archaeological potential. Sites within this topography are likely to be shallow, and consist of low density distributions of lithic artefacts. Consequently they are sensitive to dispersal or destruction from agricultural landsurface activities. Two isolated finds found elsewhere on ridgeline upper slopes within the study area appear to attest to this. (Navin Officer Heritage Consultants 2000)

  This category includes previously identified PAD3, situated on the proposed route between Woollamia and Snowwood Road (Navin & Officer 1998).

  This area is considered to have low, or low to moderate potential for surviving archaeological potential. The main criteria for identifying this landform zone are: its ridge or spurline context (and therefore possible use as an access-way or route), its relative proximity to the resources of the adjacent wetland basins and Currambene Creek estuary, and its relatively undisturbed ground surface. (Navin Officer Heritage Consultants 2000)

The study area falls within the *Jervis Bay and Hinterland* area which is listed on the Register of the National Estate, Australian Heritage Commission (AHC) # 81/11/102/17.

The study area also falls within the *Jervis Bay Landscape Conservation Area*, which is listed on the National Trust (NSW) Register.

5.7 Predictive Aboriginal Archaeology Statement

Extensive archaeological research throughout the NSW south coast region has established a set of generalised criteria for predicting the location of Aboriginal sites within the landforms represented in coastal and immediate hinterland areas (Lampert 1971 a & b; Lampert and Sanders 1973; Sullivan 1976, 1983; Byrne 1983; Cane 1987; Navin 1991a and b; Clarke and Kuskie 2006).

Clarke and Kuskie (2006) undertook a study of 1650 ha of conservation reserves within a 228 square kilometre area of the Lower Shoalhaven, around Nowra and Bomaderry. Their study involved a review of known archaeological sites in the area as well as development of a spatial model based on environmental variables and ground-truthing field survey.

The results of that study indicated that the Lower Shoalhaven contained two main resource zones: primary and secondary. Primary resource zones were identified as landforms in close proximity to the Shoalhaven and Crookhaven Rivers, while secondary resource zones were identified as landforms in close proximity to the higher order creeks. The remainder of the area was identified as corresponding to land used for hunting, gathering and transitory movement. Such use was described as “sporadic and very short in duration” (Clarke and Kuskie 2006: ii).

In contrast, the primary resource zones were acknowledged as areas in which an array of activities were likely to take place ranging from congregations of large groups of people through to transitory movement. Clarke and Kuskie (2006: ii) suggest that “Occupation is likely to have been regular and potentially longer in duration in the primary zones”. Within the secondary resource zones, there was an identified high probability of “nuclear/extended family base camps, camping by small hunting and/or gathering parties” (Clarke and Kuskie 2006: ii) as well as the associated hunting, gathering and transitory movement. The pattern of such occupation was described as “likely to have been sporadic and relatively short in duration” (Clarke and Kuskie 2006: ii).

Byrne (1982:12-13) suggested that ridgelines provided access routes through the rugged hinterland. Flat areas and saddles were more favoured as site locations for longer term or repeated visits than slopes of more than 15°. Closer to the coast, where topographic slopes become more gradual, some drainage lines may have afforded easier access routes, and sites frequently occur on well-drained elevated locations adjacent to wetlands and alluvial flats. In previous studies (Navin 1991, 1993; Navin & Officer 1998, Navin Officer Heritage Consultants 2000) the banks of Currambene Creek have been identified as areas of high archaeological potential and the adjacent basal slopes have been identified as areas of moderate archaeological potential.

When South Coast regional trends are combined with local site distribution characteristics identified from local area surveys (Navin 1989, 1991, 1993a), the following set of archaeological site type and location criteria can be proposed for the study area.

- Open artefact scatters (campsites) are most likely to occur on level or low gradient, well-drained ground, either adjacent to sources of freshwater and wetlands, along the crests of ridgelines, or on south facing slopes.

- Ridge and spurlines that afford effective through-access across, and relative to, the surrounding landscape will tend to contain more and larger sites.

- 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.

- Estuarine midden sites are likely to occur close to the estuarine environment, on locally elevated ground not subject to regular inundation.

- Scarred trees may occur anywhere old-growth trees remain, either dead or alive, and as paddock isolates or in forest contexts.

- 'Contact' Sites are sites that contain evidence of Aboriginal occupation during the period of early European occupation in a local area. The term 'contact' refers to the often poorly documented period when traditional Aboriginal society made initial social and economic contact with European society. This period is often characterised by increasingly rapid changes in Aboriginal social, economic and occupational patterns in response to European incursion. Evidence of this period of 'contact' could potentially be Aboriginal flaked glass, burials with historic grave goods or markers, and debris from 'fringe camps' where Aborigines who were employed by, or who traded with, the white community may have lived or camped. The most likely location for contact period Aboriginal occupation sites would be camp sites adjacent to permanent water, and located away from the focus of European town occupation or private landuse.

  ‘Bilong’, the site of an Aboriginal fringe camp and probable contact site is located on Currambene Creek, further downstream from the present study area.

- Burial sites are a rare site type and are generally found in landforms characterised by a relatively deep profile of soft sediments such as aeolian sand and alluvium. Burials may also occur in the deposits of occupation sites such as middens and rock shelters. A well-documented Aboriginal burial ground is located on Currambene Creek at 'Bilong', further downstream from the present study area.

- Quarry and lithic procurement sites are associated with natural outcrops or accumulations of suitable rock types such as fine-grained igneous rocks, quartzites and silcretes. Exposures of silcrete within coastal cliffs, and creekline and beach cobble deposits are characteristic quarry site locations on the south coast.

- The location of sites such as bora grounds and stone arrangements are generally related to ceremonial and cosmological considerations and can be difficult to predict based only on archaeological data.

- The survival of open sites dating to the Pleistocene and early Holocene appears to be rare. Those which have been located are characterised by a rapid sedimentary regime and subsequent protection from erosion by burial.

6. RESULTS

6.1 Aboriginal Sites

A total of 16 sites have previously been identified within the study area for the Shaolin Temple and Academy. These previous recordings comprise nine sites that are listed on the AHIMS database and seven sites that are documented in previous reports but which did not appear on the AHIMS site search (refer to Section 5). There are also a series of PADs that have been identified across sections of ridge crest, basal slopes and levee bank deposits across the southwest of the study area.

In order to maintain consistency with previous survey nomenclature in the local Comberton Grange area (Navin & Officer 1998, Navin Officer Heritage Consultants 2000), sites located in this survey have been numbered consecutively, continuing on from the 'Comberton Grange' numbering sequence employed in previous surveys. Site numbers therefore commence at Comberton Grange 8 (CG8) and Comberton Grange Isolated Find 4 (CGIF4).

In the course of field survey for this project an additional five sites were identified, these consist of four isolated finds (CGIF4, CGIF5, CGIF6 and CGIF7) and one artefact scatter (CG8). An area of PAD was also identified in association with CG8. Additional notes were also made regarding the previously recorded areas of PAD. For the purposes of this study, the previously identified PADs are dealt with as a series of four areas of archaeological sensitivity (CGSA1 – CGSA4). An archaeologically sensitive area consists of a landscape portion in which there is an assessed potential for potential archaeological deposits to occur. As such, a sensitive area recording is more general in nature than a PAD, and likely to relate to a larger landscape area.

The location of the sites and areas of archaeological sensitivity is shown in Figure 6.3, which also shows the location of all previously identified sites within the study area.

Every effort was made to revisit and reassess the previously recorded sites, however due to time constraints, changes in visibility, and the impacts from bushfires and other forms of disturbance, not all of the previous recordings could be relocated. While it was not possible within the scope of this project to re-locate any of the previously recorded isolated finds or scarred trees, the following sites were successfully re-located and additional notes taken regarding site condition and significance: B27, CG4 and CG5. In addition, the general location of the reported burial site (CG7) was also revisited.

6.1.1 New Site Recordings

Comberton Grange 8 (CG8) and associated PAD

MGA Reference: 284168.6126217 – 284190.6126177 (GDA)

This recording comprises a scatter of at least fourteen artefacts visible along a section of fire trail leading down to Georges Creek (Figures 6.1 and 6.2). The site is situated less than 100 m from Georges Creek, it is on a terminal spur crest with a gentle gradient and northeasterly aspect. The artefacts are eroding out of a sandy loam exposed along a four wheel drive track that has cut in approximately 5-10 cm into the soil profile; it is estimated that the total depth of topsoil across the crest is in the vicinity of 20 cm.

The track on which the artefacts were located extends for approximately 120 m across the spur crest and is 2 m wide on average. Ground surface exposure along the track was 80%, the average visibility within areas of exposed earth was 50%, while visibility off the track was effectively nil due to the extent of vegetation cover.

A sample of ten artefacts was recorded at this site. Details of these artefacts are as follows:

- red silcrete flaked piece, 29 x 25 x 9 mm
- brown silcrete flake, 48 x 31 x 8 mm

- grey silcrete flaked piece, 25 x 28 x 15 mm
- grey silcrete medial flake portion, 18 x 27 x 5 mm
- grey silcrete flake, 36 x 17 x 6 mm
- grey silcrete backed blade, 25 x 8 x 6 mm
- red chert proximal flake portion, 8 x 20 x 3 mm
- grey silcrete backed blade, 22 x 7 x 5 mm
- red silcrete flake, 30 x 18 x 3 mm
- grey silcrete distal flake portion, 25 x 20 x 7 mm

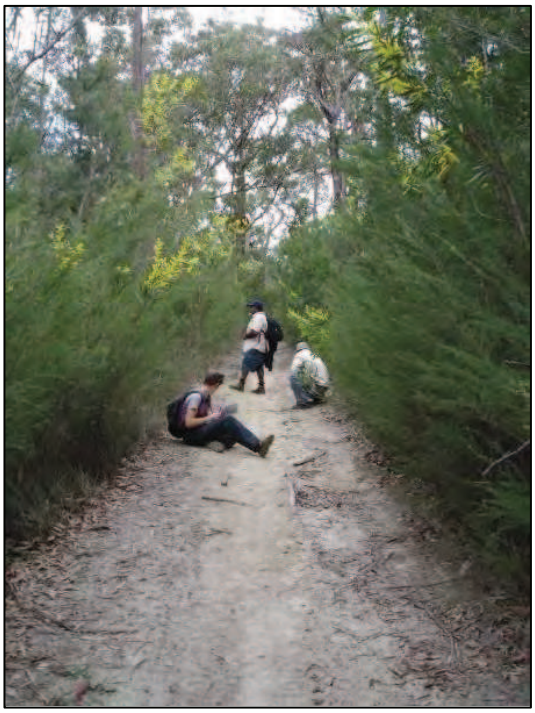

Figure 6.1 Artefact scatter CG8, looking northeast across the main concentration of artefacts.

Figure 6.2 Northern extent of the visible artefact scatter at CG8, looking southwest.

While the subsurface potential along the track itself is relatively low, the subsurface potential of the broader area is considered to be moderate. This assessment is based on the fact that:

- the track itself is a disturbed locale in which up to half of the potential archaeological deposit is missing;
- the broader area however corresponds to an elevated landform with a gentle gradient in close proximity to a relatively reliable fresh water source;
- the broader area has not been subject to extensive prior disturbance, the main impact across the crest has been the original clearance of vegetation; and
- there appears to be potential for a deposit with a depth of at least 20 cm.

CG8 is situated on a relatively undisturbed and elevated landform, in a reasonably resource rich zone, and in close proximity to a source of fresh water. On this basis an area of potential archaeological deposit (PAD) has been identified in association with this recording. The identified area of PAD corresponds to the terminal spur crest bordering Georges Creek. It measures approximately 150 m southwest to northeast and 120 m northwest to southeast. The recorded artefact scatter is situated towards the northeastern end (Figure 6.1).

Taking into consideration the nature of the landform, the topographical context and the extent of prior impacts, it is predicted that the PAD associated with CG8 has a high potential to contain a low to moderate density of artefacts, and low to moderate potential for *in situ* archaeological material. The overall archaeological potential at CG8 is moderate.

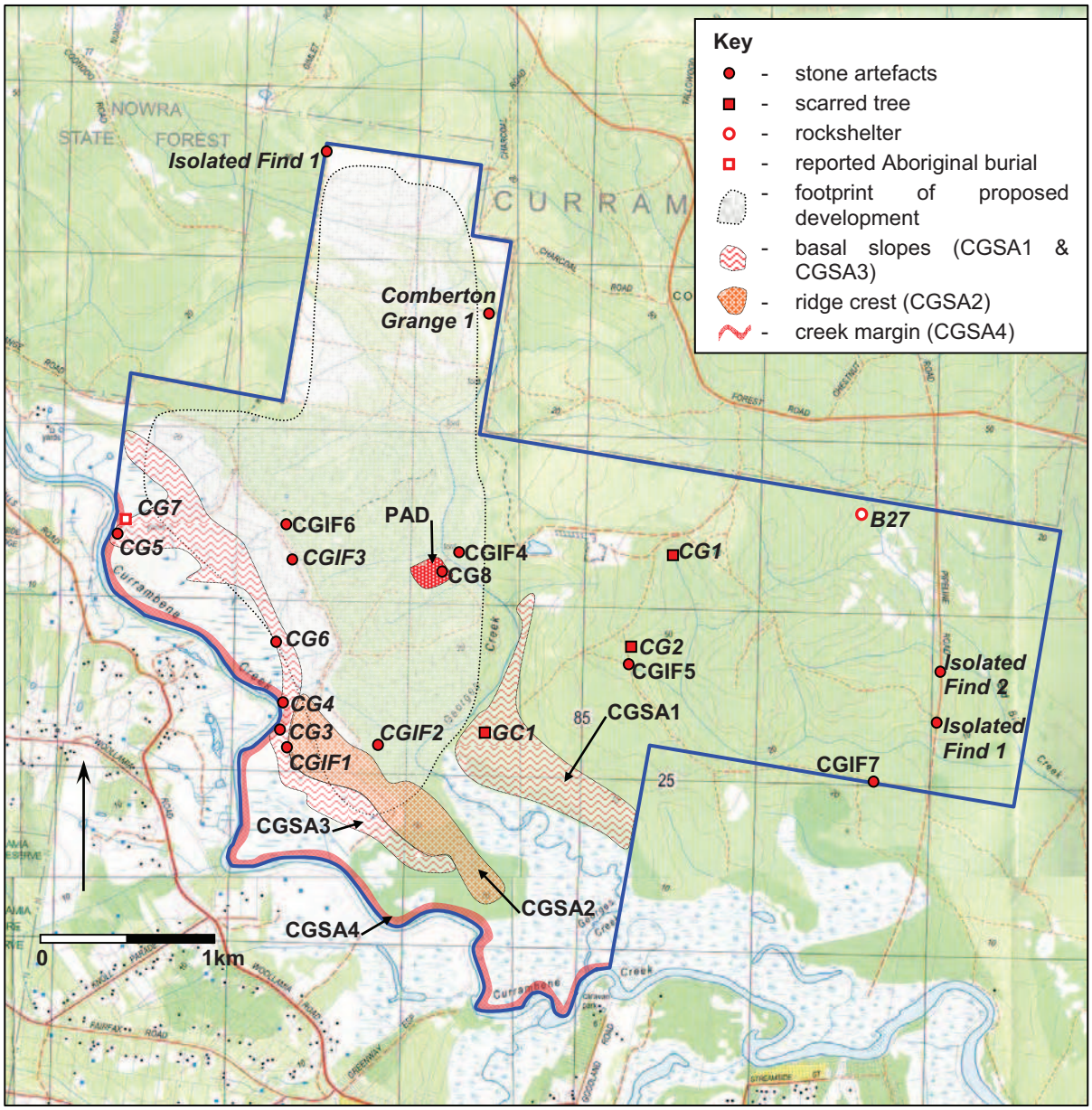

Figure 6.3 Location of Aboriginal sites, areas of PAD and archaeologically sensitive areas within the study area (Extracts from Nowra and Huskisson 3rd Edition 1:25,000 topographic maps). *Italics* indicate previously recorded sites.

Comberton Grange Isolated Find 4 (CGIF4)

MGA Reference: 284329.6126323 (GDA)

This recording consists of a single stone artefact, exposed along a west facing slope bordering Georges Creek (Figure 6.3 and 6.4). The gradient in this location is gentle to moderate; although the ground becomes steeper further to the west, adjacent the creek margins. The artefact was exposed on a heavily eroded section of fire trail. The soil in this location is a skeletal sandy loam (<10 cm) over sandy clay and sandstone bedrock.

The vehicle track is about 2 m wide and extends for approximately 250 m from the creek margin up the slope. Ground exposure along the track is 80% and visibility within this exposure averages 60%. Due to the extent of vegetation off the track, the surrounding visibility is effectively nil.

The subsurface archaeological potential of the area is considered to be low. This assessment is based on the fact that:

- the track itself is a disturbed locale in which the majority of deposit is missing;
- the soil deposits across the landform are skeletal in nature; and
- the landform type and gradient are not ideal for activities such as camping that are likely to result in the formation of substantial archaeological deposits.

Artefact description:

– grey silcrete proximal flake portion, 15 x 13 x 3 mm

Figure 6.4 Isolated Find CGIF4, looking east.

Figure 6.5 Isolated Find CGIF5, looking east.

Comberton Grange Isolated Find 5 (CGIF5)

MGA Reference: 285260.6125674 (GDA)

This recording comprises a single stone artefact located on a gentle gradient spur crest with an open to southerly aspect (Figure 6.3). The artefact was exposed at the intersection of two vehicular tracks that appear to currently be used as recreational trails for motorbikes (Figure 6.5). The soil in this location is a relatively shallow sandy loam (c. 10-15 cm) with a high gravel content.

The exposure in which the artefact is located measures approximately 8 m x 5 m. Ground exposure in this area is 90% and visibility within the exposure averages 60%. There is effectively no visibility off the track due to the extent of vegetation.

The subsurface archaeological potential of the area is considered to be low. This assessment is based on the fact that:

- the track itself is a disturbed locale;
- the soil deposits across the adjacent areas of crest and upper slopes are relatively shallow; and
- the site is situated over 500 m from the nearest reliable source of fresh water and as such additional artefacts are likely to be present as a low density distribution.

Artefact description:

– grey silcrete flaked piece/exhausted core with evidence of usewear and possible retouch along one margin, 32 x 26 x 12 mm

Comberton Grange Isolated Find 6 (CGIF6)

MGA Reference: 283279.6126427 (GDA)

This recording consists of a single stone artefact on a low gradient ridge crest with a southwesterly aspect in the western half of the study area (Figure 6.3 and 6.6). The artefact was exposed on an informal vehicle track that extends up to the northeast from the main access track. The soil in this location is a relatively shallow sandy loam (c. 10-15 cm).

Ground exposure incidence in this locale averages 10% and visibility within these exposures is 60%. The section of exposed track in which the artefact was situated is 5 m x 2 m. Surface visibility across adjacent areas ranges from 0% off the track to 5% along the remainder of the track.

The subsurface archaeological potential of the area is considered to be low. This assessment is based on the fact that:

- the track itself is a disturbed locale;
- the broader area has been subject to moderate levels of disturbance from vegetation clearance, and various forms of vehicular traffic;
- the soil deposits across the adjacent areas of crest and upper slopes are relatively shallow; and
- the site is situated approximately 1 km from the nearest reliable source of fresh water (Georges Creek) and over 500 m from the estuarine resource zone along Currambene Creek, as such additional artefacts are likely to be present as a low density distribution.

Artefact description:

– grey silcrete flake, 12 x 15 x 2 mm

Figure 6.6 Isolated Find CGIF6, looking southwest.

Figure 6.7 Isolated Find CGIF7, looking north.

Comberton Grange Isolated Find 7 (CGIF7)

MGA Reference: 286692.6125008 (GDA)

This recording consists of a single stone artefact, exposed on a gentle gradient northeast facing slope to the west of the Pipeline Road (Figure 6.3 and 6.7). The artefact was exposed on a fire trail that appears to largely be used by motorbikes. The soil in this location is a loamy sand of indeterminate depth. The landform as a whole is eroding and aggrading and the trail is clearly subject to slopewash.

The vehicle track is about 3 m wide and extends for approximately 200 m along the boundary of the study area. Ground exposure along the track is 80% and visibility within this exposure averages 90%. Due to the extent of vegetation off the track the surrounding visibility is effectively nil.

The subsurface archaeological potential of the area is considered to be low. This assessment is based on:

- the absence of artefacts in good ground surface exposures along adjacent sections of the track;
- the fact that the track itself is a disturbed locale that is subject to active erosion processes;
- the absence of a permanent and nearby natural freshwater source.

Artefact description:

- grey silcrete flake, 23 x 11 x 7 mm

6.1.2 Additional Information for Previous Recordings

Beecroft 27 (B27)

MGA Reference: 286616.6126592 (GDA)

This recording is located on the western side of the headwaters of Bid Bid Creek (Figure 6.3). The site consists of a rockshelter with sparse cultural debris on the surface and potential archaeological deposit that was previously recorded by Cane (1988: 11-12). At the time of initial recording, two stone artefacts were observed on the floor of the shelter, along with a sparse scatter of small fragments of shell and bone.

The site was visited as a component of survey for the current project. While no artefacts were visible on the floor at the time of recording, a sparse scatter of small bone fragments and charcoal was observed.

The rockshelter is seven metres long and three metres wide (Cane 1988), and has a southeasterly aspect (Figure 6.8). It is part of a fairly large sandstone outcrop with an escarpment that is approximately 150 m long and three to five metres high. The main useable floor space in the shelter is at the northern end, where there is a silty sand deposit across an area measuring 4.5 x 1.8 m (Figure 6.9). The floor of the shelter is level and appears relatively undisturbed; the depth of floor deposit varies from just a few centimetres at the back of the shelter to a depth of around 1 m towards the entrance, where the ground then begins to drop away steeply to the creek below. The ceiling height within the shelter is relatively low; it varies from 90 cm along the drip line to approximately 70 cm across the main floor space.

There is no evidence of artwork within the shelter.

Figure 6.8 General view of the entrance to B27, looking northwest.

Figure 6.9 Floor of the B27 Rockshelter.

Comberton Grange 4 (CG4)

MGA Reference: 283294. 6125376 (GDA)

A scatter of two stone artefacts was located by Navin Officer Heritage Consultants (2000: 23) on the northern side of spurline basal slopes adjacent to Currambene Creek. The artefacts were visible in an extensive ground surface exposure about 100 x 80 m, caused by sheet erosion, rilling and stock treadage. The incidence of ground surface exposures was around 60%, with an average visibility of about 80%. At the time of recording it was surmised that the site may represent a low density continuation (ie the northern end) of site CG3.

In the course of survey for the current project this site was revisited and a scatter of at least ten silcrete and chert artefacts were observed over an area of exposure measuring 30 x 20 m. Exposure incidence in this locality was 80% and visibility within exposures was 20%.

The presence of additional artefacts at this location indicates that the site is indeed larger than what was initially identified. This tends to confirm the conclusion that the artefacts in this area are actually a continuation of the site CG3, recorded in a similar topographic context less than 100 m to the southeast.

There is high potential for subsurface archaeological deposit at this site, although it is possible that the integrity of such deposits at CG4 may have been compromised by a nearby historical rubbish disposal area. Further details regarding subsurface potential along the basal slopes in this area is discussed below with regard to the archaeologically sensitive area CGSA3.

Comberton Grange 5 (CG5)

MGA Reference: 282299.6126419 (GDA)

discontinuous scatter of over sixteen stone artefacts located on the locally elevated banks of Currambene Creek where a low spurline descends to the creek corridor. Artefacts were exposed for a distance of approximately 60 m, in a relatively narrow area of cattle treadage and bank erosion (up to four metres wide). The incidence of ground surface exposures within this area was around 20%, with an average visibility of around 70%. The highest artefact density was noted on the higher parts of the bank (ie on the spurline crest) where the bank is approximately 3.5 m high. The artefacts appeared to be present in the upper soil horizon only. Raw materials present included silcrete, quartz, chert and chalcedony (Navin Officer Heritage Consultants 2000: 24).

This site was revisited during an inspection of the reported Aboriginal burial site (CG7). Similar visibility was encountered along the margins of Currambene Creek and a total of thirteen artefacts were observed. Raw materials present included silcrete, quartz, quartzite and volcanics. Artefact types consisted of flakes and flake portions, flaked pieces, a multiplatform core and a broken hammerstone.

As was noted during the initial recording of this site, the location of the artefacts appears to correspond with a micro-topographic feature in the form of a low and gently inclined terminal spur crest.

Given the depth of soils in this location and the elevated nature of the site's topographic context, the subsurface potential in this area is assessed to be high. Further details regarding this subsurface potential are discussed below with regard to the archaeologically sensitive area CGSA3.

Figure 6.10 Artefact scatter CG5, looking north.

Figure 6.11 General location of artefact scatter CG5, looking south.

Comberton Grange 7 (CG7) – Report Aboriginal Burial

MGA Reference: 282374.6126430(GDA)

This recording relates to the identification of a potential burial area for which there is various oral history references (Navin Officer Heritage Consultants 2000: 23). It is unclear, on the basis of the available information, whether or not the burial(s) reported to have been located in this area are Aboriginal or not. At the time of the initial site recording in 2000 it was noted that there was no evidence apparent on the surface to indicate the presence, or otherwise, of burials.

The general location of this site was revisited during survey work undertaken for the current project. Gerald Carberry (JLALC) and Elaine Sturgeon (WBAC) both participated in this component of the survey and, the potential for such a site was discussed with them.

Careful examination was made of the area including potential surface features, areas of ground exposure and inspection of all creek banks in the area. As was the case during survey in 2000, no obvious surface indicators for such a site were observed. It was however noted that there are very deep (c. 3 m) alluvial deposits in this area that display a certain degree of potential for such a site type. This potential is discussed in more detail below with regard to the archaeologically sensitive area CGSA4.

Comberton Grange Sensitive Area 1 (CGSA1)

This recording consists of an archaeologically sensitive area that has been identified on the basis of landform type and topographic context. The area corresponds to low gradient basal slopes on the eastern side of Georges Creek (Figure 6.3). The identified area extends for approximately 2 km along Georges Creek and is 100 – 300 m wide. It has a west to southwesterly aspect and consists of locally elevated and well drained land on the margins of the valley floor and wetlands along the lower reaches of Georges Creek. CGSA1 encompasses the previously identified PAD1 (Navin and Officer 1998).

The identified sensitive area is thickly vegetated with regenerating bushland (Figure 6.12). Visibility along survey transects in this area was effectively nil due to the density of grasses, shrubs and leaf litter. The depth of deposit in this area is uncertain, although it was noted that in some sections the drop from the basal slopes to the valley floor was in the order of 3 - 5 m, which could be indicative of relatively deep alluvial deposits.

Previous impacts in this area are limited. The main forms of prior disturbance are vegetation clearance and creation and use of a fire trail that is now completely overgrown. It is likely that any archaeological deposits in this area will be relatively undisturbed.

This section of Georges Creek would have provided a fairly reliable fresh water source for Aboriginal inhabitants in the local area. Furthermore, the wetlands associated with the confluence of Georges and Currambene Creeks would have been a relatively rich resource zone for the purposes of hunting and gathering. This suggests that the basal slopes within CGSA1 may have been targeted for activities such as camping.

Given the landscape context of CGSA1 and the apparent potential for relatively undisturbed archaeological deposits, this area is assessed to be of moderate to high archaeological potential.

Figure 6.12 Example of vegetation growth over CGSA1, looking northwest.

Figure 6.13 General view across the central saddle within CGSA2, looking southeast.

Comberton Grange Sensitive Area 2 (CGSA2)

This recording comprises gently undulating ridge crest and associated saddle, spur crest and upper slope contexts, along the watershed between Currambene and Georges Creek (Figure 6.3). The area identified as being sensitive extends for about 1600 m along the ridge and averages 200- 300 m in width. It encompasses the previously identified PADs (Navin and Officer 1998, Navin Officer Heritage Consultants 2000).

CGSA2 is generally of low gradient and has an open aspect (Figure 6.13). Vegetation at the western end is dominated by open pastureland, while casuarinas are dominant at the eastern end. Visibility across this area was very low. The areas of best visibility were encountered along an informal vehicle track, where exposure incidence averaged 5% and visibility within exposures was 15%. The soil in this area is a humic sandy loam of indeterminate depth.

Previous disturbance across the ridge crest varies from moderate to high levels of impact at the western end where the remains of the homestead complex are located, to low to moderate along the sections further to the east.

The area covered by this recording is situated at the confluence of a variety of resource zones including the woodlands to the north, the estuarine and wetland zones to the south and the east and the fresh water source of Georges Creek a few hundred metres to the northeast. An area such as this may have been the focus of activities such as camping, although the distance between CGSA2 and Georges Creek would suggest that artefact densities are likely to be low to moderate.

Taking into consideration the landscape context and the nature of soils in this location, CGSA2 is assessed to be of moderate archaeological potential.

Figure 6.14 General view across the central portion of CGSA3, where it overlaps with the proposed development footprint, looking south.

Figure 6.15 General view across the northern section of CGSA3, where it overlaps with the proposed development footprint, looking southwest.

Comberton Grange Sensitive Area 3 (CGSA3)

The southwest facing basal slopes adjacent the wetlands and estuary of Currambene Creek extend for over 3 km through the study area (Figure 6.3). The benches, spurline crests and low gradient slopes within this basal slope context have previously been identified as areas of PAD (Navin and Officer 1998, Navin Officer Heritage Consultants 2000).

CGSA3 encompasses the entire basal slope area inclusive of all areas of PAD that had previously been identified. The sensitive area comprises pastureland above the wetlands (Figures 6.14 and 6.15). The main forms of previous disturbance in this zone are vegetation clearance, fencing and grazing. Soils across CGSA4 comprise silty to sandy loams and clays with depth increasing along the lower areas bordering the wetlands and estuary.

Visibility across this section of the study area was very limited, although it is worth noting that during this survey and the study undertaken in 2000, those areas that afforded good ground exposure were found to contain surface artefacts (CG3, CG4, CG5 and CG6).

Taking into consideration the broader landscape context, it is likely that the basal slopes and in particular the low spurlines within CGSA3, would have formed the primary access routes between the woodlands to the north and the wetlands and estuaries to the south. Such areas are also likely to have been used for activities such as camping. While artefact densities will vary according to microtopographic features, it is expected that densities will generally be moderate.

The area encompassed by CGSA3 is assessed to be of moderate to high archaeological potential on the basis of landform type, gradient and landscape context.

Comberton Grange Sensitive Area 4 (CGSA4)

This recording comprises the strip of levee bank along Currambene Creek which was previously identified by Navin and Officer (1998: 26) as an area of PAD. The sensitive area essentially extends along the entire length of Currambene Creek (Figure 6.3), although it is interrupted in two places by spurline basal slopes where artefacts have been recorded (CG3, CG4 and CG5).

CGSA 4 is situated along a relatively rich estuarine environment, which means that there is potential for site types such as low density artefacts, shell middens and burials. Furthermore, soil deposits along the creek banks are deep and appear to be relatively undisturbed.

The archaeological potential of CGSA 4 is assessed to be moderate to high.

6.1.3 Summary of Other Previously Recorded Sites

Georges Creek 1 (GC1)

AMG Reference: 28435.612456 Nowra 1:25000 topo map 2nd Ed.

This recording is a scarred tree that was identified in 1998 as possibly being of Aboriginal origin (Navin and Officer 1998: 25).

> The scar is on a mature Eucalypt (possibly E. *pilularus* - Blackbutt) which is generally in good condition although some lower and upper limbs are missing. The original exposed scar surface has been burnt.

This site was not relocated during the current survey. The area in which the site was identified has been subject to bushfire since the time of recording. It is unclear whether the tree is still standing.

Comberton Grange 1 (CG1):

AMG Reference: 28538.612616 Nowra 1:25000 topo map 2nd Ed.

This recording is a scarred tree that was identified in 1998 as possibly being of Aboriginal origin (Navin and Officer 1998: 24).

> The scar is on a mature rough barked Angophera which is generally in good condition although some major canopy limbs are missing. The very large scar extends to the ground and has irregular edges except for the top end. The original exposed scar surface has been burnt and there is evidence of borer and wood rot. Seventy percent of the scar surface remains.

This site was not relocated during the current survey. The area in which the site was identified has been subject to bushfire since the time of recording. It is unclear whether the tree is still standing.

Comberton Grange 2 (CG2):

AMG Reference: 28315.612557 Nowra 1:25000 topo map 2nd Ed.

This recording is a scarred tree that was identified in 1998 as possibly being of Aboriginal origin (Navin and Officer 1998: 25).

> The scar is on a mature Eucalypt (possibly E. pilularus - Blackbutt) which is generally in good condition although some major crown limbs are missing and the tree exhibits some dieback. The scar extends to the ground and is angled up the tree, following the natural growth pattern of the tree. The scar surface has been burnt. Seventy percent of the scar surface remains

This site was not relocated during the current survey. The area in which the site was identified has been subject to a major bushfire since the time of recording. It is unclear whether the tree is still extant.

Comberton Grange 3 (CG3):

AMG Reference: 28313.612502 Nowra 1:25000 topo map 2nd Ed.

This recording comprises a scatter of over 100 stone artefacts, situated on locally elevated bedrock-based basal slopes adjacent to Currambene Creek. Artefacts were exposed in an area of cattle tracks and treadage extending along the edge of the creek bank and inland along basal slopes adjacent to a wetland basin. The extent of the artefact distribution was approximately 30 x 70 m, with the ground surface exposure extending beyond these limits along the bank in an upstream direction. The average artefact density was around one artefact per two square metres, with the highest density of around three artefacts per square metre occurring at the downstream and lower slope end, of the scatter. The exposure incidence in the area was 20%, with visibility in exposures around 90%. Raw materials included silcrete quartzite, quartz and chert (in order of decreasing frequency). Subsurface artefactual material is likely to be associated with this site (Navin Officer Heritage Consultants 2000: 23). Further consideration of the archaeological potential associated with this site is discussed above with regard to CGSA3.

Comberton Grange 6 (CG6)

AMG Reference: 28314.612557 Nowra 1:25000 topo map 2nd Ed.

This recording comprises a scatter of four stone artefacts located nine metres apart on an eroded portion of an unsurfaced vehicle track which is situated on the basal slopes of the terminal end of a narrow spurline. The exposure occurs in an area of 20 x 30 m and had an exposure incidence of 25% and average visibility value of 65%. Subsurface artefactual material is likely to be associated with this site (Navin Officer Heritage Consultants 2000: 24).

Visibility within this portion of the study area was very poor. The vehicle track described above was not relocated and as such the site was not visited during the current survey program. The general location of this site is however dealt with as a component of the archaeologically sensitive area CGSA3.

Comberton Grange Isolated Find 1 (CGIF1)

AMG Reference: 28227.612624 Nowra 1:25000 topo map 2nd Ed.

This recording consists of a broken fragment of grindstone situated on sloping ground at the interface between basal slopes and the wetland basin. The find was located on a small cattle treadage exposure about 1 x 1.5 m. Exposure incidence within the area was 30%, visibility in exposures was 75%. Due to the sloping nature of the topography it is unlikely that this find is associated with a significant density of other artefactual material. It may represent a disturbed remnant from a former site on the adjacent spurline crest, or simply be an isolated discard (Navin Officer Heritage Consultants 2000: 25).

Comberton Grange Isolated Find 2 (CGIF2)

AMG Reference: 28365.612500 Nowra 1:25000 topo map 2nd Ed.

A dark brown silicified wood, broad platform flake (40 x 24 x 12 mm), with the distal end missing, was located on low gradient upper spurline slopes, within a 20 x 8 m ground exposure formed by stock and animal tracks. Exposure incidence in the area was 40%, visibility in exposures was 85%. Due to the significant surface exposure around this find, and the relatively shallow soil context it was considered unlikely that this find is associated with a significant density of other artefactual material. It may represent a disturbed remnant from a former site on the adjacent ridgeline crest, or simply be an isolated discard (Navin Officer Heritage Consultants 2000: 26).

Comberton Grange Isolated Find IF3 (CGIF3)

AMG: 28324.612605 Nowra 1:25000 topo map 2nd Ed.

This recording consists of a grey silcrete flake (13 x 8 x 3 mm), which was situated on low gradient upper ridge slopes in a sheet erosion exposure c.8 x 5 m. Exposure incidence in the area was 25%, visibility in exposures was 85%.Due to the degree of surface exposure around this find it was considered unlikely that this find is associated with a significant density of other artefactual material. It may represent a disturbed remnant from a former site, or simply be an isolated discard (Navin Officer Heritage Consultants 2000: 26).

Comberton Grange 1 – Former Pine Plantation

AMG: 28431.612741 Nowra 1:25000 topo map 2nd Ed.

A small artefact scatter, comprising one silcrete flake and one chert flake, was recorded on a fire trail 30 m west of Georges Creek (Navin 1993a: 19), in the former pine plantation in the north of the study area. It was noted at the time of initial recording that the area had been subject to extensive mechanical disturbance and that the provenance of the artefacts was unclear.

The area in which this recording is located was carefully inspected during the current survey. The extent of vegetation cover has increased considerably since the time of original recording; as such visibility in this area was quite limited. The artefacts were not relocated during this survey.

Isolated Find 1 – Former Pine Plantation

AMG: 28335.612840 Nowra 1:25000 topo map 2nd Ed.

A quartz core was recorded on a fire trail in the far northwest corner of the study area during survey for the St Georges Basin/Jervis Bay effluent management scheme (Navin 1993a: 19). The artefact was recorded in a disturbed area that was used as the main access point to the old pine plantation. When this area was inspected during the present survey, it was noted that the area had been subject to recent mechanical disturbance and impacts associated with traffic along the trails.

The artefact was not relocated during this survey.

Isolated Find 1 – Bid Bid Creek

AMG: 28691.612511 Nowra 1:25000 topo map 2nd Ed.

This recording consists of a pink silcrete flaked piece, located on an unsealed road on a south facing spur slope adjacent a tributary of Bid Bid Creek. At the time of initial recording it was also noted that sparse fragments of shell were present in the area, although it was unclear whether or not these items had been introduced with road gravels (Navin 1993: 22).

The general location of this recording was inspected during the current program of survey work; however the site could not be relocated.

Isolated Find 2 – Bid Bid Creek

AMG: 28645.612544 Nowra 1:25000 topo map 2nd Ed.

This recording consists of a pink silcrete flake, located on the crest of a ridgeline spur between two tributaries of Bid Bid Creek (Navin 1993: 22). The general location of this recording was inspected during the current program of survey work; however the site could not be relocated.

6.2 Aboriginal Cultural Values

The Aboriginal cultural value of sites within the study area at Comberton Grange was discussed with the Aboriginal representatives during the field survey for the Shaolin Temple and Academy development. With the exception of the reported burial location (CG7), no areas of particular Aboriginal cultural sensitivity were identified within the study area.

Comberton Grange as a whole has however been identified as a place with significance to local Aboriginal communities, particularly in terms of historical associations with Aboriginal workers on the farm (D. McConnell 2009, pers. comm., 21 July).

6.3 Inventory of Site Locations

Recording Type	Recording Code	MGA Reference
scarred tree	Comberton Grange 1 (CG1)*	285480.6126350
scarred tree	Comberton Grange 2 (CG2) *	285250.6125760
artefact scatter	Comberton Grange 3 (CG3)*	283230.6125210
artefact scatter	Comberton Grange 4 (CG4)	283294.6125376
artefact scatter	Comberton Grange 5 (CG5)	282320.6126390
artefact scatter	Comberton Grange 6 (CG6)*	283240.6125760
reported Aboriginal burial ground	Comberton Grange 7 (CG7)	282370.6126430
artefact scatter	Comberton Grange 8 (CG8)	284176.6126203 (centre point)
isolated find	Comberton Grange Isolated Find 1 (CGIF1)*	283350.6125140
isolated find	Comberton Grange Isolated Find 2 (CGIF2)*	283750.6125190
isolated find	Comberton Grange Isolated Find 3 (CGIF3)*	283340.6126240
isolated find	Comberton Grange Isolated Find 4 (CGIF4)	284329.6126323
isolated find	Comberton Grange Isolated Find 5 (CGIF5)	285260.6125674
isolated find	Comberton Grange Isolated Find 6 (CGIF6)	283279.6126427
isolated find	Comberton Grange Isolated Find 7 (CGIF7)	286692.6125008
scarred tree	Georges Creek 1 (GC1)*	284500.6125390
isolated find	Isolated Find 1*	283450.6128590
isolated find	IF1*	287010.6125300
isolated find	IF2*	286550.6125630
artefact scatter	Comberton Grange 1*	284410.6128590
rockshelter	Beecroft Creek 27 (B27)	286616.6126592

* Sites that were not relocated during the current program of field survey.

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; and

- 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. Rock platform sites are still subject to visibility constraints in the form of obscuring ground litter, flood debris and sedimentation, however, rock shelters are less likely to go uninspected. The inspection rate of rock shelters is likely to be 100% in a comprehensive survey, however, the extent of leaf litter and recent sediment on a rock shelter floor may be an important factor in a recorder's ability to detect either a site, or simply a potential archaeological deposit.

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 6.1 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 11.25% of the ground area in the study area was inspected during the survey, with just under 2% providing useable archaeological exposures.

Taking into account survey coverage, archaeologically useable exposures, and visibility variables, the effective survey coverage (ESC) was 1.3 % 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.

Table 6.1: Survey Coverage Data

Survey division	Survey unit	Landform	Survey mode	Main exposure types	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 %	Archaeological recordings
CG	1	ridge/spur crest	foot	vehicle tracks, animal tracks, sheet erosion	270	20	54	20	80	8.640	3.2	CG8, Isolated Find 1 – Former Pine Plantation, Isolated Find 2 – Bid Bid Creek, CGSA2
CG	2	crest-upper slope interface	foot	vehicle tracks, animal tracks, sheet erosion	180	10	18	20	75	2.700	1.5	CGIF2 , CGIF3
CG	3	simple slope	foot	vehicle tracks, animal tracks, sheet erosion	380	10	38	15	60	3.420	0.9	CGIF4, CGIF7, Isolated Find 1 – Bid Bid Creek, Comberton Grange 1 – Former Pine Plantation
CG	4	basal slope	foot	stock tracks, vehicle tracks, sheet erosion, dams	160	10	16	15	40	0.960	0.6	CG3, CG4, CG5, CG6, CGIF1, GC1, CGSA1, CGSA3
CG	5	wetland	foot	stock tracks, surface erosion	150	2	3	2	5	0.003	0.002	-
CG	6	creek margins	foot	creek banks, sheet erosion, animal tracks	60	10	6	5	25	0.075	0.125	CG7, CGSA4
Total					*1200*		*135*	*(22.86 ha)*		*15.798*	*1.317*	

7. SIGNIFICANCE ASSESSMENT

7.1 Assessment Criteria

The Burra Charter of Australia defines cultural significance as 'aesthetic, historical, 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.

Cultural 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.

7.2 The Study Area

The significance assessments for the Aboriginal site recordings within the Comberton Grange study area have been divided into three groups: sites that were visited and assessed during this project; sites that have been previously recorded but were not revisited during this project; and the identified archaeologically sensitive areas.

7.2.1 Sites Assessed During This Project

Comberton Grange 4 (CG4)

This recording was previously recorded by Navin Officer Heritage Consultants (2000) and was assessed to be of low to moderate significance within a local context. It was however noted that the site is likely to be an extension of CG3, a site that was assessed to be of moderate to high significance in a local context.

In the course of the current survey program additional artefacts were observed at this location and it was noted that there is good potential for subsurface archaeological deposits. The research potential at CG4 is however lowered by the disturbance associated with the nearby European rubbish disposal area.

On the basis of the subsurface potential at CG4 and the possibility that this site is a component of a larger site with considerable significance in terms of archaeological research and identified Aboriginal cultural values (Navin Officer Heritage Consultants 2000: 46), this site is considered to be of moderate significance in a local context.

Comberton Grange 5 (CG5)

This recording was previously recorded by Navin Officer Heritage Consultants (2000) and was assessed to be of moderate to high significance within a local context. This assessment was made on the basis of known and potential scientific and Aboriginal cultural values. In particular it was noted that this site might form an important component of research into patterns of prehistoric and contact period occupation along Currambene Creek.

During the site visit for this project it was noted that the ground exposure and visibility factors encountered at the site were similar to those at the time of initial recording. Furthermore, similar numbers of artefacts were observed.

Essentially the initial site assessment was confirmed and it is considered that the previously identified moderate to high local significance is an accurate reflection of the archaeological research potential at this site.

Comberton Grange 7 (CG7)

As was noted in the previous significance assessment for this site (Navin Officer Heritage Consultants 2000), it is impossible to reliably assess this recording until further evidence is available that can confirm (or otherwise) the presence of a burial. If however an Aboriginal burial can be

confirmed in this area there is the potential for the site to be of high significance at local and/or regional levels.

Comberton Grange 8 (CG81)

This recording consists of a surface scatter of 14 stone artefacts that is likely to be associated with subsurface artefactual material across a much broader area. An area of PAD has been identified in association with the artefact scatter across the low gradient terminal spur crest adjacent Georges Creek.

The spur on which the artefacts are located has a gentle gradient and leads down to a natural crossing point on Georges Creek that has been formalised as a vehicular ford. Disturbance at this site is relatively limited and the area has the potential to contain low to moderate artefact densities.

The surface scatter at CG8 is a relatively common site type, although the potential for relatively undisturbed subsurface deposits does contribute to the overall scientific significance of this site. While the significance of this site cannot be confirmed without archaeological excavation, it is predicted that the surface scatter and associated PAD is of low to moderate significance within a local context.

Comberton Grange Isolated Find 4 (CGIF4)

This site consists of a single stone artefact in a disturbed context, in an area with very limited subsurface potential. The recording is a common site type and the landform in which it is located is considered to contain only low densities of stone artefacts.

A site such as this is considered to be of low archaeological significance within a local context.

Comberton Grange Isolated Find 5 (CGIF5)

This site comprises one silcrete artefact with possible usewear. The artefact is situated in a topographic context that is predicted to be characterised by low density artefact distributions. CGIF5 is a common site type with limited research potential.

A site such as this is considered to be of low archaeological significance within a local context.

Comberton Grange Isolated Find 6 (CGIF6)

This site comprises one silcrete flake situated on the ridge crest watershed between Currambene and Georges Creeks. There is a limited potential for subsurface deposits at this location. On the basis of the site's topographic context (over 500 m from fresh water), the broader area is likely to contain a low density distribution of stone artefacts. CGIF6 is a common site type with limited research potential.

A site such as this is considered to be of low archaeological significance within a local context.

Comberton Grange Isolated Find 7 (CGIF7)

This site comprises a single silcrete flake situated on northeast facing slopes adjacent a tributary of Bid Bid Creek. The subsurface archaeological potential at this location is considered to be low due to the expected low density of artefacts in a landform situated over a kilometre from a reliable fresh water source. CGIF6 is a common site type with limited research potential.

A site such as this is considered to be of low archaeological significance within a local context.

Beecroft 27 (B27)

This recording was previously identified as being of moderate significance on the basis of an inferred shallow deposit with sparse cultural material (Cane 1988). It was however noted during the current survey program that there may be relatively deep deposits towards the front of the shelter.

Furthermore, while there are limited cultural remains visible on the floor of the shelter, the nature of potential subsurface deposits is unclear.

Given the site's proximity to Bid Bid Creek and its broader landscape context in a relatively rich resource zone associated with Currambene Creek and the adjoining wetlands, there is potential for the site to contain significant archaeological deposits. However this could only be confirmed through test excavation.

In the absence of any definite information concerning the nature of archaeological deposits within B27 the original assessment of moderate within a local context is considered to be appropriate. Confirmation of the site's significance could only be achieved through further investigation in the form of archaeological excavation.

7.2.2 Previous Significance Assessments

A summary of the previous significance assessments for the sites that were not relocated or visited during this project is provided below in table 7.1.

Table 7.1: Summary of Previous Significance Assessments

Site name/identification	Previous significance assessment
Comberton Grange 1 (CG1)	moderate significance within a local context
Comberton Grange 2 (CG2)	moderate significance within a local context
Comberton Grange 3 (CG3)	moderate to high significance within a local context
Comberton Grange 6 (CG6)	low to moderate significance within a local context
Comberton Grange Isolated Find 1 (CGIF1)	low significance within a local context
Comberton Grange Isolated Find 2 (CGIF2)	low significance within a local context
Comberton Grange Isolated Find 3 (CGIF3)	low significance within a local context
Georges Creek 1 (GC1)	moderate/high significance within a local context
Isolated Find 1 – Former Pine Plantation	-
Isolated Find 1 – Bid Bid Creek	-
Isolated Find 2– Bid Bid Creek	-
Comberton Grange 1 – Former Pine Plantation	-

The three isolated finds and the artefact scatter recorded for the survey of the St Georges Basin/Jervis Bay effluent management scheme (Navin 1993a) were not specifically assessed in terms of their site significance. Nevertheless, on the basis of the site descriptions, extent of previous impacts and assessments of comparable sites, these recordings are considered likely to be of low significance within a local context. The location of each of these recordings was visited during the current survey program and in each case the area was assessed to be of low archaeological potential.

7.2.3 Areas of Archaeological Sensitivity

CGSA1, CGSA2, CGSA3 and CGSA4

An assessment of the heritage significance of these areas of archaeological sensitivity is dependent on the conduct of a program of archaeological test excavation.

8. STATUTORY AND POLICY CONTEXT[1]

8.1 Environmental Planning and Assessment Act 1979

This Act (EP&A Act) and its regulations, schedules and associated guidelines require that environmental impacts are considered in land use planning and decision making. Environmental impacts include cultural heritage assessment. The Act was reformed by the *Environmental Planning and Assessment Amendment (Infrastructure and other Planning Reform) Act 2005*.

There are four main areas of protection under the Act:

- Planning instruments allow particular uses for land and specify constraints. Part 3 governs the preparation of planning instruments. Both Aboriginal and Historical (Non-Indigenous) cultural heritage values should be assessed when determining land use;
- A separate streamlined and integrated development assessment and approvals regime for major infrastructure and other projects of significance to the State is defined by Part 3A;
- Section 90 lists impacts which must be considered before development approval is granted. Part 4 relates to the development assessment process for local government authorities. Impact to both Aboriginal and Historical (Non-Indigenous) cultural heritage values are included; and
- State Government agencies which act as the determining authority on the environmental impacts of proposed activities must consider a variety of community and cultural factors in their decisions, including Aboriginal and Historical (Non-Indigenous) cultural heritage values. Part 5 relates to activities which do not require consent but still require an environmental evaluation, such as proposals by government authorities.

Under the EP&A Act the Minister for Planning may make various planning instruments such as regional environmental plans (section 51) and local environment plans (s70). The Minister may direct a public authority such as a Local Council, to exercise certain actions within a specified time, including the preparation of draft LEPs and appropriate provisions to achieve the principles and aims of the Act (s117).

These planning instruments may identify places and features of cultural heritage significance and define various statutory requirements regarding the potential development, modification and conservation of these items. In general, places of identified significance, or places requiring further assessment, are listed in various heritage schedules that may form part of an REP or LEP. Listed heritage items are then protected from certain defined activities, normally including demolition, renovation, excavation, subdivision, and other forms or damage, unless consent has been gained from an identified consent authority. The consent authority under a LEP is normally the local Shire or City Council.

- The provisions of any environmental planning instrument, or draft environmental planning instrument (which has been placed on public exhibition); any development control plan; and the regulations;
- The likely impacts of that development on the natural and built environments, and the social and economic impacts on the locality;
- The suitability of the site for the development;
- Any submissions made in accordance with the Act or the regulations; and
- The public interest.

[1] The following information is provided as a guide only and readers are advised to seek qualified legal opinion as necessary.

8.1.1 Part 3A of the EP&A Act

Part 3A of the Act is an amendment which establishes a separate streamlined and integrated development assessment and approvals regime for major State government infrastructure projects, development that was previously classified as State Significant development, and other projects, plans or programs declared by the Minister for Planning.

Part 3A removes the stop-the-clock provisions and the need for single-issue approvals under eight other Acts, including the NP&W Act and the Heritage Act 1977. Environmental planning instruments such as the heritage provisions within REP and LEPs, (other than State environmental planning policies) do not apply to projects approved under Part 3A.

Where warranted the Minister may declare any project subject to Part 3A to be a critical infrastructure project. These projects only require a concept approval in contrast to other Part 3A projects which require project approval. In most circumstances, a concept approval will be obtained to establish the environmental performance requirements and consultation requirements for the implementation of the subsequent stages of the project.

Under the provisions of Part 3A, proponents of major and infrastructure projects must make a project application seeking approval of the Minister. The application is to include a preliminary assessment of the project. Application may be for concept plan approval or full approval. Following input from relevant agencies and council(s), DoP will issue the proponent with requirements for the preparation of an Environmental Assessment and a Statement of Commitments. The Statement of Commitments will include how the project will be managed in an environmentally sustainable manner, and consultation requirements.

Following submission of an Environmental Assessment and draft Statement of Commitments to DoP, these documents are variously evaluated, reviewed, circulated and exhibited. The proponent may modify the proposal to minimise impacts in response to submissions received during this process. The proponent then provides a Statement of Commitments and, following any project changes, a Preferred Project Report. An assessment report is then drafted by the Director-General and following consultation with relevant agencies, a final report with recommendations for approval conditions or application refusal is submitted to the Minister. The Minister may refuse the project, or approve it with any conditions considered appropriate.

8.2 Implications for Comberton Grange

The Shaolin Temple and Academy development at Comberton Grange will be assessed under Part 3A of the *Environment, Planning and Assessment Act 1979*.

Two of the sites identified during the current study are within the potential footprint of the proposed development at Comberton Grange (Figure 8.1):

- Isolated find CGIF4; and
- Isolated find CGIF6.

There are also two previous recordings within the proposed development footprint and/or areas encompassed by the current masterplan (Figure 8.1):

- Comberton Grange 1 – Former Pine Plantation; and
- Isolated find 1.

The remainder of the identified sites within the Comberton Grange study area will not be impacted by the proposed development.

Appropriate management strategies for the recordings within the development footprint will need to be approved by DoP.

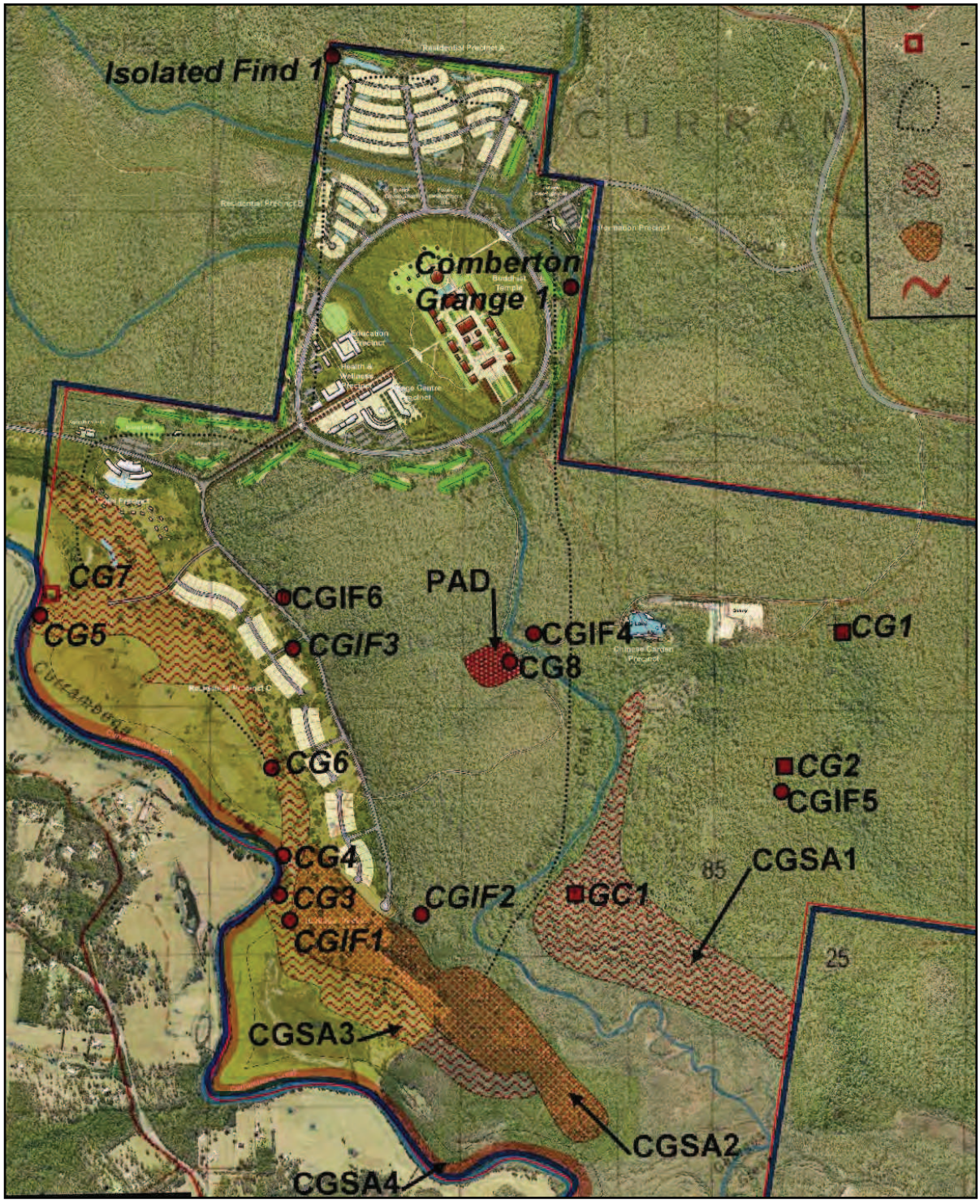

Figure 8.1 Map showing locations of Aboriginal sites, areas of PAD and archaeologically sensitive areas within the project area
(Mapping provided by Conybeare Morrison International Pty Ltd)

9. CONCLUSIONS AND RECOMMENDATIONS

9.1 Overview of Aboriginal Sites

It is concluded that there are no absolute constraints to the Shaolin Temple and Academy.

There are twenty-five Aboriginal cultural heritage recordings, including four archaeologically sensitive areas, within the Comberton Grange study area. The majority of these sites will not be impacted by the proposed Shaolin Temple and Academy. There are, however, four recordings that are situated partially or wholly within the proposed development footprint.

Two of these recordings (CGIF3 and CGIF6) are considered to be of low significance within a local context. These sites have low archaeological research potential and no specific concerns were raised by the Aboriginal representatives who participated in the field survey, with regard to Aboriginal cultural heritage values at these sites.

Comberton Grange 1 and Isolated find 1 correspond to sections of the development shown on the current Masterplan (Figure 1.1). These sites could not be relocated during field survey for this project. Given the extent of vegetation cover it is unlikely that the previously recorded artefacts could effectively be salvaged prior to any ground disturbance work that may occur in this area.

9.2 Management Recommendations

The following recommendations have been formulated on the basis of the results of the current survey and the results of previous heritage studies within the Comberton Grange study area.

It is recommended that:

1. The previously recorded sites Comberton Grange 1 (former pine plantation), and Isolated Find 1 could not be relocated during survey for this project; it is unlikely that the artefacts at these sites could be found without recourse to vegetation clearance and/or excavation. The location of each site should be inspected by a qualified archaeologist, together with selected representatives from the registered Aboriginal stakeholders, immediately after initial clearance and ground disturbance works. Any artefacts visible at that time should then be collected/moved from the area of impact.

2. Isolated finds CGIF3 and CGIF6 are located within the proposed development area and will be directly impacted. Prior to the commencement of ground disturbance works, the artefacts should be collected/moved from the area of impact by a qualified archaeologist together with representatives from the registered Aboriginal organisations.

3. With respect to the current development proposal, the following recordings are situated outside the potential impact area:

    - Scarred trees GC1, CG1 and CG2;
    - Artefact scatters CG3-6 and CG8;
    - Reported Aboriginal burial CG7;
    - Isolated finds CGIF1-2, 4-5 and 7, Isolated Finds 1 and 2 – Bid Bid Creek;
    - Rockshelter B27; and
    - Archaeologically sensitive areas CGSA1 - CGSA4.

4. The protocols for the unanticipated discovery of archaeological material and suspected human remains (presented in Appendix 2) be adopted and complied with during construction activities involving ground surface disturbance and excavation.

5. Three copies of this report should be provided to the OEH for its information and records, at the following address:

   Conservation and Regulation Division - South
   Office of Environment & Heritage
   PO Box 733 Queanbeyan NSW 2620

6. ***A draft copy of this report should be forwarded to the following registered Aboriginal stakeholders***:

   Ms Delia Lowe
   Jerrinja Local Aboriginal Land Council
   PO Box 167
   Culburra NSW 2540

   Ms Elaine Sturgeon
   50 High Street
   Wreck Bay
   Jervis Bay Territory 2540

   Mr Jason Davison
   2 Copperleaf Place
   Worrigee NSW 2540

   Mr Graham Connelly
   PO Box 66
   Culburra Beach Post Office
   NSW 2540

   Mr Reuben Ardler
   Wreck Bay Community Council
   c/- Admin Building
   Wreck Bay
   Jervis Bay Territory 2540

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APPENDIX 1

RECORD OF ABORIGINAL FIELD PARTICIPATION

Record of Aboriginal Representative Participation*

Name(s) of Aboriginal Representative: Glenda Conaberry

Name of Aboriginal Organisation: **Jerrinja Local Aboriginal Land Council**

Archaeologist(s): name & address Deirdre Lewis-Cook
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street, Kingston, ACT 2604

Project Name: **Comberton Grange – Shaolin Temple**

Client: name & address:
(please send your invoice ... to this address) Audrey Thomas
Conybeare Morrison International Pty Ltd
PO Box A866
SYDNEY SOUTH, NSW, 2011

Type of participation:

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

Period of participation:

Date(s)	Start	Finish
Tues 21st July 2009	1pm	5pm
Weds 22nd July 2009	8:30am	4:30pm
Thurs 23rd July 2009	8:30am	4:30pm
Fri 24th July 2009	8:30am	1:30pm

Issues raised:

Signed *(archaeologist)*: D Lewis-Cook

Signed *(Aboriginal representative(s))*: Glenda Conaberry

* *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.*

Record of Aboriginal Representative Participation*

Name(s) of Aboriginal Representative: Elaine Sturgeon

Name of Aboriginal Organisation: ~~Wreck Bay Aboriginal Community~~ Kylie Wellington

Archaeologist(s): name & address: Deirdre Lewis-Cook
Navin Officer Heritage Consultants Pty Ltd
4/71 Leichhardt Street, Kingston, ACT 2604

Project Name: **Comberton Grange – Shaolin Temple**

Client: name & address:
(please send your invoice to this address) Audrey Thomas
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Issues raised:

Signed *(archaeologist)*: D Lewis-Cook

Signed *(Aboriginal representative(s))*:

* *please note this form is not an invoice. For payment, please send an invoice from your organisation to*

APPENDIX 2

UNANTICIPATED DISCOVERY PROTOCOLS

Protocol to be followed in the event that (previously unrecorded) Aboriginal objects (excluding human remains) are revealed during construction works

In the event that one or more Aboriginal objects are revealed during construction works, the following protocol will be actioned (refer also to the flowchart):

1. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the Aboriginal object so that work can be suspended, and advise the site supervisor;

2. The approximate extent and nature of the Aboriginal object(s) will be determined by an archaeologist and/or a suitably qualified representative of the Jerrinja Local Aboriginal Land Council (JLALC). That is:

    a. Is it an isolated find? or

    b. Is it an artefact scatter of less than 10 visible artefacts? or

    c. If it is a scatter of more than 10 artefacts, then approximately how many?; and

    d. Are there additional types of find, such as concentrations of shell, bone or charcoal?

3. Determine if the finds belong to a previously recorded site or potential archaeological deposit. If the location of the finds is consistent with a previous recording, construction work can proceed provided that mitigative actions which may or may not have been required at that site have been completed.

4. Where there are less than 10 artefacts discovered in the find area, then:

    a. The artefacts will be recorded and collected using the attached form. Construction works may then recommence in that area

        – The location of the recovered artefacts will be recorded using a hand-held GPS, (if available and where necessary), or alternatively, by noting chainage intervals;

    b. If an unusual artefact, such as an axe head or a grinding stone, is discovered, then the same procedure as for the discovery of more than 10 artefacts should be followed (Steps 5 and following).

    c. The collected artefacts will be placed in a clear-plastic bag and placed in temporary secure storage either at the site office, JLALC office or the office/laboratory of the project archaeologist:

        – Each bag should have the following information marked on it using a broad nib permanent spirit pen:

            - The site location;
            - The date (day/month/year);
            - The collector's name; and
            - Any other relevant information (such as a GPS reference or description of contents);

        – Where necessary, the Principal is responsible for the temporary and secure storage of recovered Aboriginal objects prior to their long term management according to a strategy determined in consultation with the JLALC and other registered Aboriginal stakeholders.

5. If the find is a new site and there are more than 10 artefacts discovered in the find area, or there are concentrations of shell, bone or charcoal, or unusual artefacts types present, then an

archaeologist, accompanied by a representative of the JLALC will record the finds and assess the value of the deposit.

a. If the archaeologist considers the deposit to be of high archaeological value, then the Principal will be informed of the assessment and the requirement to conduct a salvage archaeological excavation prior to the recommencement of construction work in the area.

   – The project archaeologist, assisted by a representative of the JLALC will conduct an archaeological salvage excavation with the aim of recovering a sufficient sample of the deposit to allow an analysis which is commensurate with the assessed potential of the deposit.

   – The recovered Aboriginal objects will be temporarily stored by the project archaeologist pending the completion of analysis.

b. If the archaeologist considers the deposit not to be of high archaeological value, then the artefacts (Aboriginal objects) will be collected, and any required samples taken, prior to construction works then recommencing in the area of the find(s).

   – Artefacts will be temporarily stored as for Step 5a.

6. A OEH site card will be completed for all new site recordings and submitted to OEH.

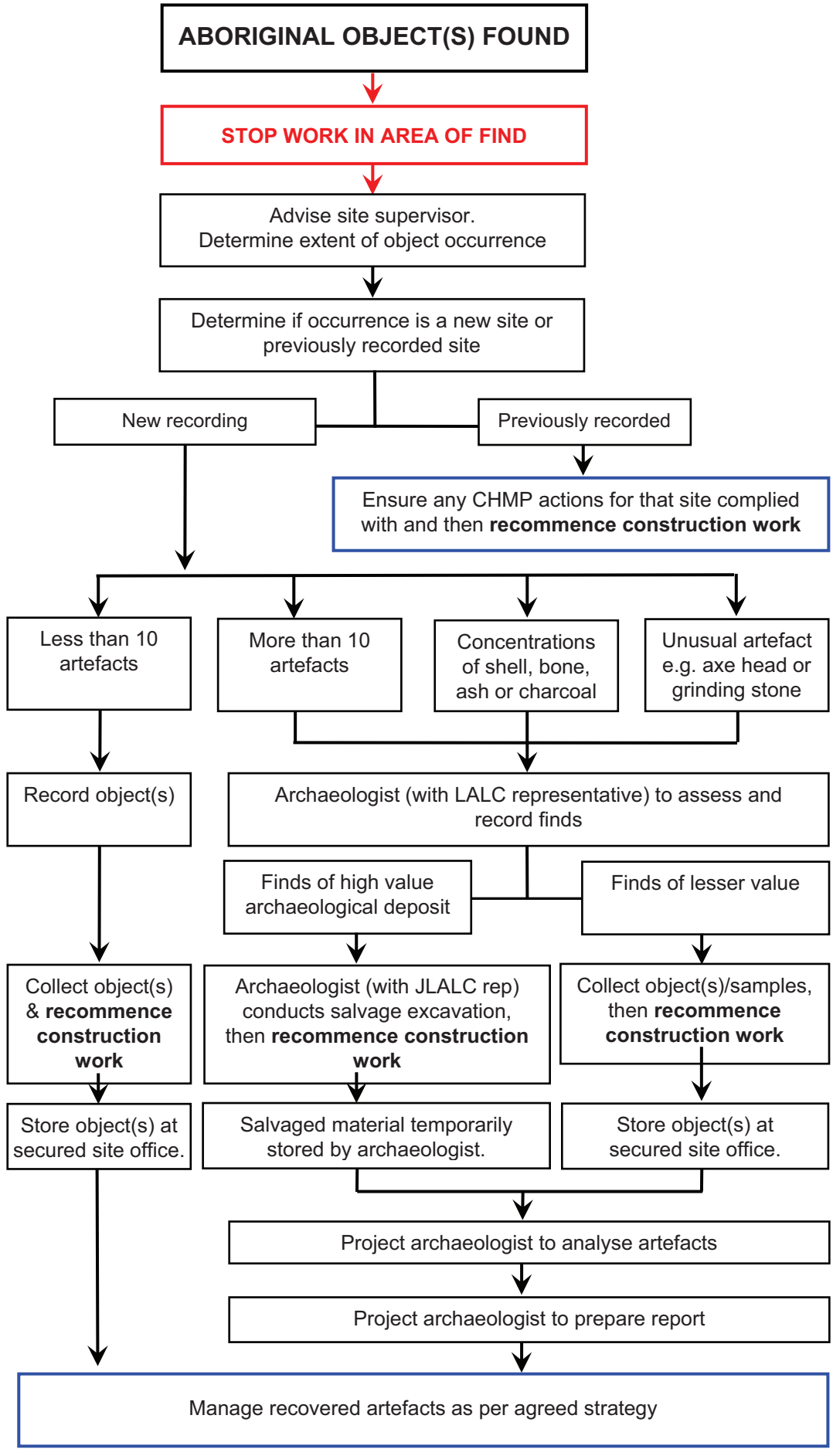
7. Following the completion of construction works in which Aboriginal objects may potentially be revealed, the project archaeologist will analyse the data from collected artefacts, together with any data and finds from salvage excavations, (conduct any radiocarbon dating determinations, where appropriate) and prepare a report.

8. Any recovered Aboriginal objects will be managed according to a long term management strategy which will be determined in consultation with the JLALC and other registered Aboriginal stakeholders. Potential options include:

   – Repositioning in the landscape, outside the construction area, but as close as possible to their original location, following the completion of construction works. All new artefact locations must be recorded on a OEH site card and submitted to OEH. (The act of repositioning artefacts may, according to negotiations with registered Aboriginal stakeholders, require the presence of an archaeologist and/or JLALC representative).;

   – Retention of some or all objects as part of a collection for scientific reference, education or cultural interpretation, and stored at the JLALC office, or an alternative agreed location. A Care Agreement with the OEH may be required to enable this option;

Flowchart – Protocol for Discovery of Aboriginal Objects During Construction Works



Record of Discovery of Aboriginal Objects

Shaolin Temple and Academy, Comberton Grange

Who and When?

Name of Recorder		**Date**	
Site name or number			

What has been recovered, and from Where?

GPS Datum: ☐ AGD66 ☐ WGS84

Chainage (m) or GPS reference	**Description of object(s)**		**No. of bags**
	No. of items	**Type of object(s)** (e.g., stone, shell, bone, charcoal, burnt clay)	

Sketch Map (Show north, location of finds, concentrations or points of interest – use other side of form for more space).

Protocol to be followed in the event that suspected human remains are revealed within the development area

The potential for human skeletal remains to be uncovered when excavating in alluvial deposits or locally elevated sand bodies cannot be discounted.

The following protocol will be actioned if suspected human remains are revealed during development activities (refer also to the flowchart):

1. If the remains are detected within or during an archaeological excavation, then no further excavation that involves the removal of *in situ* bones is to occur until the following are completed:

    a. The find is reported to the local Police;

    b. Jerrinja Local Aboriginal Land Council (JLALC) and OEH representatives have been contacted;

    c. It is reliably determined that the remains are of an Aboriginal person who died more than 100 years ago;

    d. The remains are considered not to be consistent with the triggers specified in Step 5a; and

    e. Consensus is reached regarding the continuation of the excavation.

    If there is doubt that the remains are of an Aboriginal person who died more than 100 years ago, or if the remains are consistent with any of the triggers listed in Step 5a, then proceed with Step 5.

2. If the remains are detected within the context of development or construction-related activities, then all ground surface disturbance in the area of the finds should cease immediately the finds are uncovered.

    a. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be temporarily halted; and

    b. The site supervisor and the Principal will be informed of the find(s).

3. If there is substantial doubt regarding a human origin for the remains, then consider if it is possible to gain a qualified opinion within a short period of time. If feasible, gain a qualified opinion (this can circumvent proceeding further along the protocol for remains which turn out to be non-human). If conducted, this opinion must be gained without further disturbance to any remaining skeletal material and its context as possible (Be aware that the site may be considered a crime scene containing forensic evidence if the remains are found to be human and not of an Aboriginal person who died more than 100 years ago. If a quick opinion cannot be gained, or the identification is positive, then proceed to the next step.

4. Immediately notify the following people of the discovery (if not already informed):

    a. The local Police (this is required by law);

    b. A OEH archaeologist or Aboriginal Heritage Officer;

    c. A representative from the JLALC; and

    d. The project archaeologist.

5. Facilitate, in co-operation with the appropriate authorities and Aboriginal representatives, the definitive identification of the skeletal material by a qualified person (if not already completed). This must be done with as little further disturbance to any remaining skeletal material and its context as possible.

a. If the remains are consistent with one or more of the following triggers, then a specialist in the identification of Aboriginal skeletal remains must be consulted to determine if the remains are of an Aboriginal person who died more than 100 years ago:

   i. The skeletal remains are those of a child;

   ii. Signs of recent disturbance or excavation at the burial site are found;

   iii. No cultural evidence of Aboriginal burial is evident;

   iv. Evidence of possibly fatal trauma such as a spear or bullet hole or fractures skull is noted;

   v. All of the hand, and foot bones as well as teeth (excluding Aboriginal tooth evulsion) have been removed or are absent;

   vi. If the skull is visible but does not appear to have clear Aboriginal characteristics;

   vii. If the skeleton is headless or the skull is present but smashed.

   A list of specialists is available in the DEC Aboriginal Skeleton Remains Manual (Donlan et al. 2002).

b. If the remains are identified as human, but not of an Aboriginal person who died more than 100 years ago, then further decisions and responsibilities regarding the remains rest with the NSW Police and Coroner.

   i. If the remains are more than 50 years old, then the Heritage Branch of the NSW Department of Planning should be advised of the find and an assessment may be required to determine if the remains have cultural heritage significance, and if conservation management is required.

   ii. Removal and/or collection of the find cannot occur until any statutory requirements are satisfied.

6. If the skeletal remains are reliably identified as that of an Aboriginal person who died more than 100 years ago, (and this identification has been made by a specialist where the remains are consistent with one or more of the triggers listed in step 5a), then:

   a. Ascertain the requirements of the registered Aboriginal stakeholders, the JLALC, the OEH, and the project archaeologist.

   b. Based on the above, determine and conduct an appropriate course of action. Possible strategies could include one or more of the following:

      i. Avoiding further disturbance to the find and conserving the burial *in situ*, (this option may require relocating the development and this may not be possible in some contexts);

      ii. Conducting (or continuing) archaeological salvage of the finds;

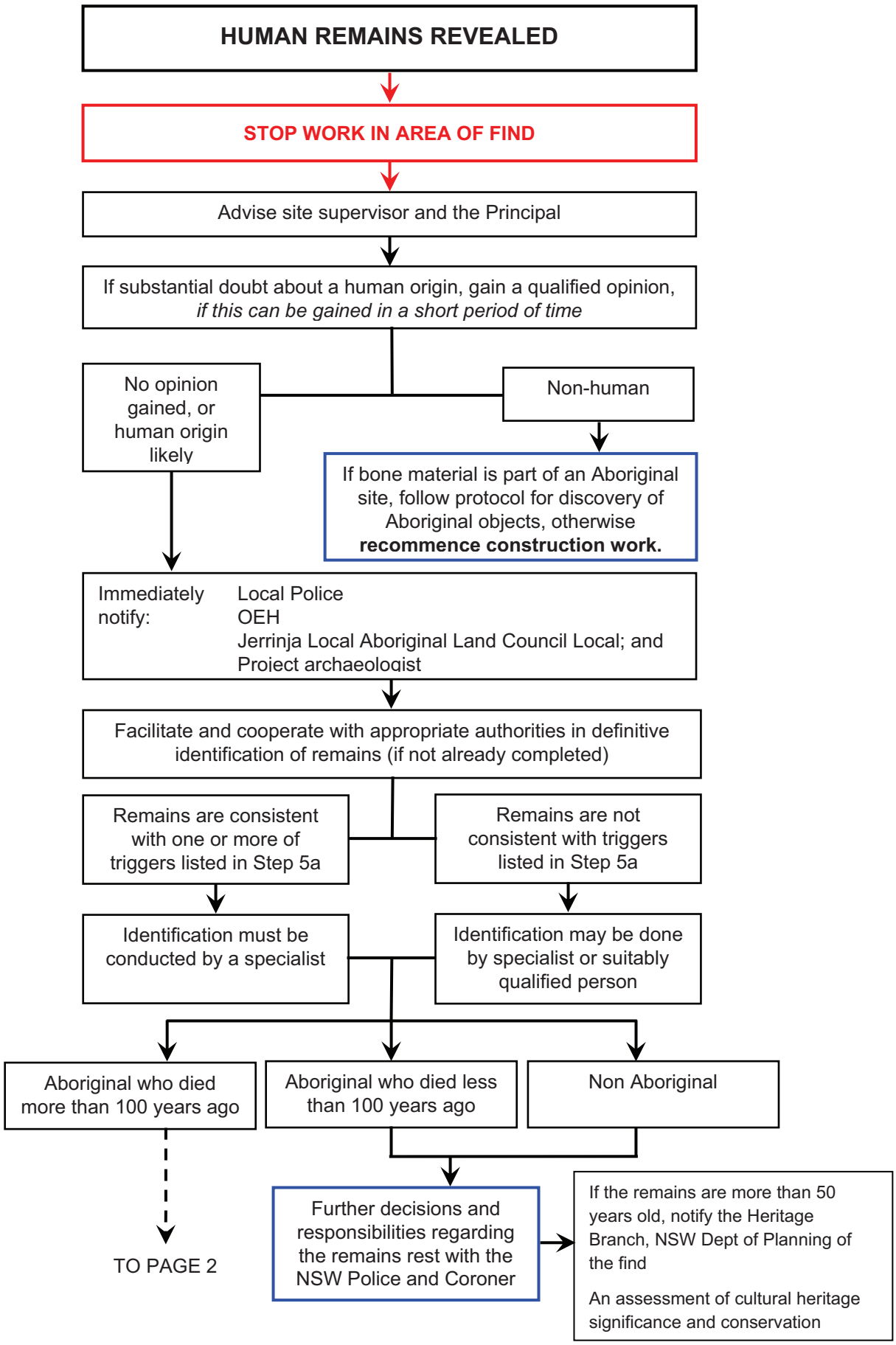
      iii. Scientific description (including excavation where necessary), and possibly also analysis of the remains prior to reburial;

      iv. Recovering samples for dating and other analyses; and

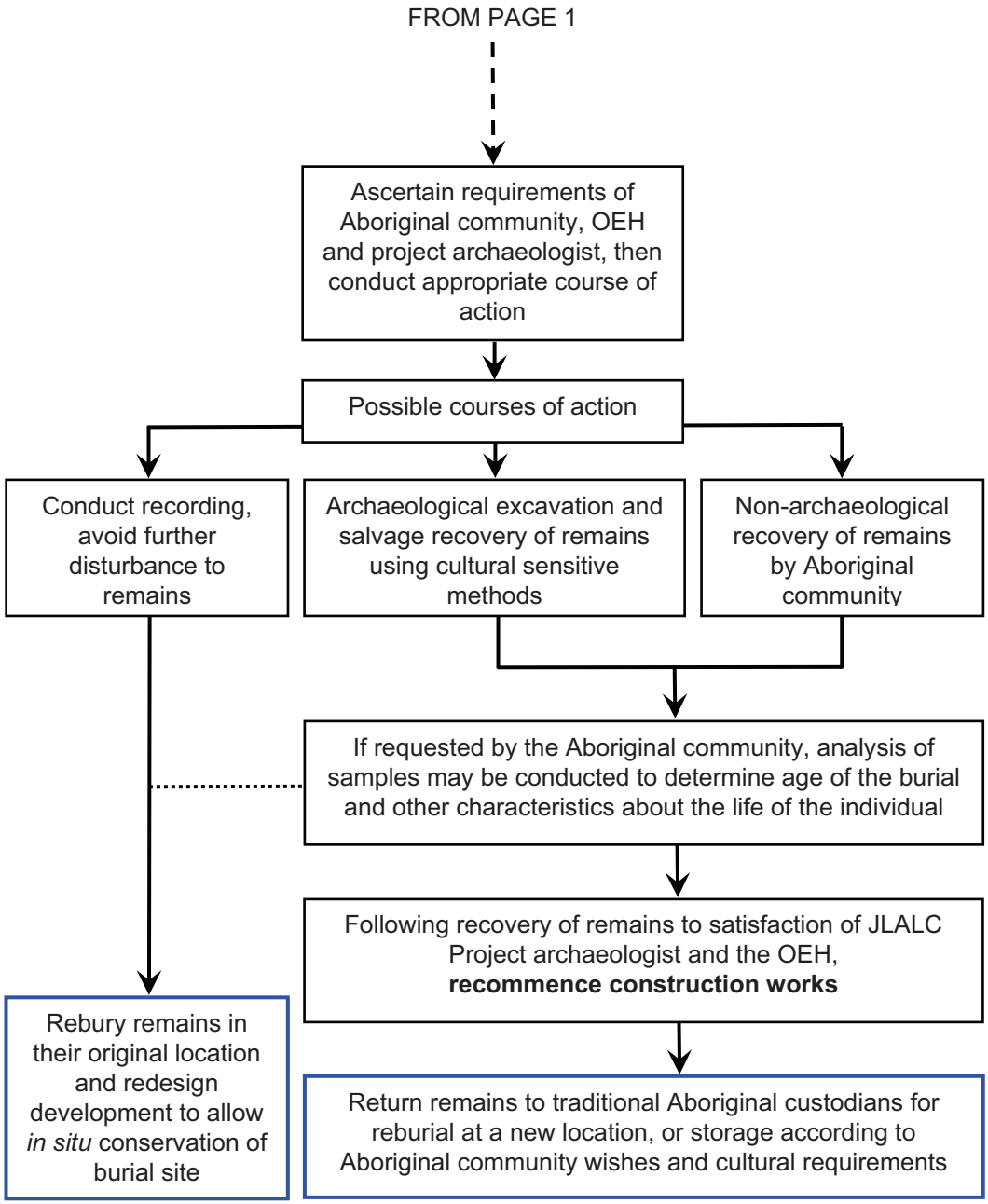
      v. Subsequent reburial at another place and in an appropriate manner determined by the local Aboriginal organisations.

7. Following the removal of the skeletal and associated burial material to the satisfaction of the project archaeologist, OEH, and JLALC, recommence the previously suspended construction activities.

Flowchart – Protocol for Human Skeletal Remains Revealed during construction Works (p1 of 2)



Flowchart – Protocol for Human Skeletal Remains Revealed during construction Works (p2 of 2)



Protocol to be followed in the event that (previously unrecorded) relics (historical sites/objects) (excluding human remains) are revealed during construction works

In the event that relics (historical sites/objects) are revealed during construction works, the following protocol will be actioned (refer also to the flowchart):

1. The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the site/object so that construction work can be suspended, and advise the site supervisor;

2. The approximate extent and nature of the relic will be determined by an archaeologist.

3. Determine if the finds belong to a previously recorded site. If the location of the finds is consistent with a previous recording, construction work can proceed provided that mitigative actions which may or may not have been required at that site have been completed.

4. If the find is a previously unrecorded item,

    a. Advise the Heritage Branch of the NSW Department of Planning;

    b. Determine an appropriate methodology for further action, based on the potential significance or archaeological potential of the find[2]. Possible methodologies include:

        – Record and, if appropriate recover, prior to commencing further construction (appropriate in cases where items are low in density and/or in a disturbed context, or of limited archaeological value);

        – Record and conduct further excavation using by-hand archaeological methodology to better define the origin, nature and significance of archaeological material (appropriate in cases where items are *in situ* or may be *in situ* and/or where the nature of the find requires clarification);

    c. In the case of *in situ* relics with significance relating to the history and development of the Alunite mine complex, determine and conduct an appropriate management strategy in consultation with the Heritage Branch of the NSW Department of Planning. Potential strategies which may be adopted include one or more of the following:

        – Record and Salvage prior to continuation of construction;

        – Record and re-bury, retaining some or all relics in situ, and constructing the access track on fill above the identified archaeological deposit; or

        – Record and conserve in situ, and avoid further damage by re-aligning access track.

5. All relics exposed in step 4 will be recorded and, where appropriate recovered ensuring that the level and scope of recording is commensurate with the significance of the item(s) and method of recovery (refer Procedures Manual in Attachment A4 for by-hand excavation methodology).

    – For isolated items, items of limited significance or archaeological value, and items collected in disturbed contexts, a recording will be made using a hand-held GPS, and the form shown in Attachment A3.

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[2] The on-site assessment of relics and the conduct of excavation methodologies would be conducted by historical archaeologist Dr Rebecca Parkes (Navin Officer Heritage Consultants).

6. All collected artefacts will be placed in clear-plastic bags and placed in temporary secure storage at the site office.

    – Each bag should have the following information marked on it using a broad nib permanent spirit pen:

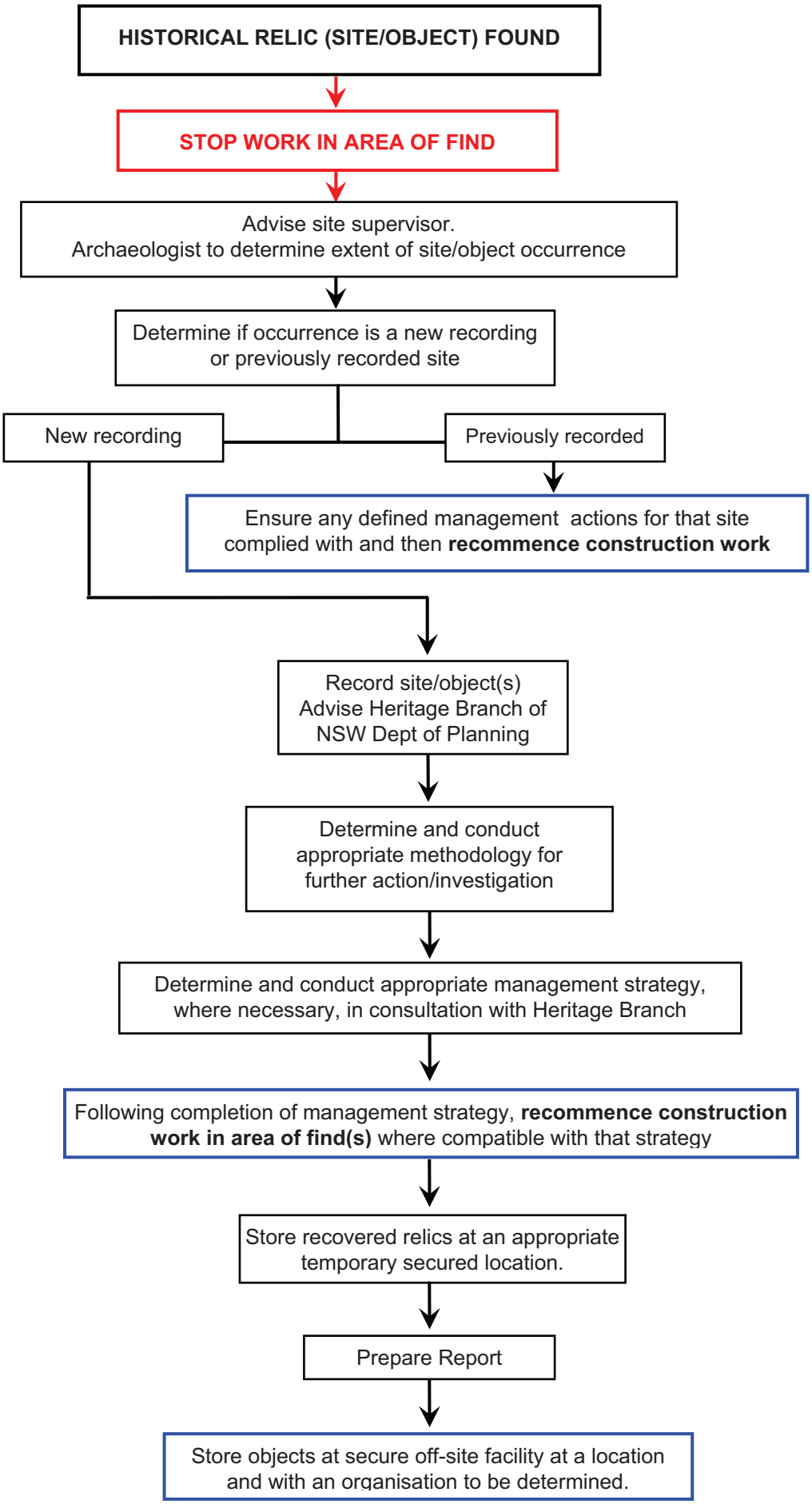
        - The site location;
        - The date (day/month/year);
        - The collector's name; and
        - Any other relevant information (such as a GPS reference or description of contents);

7. Where necessary, the Principal is responsible for the temporary and secure storage of recovered objects prior to their final relocation to an appropriate secure storage facility away from the construction area at a location and with an organisation to be determined.

8. Following the completion of an appropriate management strategy for relics exposed by the preceding steps, (approved, where necessary, by the Heritage Branch of the NSW Department of Planning (refer Step 4c)), construction works may then recommence in the area of the find(s), provided this is compatible with the management strategy.

9. Following the completion of monitoring and salvage works, the project archaeologist will describe and analyse the recovered relics, and prepare a report on the recovered material and any excavation works as per standard Heritage Branch reporting guidelines.

Flowchart – Protocol for Discovery of Relics (Historical Site/Object)



Record of Discovery of Relic (Non-Aboriginal Sites/Objects)

Shaolin Temple and Academy, Comberton Grange

Who and When?

Name of Recorder		**Date**	
Site name or number			

What has been discovered, and Where?

GPS Datum: ☐ AGD66 ☐ WGS84

Chainage (m) or GPS reference	**Description of site/object(s)**		**No. of bags**
	No. of items	**Site Type and Type of object(s)**	

Sketch Map (Show north, location of finds, concentrations or points of interest – use other side of form for more space).