

**APPENDIX K**

**Indigenous Heritage Assessment**

**An Indigenous Heritage  
Assessment for Route  
Selection:  
Proposed Additional  
Crossing of Clarence  
River,  
Grafton New South Wales**

**January 2004**

**Vanessa Hardy**

**Report for NSW  
Roads and Traffic  
Authority.**

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for Route Selection:  
Proposed Additional Crossing of the  
Clarence River,  
Grafton New South Wales**

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**Project no: s3908**

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- Lisa Appo (DEC)
- Mel Johnson and Jamie Reeves (Biosis Research Pty. Ltd.)

## ABBREVIATIONS

AHC	Australian Heritage Commission
AHIMS	Aboriginal Heritage Information Management System
AMG	Australian Map Grid
ATSIC	Aboriginal and Torres Strait Islander Commission
BP	Before Present
DEC	Department of Environment & Conservation
DIPNR	Department of Infrastructure, Planning and Natural Resources
ICOMOS	International Council on Monuments and Sites
LEP	Local Environmental Plan
NPWS	National Parks and Wildlife Service
REP	Regional Environmental Plan
RNE	Register of the National Estate

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## 1.0 EXECUTIVE SUMMARY

Biosis Research Pty. Ltd was commissioned by the NSW Roads and Traffic Authority (RTA) to undertake an Indigenous archaeology and heritage assessment of the proposed additional river crossing of the Clarence River at Grafton.

The area under investigation is between the eastern end of Susan Island and the western end of Elizabeth Island, extending north into the township of Grafton and as far south as the Pacific Highway (Figure 1). The fieldwork and reporting for this assessment was undertaken by Vanessa Hardy, archaeologist with Biosis Research Pty. Ltd in collaboration with the Grafton Ngerrie Local Aboriginal Land Council (LALC).

The project is aimed at providing information on the known sites and areas of cultural heritage potential within the broad study area perimeter and considering the extent to which further assessment might be required. The recommendations have been made in the context of legislative requirements.

Site inspections were carried out at the sample locations throughout the study area, no additional Aboriginal sites were recorded. Discussions with the Indigenous community representatives also took place.

The inspections of sample locations within the study area did not locate any additional Aboriginal sites. Alipou Creek was noted as an area of potential archaeological sensitivity. No additional areas of high archaeological potential were noted during the inspections. Susan and Elizabeth Islands were noted as areas of high significance for the Indigenous community. During the course of discussions it was expressed that there was some difficulty in assessing the community concerns over such a wide area with no identified specific impacts. The most significant issue noted as part of the assessment was the likely presence of further Dreaming or ceremonial sites associated with the Clarence River.

The following recommendations and observations for ongoing management of potential impacts within the study area have been made:

- Known recorded sites should be preserved where possible. If any impact to a registered site is proposed a permit from NSW DEC will be required;
- Further archaeological assessment of the impact to specific areas will need to be undertaken when information on route possibilities is known. This should include more intensive archaeological survey, if necessary, as well as significance assessment and a consideration of impacts for any known sites or areas of archaeological potential;

- Although there is some potential for material to remain in highly disturbed areas of urban streets or flood plain, Susan Island, Elizabeth Island and Alipou Creek are the areas of higher archaeological potential within the study area;
- The whole of the Clarence River has significance for the Indigenous population of the area;
- There was some difficulty in assessing the community concerns over such a wide area with no identified specific impacts;
- In many situations it is only when impacts are proposed that the stories attached to places will be told;
- Different individuals will have different, sometimes conflicting, stories relating to Dreaming sites; and
- The Indigenous community wishes to be consulted on a range of issues, not solely cultural heritage.
- Further assessment should be undertaken when more detailed impact information is available, this should include ongoing consultation with as wide a range of Indigenous community representatives as possible;
- The Grafton Ngerrie LALC continue to be involved in ongoing assessment by direct consultation;
- Other community organisations be given the opportunity to comment on cultural heritage concerns. These organisations include the Durahwra at Heber Street, Grafton and the Aboriginal Medical Service. It has been suggested that by disseminating information through these organisations more people could be reached;
- Any proposed crossing at Susan or Elizabeth Island would need to carefully consider direct and indirect impacts (such as increased access to sites) as they are both significant sites in the region;
- When information is presented to the Indigenous community they be given adequate time to discuss things amongst themselves and agree on input;
- Consideration should be given to establishing a procedure to facilitate the exchange of information between the Indigenous community and the RTA;
- Copies of the final report should be deposited with the Grafton Ngerrie LALC, DEC AHIMS Registrar and DEC regional office.

## 2.0 INTRODUCTION

Cultural heritage legislation protecting Aboriginal and non-Aboriginal heritage places applies in New South Wales. These places are an important part of our heritage. They are evidence of more than 40,000 years of occupation of New South Wales by Aboriginal People, and of the more recent period of interaction with non-Aboriginal settlers.

Heritage places can provide us with important information about past lifestyles and cultural change. Preserving and enhancing these important and non-renewable resources is encouraged.

It is an offence under sections of legislation to damage or destroy heritage sites without a permit or consent from the appropriate body (see Appendix 2 for a complete discussion of relevant heritage legislation and constraints).

## 2.1 Project Background

Biosis Research Pty. Ltd was commissioned by the NSW Roads and Traffic Authority (RTA) to undertake an Indigenous archaeology and heritage assessment of the proposed additional river crossing of the Clarence River at Grafton.

Fieldwork inspections were undertaken on the 13<sup>th</sup> and 14<sup>th</sup> of November 2003. The fieldwork and reporting for this assessment was undertaken by Vanessa Hardy, archaeologist with Biosis Research Pty. Ltd in collaboration with the Grafton Ngerrie Local Aboriginal Land Council (LALC).

## 2.2 Study Area

The area under investigation is between the eastern end of Susan Island and the western end of Elizabeth Island, extending north into the township of Grafton and as far south as the Pacific Highway (Figure 1).

Figure 2 shows the study area employed for this assessment. This study area is as discussed with Simone Garwood of the RTA at a project inception meeting on the 3<sup>rd</sup> October 2003 and subsequently as the project progressed. As a result of this meeting a broad study area was determined by the archaeologist to encompass areas of potential impact whether due to direct crossing construction or potential associated road upgrading.



## 2.3 Project Limitations

This report is restricted to a discussion of the Indigenous heritage items within the study area. The non-Indigenous heritage assessment is the subject of a separate report.

The project is aimed at providing information on the known sites and areas of cultural heritage potential within the broad study area perimeter and considering the extent to which further assessment might be required. The recommendations have been made in the context of legislative requirements.

This study does not include a comprehensive impact assessment, rather it provides a synthesis of known sites and the legislative framework protecting them. It also documents the results of the initial consultation process with Indigenous community representatives.

Brief field inspections were undertaken for the purpose of familiarisation with the area, these were not intended to be comprehensive field surveys.

## 2.4 Aims

The broad aim of the investigation is to identify items of Aboriginal heritage significance and to identify potential impacts upon known heritage items within the proposed study area. Specific project aims are to:

- Undertake consultation with the Aboriginal community representatives and provide an opportunity for their input to be included within the heritage impact assessment process;
- conduct background investigations into previous studies in the region and particularly the study area;
- describe the cultural and archaeological heritage values associated with the study area;
- carry out a suitable field survey to locate recorded and areas of potential Aboriginal heritage sites; and
- submit realistic recommendations and safeguards that will ensure compliance with statutory and non statutory obligations in the future.

## 2.5 Consultation with the Aboriginal Community

Consultation with the Grafton Ngerrie LALC was undertaken from the outset of the Indigenous phase of the project. The outcomes of consultation undertaken so far are detailed in Section 4.0.

A draft of this report was provided to the Grafton Ngerrie LALC. A letter of response is attached as Appendix A.

## **3.0 BACKGROUND INFORMATION**

### **3.1 Environmental Background**

The environmental background to the study area is provided in order to give a context to the archaeological assessment. The environmental aspects of an area will influence the type of archaeological remains that are likely to be present.

Firstly the environmental conditions of the study area may have influenced the land use by people in the past and secondly conditions will also affect the processes by which sites are preserved. Environmental values of an area can also contribute to the cultural significance and attachments people have to a place.

The following background is a brief summary of information relevant to the current assessment of archaeological values of the study area. The city of Grafton is around 50 kms inland within the northern coastal plain of New South Wales. It is situated approximately 670 kms north of Sydney and 350 kms south of Brisbane (See Figure 1).

#### **3.1.1 Geology & Landforms**

The study area is situated on the Clarence River within the northern coastal plain of New South Wales. This northern region is not strictly a coastal plain, but rather a series of river valleys separated by ranges (Heritage Office 1996). Extensive alluvial flats and flood-prone lands stretch across many of the valleys in the region including the Clarence River Valley.

The study area consists mostly of river flood plain landscape (see Figure 2). Within this broad plain current land uses to the south of the River are largely agricultural while to the north the area is predominantly urban streets as well as parks, riverbank reserve, and some agricultural land. A number of creek and drainage lines run through the study area meeting the Clarence River. The flood plains of the Clarence River valley contain alluvial soils. The soils are generally sandy to silty with some gravel.

The study area is within the Clarence-Morton Basin which is largely composed of sedimentary rocks (Haglund 1985). Rock types include shales, sandstones, conglomerates and some coal (Branagan & Packham 2000).

Stone types suitable for tool manufacture are available in the local area as river bed outcrops. These are likely to be suitable conglomerate outcrops in material that is mostly a mixture of conglomerate and sandstone (Hall & Lomax 1993).

### 3.1.2 Climate

In general terms the climate in the Grafton region has two major seasonal influences. The first is the sub tropical high-pressure belt which occurs in Winter and Spring and the second is the monsoonal cyclones and trade winds of Summer and Autumn. This has an impact on the availability of freshwater which would have influenced the occupation patterns of the Indigenous inhabitants. The drier Winter and Spring seasons see only small freshwater inflow into waterways while the cyclones bring large intermittent short lived fresh water events. These conditions vary somewhat across the local region. For example the Summer days are hotter coastally. These local variations may also have influenced the seasonal settlement patterns of the local inhabitants.

Average annual temperatures are around 20°C with average Summer maximums of around 30°C. Climate conditions are generally very mild by broad standards and are unlikely to have restricted the behaviour or distribution of the Indigenous inhabitants of the region although seasonal variation would have been part of their lifestyles.

### 3.1.3 Flora and Fauna

Prior to non-Indigenous settlement much of the Clarence River valley was gallery rainforest in a narrow strip along the riverbanks. Further away from riverbanks the area was more thinly timbered (Haglund 1983).

Resource zones in the region include wetlands, more distant coastal plains and rugged escarpment areas. The study area is predominantly flood plain which, prior to non-Indigenous settlement would have been a combination of cedar brush rainforest and wetlands. A remnant of the subtropical floodplain rainforest can still be found on Susan Island. It is a highly diverse vegetation community with at least 35 tree species including red and white cedar and Ficus.

For the pre-contact Indigenous population native plants provided a food resource but were also used for a range of practical items such as carrying vessels, containers, nets, canoes and shelter.

Fauna resources would also have been abundant and varied. Bandicoots, echidna, pademelons, bats, reptiles and a large variety of bird species would all have been available to the local Indigenous inhabitants. In addition, river resources including fish, shellfish and aquatic plants would have contributed to a varied diet.

## 3.2 Historical Background

The following summary of the relevant historical and archaeological research in the region is presented to provide a context for the archaeological assessment of the study area.

Dates of the earliest occupation of the Australian landmass by Aboriginal people are subject to continued revision as more research is undertaken. It is generally accepted that people have inhabited the continent for at least 60 000 years. The oldest dated site in the Grafton region at Seelands and has been dated to 6,500 years old. Many traces of past occupation have been destroyed by subsequent processes including geomorphological deposition in coastal and estuarine areas as well as non-Indigenous development of Grafton and surrounds.

### 3.2.1 Aboriginal History

At the time of non-Indigenous arrival in Grafton the area to the north of the Clarence River were Bundjalung lands. The Yaegl tribe occupied lands on the coast. The Clarence River and Grafton are within the area previously inhabited by the Gumbainggir people. These people also inhabited the steep terrain of the escarpment zone where other sites and evidence of occupation have been found (Witter 2000).

The first interaction between the Indigenous inhabitants of the Grafton region and the incoming European settlers came in 1825 in the form of an escaped convict, Richard Craig. Conflict between the Indigenous population and the incoming settlers followed soon after initial European settlement. Killings were carried out by both communities and stock were speared to drive them off land. One man, Coutts, a squatter, was tried for poisoning Aboriginal people with arsenic laced flour. He was acquitted (NSW Heritage Office 1996).

Violence, displacement and disease reduced the numbers of Aboriginal people in the area. By 1891 it was reported that the police had brought 'peace'. Nine reserves had been created to house the remaining Indigenous population and many Aboriginal people were employed in European industry as stockmen, cane strippers and fishermen (NSW Heritage Office 1996).

A community of Aboriginal people remain in Grafton to this day, many of them with strong spiritual links to the original inhabitants and important knowledge of their past ways of life.

### 3.2.2 Previous Archaeological Work

Isabel McBryde conducted a substantial amount of work in the northern rivers and New England areas in the 1970s (McBryde 1974). She emphasised wide-ranging population movements on a seasonal basis suggesting that annual migration occurred between the coast and the tableland foothills, predicting a range of seasonal sites across resource zones. Other models for similar resource zones suggest a more sedentary based pattern focused on coastal areas. This would be demonstrated in the archaeological record by large repeated use sites in resource rich areas. Associated with this settlement pattern would be smaller transitory groups transecting more marginal resource areas such ridge lines and watercourses. This movement would depend, to some extent, on the topography and would be characterised by small briefly inhabited sites (Hall & Lomax 1993). To date much work remains to be done to test these occupation models.

The oldest dated site in the region is the Seelands Rock Shelter site. It is located within 10 kms to the northeast of Grafton. The earliest levels of the rockshelter contained typical early core and flake type artefacts (see Glossary for a definition of artefact types). A sequence of transition is also recorded within the shelter with ground edge axes and smaller artefacts such as backed blades appearing later in the assemblage (Haglund 1983).

The sandstone geology above the riverbanks provides rock overhangs suitable for locating shelter sites. Grinding grooves have also been recorded along the Clarence River in granite outcrops. Up to 300 grooves remain (Grafton City Council 1985).

Aboriginal sites can be generally divided into two types. The first type are sites with tangible evidence of past Aboriginal occupation: these include occupation sites (containing material such as stone artefacts, charcoal or shell); modified trees; grinding grooves; burial sites and art sites. The second category is those sites relating to less tangible cultural elements such as ceremonial or dreaming sites. Some ceremonial sites, such as bora rings, may have tangible elements but many are natural landscape features which take on cultural significance through ceremonial or religious association.

Sites associated with past Dreamtime stories and beliefs about the creation of the landscape are usually only known from ethnographic recordings or the continuation of past stories to the current generation of Indigenous inhabitants. Fortunately in Grafton a number of stories have been recorded and there are people who still retain traditional knowledge of the ceremonial aspect of the local culture. In the majority of cases it is only possible for the Indigenous community themselves to comment on these 'less tangible' sites. In all cases the cultural significance can only be determined by the appropriate Aboriginal community

representatives.

In addition to tangible sites associated with habitation a variety of ceremony or Dreaming sites have been recorded in the region. The nature of these sites will not be discussed within this report. The location of known sites will be reported and the potential for further sites to be present will be discussed along with any specific management requirements for sites of this type.

A search was undertaken of the NSW Department of Environment and Conservation (DEC) (former National Parks and Wildlife Service) Aboriginal Heritage Information Management (AHIMS) database for an area 5 x 6 kilometres including the study area. Five sites were listed on the database as previously recorded – four of these fall within the broad study area examined (AHIMS numbers 12-6-0216; 12-6-0219; 12-6-0219 and 12-6-0326). The following table presents a summary of the site types. The approximate locations of these Sites are shown in Figure 3.

<b>DEC AHIMS Number</b>	<b>Site Name</b>	<b>Site Type *</b>
12-6-0086	Grafton Marriage Trees	TRE
12-6-0216	Goorie Park	TRE
12-6-0219	Susan Island	CMR
12-6-0326	Clarence River Golden Eel	ACD
12-6-0327	Elizabeth Island Women's Place	ACD

**Table 1: DEC AHIMS search results.**

**\*Site Type Key: ACD = Aboriginal Ceremony and Dreaming; CMR = Ceremonial Ring (Stone or Earth); TRE = Modified Tree (Carved or Scarred).**

AHIMS only includes records of known sites which have been provided to NSW DEC. The majority of NSW has not been subject to systematic survey and, therefore, may not have any associated recordings. The absence of registered sites within an area cannot be taken to mean an absence of archaeological material.

Only one of the recorded sites within the study area has tangible evidence (scarred tree). This site is associated with a non-Indigenous constructed dam within Fisher Park. Subsequent to non-Indigenous settlement Aboriginal people used this area for camping. Three other sites are associated with ceremonial practices or Dreaming. Both Islands within the study area, Susan and Elizabeth Islands, have been recorded as containing significant sites to the local community and one further site has been recorded adjacent to the present bridge (see Figure 3).

### 3.2.3 Land-use Impacts

The land within the current study area has undergone extensive modification. From the beginning of non-Indigenous settlement in the 1830s clearing of vegetation was rapidly undertaken. This was followed by pastoral land activity and the steady growth of the urban environment.

To the north of the Clarence River within the study area is mostly urban streets, housing and some parkland. To the south on the west side of the existing bridge is also the developed urban area of South Grafton. To the east of the bridge is predominantly farming land with associated houses and roads. Much of the study area is alluvial flood plain.

The alluvial nature of the floodplain soils to the south and the impact of agriculture and the urban development have reduced the likelihood of some types of evidence of Aboriginal occupation remaining within the study area.

### 3.2.4 Site Distribution Predictions

Predictive models enable statements to be made about the likelihood of sites occurring within certain areas. In predicting the likely presence and distribution of site types a variety of information is used. Information from previous work in the region along with models of preferred environmental conditions such as proximity to water can be used to form hypotheses relating to preferred site location. In addition information relating to past land disturbance will need to be considered in order to take into account where evidence for past use may still remain.

As yet proposed predictive models have not undergone extensive testing in the Clarence River region, however some general statements about the likely distribution of sites can be made. Definitions of site types can be found in the Glossary.

Due to extensive clearing of vegetation the number of trees with the potential to be scarred has been greatly reduced. Scarred trees are likely to be an uncommon site type.

Riverbanks and flood plains are unlikely to contain intact archaeological deposits due to the repeated disturbance by flooding and other impacts such as levee construction. It is still possible some material of a disturbed nature may be present in these areas. In areas of aggrading soil landscapes it is possible that deeply buried material could be present.

Early ploughing techniques may only have an impact on the top 20-30cm of soil, enabling deeper buried archaeological deposits to survive undisturbed.



Repeated long-term agricultural use is likely to have a greater impact on surface sites such as artefact scatters and bora rings.

Heavily built up areas subject to previous disturbance by road and building construction are unlikely to contain evidence of past Aboriginal occupation although it is possible some sites may be preserved sub-surface at a level beneath the disturbance.

No excavations have been undertaken outside of rock-shelters in the flood/flat areas adjacent to the Clarence River so it is difficult to predict with great certainty how much material may survive within this landscape type.

The potential for deposits or art sites occurring within rock-shelters is limited to those areas where suitable rock overhangs occur. Similarly grinding grooves will only occur in areas of suitable stone located adjacent to a water source.

Quarries may occur in areas of suitable siliceous stone outcrops, although none are recorded in the study area.

Ceremonial or Dreaming sites may occur anywhere across the landscape and may still hold significance for Indigenous communities regardless of disturbance since non-Indigenous settlement.

## 4.0 ABORIGINAL CONSULTATION

At the time of commencement of the project the archaeologist was directed to contact the RTA's Aboriginal Programs Consultant (APC) for information relating to the appropriate Indigenous community contacts. Attempts were made to contact the APC, these proved unsuccessful. On the 8<sup>th</sup> of October the archaeologist was instructed to contact the Grafton Ngerrie LALC directly.

Darryl Mercy, Co-ordinator with the Grafton Ngerrie LALC was contacted and a time to undertake field inspections was discussed. Arrangements were also made for the RTA's project manager, Peter Black, to attend a meeting of the LALC to present project related information.

A time was set for the survey on the 13<sup>th</sup> and 14<sup>th</sup> of November 2003.

The Grafton Ngerrie LALC participated in discussions prior to the commencement of the survey to determine what the likely concerns would be. The NSW DEC Parks and Service Division (former National Parks and Wildlife Service) sites officer was also present contributing valuable comments. A number of issues relating to Indigenous participation in the study were raised during the consultation process. These are discussed in Section 6.4.2.

A draft copy of this report was forwarded to the Grafton Ngerrie LALC for their consideration and their comments can be found in Appendix A. A copy of the final report will be sent to the LALC for their records.

## 5.0 SITE INSPECTIONS

Inspections of the study area were carried out on the 13<sup>th</sup> and 14<sup>th</sup> of November. Three Grafton Ngerrie LALC representatives were present during the site inspections Janice Daley, Ken Gordon and Shane Gordon.

Lisa Appo of DEC also accompanied the Survey team on the 13<sup>th</sup> November 2003.

### 5.1 Methodology

The aims of the inspections were to gain an understanding of the type of landscape within the study area and provide an opportunity for input from the Indigenous representatives about any concerns which may relate to proposed impacts in the areas. No consideration of specific impact was undertaken as part of this assessment.

Areas of agricultural land planted with crops were not inspected. Neither were areas of existing streets surveyed. It was determined that any material, which might remain in these areas, is likely to be sub-surface or not visible due to vegetation or other surface covering.

Sample areas were limited to public access areas along the riverbanks. A number of sample areas within the broad study area were inspected.

Sampling consisted of a walking across the area and carrying out a visual inspection of the area. Discussions about the likely concerns at each site were also undertaken. Notes of the condition of each area were taken. In general surface visibility was poor in all areas.

Riverbank access areas were inspected. These have been divided into four broad inspection areas at the following locations.

1. South of the river west of the existing bridge the team inspected areas at Walkers Marina and the southern end of Abbot Street.
2. On the south bank of the River east of the existing bridge areas were inspected at Iolanthe Street and Menona Lane.
3. North of the River to the east of the existing bridge areas were inspected at Corcoran Park, Jaylee Park, the southern end of Fry Street, the southern end of Bacon Street and the southern end of Pound Street.
4. North of the River to the east of the existing bridge areas were inspected immediately east of the bridge adjacent to the bridge at the end of Kent

Street, the southern end of Villiers Street and the southern end of Prince Street between the car park and Duke Street.

In addition discussions were undertaken relating to Susan and Elizabeth Islands and the broader study area including the agricultural land and urban streets.

## **5.2 Inspection Results**

Inspections for tangible sites were carried out at the sample locations throughout the study area, no additional Aboriginal sites were recorded. All areas were inspected for terrain suitable for known site types including, rock outcrops suitable for grinding grooves, sandstone overhangs suitable for shelter sites and mature trees with the potential for scarring. Areas were also inspected for signs of artefact scatters or midden material. None of these features were noted at any of the inspected areas.

In general the riverbanks are heavily disturbed, vegetation has been extensively cleared with no remnant vegetation remaining.

### **5.2.1 Broad Study Area**

The following issues relating to the likely location of further sites within the study area were identified:

- Heavily built up areas subject to previous disturbance by road and building construction are unlikely to contain evidence of past Aboriginal occupation although it is possible some sites may be preserved sub-surface at a level beneath disturbance.
- Riverbanks and flood plains are unlikely to contain intact archaeological deposits due to the repeated disturbance by flooding and other impacts such as levee construction. It is still possible some material of a disturbed nature may be present in these areas.
- The recorded site within Fisher Park (12-6-0216) remains important to the Indigenous community.

### **5.2.2 Inspection Area 1**

The likelihood of locating Aboriginal sites within this area was assessed as low. Both inspected areas were highly disturbed by marina and levee construction.

### **5.2.3 Inspection Area 2**

Some potential for site location exists in areas adjacent to Alipou Creek. This is likely to have been a resource rich area. Much of the agricultural land to the east has been subject to intensive farming and flooding, however it is possible that some sub surface material may remain in these areas.

### **5.2.4 Inspection Area 3**

Areas of sandy riverbank deposits were noted in these areas. Much of the riverbank has been disturbed by levee construction and landscaping associated with urban development, however some potential for buried sites still exists.

### **5.2.5 Inspection Area 4**

This area is predominantly urbanised and includes much disturbance due to levee construction, boat ramps and landscaping. The likelihood of locating archaeological deposit in these areas is low.

### **5.2.6 Susan Island and Elizabeth Island**

Sites have been recorded in both these locations. Both Islands have been recognised as having high significance for the Indigenous community. Inspections of these sites were not undertaken. Management of these areas was discussed and further information relating to intangible sites is also relevant for both islands.

### **5.2.7 Ceremonial or Dreaming Sites**

All of the study area is significant for a variety of reasons to the local Aboriginal people. A variety of significant ceremonial areas exist within the landscape. Management of these sites may need a specific approach that will be discussed further in Section 6.0. The telling of stories associated with such sites is often restricted. In many situations it is only when impacts are proposed that the stories attached to these places will be told.

## **5.3 Potential Impacts**

As part of this assessment only very general impacts to the study area were considered. Impacts for the construction of an additional crossing are likely to include riverbank impact and potential road widening and associated road improvements. Construction has some potential to impact on areas of

significance to the Aboriginal community.

## **5.4 Conclusion**

The inspections of sample locations within the study area did not locate any additional Aboriginal sites. Alipou Creek was noted as an area of potential archaeological sensitivity. No additional areas of high archaeological potential were noted during the inspections. Susan and Elizabeth Islands were noted as areas of high significance for the Indigenous community. During the course of discussions it was expressed that there was some difficulty in assessing the community concerns over such a wide area with no identified specific impacts. The most significant issue noted as part of the assessment was the likely presence of further Dreaming or ceremonial sites associated with the Clarence River.

## **6.0 MANAGEMENT ISSUES AND RECOMMENDATIONS**

### **6.1 Introduction**

Cultural heritage places provide us with evidence of past human activity. Heritage places may be confined to a small area, or represented by a complex of features, including a cultural landscape. Places of human activity in the past are affected by the actions of the present, particularly urban expansion and agricultural processes. This means cultural heritage places are a diminishing resource.

Cultural heritage places are valuable, not only for the scientific records of the past they provide, but also for their social significance. Many Aboriginal places, for example, have a special significance to Aboriginal communities as places where traditional life has continued and places that may have sacred or symbolic significance.

Many heritage places may also be outstanding examples of artistic and creative achievement. Heritage places are valuable to Australians — and the rest of the world — as they not only provide a link with a culturally rich past, but they can contribute to recreational and community life.

Heritage places may also have economic potential (Pearson & Sullivan 1995: 15). These values should, where possible, be protected and handed on to future generations. We all have some degree of social, spiritual, ethical — and legal — obligation to see that this happens.

### **6.2 Significance Assessment**

An important part of management of heritage sites is an assessment of the significance. No significance assessment has been carried out as part of this study although it is recommended as an essential part of ongoing management associated with impact assessment.

An assessment of site significance involves a range of heritage criteria and values. The heritage values of a site or place are broadly defined as the ‘aesthetic, historic, scientific or social values for past, present or future generations’ (Marquis-Kyle & Walker 1992). This means a place can have different levels of heritage value and significance to different groups of people.

Archaeological sites can tell us about past lifestyles and people. They are most commonly assessed in terms of historical and scientific values. There are accepted procedures for determining the level of significance of an

archaeological site. Archaeological significance is likely to be less in disturbed sites, although they may have much higher social significance for the local community. Aboriginal sites and areas of land under the custodianship of a local Aboriginal community usually have a special significance for Aboriginal people. The sites are evidence of past Aboriginal occupation and use of the area, and are the main source of information about the Aboriginal past. The consultants cannot comment directly on such cultural significance – comment can only be made by the Aboriginal community.

## 6.3 Statutory Regulations

The following discussion summarises legislation that applies to Aboriginal sites. The statutory regulations that affect the heritage places identified and recorded during this survey are detailed in Appendix 2. Please consult this appendix for a comprehensive discussion about relevant regulations.

### 6.3.1 New South Wales Aboriginal Cultural Heritage Legislation

Aboriginal heritage management in NSW is provided for by two pieces of legislation: the *National Parks and Wildlife Act 1974* and the *Environmental Planning and Assessment Act 1979*. These acts provide protection for all material relating to the past Aboriginal occupation of Australia. This includes individual artefacts, scatters of stone artefacts, rock art sites, ancient camp sites, human burials, scarred trees, ruins and archaeological deposits associated with Aboriginal missions or reserves. All sites are protected regardless of whether or not they are registered and regardless of their significance. A permit from the DEC Director General is required prior to any disturbance to an Aboriginal site. The *National Parks and Wildlife Act 1974* also establishes administrative procedures for archaeological investigations and the mandatory reporting of the discovery of Aboriginal sites. The NSW DEC administers the *National Parks and Wildlife Act 1974*. The *Environmental Planning and Assessment Act* is administered by The Department of Infrastructure, Planning and Natural Resources (formerly Planning NSW).

## 6.4 Management Recommendations

Two main areas of recommended management for the project are presented below, those relating to the known archaeological sites or areas of potential archaeological deposit and those relating to the continuing involvement of the Indigenous community in the impact assessment process. The involvement of the Indigenous community also relates to the likely presence and management of ceremonial or Dreaming sites.



### 6.4.1 Archaeological Sites

It is recommended that:

- Known recorded sites should be preserved where possible. If any impact to a registered site is proposed a permit from NSW DEC will be required;
- Further archaeological assessment of the impact to specific areas will need to be undertaken when information on route possibilities is known. This should include more intensive archaeological survey, if necessary, as well as significance assessment and a consideration of impacts for any known sites or areas of archaeological potential;
- Although there is some potential for material to remain in highly disturbed areas of urban streets or flood plain, Susan Island, Elizabeth Island and Alipou Creek are the areas of higher archaeological potential within the study area.

### 6.4.2 Indigenous Consultation and Participation

Many of the recommendations in this section are directly derived from discussions with the representatives of the Grafton Ngerrie LALC and DEC. A draft of this report should be forwarded for their endorsement and comment.

The community representatives expressed that the following be acknowledged:

- The whole of the Clarence River has significance for the Indigenous population of the area;
- There was some difficulty in assessing the community concerns over such a wide area with no identified specific impacts;
- In many situations it is only when impacts are proposed that the stories attached to places will be told;
- Different individuals will have different, sometimes conflicting, stories relating to Dreaming sites; and
- The Indigenous community wishes to be consulted on a range of issues, not solely cultural heritage.

In order to maintain ongoing consultation and recognition of impacts during the planning process it is recommended that:

- Further assessment be undertaken when more detailed impact information is

available, this should include ongoing consultation with as wide a range of Indigenous community representatives as possible;

- The Grafton Ngerrie LALC continue to be involved in ongoing assessment by direct consultation;
- Other community organisations be given the opportunity to comment on cultural heritage concerns. These organisations include the Durahwra at Heber Street, Grafton and the Aboriginal Medical Service. It has been suggested that by disseminating information through these organisations more people could be reached;
- Any proposed crossing at Susan or Elizabeth Island would need to carefully consider direct and indirect impacts (such as increased access to sites) as they are both significant sites in the region;
- When information is presented to the Indigenous community they be given adequate time to discuss things amongst themselves and agree on input;
- Consideration should be given to establishing a procedure to facilitate the exchange of information between the Indigenous community and the RTA;
- Copies of the final report should be deposited with the Grafton Ngerrie LALC, DEC AHIMS Registrar and DEC regional office.

## 6.5 Report Lodgement

This report has been distributed to:

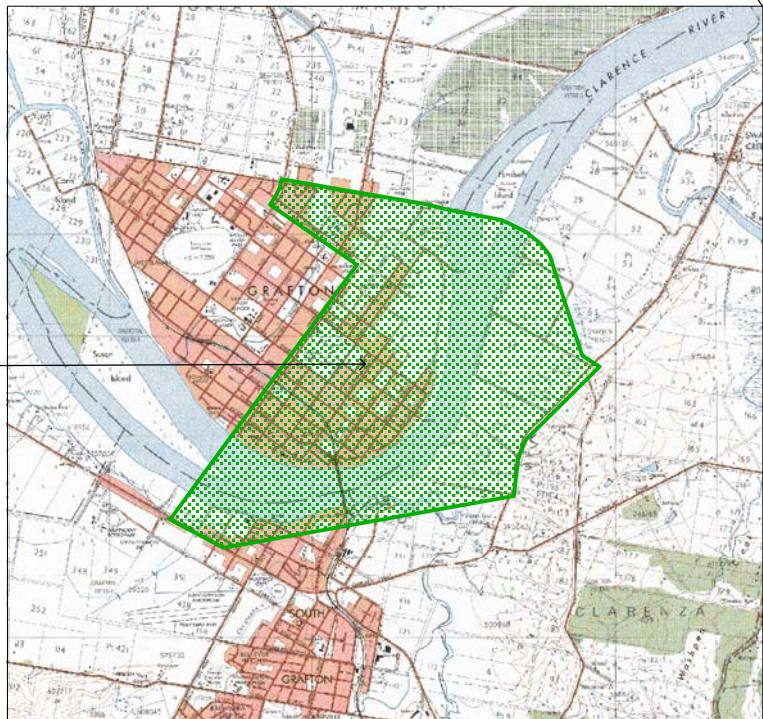
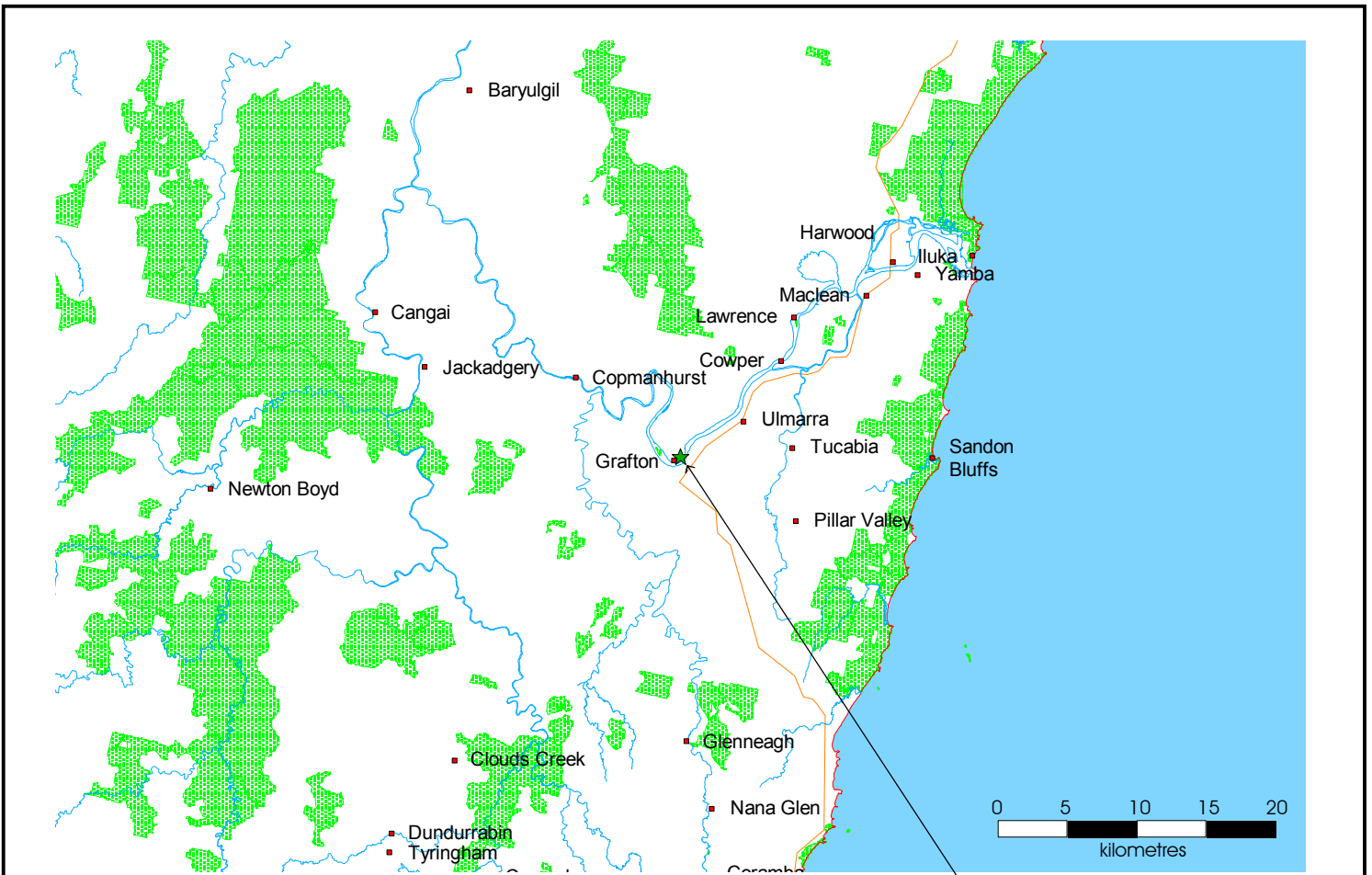
- The NSW Roads and Traffic Authority
- Grafton Ngerrie LALC
- NSW DEC

## 6.6 Independent Review of Reports

Archaeological reports and the management recommendations contained therein may be independently reviewed by the Cultural Heritage Services Division of the NSW DEC and the relevant Aboriginal community.

Although the findings of a consultant's report will be taken into consideration, recommendations in relation to managing a heritage place should not be taken to imply automatic approval of those actions by the DEC or the Aboriginal community.

# FIGURES



Study area

Acknowledgements: Land and Property Information (1:25000 - Grafton) and NSW National Parks and Wildlife Service.



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10 Bartley Street  
Chippendale  
NEW SOUTH WALES 2008

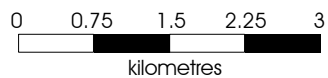
Figure 1: Location of the study area in a regional context.

DATE: 27 January 2004

Checked by: VH | File number: S3908

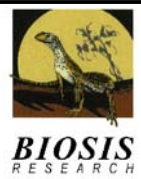
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Scale:





Acknowledgements: Roads and Traffic Authority.



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 Chippendale  
 NEW SOUTH WALES 2008

Figure 2: Study area boundary.

DATE: 27 January 2004

Checked by: VH

File number: S3908

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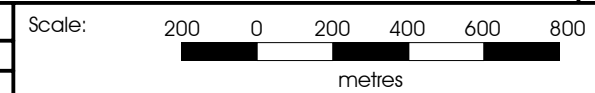


Figure 2: Study area boundary.





# APPENDICES

# APPENDIX 1

## A1. Indigenous community comment



**GRAFTON NGERRIE LOCAL**



**ABORIGINAL LAND COUNCIL**

PHONE: 02 6642 6020  
FAX: 02 6642 6994  
EMAIL: [ngerrie@bri.net.au](mailto:ngerrie@bri.net.au)

50 WHARF STREET  
SOUTH GRAFTON  
PO BOX 550  
GRAFTON, NSW 2460

Janice Daley  
Grafton Ngerrie Local Aboriginal Land Council

Dear Vanessa,

A site inspection was carried out on the 13 and 14 November between, Janice Daley, Ken Gordon, Shane Gordon and Rod Duroux. from the local land council.

On the proposed site for a second bridge across the Clarence River.

The area in question is between eastern end of Susan Island and the western end of Elizabeth Island, all possible areas in between.

There were no Aboriginal sites or Aboriginal objects in the areas that we looked at.

However, this was only a suggestion by the RTA of possible areas for crossing.

*Janice Daley*

## APPENDIX 2

### A2. Statutory regulations

#### A2.1 Aboriginal Sites

##### i) NSW Aboriginal cultural heritage legislation

The State *National Parks and Wildlife Act* 1974 provides protection for material and places relating to the past Aboriginal occupation of Australia, both before and after European occupation. This includes individual artefacts, scatters of stone artefacts, rock art sites, ancient camp sites, human burials, scarred trees, and ruins and archaeological deposits associated with Aboriginal missions or reserves. Aboriginal Objects (any material evidence of the Indigenous occupation of NSW) are protected under Section 90 of the Act. Aboriginal places (areas of cultural significance to the Aboriginal Community declared by the Minister) are protected under Section 84 of the Act. The Act also establishes administrative procedures for archaeological investigations and the mandatory reporting of the discovery of Aboriginal sites. The NSW Department of Environment and Conservation administers *the National Parks and Wildlife Act*.

The NSW Department of Environment and Conservation also provides guidelines for standard archaeological reporting and assessment (NSW NPWS 1997). These guidelines are currently being updated and are in draft form (NSW NPWS n.d.)

The *National Parks and Wildlife Act* requires that a permit from the Director General be obtained before archaeological fieldwork involving disturbance to an Aboriginal site is carried out.

##### ii) Commonwealth Aboriginal cultural heritage legislation

The Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act* 1984 provides protection for Aboriginal cultural property. Certain powers and responsibilities are managed by the NSW Department of Environment and Conservation. Whereas the

State Act provides legal protection for all the physical evidence of past Aboriginal occupation, the Commonwealth Act deals with Aboriginal cultural property in a wider sense. Such cultural property includes any places, objects and folklore that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'. There is no cut-off date and the Act may apply to contemporary Aboriginal cultural property as well as ancient sites. The Commonwealth Act takes precedence over State cultural heritage legislation when there is conflict.

Queries and applications to excavate or disturb an Aboriginal archaeological site for purposes of archaeological fieldwork, should be directed to Cultural Heritage Unit Manager at the relevant DEC Aboriginal Heritage Division regional Office.

#### A2.2 Non-Aboriginal and Contact Sites

##### i) NSW cultural heritage legislation

The *Heritage Act 1977* details statutory responsibilities for historic buildings and gardens, historic places and objects, historical archaeological sites, and historic shipwrecks. The Act is administered by the Heritage Council of New South Wales, through the NSW Heritage Office.

The Heritage Act protects all historical archaeological sites, places and relics in NSW older than 50 years, regardless of their level of cultural heritage significance.

An excavation permit is required for any works, excavations or activities, associated with an archaeological site. Excavation permits are issued by the Heritage Council of New South Wales in accordance with sections 60 or 140 of the Heritage Act. It is an offence to disturb or excavate land to discover, expose or move a relic without obtaining a permit from the NSW Heritage Council. Excavation permits are

usually issued subject to a range of conditions that will relate to matters such as reporting requirements and artefact cataloguing, storage and curation.

The State Heritage Register is a list of places and items with State heritage significance endorsed by the Heritage Council and the Minister that came into effect on 2 April 1999. The register was established under the *Heritage Amendment Act 1998*. It replaces the earlier system of Permanent Conservation Orders as a means for protecting items with State significance. The processes of listing and monitoring the conservation and protection of items are essentially the same.

Items are added to the register by the Minister on the recommendation of the Heritage Council, following an assessment of their significance and consultation with owners and the broader community. The Heritage Council has established the State Heritage Register Committee to recommend items to the Minister for inclusion in the register.

A permit may be required from the Heritage Council of NSW for works or activities associated with a registered place or object.

General queries about site issues and permit applications can be made to the archaeological officers at the Heritage Office. The contact details are:

NSW Heritage Office  
3 Marist Place  
PARRAMATTA NSW 2150  
Ph: (02) 9873 8500  
Fax: (03) 9873 8599

Consultation and discussion with the NSW Heritage Office should begin well before lodging an application for a permit to disturb or destroy a historical archaeological site.

## **A2.3 Additional Legislation**

### ***Environmental Planning and Assessment Act 1979***

The *NSW Environmental Planning and Assessment Act* may have relevance for certain projects because it requires that environmental impacts are considered in land-use planning and decision making. The definition of 'environment impacts' includes

impacts on the cultural heritage of the project area. The Act has three relevant parts: Part III, which governs the preparation of planning instruments; Part IV, which relates to development where consent is required under an environmental planning instrument (EPI); and Part V, which relates to activity where development consent is not required but some other government approval assessments are needed.

Under the Act, local government authorities and The Department of Infrastructure, Planning and Natural Resources (formerly Planning NSW) prepare local and regional environmental planning instruments (LEPs and REPs) to give statutory force to planning controls. These may incorporate specific provisions for conserving and managing archaeological sites.

Integrated Development Assessment (IDA) was introduced under the *Environmental Planning and Assessment Act* so that all matters affecting a development application would be considered by the consent authority in an integrated way.

Integrated Development is one which requires development consent as well as one or more approvals from different government agencies. Such agencies may include NSW NPWS or the NSW Heritage Council. If a development is likely to impact a heritage item, the consent authority must refer it, to NSW NPWS (for Indigenous objects) or the NSW Heritage Council (for sites listed on the State Heritage Register) prior to approval determination.

### ***The Local Government Act 1993***

Under the State Local Government Act, councils can prepare local approvals policies that set out specific matters for consideration in relation to applications to demolish, build or undertake works. Archaeological sites could be considerations under such policies.

### ***Environment Protection and Biodiversity Conservation Act 1999***

Under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) an action requires approval from the Federal Environment Minister if the action will, or is likely to, have a significant

impact on a matter of national environmental significance. Matters of national environmental significance are:

- World Heritage properties,
- Ramsar wetlands,
- nationally listed threatened species and communities,
- migratory species listed under international agreements,
- nuclear actions, and

- the Commonwealth marine environment.

The listing and further information about the EPBC Act can be found at the Environment Australia website: [www.ea.gov.au/epbc](http://www.ea.gov.au/epbc). Actions that are likely to have a significant impact on the environment of Commonwealth land (even if taken outside Commonwealth land), and actions taken by the Commonwealth that are likely to have a significant impact on the environment anywhere in the world, may also require approval under the EPBC Act.

# GLOSSARY & REFERENCES

# GLOSSARY

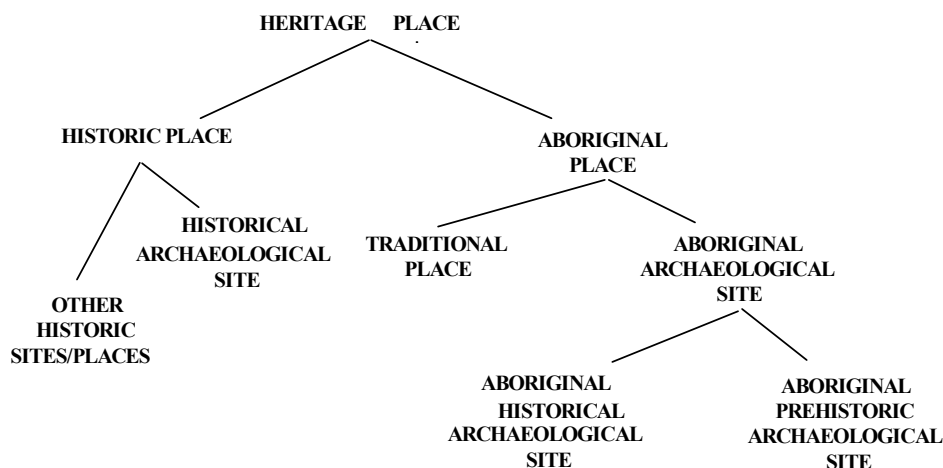
## Introduction & terminology

The following list provides definitions of various terms used in this report. Many of the terms have been referenced and the sources included in the reference list at the end of this report.

There is often a degree of confusion about the use of terms such as *heritage place*, *historical site*, *archaeological site* and so on. The definitions of these terms, as used in this report, have been included in the glossary and their relationship outlined in **Figure 1** below. The term used most consistently is *heritage place* and this is defined as follows:

**Heritage place:** A place that has aesthetic, historic, scientific or social values for past, present or future generations – ‘... this definition encompasses all cultural places with any *potential* present or future value as defined above’ (Pearson & Sullivan 1995: 7).

For the purpose of discussion in this document ‘heritage place’ can be sub-divided into **Aboriginal place** and **historic place** (i.e. a historic place refers more particularly to non-Aboriginal sites).



**Figure G1:** Terminology used for categories of heritage places.

## Archaeological site types

The archaeological site types encountered in Australia can be divided into three main groups:

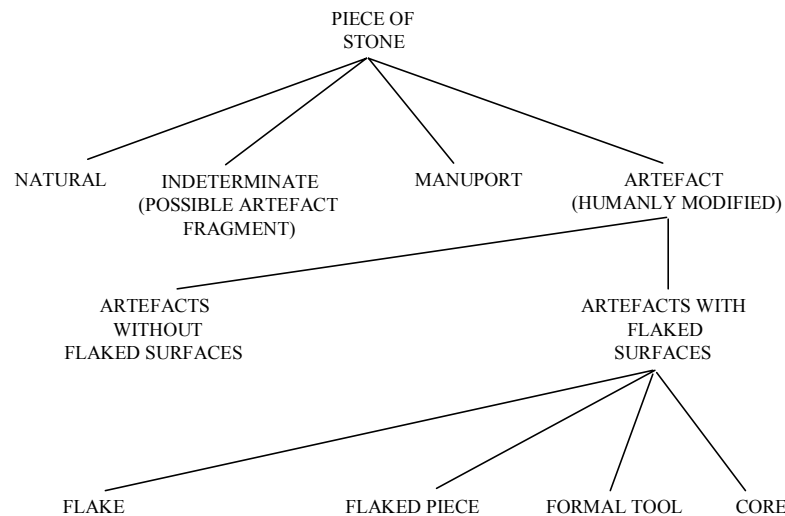
**Historical archaeological site:** an archaeological site formed since non-Aboriginal settlement that contains physical evidence of past human activity (for example a structure, landscape or artefact scatter).

**Aboriginal historical archaeological site (or contact site):** a site with a historical context such as an Aboriginal mission station or provisioning point; or a site that shows evidence of Aboriginal use of non-Aboriginal materials and ideas (for example: artefact scatter sites that have artefacts made from glass, metal or ceramics).

**Aboriginal prehistoric archaeological site:** a site that contains physical evidence of past Aboriginal activity, formed or used by Aboriginal people either before, or not long after, European settlement. These sites are commonly grouped as follows (further definition of each is contained in the glossary list):

- artefact scatter
- mound
- structures
- burial
- quarry
- rock art
- hearth
- scarred tree
- rock shelter
- isolated artefact
- shell midden
- rock well

One of the most common artefact types that provides evidence of Aboriginal people are those made from stone. Types and categories are outlined below in **Figure 2**, with further definition of each in the glossary list.



**Figure G2:** Stone artefact types/categories.

## List of definitions

**Aboriginal historical archaeological site (or contact site):** either a site with an historic context such as an Aboriginal mission station or provisioning point; or a site that shows evidence of Aboriginal use of European/non-Aboriginal materials and ideas (e.g. artefact scatter sites that contain artefacts made from glass, metal or ceramics).

**Aboriginal prehistoric archaeological site:** a site that contains physical evidence of past Aboriginal use, formed or used by Aboriginal people either before, or not long after, European settlement.

**Alluvial terrace:** a platform created from deposits of alluvial material along river banks.

**Anvil:** a portable flat stone, usually a river pebble, used as a base for working stone. Anvils used frequently have a small

circular depression in the centre where cores were held while being struck. An anvil is often a multi-functional tool also used as a grindstone and hammerstone.

**Archaeology:** the study of the remains of past human activity.

**Artefact scatter:** a surface scatter of cultural material. Artefact scatters are often the only physical remains of places where people have lived camped, prepared and eaten meals and worked.

**Backed piece:** a flake or blade that has been abruptly retouched along one or more margins opposite an acute (sharp) edge. Backed pieces include backed blades and geometric microliths. They are thought to have been hafted onto wooden handles to produce composite cutting tools. Backed pieces are a feature of the 'Australian small tool tradition', dating from

- between 5000 and 1000 years ago in southern Australia (Mulvaney 1975).
- Bipolar working:** technique used for the reduction of stone, in particular quartz, by placing a core on an anvil and ‘smashing’ with a hammerstone.
- Blade:** a flake at least twice as long as it is wide.
- Burial site:** usually a sub-surface pit containing human remains and sometimes associated artefacts.
- Burin:** a stone implement roughly rectangular-shaped with a corner flaked to act as point for piercing holes in animal skins. The distinguishing feature is a narrow spall, usually struck from the distal end down the lateral margin of a blade, but sometimes across the end of a flake (McCarthy 1976: 38).
- Contact site:** see ‘Aboriginal historical archaeological site’.
- Core:** an artefact from which flakes have been detached using a hammerstone. Core types include single platform, multi-platform and bipolar forms.
- Cortex:** original or natural (unflaked) surface of a stone.
- Edge-ground implement:** a tool, such as an axe or adze, which has usually been flaked to a rough shape and then ground against another stone to produce a sharp edge.
- Edge modification:** irregular small flake scarring along one or more margins of a flake, flaked piece or core, which is the result of utilisation/retouch or natural edge damage.
- Flake:** a stone piece removed from a core by percussion (striking it) or pressure. It is identified by the presence of a striking platform and bulb of percussion, not usually found on a naturally shattered stone.
- Flaked piece:** a piece of stone with definite flake surfaces, which cannot be classified as a flake or core.
- Formal tool:** an artefact that has been shaped by flaking, including retouch, or grinding to a predetermined form for use as a tool. Formal tools include scrapers, backed pieces and axes.
- Gilgai soils:** soils with an undulating surface, presenting as a pattern of mounds and depressions. A possible cause is the alternation of swelling and cracking of clay during periods of wet and dry conditions.
- Grindstones:** upper (handstone) and lower (basal) stones used to grind plants for food and medicine and/or ochre for painting. A handstone sometimes doubles as a hammerstone and/or anvil.
- Hammerstone:** a piece of stone, often a creek/river pebble/cobble, which has been used to detach flakes from a core by percussion. During flaking, the edges of the hammerstone become ‘bruised’ or crushed by impact with the core.
- Hearth:** usually a sub-surface feature found eroding from a river or creek bank or a sand dune - it indicates a place where Aboriginal people cooked food. The remains of a hearth are usually identifiable by the presence of charcoal and sometimes clay balls (like brick fragments) and hearth stones. Remains of burnt bone or shell are sometimes preserved within a hearth.
- Heat treatment:** the thermal alteration of stone (including silcrete) by stone workers to improve its flaking qualities (see Flenniken & White 1983).
- Heritage Place:** A place with aesthetic, historic, scientific or social values for past, present or future generations – ‘... this definition encompasses all cultural places with any *potential* present or future value as defined above’ (Pearson & Sullivan 1995).
- Historic place:** a place that has some significance or noted association in history.
- Historical archaeological site:** an archaeological site formed since non-Aboriginal settlement that contains physical evidence of past human activity (for example a structure, landscape or artefact scatter).
- Isolated artefact:** the occurrence of one (or a small number as defined by the



survey methodology) of artefacts within a given area. It/they can be evidence of a short-lived (or one-off) activity location, the result of an artefact being lost or discarded during travel, or evidence of an artefact scatter that is otherwise obscured by poor ground visibility.

**Manuport:** foreign fragment, chunk or lump of stone that shows no clear signs of flaking but is out of geological context and must have been transported to the site by people.

**Mound:** these sites, often appearing as raised areas of darker soil, are found most commonly in volcanic plains or on higher ground near bodies of water. The majority were probably formed by a slow build-up of debris resulting from earth-oven cooking; although some may have been formed by the collapse of sod or turf structures. It has also been suggested some were deliberately constructed as hut foundations (Bird & Frankel 1991: 7-8).

**Obtrusiveness:** how visible a site is within a particular landscape. Some site types are more conspicuous than others. A surface stone artefact scatter is generally not obtrusive, but a scarred tree will be (Bird 1992).

**Pebble/cobble:** natural stone fragments of any shape. Pebbles are 2–60 mm in size and cobbles are 60–200 mm in size (McDonald et al. 1984: 78).

**Percussion:** the act of hitting a core with a hammerstone to strike off flakes.

**Platform preparation:** removal of small flake scars on the dorsal edge of a flake, opposite the bulb of percussion. These overhang removal scars are produced to prevent a platform from shattering (Hiscock 1986: 49).

**Pre-contact:** before contact with non-Aboriginal people.

**Post-contact:** after contact with non-Aboriginal people.

**Quarry (stone/ochre source):** a place where stone or ochre is exposed and has been extracted by Aboriginal people. The rock types most commonly quarried for artefact manufacture include silcrete,

quartz, quartzite, chert and fine-grained volcanics such as greenstone.

**Retouch:** a flake, flaked piece or core with intentional secondary flaking along one or more edges.

**Rock art:** ‘paintings, engravings and shallow relief work on natural rock surfaces’ (Rosenfeld 1988: 1). Paintings were often produced by mineral pigments, such as ochre, combined with clay and usually mixed with water to form a paste or liquid that was applied to an unprepared rock surface. Rock engravings were made by incising, pounding, pecking or chiselling a design into a rock surface. Rare examples of carved trees occasionally survive.

**Rock shelter:** may contain the physical remains of camping places where people prepared meals, flaked stone, etc. They are often classed as a different type of site due to their fixed boundaries and greater likelihood of containing sub-surface deposits. Rockshelters may also contain rock art.

**Rock-well:** a natural or modified depression within a stone outcrop, which collects water. The most identifiable of these sites have been modified by Aboriginal people, either by deepening or enlarging.

**Scarred tree:** scars on trees may be the result of removal of strips of bark by Aboriginal People e.g. for the manufacture of utensils, canoes or for shelter; or resulting from small notches chopped into the bark to provide hand and toe holds for hunting possums and koalas. Some scars may be the result of non-Aboriginal activity, such as surveyors marks.

**Scraper:** a flake, flaked piece or core with systematic retouch on one or more margins. Scraper types follow Jones (1971).

**Shell midden:** a surface scatter and/or deposit comprised mainly of shell, sometimes containing stone artefacts, charcoal, bone and manuports. These site types are normally found in association with coastlines, rivers, creeks and swamps – wherever coastal, riverine or estuarine

shellfish resources were accessed and exploited.

**Significance:** the importance of a heritage place or site for aesthetic, historic, scientific or social values for past, present or future generations.

**Striking platform:** the surface of a core, which is struck by a hammerstone to remove flakes.

**Structures (Aboriginal):** can refer to a number of different site types, grouped here only because of their relative rarity and their status as built structures. Most structures tend to be made of locally available rock, such as rock arrangements (ceremonial and domestic), fishtraps, dams and cairns, or of earth, such as mounds or some fishtraps.

**Stratified deposit:** material that has been laid down, over time, in distinguishable layers.

**Utilised artefact:** a flake, flaked piece or core that has irregular small flake scarring along one or more margins that does not represent platform preparation.

**Visibility:** the degree to which the surface of the ground can be seen. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land-use practices, such as ploughing or grading. Visibility is generally expressed in terms of the percentage of the ground surface visible for an observer on foot (Bird 1992).

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