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**GML Heritage Pty Ltd**
**ABN 60 001 179 362**

14 February 2018

Mr Lloyd Gomez
Development Director
Celestino Pty Limited
642 Great Western Highway
PENDLE HILL NSW 2145

Our Ref: 17-0318lgl2

**Re: Jacaranda Ponds, Glossodia, 2017 Masterplan—Heritage Advice**

Dear Mr Gomez,

GML Heritage Pty Ltd (GML) has been engaged by Celestino on behalf of E.J. Cooper & Son Pty Ltd to review changes to the proposed Masterplan update for a group of properties at Jacaranda Ponds, Glossodia ('the study area'). GML has previously prepared an Aboriginal and Non-Aboriginal Heritage Assessment for the study area in 2009, with an updated report prepared in 2015. This letter has been prepared to support a revised submission of the updated Masterplan.

This letter provides a summary of findings from the previous assessments to inform an assessment of the revised Masterplan design to identify any changes that would result in previously unidentified impacts to Aboriginal and non-Aboriginal heritage within the study area. Recommendations for further archaeological management are also provided.

## Background

GML has previously prepared the following reports for the Jacaranda Ponds Masterplan:

- Jacaranda Ponds, Glossodia, Indigenous and Non-Indigenous Heritage Assessment Final Report, report prepared for EG Property Group, December 2009; and
- Jacaranda Ponds, Glossodia, Aboriginal and Non-Aboriginal Heritage Assessment Final Report, report prepared for EJC Corporate Services Pty Ltd, April 2015.

The 2009 report comprised an assessment of the Aboriginal and historical archaeological potential of the subject site. This assessment included consultation and a site inspection with registered Aboriginal stakeholders. In 2015, an update to the previous report was commissioned for the purposes of addressing legislative changes at both local and state levels that had occurred since the original assessment.

During the 2009 site inspection, four Aboriginal heritage sites were identified within the study area. These comprise two isolated artefacts (JCP1, JCP2) and

two potential archaeological deposits (PAD1, PAD2). The 2015 report did not include a site visit, and no additional Aboriginal sites were recorded with the study area. These reports recommended a program of Aboriginal archaeological test excavation to determine the likelihood for Aboriginal objects to survive within the subject site and to inform the requirements for additional archaeological management, such as salvage excavation.

The historical (non-Aboriginal) archaeological assessment determined that the study area has limited potential to contain historical archaeological remains. The study area has been in use for farming and agriculture throughout the nineteenth and twentieth centuries and any archaeological remains would likely be ephemeral and would contribute little new knowledge to our understanding of the development of the region. No further work was recommended for historical archaeology.

### Site Inspection

Sophie Jennings, GML Heritage Consultant, undertook a site inspection of the study area on 10 November and 21 November 2017. The purpose of the site inspection was to assess the current site conditions and inspect the locations of previously identified archaeological sites to inform the recommendations for any future archaeological works that may be required.

The results of the site inspection indicate that no substantial changes, such as the addition of new buildings or landscaping works, have occurred to the study area since 2009. The study area continues to be used for agricultural purposes (chicken farming, cattle grazing).

#### *Previously Recorded Aboriginal Sites*

The 2009 field survey recorded four Aboriginal sites within the study area: JCP1, JCP2, PAD1 and PAD2. A search of the AHIMS database on 16 November 2017 indicates that no additional Aboriginal sites have been registered within the study area. During the most recent site inspections, the locations of these sites were inspected for the purpose of assessing the current condition of these sites.

JCP1 and JCP2 each comprise a single isolated artefact located on existing road surfaces within the study area. The locations of both these sites were inspected, although the artefacts recorded during the 2009 survey were not identified at either site. No other Aboriginal objects were identified at these locations.

PAD1 comprises a ridge located in the northeast of the study area that is considered to have the potential to contain Aboriginal objects. No surface artefacts were identified during either the 2009 or the 2017 site inspections due to dense vegetation cover restricting visibility. The area of potential archaeological deposits appeared intact and further archaeological testing would be required to confirm the presence/absence of Aboriginal objects.

PAD2 comprises a ridge that runs east to west along the northern boundary of the study area. This area was identified during the 2009 survey by the Aboriginal stakeholders as an area with the potential for archaeological deposits. The location was not inspected during the recent site inspection, although visual inspection from Spinks Road that runs parallel to and outside of the study area indicates that this site appears intact.

### Comparison of the 2015 and 2017 Masterplan Proposals

The 2015 subdivision concept included 600 new residential lots, a riparian zone along the creek, and green spaces including a large dam and lake. The current Masterplan for residential subdivision of the study area would include 580 residential lots with green open spaces utilising existing dams and waterways.

Comparison of the current proposal against the 2015 Masterplan indicates that the overall impacts of the proposed subdivision on Aboriginal heritage are comparable to that which has previously been assessed. The property lot layout and arrangement of roads under the current proposal extends farther south towards the creek that forms the southern boundary of the study area, with areas formerly demarcated as riparian zones now proposed for housing lots. The arrangement of open areas/riparian zones has been modified although the large dam/wetland area in the northeast corner remains as open space. As with the 2015 proposal, the registered Aboriginal sites JCP1, JCP2, PAD1 and PAD2 would be partially or wholly impacted by the proposed works.

### Conclusions and Recommendations

This assessment has considered proposed changes between the 2015 proposal and the current draft Masterplan to assess whether additional impacts to Aboriginal and non-Aboriginal heritage would arise as a result of these changes. Comparison of the current and previous proposals indicates that the degree of impact arising from the proposed subdivision on Aboriginal sites and objects is of a similar nature and scale to that proposed in 2015. It is considered that the 2015 report included adequate assessment of the archaeological potential of the study area and no further assessment of impacts to Aboriginal sites would be required at this stage to progress the Masterplan. The 2015 report included strategies to avoid or minimise impacts to the registered Aboriginal sites. Under the current proposal all four registered Aboriginal sites would be impacted by the proposed development and avoidance of these sites is not possible. Therefore, further archaeological assessment would be required prior to redevelopment of these locations to ascertain the significance of these sites.

Both the 2009 and 2015 assessments concluded that the study area has limited potential to contain historical archaeological remains, and as such the proposed changes to the Masterplan would not result in any additional impacts.

The recommendations for the management and mitigation of impacts to Aboriginal and non-Aboriginal heritage provided in the 2015 report have been updated and are set out below:

- Aboriginal community consultation in accordance with the Office of Environment and Heritage (OEH) guidelines should be prepared as part of any future development application (DA) for the proposed subdivision of the study area.
- A program of targeted archaeological test excavation should be undertaken in accordance with the OEH's guidelines across the study area to confirm the presence/absence of Aboriginal objects in areas where impacts are proposed. This should include the location of JCP1, JCP2, PAD 1 and PAD 2 if they are to be impacted by the proposal.
- As part of the 2009 study, the Deerubbin Local Aboriginal Land Council requested that if avoidance strategies cannot be applied along the creek flats, any proposed activity that may disturb the topsoil in this area (along the Currency Creek corridor) be subject to archaeological monitoring.
- Should Aboriginal objects be identified during the program of test excavation that cannot be avoided by the development, an application should be made to the OEH for an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the *National Parks and Wildlife Act 1974* (NSW).
- If human remains are unexpectedly discovered during any development works on the property, the finding should immediately be reported to the New South Wales Coroner's Office and/or the New

South Wales Police. If the remains are suspected to be Aboriginal, OEH should also be contacted and a specialist should be called in to determine the nature of the remains.

- A management strategy to mitigate the impacts from increased population and recreational use of the bushland within and surrounding the study area should be developed to avoid impacts to Aboriginal sites and objects that may exist in these areas.
- On the basis of this assessment, there would be no requirements for approval from the Heritage Branch, OEH, on non-Aboriginal heritage grounds to develop this site.
- In the unlikely event that unexpected archaeological evidence relating to historical, non-Aboriginal occupation of the study area not identified by this assessment were to be discovered during site works, the Heritage Branch, OEH, must be notified in accordance with Section 146 of the *Heritage Act 1977* (NSW) (Heritage Act).

Should you have any queries, please contact me on (02) 9318 7575 and I would be happy to discuss further.

**Yours sincerely,**
**GML Heritage Pty Ltd**

**Sophie Jennings**
**Heritage Consultant**

**Attachments:**

- Jacaranda Ponds Master Plan (FEB 2018_ver1), One Collective Urban Design Studio, February 2018

| INDICATIVE YIELD | |
|---|---|
| Regular Lots (1000sqm+ ave) | 487 lots |
| Mid Lots (2000sqm+ ave) | 50 lots |
| Large Lots (4000-4250sqm+ ave) | 43 lots |
| Total | 580 lots |

MAIN COLLECTOR
- 20m street reserve
- 11m pavement
- 2.5m multipurpose pathway on one side

KEY GREEN STREETS
- Key pedestrian / streetscape / entry streets
- 20m reserve (may reduce where interfacing with open space)
- pavement width may vary (subject to detailed design)
- 2.5m multipurpose pathway on one side

LOCAL STREETS

SHARED DRIVES / LOWER ORDER STREETS
- Key streetscape / landscape treatments to break up residential areas and provide additional interest
- Serving limited number of lots
- Varied pavement width / treatment (subject to engineering design / council approval)

FIRE TRAIL

note: the layout is preliminary only and subject to detailed engineering and surveying input. all dimensions and areas are indicative only.

# JACARANDA PONDS | MASTER PLAN (FEB 2018_ver1)

FEB 2017

0 25 50m

www.onecollective.com.au

GML HERITAGE

# Jacaranda Ponds, Glossodia

## Aboriginal and Non-Aboriginal Heritage Assessment

**Report prepared for EJC Corporate Services Pty Ltd**

**April 2015**

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## Report Register

The following report register documents the development and issue of the report entitled Jacaranda Ponds, Glossodia—Aboriginal and Non-Aboriginal Heritage Assessment, undertaken by GML Heritage Pty Ltd in accordance with its quality management system.

| Job No. | Issue No. | Notes/Description | Issue Date |
|---|---|---|---|
| 14-0484 | 1 | Draft Report | March 2015 |
| 14-0484 | 2 | Final Report | April 2015 |

## Quality Assurance

GML Heritage Pty Ltd operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2008.

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

| | | | |
|---|---|---|---|
| **Project Manager:** | Diana Cowie | **Project Director & Reviewer:** | Martin Rowney |
| **Issue No.** | 2 | **Issue No.** | 2 |
| **Signature** |  | **Signature** |  |
| **Position:** | Consultant | **Position:** | Associate |
| **Date:** | 27 April 2015 | **Date:** | 27 April 2015 |

# Contents Page

# 1.0 Introduction

## 1.1 Project Background

EJC Corporate Services (the proponent) has engaged GML Heritage (GML) to prepare an update of the 2009 combined Aboriginal and non-Aboriginal Heritage assessment for a group of properties at Jacaranda Ponds, Glossodia (the study area). The report will help guide future release and development of land for residential purposes in the Hawkesbury Local Government Area (LGA).

Glossodia is the Hawkesbury's second largest local centre. It is located north of the Hawkesbury River and is an area characterised by rural smallholdings and low- to medium-density residential allotments. It has remained largely unchanged for the past 10 years. In 2009, GML undertook an assessment of Aboriginal and non-Aboriginal heritage within the study area for EG Property Group. The 2009 report was triggered by local and regional strategy documents that had flagged Glossodia as a target growth area.

Legislative changes have occurred at both local and state levels since the 2009 report and thus this new GML report was commissioned. It reviews and updates the assessment of potential for Aboriginal and non-Aboriginal cultural material to be present at the site, identifies levels of significance, and outlines mitigative strategies to manage these resources as part of any future redevelopment commensurate to their heritage significance and current statutory requirements.

## 1.2 Study Area Location

Jacaranda Ponds is located adjacent to the township of Glossodia, approximately 60km to the northwest of Sydney's city centre (Figure 1.1). The study area is 185.2 hectares in extent and comprises the following properties:

- 'Jacaranda Park', Spinks Road, Glossodia, Lot 2 DP 533402, Lot 3 DP 230943, Lot 50 DP 751637 and Lot 52 DP 1104504 with total area of 97.26 hectares;
- 'Annalee', 780 Kurmond Road, Glossodia, Lots 1, 2 and 3 DP 784300 with total area of 84.81 hectares;
- Lot 75 DP 214752 (2.02 hectares);
- Lot 20 DP 214753 (0.41 hectares); and
- Lot 44 DP 214755 (0.7 hectares).

The site is bounded by Spinks Road to the north and Currency Creek to the south. It is surrounded by residential housing to the north and mixed agriculture land use on all other sides.

## 1.3 Approach to Aboriginal Heritage Management

In order to administer the *National Parks and Wildlife Act 1974* (NSW) (NPW Act), *Heritage Act 1977* (NSW) (Heritage Act) and the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act), which protect Aboriginal and historical heritage in NSW, the NSW Office of Environment and Heritage (OEH) have provided a series of best practice guidelines and policies. Since the 2009 heritage assessment of the study area, the OEH has issued a number of new guidelines which must be complied with following amendments to the NPW Act in 2010.

The applicability of guidelines depends upon the approval mechanism for a project. The current project will be assessed and granted approval under Part 5 of the EP&A Act. Therefore the approach to the preparation of this document was based on the following current best practice guidelines:

- Aboriginal Cultural Heritage: Standards and Guidelines Kit (1997 draft);[1]
- *Guide to Determining and Issuing Aboriginal Heritage Impact Permits*;[2]
- *Operational Policy: Protecting Aboriginal Cultural Heritage* (February 2009);[3]
- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (the Due Diligence Code);[4]
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (24 September 2010) (the Code of Practice);[5]
- *NSW Heritage Manual*, particularly the 'Archaeological Assessment' guidelines; and
- the *Australia ICOMOS Burra Charter, 2013* (the Burra Charter).[6]

### 1.3.1 Due Diligence Approach

Since the 2009 heritage assessment of the study area, the OEH has issued the Due Diligence Code that defines a 'due diligence' approach to Aboriginal heritage. This guideline is designed to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects, and/or Aboriginal places, and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP).

The Due Diligence Code has been applied during this study as a best practice management tool for potential Aboriginal heritage objects, places and values which could be associated with the study area. The Due Diligence Code sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

- identify whether or not Aboriginal objects are, or are likely to be, present in an area;
- determine whether or not their activities are likely to harm Aboriginal objects (if present); and
- determine whether an AHIP application is required.

The OEH has defined due diligence thus:

> *Due diligence is a legal concept describing a standard of care. Exercising due diligence means turning your mind to the likely risks of your proposed course of action. It is not enough to perform activities carefully. Due diligence requires consideration of your obligations under, in this case, the NPW Act, and the consideration and adoption of a course of action that is directed towards preventing a breach of the Act.*
>
> *In the context of protecting Aboriginal cultural heritage, due diligence involves taking reasonable and practicable measures to determine whether your actions will harm an Aboriginal object and if so avoiding that harm.*[7]

The steps that are required to follow the due diligence process are:

- searching the Aboriginal Heritage Information Management System (AHIMS);
- checking for landscape features which may indicate the presence of Aboriginal objects;

- developing strategies to avoid harming Aboriginal objects; and
- desktop assessment and visual inspection to confirm the presence of Aboriginal objects.[8]

### 1.3.2 Application to the Current Assessment

In preparing this report, GML complied with the guidelines set out in the Due Diligence Code. The extent of land covered by the due diligence process is described as the study area (Figure 1.1).

The scope of work included the following tasks:

- a review of historical and Aboriginal cultural and archaeological research within the vicinity of the study area since 2009;
- collation of any additional existing information on the ethnohistory of the study area;
- a search of the AHIMS for known Aboriginal objects and/or sites within the vicinity of the study area;
- evaluation of the previous predictive model and significance assessment for the study area based on the background research;
- examination of aerial photographs to identify any disturbances or changes to the study area since 2009;
- preparation of a report that complies with relevant OEH guidelines; and
- updating recommendations for management of Aboriginal and historical heritage within the study area in the future.

### 1.3.3 The Burra Charter Process

The Burra Charter process (Article 6) defines a broad three-stage process—comprising seven smaller steps—for the management of heritage. The three stages involve:

1) developing an understanding of significance,
2) ensuring policy is developed appropriate to the significance, and
3) ensuring management is undertaken in accordance with that policy.

The definitions presented in the Burra Charter have provided the basis for definitions used in this report. The Burra Charter's Indigenous Practice Note provides further guidance for application of the Burra Charter to Aboriginal heritage. Of relevance are the following definitions:

Article 1.1—Place

> *Place means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.*[9]
>
> *'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all of these things or may embody all of these values at the same time.*[10]

Article 1.2—Cultural Significance

*Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.*[11]

Article 1.10—Use

*Use means the functions of a place, including the activities and traditional and customary practices that may occur at the place or are dependent on the place.*[12]

Article 1.11—Compatible Use

*Compatible use means a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.*

Article 8—Setting

*Conservation requires the retention of an appropriate setting. This includes retention of the visual and sensory setting, as well as the retention of spiritual and other cultural relationships that contribute to the cultural significance of the place.*[13]

*Places of significance to Indigenous people require a holistic approach to 'setting'. 'Setting' may encompass the broadest of experiential factors including a sense of 'intrusion' occasioned when people of the 'wrong' gender, age or level of initiation trespass on defined areas, as well as auditory and visual intrusion.*

*For some Indigenous peoples, nature and culture are indivisible. The social significance and spiritual significance of a place for Indigenous people may be wholly or partly dependent on the natural environment that the place forms a part of, including aspects such as biodiversity, and totemic and resource species.*[14]

### 1.3.4 Application to the Current Assessment

Stages 1 and 2 of the Burra Charter Process have been applied during the current project. The following steps have thus been undertaken:

Step 1—Understand the place

This involved desk-based investigation into the environment, archaeology, history and literature relevant to the study area. Field survey was undertaken in collaboration with the Aboriginal community (in 2009). The outcome of the Step 1 investigations was the development of archaeological and landscape zoning plans, which show the known sites, places and values connected to the study area. The approach followed the notion that the study area is part of an Aboriginal cultural landscape, and the study area represents a small zone within this landscape.

Step 2—Assess cultural significance

A preliminary indication of cultural significance considered aesthetic, historic, scientific and social aspects to the study area. This preliminary assessment of value should be used for future assessments, noting both that 'cultural significance may change'[15] and 'tangible heritage should not be emphasised at the expense of intangible heritage'.[16]

Step 3—Identify factors and issues

The results from Steps 1 and 2 were used to identify obligations arising as key future management factors and/or issues. The issues and factors define future needs, opportunities and constraints connected with possible future compatible use.

Step 4—Develop policy

The outcome from Step 3 was applied to develop appropriate management policy, in consultation with the Aboriginal community and in accordance with relevant NSW statutory processes.

### 1.3.5 Exclusions

The conclusions of this report are based on a review of recent publically available background information. No surface survey or excavation or Aboriginal community consultation was undertaken in 2015 as part of this work.

## 1.4 Authorship and Acknowledgements

This updated report has been prepared by Diana Cowie, Consultant and archaeologist with input from Caitlin Dircks, Graduate Consultant of GML. The report has been reviewed by Martin Rowney, Associate of GML.

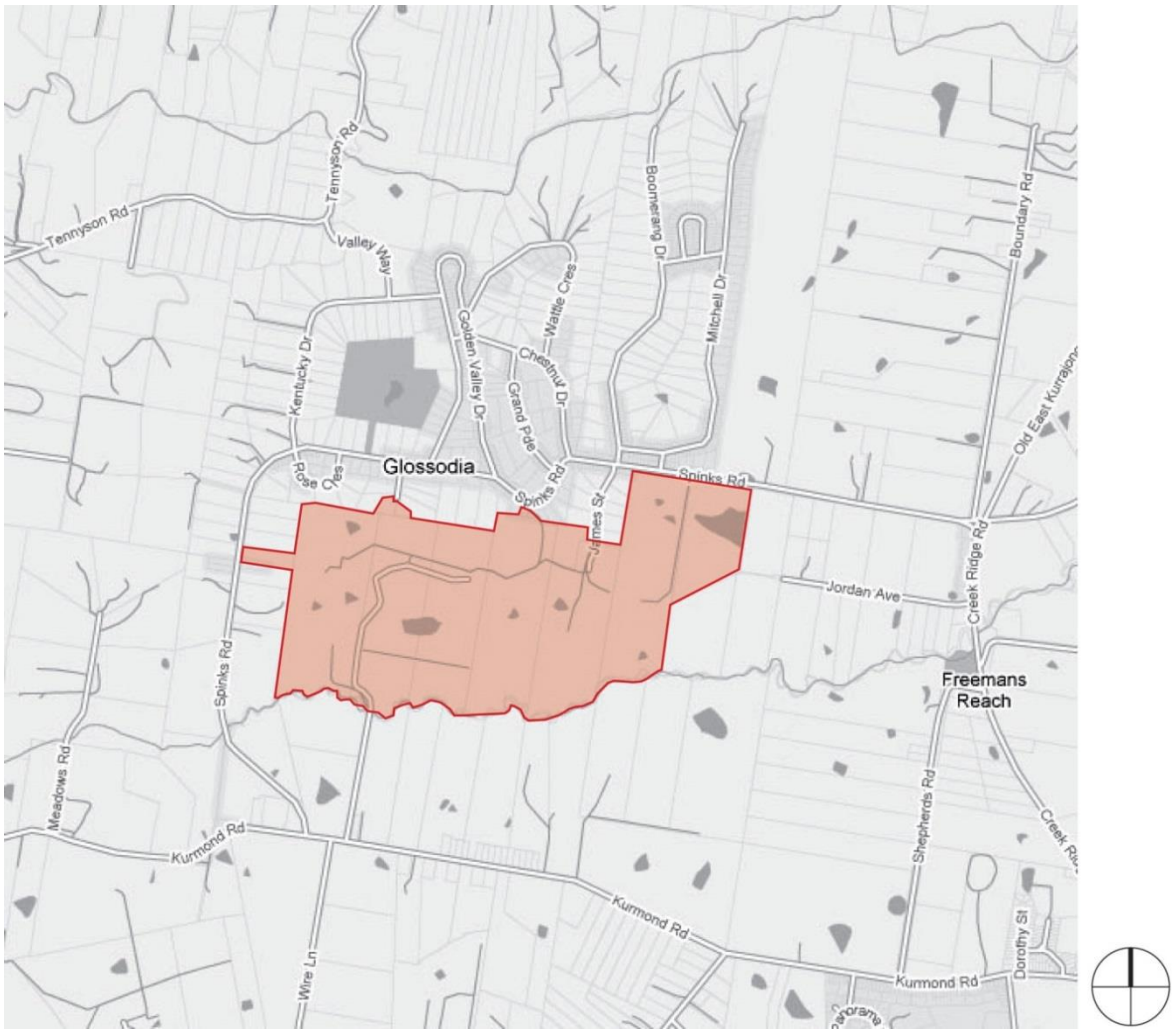



**Figure 1.1** Site location, with study area indicated in red. (Source: Google Maps with GML overlay)

## 1.5 Endnotes

1 Guilfoyle, D, Aboriginal Cultural Heritage. Standards and Guidelines Kit, NSW National Parks and Wildlife Service, Sydney, 1997 draft.

2 DECC 2009, *Guide to Determining Heritage and Issuing Aboriginal Heritage Impact Permit*, Office of Environment and Heritage, viewed 3 March 2015 < http://www.environment.nsw.gov.au/resources/cultureheritage/09121AHIPGuide.pdf>.

3 DECC 2009, *Operational Policy: Protecting Aboriginal Cultural Heritage*, Office of Environment and Heritage, viewed 3 March 2015 < http://www.environment.nsw.gov.au/resources/cultureheritage/09122ACHOpPolicy.pdf>.

4 DECCW 2010, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*, Office of Environment and Heritage, viewed 3 March 2015 <http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf>.

5 DECCW 2010, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Office of Environment and Heritage, viewed 3 March 2015 <http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf>.

6 Australia ICOMOS Inc, *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood VIC, 2000.

7 DECCW 2010, *Due diligence guidelines for protection of Aboriginal objects in NSW,* Office of Environment and Heritage, viewed 3 March 2015 <http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf>.

8 DECCW 2010*, NPW Act 1974 Fact sheet 2*.

9 Australia ICOMOS Inc., *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013*, Australia ICOMOS Inc., Burwood VIC 2013, Article 1.1.

10 Australia ICOMOS Inc., *Burra Charter Practice Note 2013*, Australia ICOMOS Inc., Burwood VIC 2013, p 2.

11 Australia ICOMOS Inc., *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013*, Australia ICOMOS Inc., Burwood VIC 2013, Article 1.2.

12 Australia ICOMOS Inc., *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013*, Australia ICOMOS Inc., Burwood VIC 2013, Article 1.10.

13 Australia ICOMOS Inc., *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013*, Australia ICOMOS Inc., Burwood VIC 2013, Article 8.

14 Australia ICOMOS Inc., *Burra Charter Practice Note 2013*, Australia ICOMOS Inc., Burwood VIC 2013, p 5.

15 Australia ICOMOS Inc., *Burra Charter Practice Note 2013*, Australia ICOMOS Inc., Burwood VIC 2013, p 4.

16 Australia ICOMOS Inc., *Burra Charter Practice Note 2013*, Australia ICOMOS Inc., Burwood VIC 2013, pp 2 and 4.

# 2.0 Statutory Context

## 2.1 Preamble

The Jacaranda Ponds study area is affected by a number of statutory controls which must be taken into account prior to developing the land. These controls include the:

- Heritage Act;
- NPW Act;
- EP&A Act;
- *Hawkesbury Local Environmental Plan 2012* (Hawkesbury LEP); and
- *Hawkesbury Development Control Plan 2013* (Hawkesbury DCP).

## 2.2 The Heritage Act 1977 (NSW)

The Heritage Act is a statutory tool designed to conserve NSW heritage and is used to regulate the impacts of development on the state's heritage assets. The Heritage Act defines a heritage item as 'a place, building, work, relic, moveable object or precinct'.

To assist in management of the state's heritage assets, the Heritage Act distinguishes between items of Local and State heritage significance.

- 'local heritage significance', in relation to a place, building, work, relic, moveable object or precinct, means significance to an area in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.
- 'State heritage significance', in relation to a place, building, work, relic, moveable object or precinct, means significance to the state in relation to the historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic value of the item.

A 'relic' is defined by the Heritage Act as:

> *Any deposit, artefact object or material evidence that:*
>
> *(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
>
> *(b) is of State or local heritage significance.*[1]

Archaeological features and deposits are afforded statutory protection by the relics provision of the Heritage Act (as amended in 1999). Section 139[1] of the Act states that:

> *A person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.*[2]

Approval from the Heritage Division of the OEH (under delegation from the Heritage Council of NSW) would be required to allow disturbance of any areas of historical archaeological potential. Excavation permits may be issued under Section 141 of the Heritage Act by the Heritage Council of NSW (or by the Heritage Division or the OEH under delegation).

A search of the State Heritage Register undertaken in 2009 did not identify any heritage items listed under the Heritage Act within or in the vicinity of the study area. A search undertaken on 11 February 2015 confirmed that there are still no heritage items listed under the Act in or near the study area.

## 2.3 National Parks and Wildlife Act 1974 (NSW)

The NPW Act provides statutory protection for all Aboriginal 'objects' ('objects' consist of any material evidence of the Aboriginal occupation of NSW) under Section 90 of the NPW Act, and for 'Aboriginal places' (areas of cultural significance to the Aboriginal community) under Section 84 of the NPW Act. Aboriginal objects and places are afforded automatic statutory protection in NSW whereby it is an offence (without the Minister's consent) to harm an Aboriginal object or declared Aboriginal place.

The NPW Act defines an Aboriginal object as:

> *any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*[3]

On 1 October 2010 the mechanisms for the protection and management of Aboriginal heritage places and objects changed with the adoption of the NPW Amendment (Aboriginal Objects and Places) Regulation 2010.

New offences relating to the harm to, or desecration of, an Aboriginal object or declared Aboriginal place were introduced. The definition of 'harm' now includes to destroy, deface, damage or move an Aboriginal object or declared Aboriginal Place. The OEH has stated:

> *The most significant change is the introduction of tiered offences and penalties. Offences committed with knowledge, in aggravating circumstances or in relation to an Aboriginal Place will attract higher penalties than previously. There is a new strict liability offence of harming Aboriginal objects and of harming or desecrating Aboriginal Places.*[4]

The strict liability offence of harming Aboriginal objects has a number of defences. The two defences relevant to this project include the statutory defence of due diligence through complying with an adopted industry code of practice or compliance with the conditions of an AHIP.

## 2.4 The Environmental Planning and Assessment Act 1979 (NSW)

The EP&A Act is administered by the NSW Department of Planning and provides for environmental planning instruments to be made to guide the process of development and land use. It provides for the protection of local heritage items and conservation areas through listing on Local Environmental Plans (LEPs) or Regional Environmental Plans (REPs) as well as a statutory framework for the determination of development proposals.

LEPs guide local councils in making planning decisions. Heritage items in planning instruments are usually historic sites but can include Aboriginal objects and places. The EP&A Act requires that appropriate measures be taken for the management of the potential archaeological resource by means consistent with practices and standards adopted in meeting the requirements of the Heritage Act and NPW Act.

The study area is located within the Hawkesbury LGA, and is therefore subject to the Hawkesbury LEP and Hawkesbury DCP.

## 2.5 Hawkesbury Local Environment Plan 2012

LEPs are prepared by councils to guide planning decisions in their LGA and establish the requirements for the use and development of land. Through zoning and development controls they allow councils to supervise the ways in which land is used.

### 2.5.1 Aims and Objectives

The stated aims and objectives of the Hawkesbury LEP are:

*(a) to provide the mechanism for the management, orderly and economic development and conservation of land in Hawkesbury,*

*(b) to provide appropriate land in area, location and quality for living, working and recreational activities and agricultural production,*

*(c) to protect attractive landscapes and preserve places of natural beauty, including wetlands and waterways,*

*(d) to protect and enhance the natural environment in Hawkesbury and to encourage ecologically sustainable development,*

*(e) to conserve and enhance buildings, structures and sites of recognised significance that are part of the heritage of Hawkesbury for future generations,*

*(f) to provide opportunities for the provision of secure, appropriate and affordable housing in a variety of types and tenures for all income groups in Hawkesbury,*

*(g) to encourage tourism-related development that will not have significant adverse environmental effects or conflict with other land uses in the locality.*[5]

### 2.5.2 Terms of Reference

The following heritage terms of reference are defined in the Hawkesbury LEP as quoted below:

***Aboriginal object*** *means any deposit, object or other material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of an area of New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*

***Aboriginal place of heritage significance*** *means an area of land, the general location of which is identified in an Aboriginal heritage study adopted by the Council after public exhibition and that may be shown on the Heritage Map, that is:*

*(a) the site of one or more Aboriginal objects or a place that has the physical remains of pre-European occupation by, or is of contemporary significance to, the Aboriginal people. It may (but need not) include items and remnants of the occupation of the land by Aboriginal people, such as burial places, engraving sites, rock art, midden deposits, scarred and sacred trees and sharpening grooves, or*

*(b) a natural Aboriginal sacred site or other sacred feature. It includes natural features such as creeks or mountains of long-standing cultural significance, as well as initiation, ceremonial or story places or areas of more contemporary cultural significance.*

*Note. The term may not include (but is not limited to) places that are declared under section 84 of the National Parks and Wildlife Act 1974 to be Aboriginal places for the purposes of that Act.*

***Archaeological site*** *means a place that contains one or more relics.*

**Heritage conservation area** means an area of land of heritage significance:

(a) shown on the Heritage Map as a heritage conservation area, and

(b) the location and nature of which is described in Schedule 5,

and includes any heritage items situated on or within that area.

***heritage item*** *means a building, work, place, relic, tree, object or archaeological site the location and nature of which is described in Schedule 5.*

*Note. An inventory of heritage items is also available at the office of the Council.*

***heritage significance*** *means historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic value.*[6]

### 2.5.3 Heritage Provisions

While heritage items are listed in Schedule 5 of The Hawkesbury LEP 2012, clauses that apply to heritage resources are provided in Section 5.10. In summary, development consent is required for any of the following:

*(a) demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):*

*(i) a heritage item,*

*(ii) an Aboriginal object,*

*(iii) a building, work, relic or tree within a heritage conservation area,*

*(b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,*

*(c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,*

*(d) disturbing or excavating an Aboriginal place of heritage significance,*

*(e) erecting a building on land:*

*(i) on which a heritage item is located or that is within a heritage conservation area, or*

*(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,*

*(f) subdividing land:*

*(i) on which a heritage item is located or that is within a heritage conservation area, or*

*(ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.*[7]

### 2.5.4 Listed Heritage Items and Findings of the Previous Study

There are no heritage items within the study area or the locality of Glossodia which are listed in the Hawkesbury LEP. However, the previous heritage assessment of the study area in 2009 noted 19 previously recorded Aboriginal sites in the vicinity of the study area and identified two Aboriginal objects within it. An area assessed as having high potential for surface and/or subsurface archaeological deposits was identified along the eastern hill crest (A7); however, based on the known site types of the region, it was deemed that any identified sites would probably be of low to moderate

archaeological significance. The Currency Creek corridor was assessed as having moderate potential to contain surface and/or subsurface archaeological deposits and low to moderate archaeological significance. Development regulations are likely to prevent any construction within the riparian zone and thus archaeology within this area has the potential to be conserved. In terms of historic heritage, the 2009 study found that the study area may have some potential to contain fragmentary archaeological evidence associated with generic farming activities. This evidence would have limited research potential to contribute new or substantial information about the study area. Built structures in the study area are limited to twentieth century houses, sheds and outbuildings—and the study area was considered to have little or no non-Aboriginal archaeological potential or heritage significance. There were no other identified heritage items within the study area.

### 2.5.5 Conservation Initiatives

The Hawkesbury LEP 2012 provides conservation incentives for the following:

> *any purpose of a building that is a heritage item or of the land on which such a building is erected, or for any purpose on an Aboriginal place of heritage significance, even though development for that purpose would otherwise not be allowed by this Plan, if the consent authority is satisfied that:*
>
> *(a) the conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and*
>
> *(b) the proposed development is in accordance with a heritage management document that has been approved by the consent authority, and*
>
> *(c) the consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and*
>
> *(d) the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and*
>
> *(e) the proposed development would not have any significant adverse effect on the amenity of the surrounding area.*[8]

## 2.6 Hawkesbury Development Control Plan

Though prepared prior to the Hawkesbury LEP, the DCP was updated in 2013 and complements the statutory provisions contained in the LEP. Heritage and Heritage Conservation is specifically addressed in Chapter 10 of the DCP. The chapter provides 'objectives and development controls for heritage items and heritage conservation areas listed in the Hawkesbury LEP and any development ono land adjacent to or within the vicinity of a heritage item or conservation area'.[9] The requirements of the DCP apply to any development in addition to those set out in Section 5.10 of the LEP.

### 2.6.1 Objectives

The primary objectives of the DCP in terms of heritage conservation are:

> (a) *To promote and protect the Hawkesbury area's natural and cultural heritage as a valuable resource that must be conserved for future generations.*
>
> (b) *To consider the potential heritage significance of all properties identified in the LEP Heritage Map and other applications as a matter to be taken into account in the assessment of Das affecting those properties.*
>
> (c) *To integrate conservation and management issues into the planning and development control process.*

(d) *To ensure that any development with respect to a heritage site is undertaken in a manner that is sympathetic to, and does not detract from the identified significance of the site.*

(e) *To encourage innovative approaches to the conservation of Hawkesbury area's and [sic] heritage sites and to provide incentives for good management practice.*[10]

### 2.6.2 Terms of Reference

The DCP utilises the heritage definitions as presented in the LEP though it provides additional clarification on what, for example, may constitute a heritage item. While the DCP refers to the definition of archaeological site in the LEP, it provides a somewhat more useful definition of archaeological sites and conservation of these:

> *An archaeological site can be defined as any concentration of material remains marking the location of past human activities…the conservation of important archaeological sites not only provides a more attractive environment but also enhances the cultural significance of the area and enables the community to enjoy the benefits of enhanced tourism, recreation and education. Archaeological work assists in our understanding of past activities and our cultural heritage.*[11]

### 2.6.3 Clauses and Controls

The DCP reiterates the LEP clauses about when development consent is required for works related to a heritage place or site and the conservation incentives. Further to this, the DCP covers obligations for developers when development consent is not required as well as clauses and controls for:

- adaptive reuse of heritage items;
- demolition or relocation of a heritage building/item;
- conservation and maintenance;
- alterations and additions;
- built form and character;
- finishes materials and colours;
- new development within the curtilage of a heritage item;
- development within a heritage conservation area;
- development in the vicinity of a heritage item or conservation area;
- development of archaeological sites;
- subdivision;
- landscaping; and
- signage.

In principle, the controls reflect the methodology that should be applied to manage heritage sites and places according to the Burra Charter.

Of particular relevance to proposed development at Jacaranda Ponds, Glossodia, are the controls for development of archaeological sites:

> *(a) New development should be designed to minimise impacts on an archaeological site that is considered to be of heritage significance.*
>
> *(b) Any development that involves the disturbance of archaeological sites or deposits cannot proceed without the appropriate approvals under the NSW Heritage Act 1977. The applicant should seek advice from the Heritage Branch of the Office of Environment & Heritage and Council's Heritage Officer in relation to these requirements.*
>
> *(c) Archaeological investigations must be carried out according to Office of Environment and Heritage's Code of practice for archaeological investigation of Aboriginal objects in NSW, available at www.environment.nsw.gov.au/licences/archinvestigations.htm.*[12]

The council require as part of any development application which may involve impact to Aboriginal and/or historic sites, places and/or archaeology, an archaeological report and/or heritage impact statement prepared in accordance with the relevant NSW legislation and guidelines.

## 2.7 This Study

This report updates the 2009 heritage assessment for the study area, bringing it up to date with the current NSW legislation and guidelines. This report satisfies in part the due diligence requirements for Aboriginal archaeology and provides an initial assessment of historical archaeological potential. As Aboriginal archaeological potential has been identified within the study area, archaeological test excavation under the Code of Practice will be required to confirm the presence, nature and extent of any Aboriginal archaeological deposits within the study area so that they may be appropriately managed prior to and in conjunction with proposed future development. Thus, a field survey has not been undertaken as part of this study updating the 2009 assessment, as it will be undertaken prior to future test excavation, in consultation with Registered Aboriginal Parties (RAPs) from the local Aboriginal community.

## 2.8 Endnotes

[1] Australasian Legal Information Institute, 'Heritage Act 1977—Sect 4', viewed 11 February 2015 <http://www.austlii.edu.au/au/legis/nsw/consol_act/ha197786/s4.html#relic>.

[2] Australasian Legal Information Institute, 'Heritage Act 1977—Sect 139', viewed 11 February 2015 <http://www.austlii.edu.au/au/legis/nsw/consol_act/ha197786/s139.html >.

[3] Australasian Legal Information Institutes, 'National Parks and Wildlife Act 1974—Part 1, Section 5', viewed 3 March 2015 <http://www.austlii.edu.au/au/legis/nsw/consol_act/npawa1974247/s5.html>.

[4] DECCW 2010, *National Parks and Wildlife Act 1974 Fact sheet 1*, viewed 11 February 2015 <http://www.environment.nsw.gov.au/resources/cultureheritage/NPWAct/10701npwfacts1.pdf>.

[5] NSW Government, 2015, Hawkesbury Local Environmental Plan 2012, '1.2 Aims of Plan', viewed 11 February 2015 <http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+470+2012+cd+0+N>.

[6] NSW Government, 2015, Hawkesbury Local Environmental Plan 2012, 'Dictionary', viewed 11 February 2015 <http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+470+2012+cd+0+N>.

[7] NSW Government, 2015, Hawkesbury Local Environmental Plan 2012, '5.10 Heritage Conservation', viewed 11 February 2015 <http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+470+2012+cd+0+N>.

[8] NSW Government, 2015, Hawkesbury Local Environmental Plan 2012, '5.10 Heritage Conservation', viewed 11 February 2015 <http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+470+2012+cd+0+N>.

[9] Hawkesbury Council 2013, 'Chapter 10 Heritage Conservation', *Hawkesbury Development Control Plan*, Hawkesbury Council, Windsor, viewed 11 February 2015 <http://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0020/61337/Heritage-Conservation-Chapter-December-2013.pdf>.

[10] Hawkesbury Council 2013, 'Chapter 10 Heritage Conservation', *Hawkesbury Development Control Plan*, Hawkesbury Council, Windsor, p 10.1, viewed 11 February 2015 <http://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0020/61337/Heritage-Conservation-Chapter-December-2013.pdf>.

[11] Hawkesbury Council 2013, 'Chapter 10 Heritage Conservation', *Hawkesbury Development Control Plan*, Hawkesbury Council, Windsor, p 10.5, viewed 11 February 2015 <http://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0020/61337/Heritage-Conservation-Chapter-December-2013.pdf>.

[12] Hawkesbury Council 2013, 'Chapter 10 Heritage Conservation', *Hawkesbury Development Control Plan*, Hawkesbury Council, Windsor, p 10.18, viewed 11 February 2015 <http://www.hawkesbury.nsw.gov.au/__data/assets/pdf_file/0020/61337/Heritage-Conservation-Chapter-December-2013.pdf>.

# 3.0 Understanding the Place: Environmental, Cultural and Historical Context

## 3.1 Environment

The study area is a group of properties where poultry farming and husbandry/agistment is being undertaken. The study area is currently occupied primarily by a chicken farm and egg processing plant. It has over 30 agricultural sheds and a number of small- to medium-sized dams and has been subject to clearing, ploughing and grazing activities since the nineteenth century.

The nature and availability of resources including water, flora and fauna, and suitable raw materials for traditional Aboriginal manufacture of stone tools and other items had (and continues to have) a significant influence over the way in which people utilise the landscape.

### 3.1.1 Landform

Glossodia lies at the border of two physiographic regions, the Cumberland Lowlands and the Blue Mountains Plateau. The Cumberland Lowlands cover the Cumberland Plain and the area around the towns on the Hawkesbury River, while the Blue Mountains Plateau covers elevated tablelands to the west. The topography of the area is characterised by undulating hills which rise to 78m AHD (Australian Height Datum—mean sea level is assigned zero) in the northwest and slopes south to Currency Creek, where the lowest point is 35m AHD. There are views to the surrounding countryside to the southeast and the Blue Mountains to the west. Small stands of regrowth vegetation are scattered throughout the study area.

### 3.1.2 Hydrology

The study area lies within the Hawkesbury-Nepean catchment. The study area is not affected by flooding from the Hawkesbury River (located approximately 2km to the south) as it lies wholly above the Probable Maximum Flood (PMF) level for the region, which varies between 26.4 and 26.5 metres between North Richmond and Windsor. Running through the Glossodia area are a number of small creeks and streams feeding into Halls Wetlands and the Hawkesbury River in the southeast. There are three watercourses within the current study area. One of these, Currency Creek, a first order stream, defines the southern boundary of the study area. The other two unnamed watercourses are located within the northwestern corner of the study area and are also first order creeks according to the Strahler creek order system.

### 3.1.3 Geology

The study area is part of the Sydney Basin geological province and the Cumberland Plain, and geologically consists of Tertiary and Triassic horizontally bedded sedimentary rock.[1] Wianamatta group shale forms the geological profile of the study area. The Wianamatta group consists of shales, conglomerates and sandstones which originally overlaid the Hawkesbury sandstone. Wianamatta Group shales are divided into two formations: Ashfield Shale and Bringelly Shale. The Ashfield Shale consists of black and grey siltstone and laminite. This is overlain by Bringelly Shale, which consists of claystone and siltstone, carbonaceous claystone, laminite and fine- to medium-grained sandstone. In many areas of the Hawkesbury region, these rocks have been deeply eroded over time, exposing lower levels, which are almost exclusively Hawkesbury sandstone.[2] This, however, is not the case within the study area, where no sandstone outcrops have been identified to date.

### 3.1.4 Soils

The property at Glossodia lies on an erosional 'Gymea' soil landscape surrounded by woodland soil types. These landscapes feature shallow to moderately deep (30–100cm) yellow earths and earthy sands on the hill crests, with yellow earths to earthy sands inside the benches (soil beds located on the sides of valleys above the valley base). The foremost edges of the benches have shallow (<20cm thick) silica rich soils. The slopes are covered in shallow red soils with no clearly defined horizons. Leached sands and sands containing silica lie in shallow (30–100cm) to deep (150–300cm) deposits along the drainage lines. Rock outcrops generally feature on 25 per cent or less of the landscape, and localised grey and yellow leached soils are found on shale lenses. The soils in this area are highly permeable with high erosion potential and low fertility.[3]

### 3.1.5 Climate

The climate of Glossodia is temperate, marked by cool winters and warm to hot summers. December is the warmest month at the nearby Richmond RAAF base, with the average daily temperatures ranging from a minimum of 17.5°C to a maximum of 30.1°C. July is the coolest month, with average daily temperatures ranging from an overnight minimum of 3.5°C to a high of 17.5°C; and frosts are common in winter. The average annual rainfall for Orchard Hills is 729mm and totals are highest in the summer months and lowest in the winter months.[4] The Cumberland Plain is located in the rain shadow of the higher coastal plateau of the Blue Mountains that captures rain from the prevailing winds from the southeast.[5] As such, the rainfall in the western Cumberland Plain is considerably lower than that of the adjacent Blue Mountains and coastal Sydney. The climate of the last 1,000 years is noted to have been similar to that of today[6], so the Glossodia area would have been suitable for occupation by Aboriginal people in the past.

### 3.1.6 Flora and Fauna

In the past, the Cumberland Plain and Hawkesbury region was covered with open forest and was home to diverse flora and fauna providing a resource-rich environment for habitation. Through European land clearance and farming practices—which commenced in the area in the early nineteenth century and were followed by the development of housing, roads and services—much of the area has been cleared of its original forest cover.

Historical records cited by Brayshaw indicate that by the early 1820s the 'greater part of the alluvial lands upon the Hawkesbury and Nepean have been cleared and under cultivation'.[7] The result was the clearing of almost all of the original vegetation from the site. Only a few stands of native vegetation remain, consisting of dry sclerophyll woodland. The study area itself is mostly cleared.

The area today is characterised by dry sclerophyll forest with the dominant species being spotted gum (*Eucalyptus maculata*) and grey box (*Eucalyptus moluccana*). Understorey shrubby species include hickory (*Acacia implexa*) and blackthorn (*Bursaria spinosa*), while grasses include kangaroo grass (*Themeda australis*) and speargrass (*Aristida vegans*).[8] A range of faunal species exist throughout the Cumberland Plain including eastern grey kangaroo (*Macropus giganteus*) and a range of wallaby, wombat and possum species. Swan and duck species frequent the wetlands and creeks in the surrounding area. The plants and animals in the area would have provided Aboriginal people with a varied diet in the past.

## 3.2 Ethnohistory of the Cumberland Plains Region

Our knowledge of Aboriginal groups prior to European contact is, to a large extent, reliant on European accounts. Such documents are inherently biased by the class and cultural background of the authors. However, when combined with archaeological evidence and traditional knowledge they can provide a more holistic picture of Aboriginal life and culture.

The duration of Aboriginal presence in the Sydney region is asserted by Aboriginal oral tradition and supported by archaeological evidence. The greater Sydney region contains thousands of Aboriginal sites, with new ones being recorded constantly through academic studies, surveys and excavations undertaken for consulting projects. The types of Aboriginal sites in the region include rock shelters, isolated stone artefacts, stone artefact concentrations, middens, camp/cooking sites, rock engravings and paintings, scarred trees, axe-grinding grooves, burial sites and stone and ochre quarries. A number of Aboriginal sites have been excavated throughout the region from a variety of environments. A rock shelter site in the Blue Mountains (Kings Tableland) has been dated to about 22,000 years ago.[9] Post-contact Aboriginal sites include former missions, reserves and historical campsites.

Determining the population of Aboriginal people at the time of European contact is notoriously difficult. Firstly, Aboriginal people were largely mobile and avoided contact with Europeans. Further, many Aboriginal people perished from European diseases such as smallpox some time after contact or through clashes with the new settlers, so the population statistics gathered in the early years may not be particularly reliable. Population estimates for the greater Sydney region, including the lower Blue Mountains, generally range from 4,000–8,000 at the time of European contact.[10] The western Cumberland Plain population, specifically, has been estimated to be between 500–1,000 people at the time of contact—which translates to a minimum population density of 0.5 people per square kilometre.[11]

Previous ethnographic research has identified 13 inland Darug clans, the three closest to the Glossodia area being the *Kurrajong* clan located at Kurrajong, the *Cattai* clan at Windsor and *Boorooberongal* clan at Richmond.[12] The name 'Kurrajong' is said to come from a tree whose bark fibres were used for making twine and fishing lines.[13]

The material culture of Aboriginal people in the Cumberland Plain at the time of European settlement was diverse and utilised the local materials at hand including plants, animals and stone. The use of plant materials was widespread with many items being made from bark and wood including shelters, canoes, weapons, tools and items of personal adornment. Canoes were noted on the Hawkesbury–Nepean River and ranged in length from 2.4 to 6 metres in length.[14] Spears were made of wood, with stone, bone, wood or shell barbs attached using resin. Wood was also used for axe handles, bowls and women's digging sticks used to obtain yams and other tubers.[15] Boomerangs and clubs were made from hardwoods and were used in hunting. 'Boomerang' is believed to be a Darug word.[16] Land mammals on the Cumberland Plain were hunted and eaten including kangaroos, wallabies, possums, gliders, fruit bats and kangaroo-rats. Birds were also hunted and eggs were collected for eating. Freshwater food resources available in the Hawkesbury–Nepean catchment included eel, fish, crayfish, yabbies, shellfish, platypus and water rat. Reptiles including snakes, lizards and tortoises were caught and eaten.[17] Besides plant materials being used to create useful items, Sydney's vegetation communities include over 200 species that have edible parts, including seeds, fruits, tubers, leaves, flowers and nectar.[18] Some plant products also had medicinal or ceremonial uses.

## 3.3 Contact/Invasion and Dispossession

The Aboriginal population of the Sydney region was devastated following the arrival of Europeans, who brought with them diseases to which the Aboriginal inhabitants had little or no resistance. A major cause of depopulation was the 1789 smallpox epidemic which killed vast numbers of Aboriginal people. The disease spread to the Hawkesbury River and beyond before the colonists themselves even reached these areas, and most of the *Bediagal* of the western Cumberland Plain had been severely affected by the time of Governor Phillip's expedition to the Hawkesbury and Nepean River systems in April 1791. The widespread deaths from smallpox would have had an enormous impact on the fabric of Aboriginal society in the Sydney region at the time, with the loss of support structures and traditional knowledge. This was also a trigger for initial displacement and land dispossession as survivors fled inland to escape disease.

As greater expanses of land were occupied by settlers towards the end of the eighteenth century, tensions boiled over and resistance to white settlement became increasingly violent. In 1790, station raids led by Pemulwuy and his son Tedbury saw the use of arson to destroy buildings and burn crops, and numerous assaults on livestock and settlers themselves. A period of resistance by Aboriginal people in the Hawkesbury and Parramatta areas began in 1799 and was known as the 'Black Wars'.[19] In 1804 colonists were authorised to shoot unarmed Aboriginals.[20] The guerrilla-like wars continued until 1816.

In 1814, Governor Macquarie opened a school for Aboriginal children at Parramatta called the 'Native Institution' to 'civilise, educate and foster habits of industry and decency in the Aborigines'. While this school closed in 1820, Aboriginal people across the colony began to be moved onto mission stations and settlers tried to control growth of the Aboriginal population with a policy of absorption.[21]

In the last 30 years, processes for returning some lands to Aboriginal people have been instituted.[22] The *NSW Aboriginal Land Rights Act 1983* created a system for claiming land to provide for the spiritual, social, cultural and economic benefit of Aboriginal people. The only land available for claim is vacant Crown land (that is, unused public land). By the year 2000, 7000 claims had been lodged, and 2000 had been granted in full or in part.[23]

## 3.4 European Settlement/Post-Contact Period

The Hawkesbury region was one of the first areas outside of Sydney town that Europeans explored after arriving in 1788. The need for the new colony to be self-sufficient led to the search for arable land away from the poor soils of Sydney Cove within the first months of landing. By 1789 the first explorers' parties had reached the Hawkesbury River, with the initial sighting coming in July 1789 near Richmond Hill, close to the study area. The wide and deep river they encountered, with rich floodplains on either side, appeared ideal for agricultural land, although it was clearly subject to major flooding, and by 1794 a small farming community had developed along the banks from South Creek (near present-day Windsor) to Canning Reach near Pitt Town.[24] The first grantees on the river were mainly emancipist convicts, with one private in the NSW Corp and one free settler amongst them. Twenty-two grants of 30 acres each were made along the river.

By 1794 the first farmers had been joined by an increasing number of emancipist convicts. Settlement had by now stretched further along both sides of the river, past Argyle Reach and Freemans Reach almost to Richmond Hill. The land was cleared of timber, with wood not used for building either burnt or discarded. The land was sown with wheat or maize and later crops such as barley, oats, vegetable market gardens and orchards of peaches, plums and apricots were planted.

In 1795 the first government storehouse was built at the Hawkesbury, signalling the beginnings of a permanent settlement in the area. The same year recorded the first flood, although only a minor one which caused minimal damage. In June 1795, 546 people were recorded as residing at the Hawkesbury with 222 hectares of land sown with wheat.[25] The main settlement was known as Green Hills, which was later renamed Windsor by Governor Macquarie.

Although increasing large floods and increasingly high debts of the farmers were features of the settled area, the Hawkesbury area continued to grow and soon became the major food-producing area for the growing colony. Cattle and grazing stock became increasingly common through the 1790s as ore ships brought stock into the colony. In 1804, in response to the growing need for land, Governor King set aside a number of commons in and around the Hawkesbury area for grazing of sheep and cattle. Six commons including Pitt Town Common, Richmond Common (later renamed Ham Common) and Wilberforce Common were set aside, comprising 14,256 hectares of land in the district for grazing. The study area is within what was the Wilberforce Common.

These measures and the use of the riverfront and floodplain land for crops set the pattern of land use in the area which largely remains in place.

### 3.4.1 The Macquarie Towns: Wilberforce

When Governor Macquarie arrived in the colony in 1810, the Hawkesbury settlement was well established and providing good, regular harvests to Sydney. However, floods were still an issue, with two large floods in 1806 and 1809 proving to be disastrous to the region. Macquarie's solution to the ongoing problem was to lay out new towns on the high ground back from the river and encourage, or force, the settlers to relocate to them. With this in mind, Macquarie then had five new towns surveyed and laid out along the river, two at the existing townships of Green Hills (renamed 'Windsor') and Richmond, and three others at the smaller settlements of Wilberforce, Pitt Town and Castlereagh. Of these, the closest to the study area at Glossodia was Wilberforce.

As the town of Wilberforce was laid out, settlers slowly began to take up the allotments in and around it. Much of the area around was withheld from grants and settlement by farmers as it was within the large Wilberforce Common. Wilberforce Common (approximately 2,491 hectares) covered the area north of the current village of Wilberforce from the Hawkesbury River in the east to the present-day Boundary Road at Glossodia and north to the boundary of the Parish of Meehan.[26]

Running through the common were a number of small creeks and streams feeding into Halls Wetlands and the Hawkesbury River in the east. One of these, Currency Creek, defines the southern boundary of the study area. Currency Creek was named prior to 1829 (as it appears in the *Sydney Gazette* in March 1829), and it appears on an 1840 map of the grants in the area (see Figure 3.1). The name is likely to derive from a colonial expression for Australian-born settlers (especially the children of emancipist convicts) to define them from those born overseas: They were colloquially known as 'currency lads or lasses', so the name may be derived from local-born farm settlers in the region. While the Wilberforce Common was withheld from sale, areas fronting Currency Creek to the west of the Common, including the current study area, were granted or sold from the 1820s.

The population of the area surrounding the study area was slow to expand and was restricted to isolated farming families for much of the nineteenth century. It was not until 1896 that enough families lived in the Currency Creek district to justify building a school house. The school was located to the east of the study area on Creek Ridge Road. It was around here that the first Currency Creek village grew up, with a post office and other services being constructed here. In 1988, after a fire destroyed

the school (this was the second fire at the school since it was built), a new school was built in Golden Valley Drive north of Spinks Road near the study area.

### 3.4.2 Later Development

The development of the small settlement of Currency Creek grew around the school site. In 1922 the residents petitioned for a post office. The postmaster-general gave permission for a new post office on the provision that the district changed its name, as there was already a Currency Creek in South Australia. On Boxing Day 1922, the official renaming ceremony took place with the district changing its name to Glossodia after a small native orchid that grew in the area—*Glossodia major*, or the 'wax lip orchid'.

Throughout the twentieth century, most families in the area made a living from either orchards or mixed farming, with some sawmilling also being carried out.

In 1963, new large subdivisions were proposed in the Golden Valley area north of Spinks Road but sales did not begin until 1970. The lots were across Portions 2, 3 and 7 with 876 new allotments laid out, including provision for a small shopping area. The result was the virtual relocation of Glossodia from the east of Boundary Road to the west.

### 3.4.3 First Settlement and Landuse at Currency Creek

The study area, bounded by Spinks Road in the west and north and Currency Creek in the south, encompasses the land within eight early grants in the Currency Creek area. These are Portions 46–53 in the Parish of Currency, County Cook, extending north from the banks of Currency Creek. The grants were made out to James Turner (Portion 46, pre-1840); Robert Farlow (Portion 47, 30 June 1823); W Field (Portion 48, 30 June 1823); W Perkins (Portion 49, 30 June 1823); William Clarke (Portion 50, pre 1840); Thomas Clarke (Portion 51, pre 1840); Mathew Lock (Portion 52, 5 April 1821); and Thomas Graham (Portion 52, 5 April 1821). These portions are shown on a map of the Kurrajong area from 1840, included here as Figure 3.1. The majority of the portions were 60 acres, with Portion 46 (James Turner) being 30 acres and Portion 47 (Robert Farlow) being 80 acres.

Very little information on specific land use in the study area in the early colonial period and the later nineteenth century has come to light for this project. However, the pattern of land use in the surrounding district was similar to that in the study area and can be used to speculate in regards to the study area. By the 1820s the rural scene at the Hawkesbury was well established. As early as 1799, more than half of the total area under cultivation in the colony was located at the Hawkesbury, totalling 1,398 hectares.[27] Granaries were in place at Green Hills (Windsor) by the mid-1790s and the first mills appeared around 1806-09—the first was at Cattai, with one established at Windsor by 1815 and two at Kurrajong in 1818. These mills processed the grain from the surrounding farms. As the first grants in the study area date from 1821, it is likely that at least part of the land there was being utilised for grain crops.

The grazing of both sheep and cattle was also a common land use in the early nineteenth century in the district. Industries such as tanning and butchery were operating at Windsor from at least 1799.

Census records and colonial convict musters from 1828 give a picture of some of the landholders in the study area. These are set out briefly below:

**James Turner** Portion 46: Turner had arrived in Sydney aboard the *Perseus* in 1802 as a convict sentenced to life. By 1823 he had received a conditional pardon and was listed as a landholder at Wilberforce. The census records give no further information on him.[28]

**Robert Farlow** Portion 47: Farlow had arrived in Sydney aboard the *Canada* in 1801 as a convict sentenced to seven years. He was freed by servitude and by 1828 had 221 acres, of which 91 had been cleared and cultivated. He owned 19 horses and 20 cattle. He is also recorded as being married to Ann, with six children aged between eight and 19.[29] In 1836 he had a convict assigned to him.[30] Farlow's 221 acres included 80 acres within the study area. It is not known if Farlow and the family lived on the acres within the study area, although it is recorded that he died at his residence at Wilberforce (the general term for the area) in 1853, aged 75.[31]

**William Clarke** Portion 50: Clarke had arrived in Sydney aboard the *Fortune* as a convict with a sentence of seven years. He was freed by servitude and by 1823 was living in the Wilberforce district with his wife, four sons and a daughter all born in the colony. The census records give no further information on Clarke.[32]

**Mathew Lock** Portion 52: Lock had arrived in Sydney in 1790 on board the *Surprise* as a convict sentenced to seven years. By 1828 he was an emancipist, freed by servitude and living with his wife Alice, also a former convict. Lock had 210 acres, including 60 acres within the study area, of which 100 had been cleared and 12 cultivated. He had 6 horses and 132 sheep.[33]

Although no further information has been gathered on these individuals and their families, the census does give a glimpse of the land use of the region. As can be seen, Farlow had a large area of his land cleared and planted by 1828 whereas Lock, with almost the same area, was running livestock. This could be explained by Farlow having a large family, which was needed to maintain the fields, whereas Lock was married with no children, and could only manage a less labour-intensive use of the land.

The fact that, of the eight landholders shown on the parish maps there is a record of only four—and of those four only two are in the 1828 census—suggests a high attrition rate for small landholders in the district. It could be that Field, Perkins, Thomas Clarke and Thomas Graham had left the district by the time of the muster in 1823. Similarly, William Clarke and James Turner are not listed in the area in the 1828 census, possibly showing they too had left.

If this was the case, it is of interest that if the portions adjoining Farlow's land (portions 46, 48 and 49) were added to his own, his property would have equalled 220 acres. Similarly, if those adjoining Lock's land (portions 50, 51 and 53) were added to his original 60 acres, his land would equal 240 acres. These are close to the numbers shown in the 1828 census as being in the ownership of these two individuals and may indicate that Farlow and Lock purchased their neighbours' portions as they left the district. If this were the case, both Farlow and Lock may have lived on their properties at Currency Creek and there may be some evidence of their occupation within the study area.

### 3.4.4 Recent Developments in Glossodia: 1960 to the Present

From the colonial era to the current period, very little specific information has been uncovered for each of the portions. An aerial photograph from 1961 shows subdivisions of the new town of Glossodia being laid out to the north of the study area and the roads being graded, but as yet no development. Spinks Road, the northern boundary, appears new and only extends west to Kentucky Drive at this time.

By 1961, development in the study area was limited to two large orchard and farm sites, Jacaranda Park horse stud and three smaller farms. Of the orchards, one was located adjacent to Jacaranda Park stud within the boundaries of Portions 52 and 53 and one within the boundary of Portion 47. Within Portions 52 and 53, the orchards can be clearly seen in the aerial photo, with rows of plantings edged on the north by bushland (whether regrowth or remnant is not known). Both the properties here

(being Jacaranda Park and the orchard) had a house on them and a collection of sheds and outbuildings clustered around. The orchard to the west of these, on Portion 47, has a large plot cleared from the surrounding bush. Two houses were located to the southeast, close to a large dam, with a third house and collection of buildings to the southwest of them closer to Currency Creek. Between these two orchard sites, located within the approximate boundary of Portion 50, was another collection of buildings including a house and a long shed, possibly a chicken shed.

The land around these properties had been cleared and evidence of cultivation can be seen in the image. Fence lines appeared to mimic the portion dimensions on the 1840s plan and the parish maps, while a number of dams were scattered through the landscape.

By 1970, the first phase of the large Checkerboard Livestock Research farm at Glossodia was under construction. Land had been cleared for the erection of the associated sheds and buildings adjacent to the orchard property on Portion 47 and, to the south, 11 large sheds had been built, with an access road to Kurmond Road in the south. To the west, the orchards across Portions 52 and 53 appear to have been largely taken out, with only one corner block left under cultivation. New houses were also beginning to appear fronting Spinks Road in the north, although to the west Spinks Road had not yet been extended to meet Kurmond Road.

A topographic map of the area in c1975 shows a scattering of buildings, most located close to Spinks Road and the Golden Valley subdivisions.

An aerial photograph over the study area in 1991 shows that most of the structures visible in the 1961 and 1970 photos are still evident. The Livestock Research Farm with its long sheds in two groups is clearly visible, with areas of open paddock still being the main landform. Along Spinks Road, smaller allotments have been subdivided and developed as domestic house lots. The orchards have all but disappeared, with none visible within the study site boundary. Current Google Earth imaging and an aerial photograph (c2007) and Google Earth images (c2009) show little change from the 1991 image.

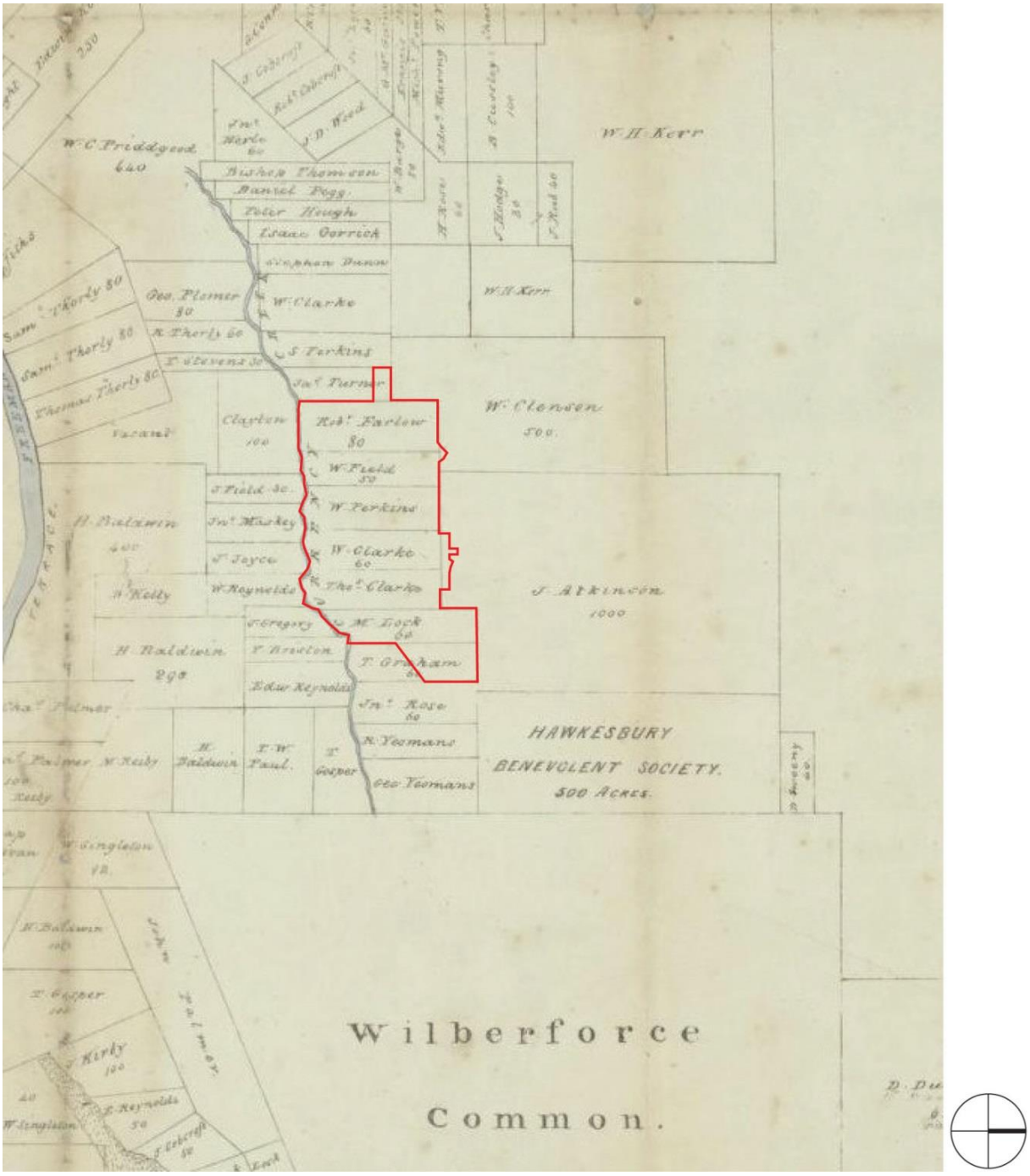



**Figure 3.1** Map of Kurrajong. (Source: Mitchell Library (NLA c1840-49 Map F 461) with GML overlay)

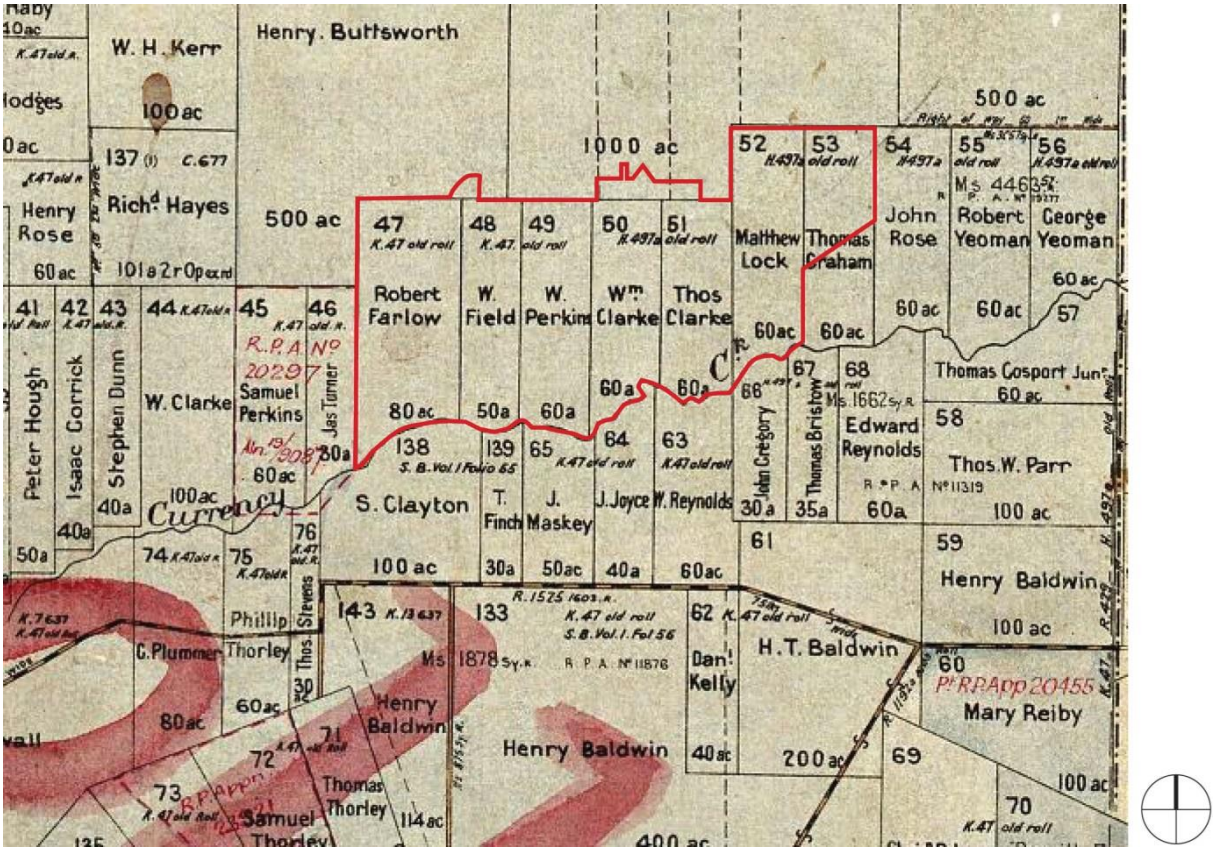



**Figure 3.2** Parish of Currency Creek, c1926. (Source: Mitchell Library (AO MAP 20712) with GML overlay)


**Figure 3.3** 1961 aerial with site boundary indicated in red. Note areas of clearing and cultivation, homesteads and road access. (Source: Department of Lands with GML overlay)

## 3.5 Endnotes

1 NSW Office of Environment & Heritage, Scheyville National Park, viewed 13 February 2015, <http://www.environment.nsw.gov.au/NationalParks/parkNature.aspx?id=N0101>.
2 NSW Office of Environment & Heritage, Lane Cove National Park, viewed 13 February 2015, <http://www.environment.nsw.gov.au/NationalParks/parkGeology.aspx?id=N0083>.
3 Hazelton, P, Bannerman, S and Tillie, P 1989, *Soil Landscape—Penrith 1: 100 000 Sheet,* Soil Conservation Service of NSW, Bathurst.
4 Bureau of Meteorology, viewed 4 April 2010 <http://www.bom.gov.au/climate/averages/tables/cw_067105.shtml>.
5 Bannerman, SM and PA, Hazelton, 1990, *Soil Landscapes of the Penrith 1:100 000 Sheet,* Soil Conservation Service of NSW, Sydney, p 3.
6 Attenbrow, V 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, p 39.
7 Attenbrow, V 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, p 7.
8 Attenbrow, V 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, p 64.
9 Stockton, ED and Holland, WN 1974, 'Cultural sites and their environment in the Blue Mountains', *Archaeology and Physical Anthropology in Oceania* 9(1), pp 36–65.
10 Kohen, J 1993, *The Darug and Their Neighbours—The Traditional Aboriginal Owners of the Sydney Region*, Darug Link in association with Blacktown & District Historical Society, Sydney, p 19.
11 Kohen, J 1995, *Aboriginal Environmental Impacts*, UNSW Press, Sydney, p 81.
12 Kohen, J and Lampert, R 1987, 'Hunters and fishers in the Sydney region', in Mulvaney, D and White, J (eds), *Australians to 1788*, pp. 343-365. Fairfax, Syme and Weldon Associates, Sydney, p 351.
13 McCarthy, F 1963, *Notes on the Anthropology of the Blue Mountains*, AIATSIS PMS 1091, Sydney.
14 Attenbrow, V 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, p 87.
15 Attenbrow, V 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, p 112.
16 Turbet, P 2001, *The Aborigines of the Sydney District before 1788*, revised edition, Kangaroo Press, East Roseville, pp 37–39, 45.
17 Turbet, P 2001, *The Aborigines of the Sydney District before 1788*, revised edition, Kangaroo Press, East Roseville, pp 37–39, 45pp 69-71.
18 Attenbrow, V 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, p 76.
19 Australian Museum, Indigenous Australia Timeline—1500 to 1900, viewed 13 February 2015 <http://australianmuseum.net.au/Indigenous-Australia-Timeline-1500-to-1900>.
20 Creative Spirits, Australian Aboriginal History, viewed 13 February 2015 <http://www.creativespirits.info/aboriginalculture/history/aboriginal-history-timeline-early-white.html>.
21 Creative Spirits, Australian Aboriginal History, viewed 13 February 2015 <http://www.creativespirits.info/aboriginalculture/history/aboriginal-history-timeline-early-white.html>.
22 Adams, M 2004, 'Negotiating Nature: Collaboration and Conflict Between Aboriginal and Conservation Interests in New South Wales, Australia', *Australian Journal of Environmental Education*, vol. 20(1).
23 NSW Department of Aboriginal Affairs, 2000 in Adams, M 2004, 'Negotiating Nature: Collaboration and Conflict Between Aboriginal and Conservation Interests in New South Wales, Australia', *Australian Journal of Environmental Education*, vol. 20(1).
24 Barkley, J and Nichols, M 1994, *Hawkesbury 1794–1994: The First Two Hundred Years of the Second Colonisation*, Hawkesbury City Council, p 8.
25 Barkley, J and Nichols, M 1994, *Hawkesbury 1794–1994: The First Two Hundred Years of the Second Colonisation*, Hawkesbury City Council, p 19.
26 Cooper, A 2009, *Glossodia: A Peep into the Past around Currency Creek*, Sydney, p 3.
27 Barkley, J and Nichols, M 1994, *Hawkesbury 1794–1994: The First Two Hundred Years of the Second Colonisation*, Hawkesbury City Council, p 19.
28 General Muster List of New South Wales, 1823, 1824, 1825.
29 'Census of New South Wales November 1828', Biographical Database of Australia, viewed 4 March 2015 < http://www.bda-online.org.au/files/MC1828_Muster.pdf>.

[30] *The Sydney Gazette and NSW Advertiser,* 24 September 1836, viewed 4 March 2015 <http://newspapers.nla.gov.au/>.

[31] *Maitland Mercury & Hunter River General Advertiser*, 25 June 1853, viewed 4 March 2015 <http://newspapers.nla.gov.au/>.

[32] 'General Muster List of New South Wales, 1823, 1824, 1825', Biographical Database of Australia, viewed 4 March 2015 < http://www.bda-online.org.au/files/MC1825_Muster.pdf>.

[33] 'Census of New South Wales November 1828', Biographical Database of Australia, viewed 4 March 2015 < http://www.bda-online.org.au/files/MC1828_Muster.pdf>.

# 4.0 Aboriginal Heritage Context

## 4.1 Preamble

The purpose of this section is to provide contextual information which when considered together with the environmental context presented in Section 3.0, is useful in developing a predictive model of Aboriginal site locations associated with the study area. Interactions between people and their surroundings are of integral importance in both the initial formation and the subsequent preservation of the archaeological record. Alterations to the natural environment also impact upon the preservation and integrity of any cultural materials that may have been deposited, whilst current vegetation and erosional regimes affect the visibility and detectability of Aboriginal sites and objects.

This section aims to provide an Aboriginal heritage context for the study area by summarising Aboriginal archaeological investigation in the vicinity of the study area, presenting the results from Aboriginal Heritage Information Management System (AHIMS) database searches, and outlining the consultation process previously undertaken with Aboriginal stakeholder groups in relation to the study area.

## 4.2 Previous Aboriginal Archaeological Research

In 2009 the study area was the subject of an archaeological field survey. No archaeological excavation was undertaken at that stage and AHIMS records indicate that no other investigations have been undertaken on the study area prior to or since that time.

Numerous archaeological survey and excavation projects as a result of recent development initiatives in the surrounding area, as well as the greater region, have provided raw data which has informed a growing understanding of Aboriginal archaeological site patterning across the Cumberland Plain.

Analysis of this data indicates that the predominant site types in the region are surface artefact scatters or shallow deposits—these are remnants of Aboriginal open campsites and/or stone chipping and/or tool manufacture sites. It also suggests that the dominant raw material resource exploited by Aboriginal people for tool manufacturing[1] was silcrete, outcrops of which are widespread across the region.[2] The data also indicates that sites tend to occur most frequently on high ground above or between creeks and along creek banks.[3] Undisturbed sites are generally rare, and therefore few sites have been subject to scientific dating.

### 4.2.1 Archaeological Models for the Cumberland Plain

Previous archaeological research on the Cumberland Plain has taken two forms: academic-driven research begun in the 1960s, and consultant reports which have responded to the urban development of western Sydney following the gazettal of the NPW Act in 1974.

Aboriginal occupation of the Cumberland Plain and Nepean River Valley extended into the Pleistocene period, 10,000 years before present (BP). Currently the oldest accepted date in this region is from the Shaws Creek rockshelter, located on the Nepean River at Cranebrook, dating to 14,700 years BP.[4] Pleistocene dates were also recorded for the lower occupation levels at Regentville near Penrith, dating to 12,100 years BP.[5]

Archaeological models for the Cumberland Plain were developed during the 1980s and 1990s. One of the earliest was developed by Kohen who argued that Aboriginal occupation of the Cumberland Plain first occurred during the mid to late Holocene period (c4,500 BP). Before this, it was said that

occupation was confined to the coastal areas and the Nepean River valley. Kohen argued the changes at this time related to increased population and the addition of small-tool technologies.[6] Kohen's (1986) analysis of Cumberland Plain site patterning is based on the notion that there is an almost continuous scatter of material across the landscape. Concentrated areas of artefacts represent concentrated occupation, while other areas represent a wide range of activities across the landscape. However, he concluded that site distribution was, most importantly, correlated to the availability of water, while other factors also included proximity to a diverse range of animal, plant and lithic resources, and elevation above water.[7]

Following on from this, Smith in 1989 developed a theory for the southern Cumberland Plain based on her work with the National Parks and Wildlife Service (NPWS) Planning Study for the Cumberland Plain. She concluded that by the time of her study (1989), less than 0.5% of the Cumberland Plain had been the subject of archaeological surveys and that only 17 sites had been excavated. Smith found that sites were more likely to be found along permanent creeks and swamp margins on the Cumberland Plain.[8] Taking a slightly different view to Kohen, Smith (1989) also noted that proximity to lithic sources correlated to site location, although water sources factored highest in the data correlating to site location. She predicted that 50% of all sites would be located around creek lines and other water sources.[9] All other topographic units like ridges, hilltops, slopes and flats were found to have sites, although 45% were along creek flats. Smith's[10] other conclusions about the Cumberland Plain included the understanding that 90% of recorded sites are artefact scatters, the majority of which are surface scatters with little or no stratigraphy. Within those open artefact scatters, 85% of artefacts are unmodified flakes and flaked pieces, 5% are cores and 10% are utilised flakes and flaked pieces. Extraction or quarry sites and artefact manufacturing sites occur in limited numbers on the Cumberland Plain and in restricted geographical locations.[11]

Jo McDonald developed a theory through her work on the Cumberland Plain in the 1990s. She found that by 1997, 666 sites had been registered with DEC (the predecessor to DECCW) on the Cumberland Plain and that the vast majority (89%) of sites were open artefact scatters/open campsites. A further 3.5% of sites were isolated artefacts, with scarred trees representing 2.1% of sites on the Cumberland Plain. Following on from salvage excavations undertaken by McDonald at Rouse Hill in the 1990s, she noted that many areas contained subsurface stone artefacts, even when there was no lithic material present on the surface. She found a variety of site types including intact knapping floors; backed-blade manufacturing sites with two early Bondaian dates between 3,000 and 5,000 years BP; heat-treatment sites; specialised tool types; and general campsites.[12]

By 2005 there were approximately 4000 recorded sites on the Cumberland Plain, of which the vast majority were open artefact scatters.[13] This increase in the number of recorded sites is directly attributable to the amount of archaeological survey and investigation work now being conducted across the Cumberland Plain. McDonald posited that most areas of the Cumberland Plain contain subsurface archaeological materials regardless of surface manifestations, that the complexity of the archaeological record was far greater than previously identified on the basis of surface recording and that gross site patterning is identifiable on the basis of environmental factors, ie that sites on permanent water are more complex than those on ephemeral water sources.[14]

In further developing her predictive model for the Cumberland Plain, McDonald noted that stream order was an important feature in determining the locations, sizes and complexity of archaeological sites on the Cumberland Plain. She noted:

> *In the headwaters of the upper tributaries (first order creeks) archaeological evidence will be sparse and represent little more than a background scatter. In the middle reaches of the minor tributaries (second order creeks) archaeological*

*evidence will be sparse but indicated focused activity (e.g. single camp locations). In the lower reaches of tributaries creeks (third order creeks) will be archaeological evidence for more frequent occupation. This will include repeated occupation by small groups, knapping floors (perhaps used and re-used), and evidence of more concentrated activities. On major creek lines and rivers (fourth order) archaeological evidence will indicate more permanent or repeated occupation. Sites will be complex, with a range of lithic activities represented, and may even be stratified. Creek junctions may provide a focus for site activity; the size of the confluence (in terms of stream ranking nodes) could be expected to influence the size of the site. Ridge top locations between the drainage lines will usually contain limited archaeological evidence although isolated knapping floors or other forms of one-off occupation may be in evidence in such a location.*[15]

### 4.2.2 Previous Research at Glossodia

Generally, in the locality of Glossodia few archaeological investigations have been undertaken. This is due to Glossodia's distance from population centres which means it has not undergone as many road, infrastructure or urban developments as have areas closer to Sydney. The archaeological investigations undertaken in the surrounding area are described below.

#### 88 Spinks Road, Glossodia

The property at 88 Spinks Road, Glossodia is located opposite the current study area, on the northern side of Spinks Road (Figure 4.1). It has been the subject of a number of past archaeological investigations. In 1982, Brayshaw, McIntyre and Greer undertook an Aboriginal archaeological survey of the property. The survey was commissioned by Don Fox Planning Pty Ltd on behalf of the owners of the 'Grasslands' property. The purpose of the investigation was to locate Aboriginal archaeological sites and assess their significance prior to proposed rural residential development.[16]

The survey located the four previously recorded Aboriginal archaeological sites on the property (Glossodia Grasslands Open Sites 1–4 (45-5-0351-0354)) comprising three artefact scatters and one axe-grinding groove. Grasslands Open Site 1 was located on the gravel driveway between Spinks Road and the farmhouse and comprised three red chert flakes in a disturbed and erosional environment. In addition, one isolated artefact was located in one of the nearby horse yards.[17]

Grasslands Open Site 2 comprised two pieces of red silcrete on a large sandstone slab. This site is located 10 metres east of an unnamed creek in the north of the 88 Spinks Road study area. Grasslands Open Site 3 contains four definite and two less distinct axe-grinding grooves on a flat sandstone slab, five metres north of a small dam in the north of the property. The sandstone slab where the grooves are located measures 6.6m x 1.07m. Grasslands Open Site 4 contained three silcrete flakes and one chert flake. This site was located on a sandstone slab, approximately 50 metres from the unnamed creek where the axe-grinding groove was located. The investigation found that all of the stone artefacts were located on either sandstone slabs or loosely on the ground, not in situ and thus represented little research potential. The report recommended that the sites be retained as part of any future development.[18]

A subsequent Aboriginal Heritage Assessment was undertaken by GML in 2010 and included an archaeological field survey of the 88 Spinks Road study area. Due to the dense nature of grass cover over almost all of study area, it was not suitable for walking regularly spaced transects. The survey method employed was pedestrian and opportunistic, restricted to areas of ground exposure such as vehicle and animal tracks, under large trees, dam banks, around sandstone outcrops and along drainage lines.

The first aim of the survey was to identify previously recorded Aboriginal archaeological sites Glossodia Grasslands Open Sites 1–4. The four previously recorded sites in the study area were not able to be relocated during the 2010 assessment. Unfortunately, these sites were recorded in the pre-GPS period and as such no AMG co-ordinates are available for these sites on the AHIMS site card or the report which documents the sites. Grasslands Open Sites 1, 2 and 4 each consisting of small numbers of non in situ artefacts may have been moved due to natural erosion processes in the 19 years since they were recorded by Brayshaw, McIntyre and Greer in 1991.[19] Brayshaw et al 1982, considered the artefact scatters that they recorded during the 1982 survey: Glossodia Grasslands Open Sites 1, 2 and 4 had little potential for further archaeological investigation.[20]

In addition to the previously recorded sites, two areas were identified as having moderate potential for Aboriginal archaeological sites as part of the 2010 field survey. Within 100 metres of the two first order drainage lines that run southwest to northeast through the study area there is moderate potential for artefact scatters and subsurface artefact deposits. In the area of sandstone outcropping in the north of the study area, in addition to the three previously recorded Aboriginal archaeological sites, there was deemed to be moderate potential for axe-grinding grooves, surface artefact scatters and buried artefact deposits and low potential for engravings to exist. The remainder of the study area was considered unlikely to contain large stratified artefact deposits or artefact scatters given the nature of past land disturbances and the fact that it is far from waterways. These areas could contain isolated artefacts with limited research potential.

Although the sites could not be located during the 2010 assessment, a significance assessment of the sites previously recorded by Brayshaw et al in 1982 was undertaken. Glossodia Grasslands sites 1, 2 and 4 are small artefact scatters, each comprising less than five artefacts each, with no formal tool types identified. None of the artefacts from these scatters were found in situ.[21] These types of sites are common on the Cumberland Plain and Hawkesbury district and thus were considered to have low research potential. The axe-grinding groove site (Glossodia Grasslands 3) is considered locally rare and as such was deemed to hold low to medium research potential. The preliminary significance assessment of the sites Glossodia Grasslands Open Sites 1–4 is summarised in Table 4.1 below. Note that this does not include Aboriginal cultural significance assessment.

**Table 4.1** Summary of the Preliminary Significance Assessment of the Glossodia Grasslands Open Sites 1–4.

| Site Name | Cultural significance | Scientific/ archaeological/ research potential | Representativeness | Rarity | Educational value |
|---|---|---|---|---|---|
| Glossodia Grasslands Open Site 1 | See Section 6.2 of GML, 2010.[22] | Low | Similar to other sites | Common | Low |
| Glossodia Grasslands Open Site 2 | See Section 6.2 of GML, 2010.[23] | Low | Similar to other sites | Common | Low |
| Glossodia Grasslands Open Site 3 | See Section 6.2 of GML, 2010.[24] | Low–medium | One other example recorded in the local area | Rare | Low |
| Glossodia Grasslands Open Site 4 | See Section 6.2 of GML, 2010.[25] | Low | Similar to other sites | Common | Low |

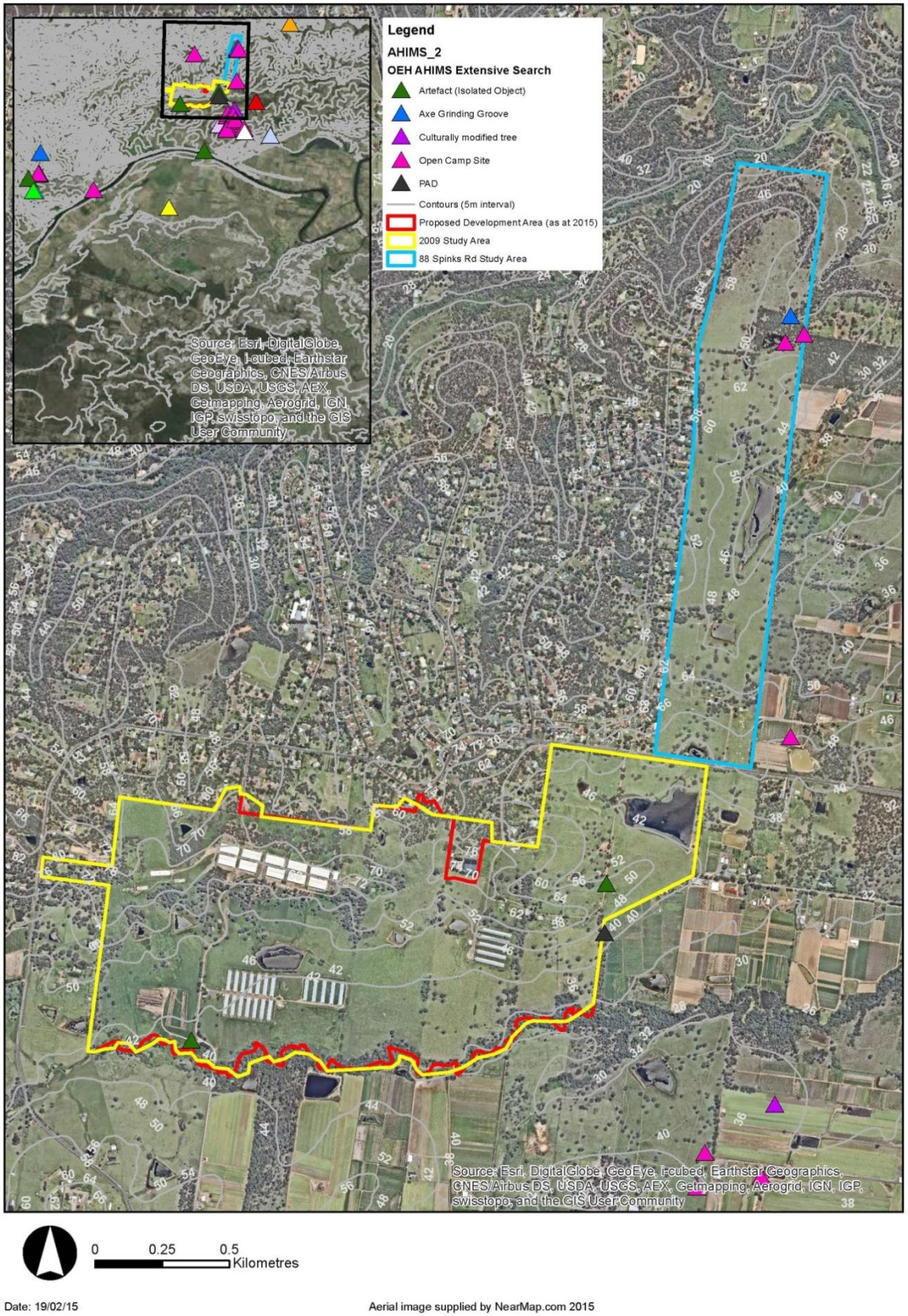



**Figure 4.1** 88 Spinks Road Glossodia, study area location (marked in blue boundary). The current study area is indicated in red. (Source: Near Map 2015 with GML additions)

## 4.3 AHIMS Search

The AHIMS provides information about Aboriginal objects, sites and places that have been recorded in NSW and reported to the Director General, Department of Premier and Cabinet or which have been declared by the Minister. The system also includes previous archaeological reports. AHIMS was administered by the then Department of Environment, Climate Change and Water (DECCW) which is now known as the OEH.

The search of the AHIMS register in 2009 revealed 19 known Aboriginal sites within a 5km x 5km search area surrounding the study area (Appendix A). None of these 19 sites were located within the study area itself. The sites from the 2009 search are summarised in Table 4.2 below.

**Table 4.2** AHIMS Registered Sites in 2009 within a 10km$^2$ Search Area Surrounding the Study Area.

| Site Type | Site Features | Frequency |
|---|---|---|
| Open campsite | Artefacts | 13 |
| Culturally modified tree (carved or scarred) | Tree | 1 |
| Culturally modified tree (carved or scarred), quarry, open campsite | Tree, stone outcrop, artefacts | 1 |
| Axe-grinding groove | Stone outcrop | 1 |
| Open campsite, quarry | Stone outcrop, artefacts | 1 |
| Quarry | Stone outcrop | 1 |
| None | ? | 1 |
| **TOTAL** | | **19** |

As shown in Table 4.2, the majority of identified sites in the vicinity of Jacaranda Ponds in 2009 were open campsites, followed by scarred trees, quarries and axe-grinding grooves.

An updated search of the AHIMS register was undertaken on 13 February 2015 (Appendix B) for an area approximately 10km$^2$ surrounding the study area. The search returned a result of 37 Aboriginal sites within the search area including three within or on the boundary of the study area. These sites are summarised in Table 4.3 below. The locations of all sites identified are mapped in Figures 4.1–4.3.

**Table 4.3** AHIMS registered sites in 2015 within a 10km$^2$ search area surrounding the study area.

| Site Type | Site Features | Frequency |
|---|---|---|
| Open campsite | Artefacts | 15 |
| Culturally modified tree (carved or scarred) | Tree | 1 |
| Culturally modified tree (carved or scarred), quarry and open campsite | Tree, stone outcrop, artefacts | 1 |
| Axe-grinding groove | Stone outcrop | 5 |
| Open campsite and quarry | Stone outcrop, artefacts | 1 |
| Quarry | Stone outcrop | 1 |
| None | Unknown open site type but marked as destroyed | 1 |

| Site Type | Site Features | Frequency |
|---|---|---|
| Shelter with art | Shelter with art - pigment or engraved | 1 |
| Art | Pigment or engraved | 1 |
| Art and PAD | Pigment or engraved art and Potential Archaeological Deposit | 1 |
| Artefact | Isolated objects (one site had two objects while the rest have one each) | 7 |
| Artefact | Destroyed | 1 |
| PAD | Potential Archaeological Deposit | 1 |
| **TOTAL** | | **37** |

The three Aboriginal sites identified within the study area are: JCP1 and JCP2 (both isolated flakes) and PAD1 (hillcrest) all of which were identified during the 2009 GML survey of the study area.

Mapping of the AHIMS sites using GIS provides valuable information as to the distribution of these site types within the various land forms (hill slope or creek line environments) around the study area and gives direction as to the site types and cultural material likely to be encountered within the study area (see Figure 4.1). The majority of sites occur along the creek lines and flat areas adjacent to water sources—for example there is a large cluster of open campsites on the flat adjacent to the Hawkesbury River (Figure 4.3). The frequency of sites identified along other creek lines and near the river may indicate a greater degree of ground visibility (either at the time of survey or in general) than was present at Jacaranda Ponds during the 2009 survey.

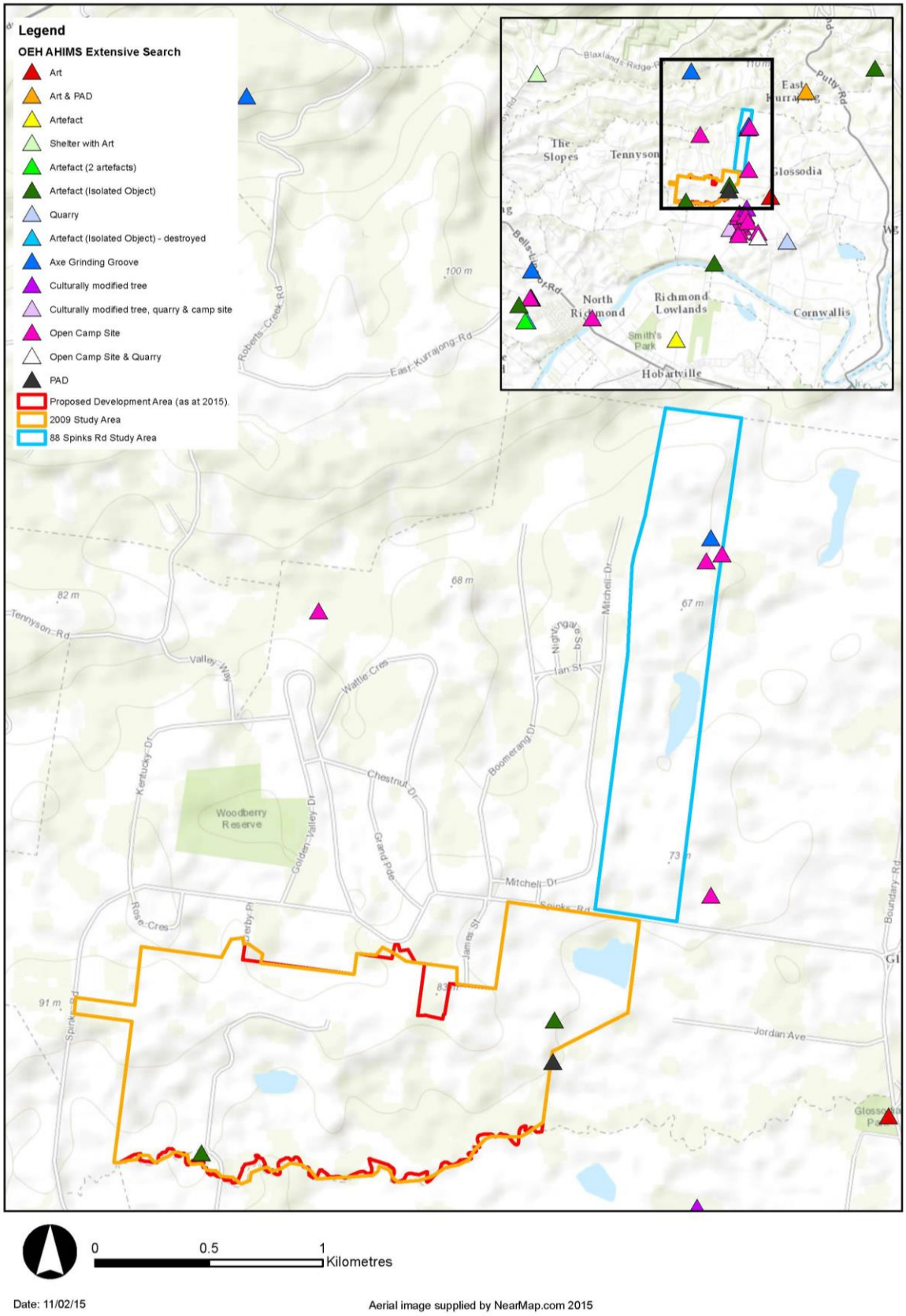



**Figure 4.2** AHIMS sites in relation to the current study area and former studies in the vicinity. (Source: NearMap and AHIMS collated by GML 2015).

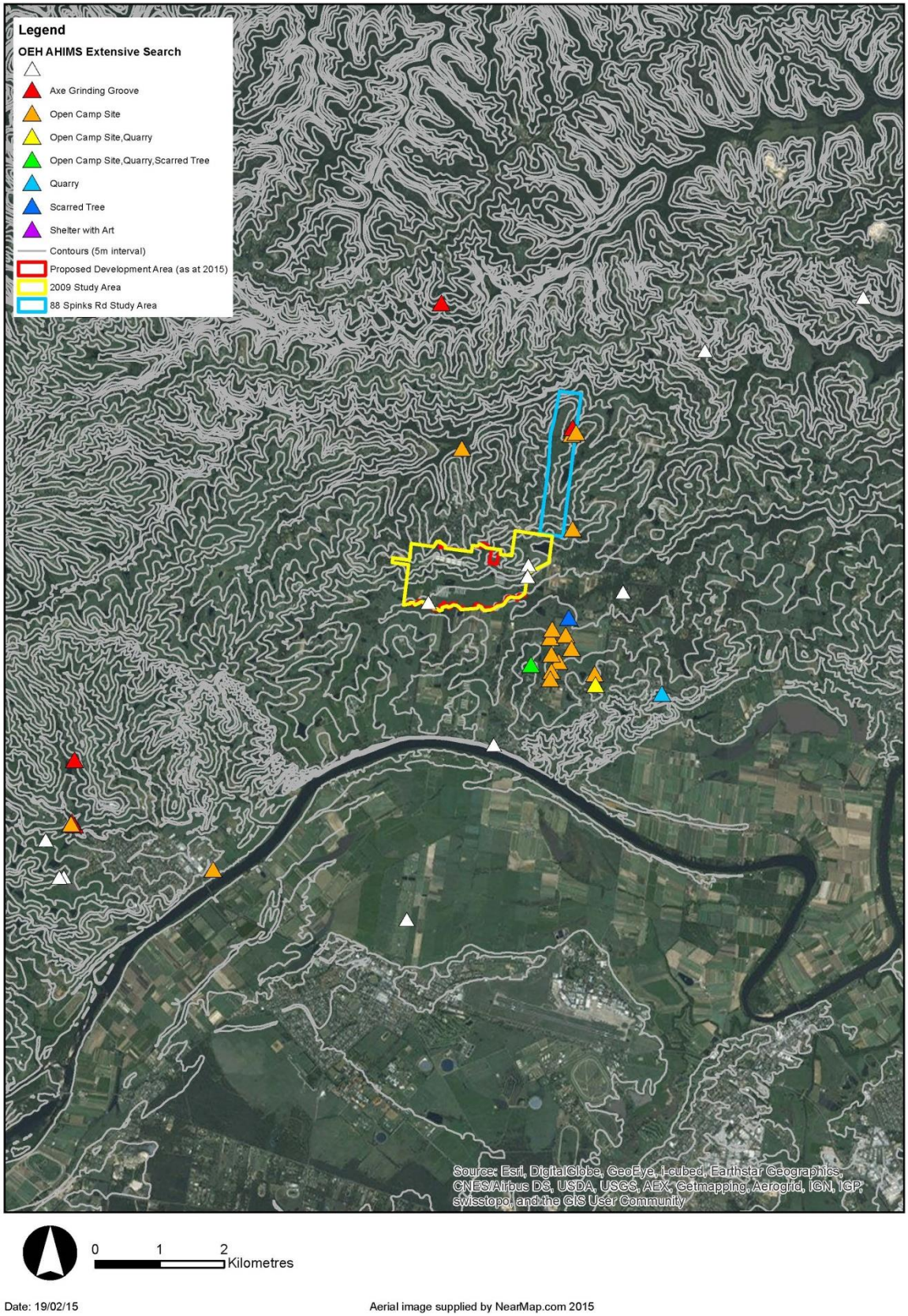



**Figure 4.3** AHIMS sites in relation to the current study area, former studies in the vicinity, topography and hydrology. (Source: NearMap and AHIMS collated by GML 2015).

## 4.4 Synopsis of the AHIMS Search, Landscape and Aboriginal Archaeological Context

Based upon the AHIMS search, it can be stated that a range of Aboriginal heritage sites may be identified in the Glossodia area, most of these being located along creek lines and on river flats. Most sites in the area are open campsites (artefact scatters and/or concentrations). There are two quarries in the AHIMS search area which could have supplied raw materials for knapping at the other locations where artefacts have been identified.

The assessment of the environmental context within which the study area is located suggests that the Glossodia area provided a rich array of natural resources including an abundance of permanent freshwater supplies which would have supported Aboriginal subsistence activities in the area.

Overall, it may be stated that the study area does contain previously recorded Aboriginal sites and potential for Aboriginal objects associated particularly with soil horizons below the current surface level within landforms along the creek. While historical agricultural activities across this rural landscape such as ploughing, grazing and orcharding may have contributed to impacts to and dispersal of Aboriginal artefact sites, as evidenced by objects being found on the surface within the study area and surrounding areas, there is the potential for as yet, unidentified sites within the study area.

Furthermore, historically, Aboriginal archaeological investigations have focused on stone artefact-based sites. Recently on the Cumberland Plain, investigations have identified ovens and other burning features which are providing insight into the domestic lifestyle of Aboriginal people.[26]

Being located on an erosional landscape, this may have resulted in archaeological sites being buried by sediment accumulating at the base of slopes or on creek bends, or alternatively, sites being diffused by erosion or washed away from creek bank locations in flood events. Alluvial deposits adjacent to the creek may have potential for stratified Aboriginal archaeological evidence to be present which can indicate change over time and the nature of use and repetition of visitation to a site. Chronostratified deposits are rare on the Cumberland Plain but have been identified along the Hawkesbury River at Pitt Town and so there is some potential they may be present within the current study area.

### 4.4.1 Site Types Considered in the Jacaranda Ponds Study Area

A wide range of site types can be encountered during archaeological investigations in New South Wales, and these reflect the range of activities carried out by Aboriginal people in the past. AHIMS sets out 20 site types which are defined by the cultural activities associated with the use of a place. These site types reflect the diverse range of evidence that may be encountered relating to past Aboriginal activity. It is important to note that one site may comprise a number of different site types or attributes, indicating the diverse range of cultural activities that can be undertaken in one place.

Site types were considered prior to commencement of the project in 2009 to determine the site types most likely to be encountered within the study area during field survey. The site types determined to be likely were based on the AHIMS database, previous archaeological research on the Cumberland Plain, as well as a desktop assessment of landforms and environment within the study area. More recent studies have been undertaken in the study area and are considered as part of this 2015 heritage assessment. The combined background research indicates that the site types most likely to be encountered within the study area are artefact sites (open campsites, stone artefact scatters and isolated artefacts). Grinding grooves may also be present within or adjacent to the creek lines and

there is a possibility scarred trees and or quarries may also be within the study area. These potential site types are discussed below.

### Open Campsites, Artefact Scatters and Isolated Artefacts

Stone artefacts occur across much of the New South Wales landscape in varying densities, and are typically classified as artefact scatters (also referred to as 'open campsites'), artefact concentrations or isolated finds (isolated occurrences of individual artefacts). These sites provide a record of past Aboriginal occupation and activity across the landscape. Artefact scatters comprise visible concentrations of artefacts (although these sites often have a significant subsurface element) and typically reflect areas of concentrated Aboriginal activity and occupation in the past, either as domestic sites (campsites) work sites or more transient places of concentrated activity. Artefact scatters are typically defined as the presence of two or more artefacts within 50 metres of each other. An artefact concentration is a density of artefacts in close proximity to each other (less than 20 metres apart) which is greater in density than the surrounding low-density 'background' scatter or absence in the landscape. These site types contrast with isolated artefacts, which occur in much lower densities and are generally considered a 'background scatter' across the landscape in many areas of New South Wales.

Throughout the twentieth century, scholars have argued about stone-tool technologies varying over time in New South Wales. After subsequent radiocarbon dating of deposits taken from the excavation of two rock shelters in eastern New South Wales (at Lapstone Creek at the base of the Blue Mountains (1936)[27] and at Capertee Valley, north of Lithgow (1964)[28]), Fredrick McCarthy coined the theory of the 'Eastern Regional Sequence'. He identified the 'Carpertian', 'Bondaian' and 'Eloueran' as three phases within the series which collectively span the last 15,000 years. In the earliest phase, Capertian, tools were characterised by uniface pebble implements, cores, dentated saws and large heavy flakes. The Bondaian phase saw the arrival of the microliths and was typified by the small Bondi points (named after Bondi Beach, one of the places where they were first identified), burins and scrapers. The Eloueran phase was named after the Elouera, a triangular sectioned stone-backed blade, somewhat larger than the Bondi point. This last phase also contained ground-edge axes.[29]

Later, scholars such as Stockton and Holland (1974) modified McCarthy's sequence, proposing four phases. After the Capertian, they identified the 'Early Bondaian' and 'Middle Bondaian' phases where the classic backed blades, the Bondi point, geometric microlith and the Elouera became common from the late Holocene period (5,000 years BP) onwards. Stockton and Holland's[30] 'Late Bondaian' phase corresponded to McCarthy's Eloueran phase which has been revised through carbon dating to the last 1,600 years. During this period, Bondi points and geometric microliths became far less common in the coastal areas of Sydney, but remained common on the Cumberland Plain, where they survived until at least 500 years BP. Stockton and Holland's terms are widely used in the Sydney region today.[31]

### Potential Archaeological Deposits (PADs)

PADs are sites where archaeological deposits, such as buried artefact scatters, concentrations or shell midden accumulations are likely to occur based on sensitive landforms and locations in the landscape. This site type can also be registered with OEH as has previously been done for the current study area following the 2009 survey (see Section 5.0).

### Axe-grinding Grooves

Axe-grinding grooves are shallow oval-shaped indentations on outcrops—usually sandstone, but occasionally other rock types—that have been created by Aboriginal people in the past as part of

sharpening axe heads and other implements. The grinding grooves are typically located on or close to water sources including rivers, creeks and lakes. Stone artefacts including flakes and axe heads are often found in places associated with grinding grooves.[32]

### Carved and Scarred Trees and 'Possum Trees'

Aboriginal people carved trees by removing a section of the bark and then carving into the exposed wood. These carvings were done to mark burials and ceremonial sites and, as such, are still significant to Aboriginal people. Scarred trees differ in that they were created when a section of a tree's bark and wood was removed to make a range of useful objects including canoes, shields, containers (such as coolamons) and other weapons and items. The term 'possum tree' refers to trees that have had small notches or toeholds cut into them for the purpose of possum hunting or the collection of honey. In New South Wales, these types of evidence tend to only occur on trees above a certain age, related to the gradual cessation of traditional Aboriginal land use practices with the arrival of European ways of life. Trees of this age are also becoming rarer as they decay, fall over or are burnt.[33]

### Stone Exploitation Sites

Stone exploitation sites, also known as 'quarries', are places were stone was either collected from the surface or struck off from bedrock for the purpose of fashioning stone tools (a process called knapping). Stone exploitation sites are found over many parts of New South Wales and stone was often traded large distances from the source of the raw material, at times hundreds of kilometres. Stone exploitation sites are characterised by the presence of large amounts of flaked artefacts and debris close to a stone source or negative flake scars on bedrock or both. Stone reduction sites are those where the raw material is broken down into usable flakes, blades or cores for the production of tools. Stone reduction sites may occur at the stone exploitation site or some distance from it. On the Cumberland Plain there is a number of known silcrete stone exploitation sites located in the St Marys area and along some of the north–south flowing creeks.

## 4.5 The 2009 Consultation Process

### 4.5.1 Background

Input from Aboriginal stakeholders is an integral part of assessing the significance and cultural heritage values of Aboriginal objects and places that are likely to be impacted by an activity. Aboriginal community involvement is a requirement under the NPW Act, where an application is prepared for an AHIP under Part 6 of the NPW Act. The process for Aboriginal community consultation in NSW is currently undertaken following guideline document—*Aboriginal cultural heritage consultation requirements for proponents*.[34] Community consultation was undertaken as part of the heritage assessment for the study area in 2009 under the then Department of Climate Change and Water (DECCW) *Interim Community Consultation Requirements for Applicants* (2005).

These guidelines recognise that:

- *Aboriginal heritage has both cultural and scientific/archaeological significance and that both should be the subject of assessment to inform its decision-making;*
- *Aboriginal people are the primary determinants of the significance of their heritage;*
- *Aboriginal community involvement needs to occur early in the assessment process to ensure that their values and concerns are taken duly into account, and so that their decision-making structures are able to function; and*

- *Information arising out of consultation allows the consideration of Aboriginal community views about the significance and impact, as well as the merits of management or mitigation measures to be considered in an informed way.*[35]

The consultation guidelines outline the requirements (including prescribed timeframes) for engaging with the Aboriginal community as part of the preparation of an application for consent or a permit under Part 6 of the NPW Act. These requirements (including notification and consultation in accordance with the prescribed timeframes) would be implemented if the proponent chooses to proceed with the proposed development and thus apply for an AHIP for development works that may impact potential Aboriginal archaeological deposits within the study area. Thus, while consultation was undertaken with the local Aboriginal community in 2009, it has not been undertaken as part of this report, which was commissioned to update the 2009 study in relation to current legislation and more recent background information. The methodology and outcomes of the 2009 Aboriginal community consultation is presented below.

### 4.5.2 The 2009 Aboriginal Community Consultation for the Study Area

Aboriginal community consultation for the project was initiated by GML in August 2009. The study area falls within the administrative boundaries of the Deerubbin Local Aboriginal Land Council (DLALC), and thus DLALC was identified as one of the key stakeholder groups. In addition, a number of organisations claim traditional and historical links within the Greater Western Sydney area in which the study area is situated, including Darug Tribal Aboriginal Corporation (DTAC), Darug Custodian Aboriginal Corporation (DCAC), and Darug Aboriginal Cultural Heritage Assessments (DACHA). These groups were contacted and invited to register their interest in the project.

In addition to the above organisations, the NSW Native Title Services, the Registrar of Aboriginal Owners (NSW Department of Aboriginal Affairs) and DECCW were also contacted at this time.

Concurrent with this, a public notice was placed in the *Hawkesbury Courier* to invite interested parties to register for the project. Expressions of interest were subsequently received from DLALC, DTAC, DCAC and DACHA.

Representatives from each organisation participated in the field survey of the property on 1 September 2009 and 3 September 2009.

A copy of the 2009 draft heritage assessment report was forwarded to the four Aboriginal groups for comment. Comments received from all stakeholder groups indicated support for the findings and recommendations of the 2009 assessment, as follows:

- *Having read and support* [sic] *the draft report … we cannot see why this project should not go ahead following all recommendations it contains. We also support the application for a section 87 permit* [for test excavation which required a permit at the time but now may be undertaken under the DECCW 2010 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*]. (DTAC)

- *We support the findings and recommendations set out within this report, we would like to add that the ridgeline (A7) be included in a s87 testing program as recent test excavations have shown that the ridgelines do have moderate to high potential, we need to move away from predictive models and test these theories.* (DCAC)

- *DACHA proposes a Darug Aboriginal archaeological testing program in the areas of moderate to high potential and we support the application for a Section 87 Permit for exploration of this important area to the Darug.* (DACHA)

- *Deerubbin LALC … recommends further investigation in the areas that have potential for subsurface Aboriginal artefacts, furthermore any construction or activity that may disturb the topsoil on the creek flats, Deerubbin Local Aboriginal Land Council will require our representative to monitor such works.* (DLALC)

2009 Aboriginal community consultation records are provided in Appendix C.

## 4.6 Endnotes

1 McDonald, J, Preliminary Archaeological Reconnaissance of the proposed Schofields regional depot, Plumpton, NSW, report prepared for Metro Waste Disposal Authority, Sydney NSW, 1986.

2 Brayshaw and McDonald, An Assessment of the Archaeological Context, Landuse History and Management Requirements for Aboriginal Archaeology in the ADI site, St Marys NSW, report prepared for ADI Ltd NSW Property Group, 1994, p 29.

3 Dallas, M, An Archaeological survey at Riverstone, Schofields and Quakers Hill, NSW, report prepared for the Land Council of NSW, 1982 p 7.

4 Nanson, GC, Young, RW and Stockton, ED 1987, 'Chronology and palaeoenvironment of the Cranebrook Terrace (near Sydney) containing artefacts more than 40 000 years old', *Archaeology in Oceania* 22(2), Sydney, p 76.

5 McDonald, J, Mitchell, P and Rich, E, A Further Investigation of Site RS1 (45-5-892) at Regentville, Mulgoa Creek, Western Sydney, report prepared for Environmental Services Pacific Power, Sydney, 1996, p 33.

6 Kohen in Foley, J 1986, An Archaeological Survey of 'Windbourne' at Mulgoa, unpublished report, Sydney.

7 Kohen in Brayshaw, H, Defence Department Land at Penrith, NSW. Archaeological Survey for Aboriginal Sites, report prepared for the Department of Defence, 1993, p 9.

8 Smith, L, Interim Report: Site Survey and Site Analysis on the Cumberland Plain, report prepared for NSW National Parks and Wildlife Service, Sydney, 1989 p 2.

9 Smith, L, Interim Report: Site Survey and Site Analysis on the Cumberland Plain, report prepared for NSW National Parks and Wildlife Service, Sydney, 1989 p 2.

10 Smith, LJ 1989, 'Archaeological site survey and analyses of sites on the Northern Cumberland Plain. Cumberland Plain Management Study. Report prepared for NSW National Parks and Wildlife Service', cited in Brayshaw, H 1993, Defence Department Land at Penrith, NSW. Archaeological Survey for Aboriginal Sites, report prepared for the Department of Defence, 1993.

11 Smith, LJ 1989, 'Archaeological site survey and analyses of sites on the Northern Cumberland Plain. Cumberland Plain Management Study. Report prepared for NSW National Parks and Wildlife Service', cited in Brayshaw, H 1993, Defence Department Land at Penrith, NSW. Archaeological Survey for Aboriginal Sites, report prepared for the Department of Defence, 1993.

12 McDonald, J, Mitchell, P and Rich, E, A Further Investigation of Site RS1 (45-5-892) at Regentville, Mulgoa Creek, Western Sydney, report prepared for Environmental Services Pacific Power, Sydney, 1996, p 33.

13 McDonald, J, Archaeological assessment of a proposed fauna fence in the Blacktown LGA, St Marys Property, report prepared for Delfin Lend Lease, 2005.

14 McDonald, J, Archaeological assessment of a proposed fauna fence in the Blacktown LGA, St Marys Property, report prepared for Delfin Lend Lease, 2005.

15 McDonald, J 2000, Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision 'Austral Site'—Mamre Road, Eskine Park, NSW, unpublished report, Sydney, p 19.

16 Brayshaw, H, McIntyre, S and Greer, S, An Archaeological Survey of Grasslands Glossodia NSW, report prepared for Don Fox Planning Pty Ltd on behalf of Grasslands stud farm, 1982.

17 Brayshaw, H, McIntyre, S and Greer, S, An Archaeological Survey of Grasslands Glossodia NSW, report prepared for Don Fox Planning Pty Ltd on behalf of Grasslands stud farm, 1982.

18 Brayshaw, H, McIntyre, S and Greer, S, An Archaeological Survey of Grasslands Glossodia NSW, report prepared for Don Fox Planning Pty Ltd on behalf of Grasslands stud farm, 1982.

19 Brayshaw, H, S McIntyre & S Greer, 1982, 'An Archaeological Survey of Grasslands Glossodia NSW', report prepared for Don Fox Planning Pty Ltd on behalf of Grasslands stud farm, no page.

20 Brayshaw, H, McIntyre, S and Greer, S, An Archaeological Survey of Grasslands Glossodia NSW, report prepared for Don Fox Planning Pty Ltd on behalf of Grasslands stud farm, 1982.

21 Brayshaw, H, S McIntyre & S Greer, 1982, 'An Archaeological Survey of Grasslands Glossodia NSW', report prepared for Don Fox Planning Pty Ltd on behalf of Grasslands stud farm, no page.

22 GML, 88 Spinks Road, Glossodia—Aboriginal Heritage Assessment, report prepared for EG Property Group on behalf of Diverse Pty Ltd, 2010.

23 GML, 88 Spinks Road, Glossodia—Aboriginal Heritage Assessment, report prepared for EG Property Group on behalf of Diverse Pty Ltd, 2010.

[24] GML, 88 Spinks Road, Glossodia—Aboriginal Heritage Assessment, report prepared for EG Property Group on behalf of Diverse Pty Ltd, 2010.

[25] GML, 88 Spinks Road, Glossodia—Aboriginal Heritage Assessment, report prepared for EG Property Group on behalf of Diverse Pty Ltd, 2010.

[26] GML Heritage, Oakdale Central Salvage Post-Excavation Report, report prepared for Goodman Property Services, 2015; Owen, T. 2013, 'Aboriginal Ceramics on the Cumberland Plain—the Aboriginal ovens at Leppington, NSW', Australian Archaeological Association Conference, Coffs Harbour, 2013.

[27] McCarthy, F 1948, The Lapstone Creek Excavation: Two Culture Periods Revealed in Eastern NSW, records of the Australian Museum 22, Sydney, pp 1–34.

[28] McCarthy, F 1964, The Archaeology of the Capertee Valley, New South Wales, records of the Australian Museum 26, Sydney, pp 197–246.

[29] McCarthy, F 1976, Australian Aboriginal Stone Implements, the Australian Museum Trust, Sydney, pp 96–97.

[30] Stockton, ED and Holland, WH 1974, 'Cultural Sites and their Environment in the Blue Mountains', *Archaeology and Physical Anthropology in Oceania* 9(1), Sydney, pp 36–65.

[31] Attenbrow, V, 2002, *Sydney's Aboriginal Past—Investigating the Archaeological and Historical Records*, the Australian Museum Trust, Sydney, pp 153–159.

[32] Aboriginal Affairs Victoria 2002, 'Aboriginal Axe-Grinding Grooves – Site Identification Mini Poster 12', Victorian Department of Natural Resources and Environment, Melbourne.

[33] Aboriginal Affairs Victoria 2002, 'Aboriginal Axe-Grinding Grooves – Site Identification Mini Poster 12', Victorian Department of Natural Resources and Environment, Melbourne.

[34] Department of Environment Climate Change and Water 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, NSW Aboriginal Land Council website, viewed 4 March 2014. <http://www.alc.org.au/media/43239/1004%20deccw%20community%20consultation%20requirements.pdf>.

[35] Department of Environment and Conservation (NSW) 2005*, Interim Community Consultation Requirements for Applicants*.

# 5.0 Archaeological Potential

This section discusses Aboriginal and non-Aboriginal cultural heritage potential, including Aboriginal and non-Aboriginal archaeological potential which is most relevant to this study. The term 'archaeological potential' is defined as the likelihood that a site may contain physical evidence related to an earlier phase of occupation, activity or development. This term is differentiated from 'archaeological significance' and 'archaeological research potential', which are more subjective statements on the value of the archaeological resource and are discussed in more detail in Section 6.0 of this report.

## 5.1 Predictive Modelling

The most effective survey and excavation methodologies can be informed by a predictive model. Such a model allows the targeting of areas assessed through preliminary desktop research to have greater potential to contain archaeological remains. A predictive model was developed for the study area in 2009 prior to commencement of field survey, and thus areas of likely Aboriginal and non-Aboriginal archaeological sensitivity were targeted during the field survey.

Land uses can have a substantial impact on any archaeological resources within a given landscape. This section aims to present a summary of the former land uses of the study area and the impact they may have had on the archaeological resource. This section also presents the locations of areas of archaeological potential within the study area.

### 5.1.1 Aboriginal Archaeology

#### Potential Impact of Former Land Uses

By 1840, the study area was freehold land—part of eight early grants in the area of Currency Creek. It was used for cultivation and grazing purposes during the nineteenth and twentieth centuries and was progressively cleared of its vegetation. In 1961 the township of Glossodia was laid out (to the north of the study area), and roads were graded; however, the study area itself remained rural.

By 1961, the study area was broken into a number of areas including two large orchard and farm sites, Jacaranda Park horse stud and three smaller farms. Both Jacaranda Park and one of the orchards had a house and collection of sheds and outbuildings clustered on the land. The other orchard, on Portion 47, had two houses located close to a large dam, with a third house and collection of buildings to the southwest of them closer to Currency Creek. Between the two orchard sites was another collection of buildings including a house and a long shed, possibly for keeping chickens. Evidence of cultivation is still present in the 1961 aerial.

By 1970, 11 large sheds had been built with access to Kurmond Road to the south. The orchards were mostly removed and new houses appeared fronting Sprinks Road to the north.

In 2015, almost all of the structures visible in the 1961 and 1970 aerials are still present and there are no longer any orchards. The property is used for grazing of a few livestock but is mostly occupied for the raising of chickens.

Most of the land has been cleared of native vegetation in the past, apart from some areas along Currency Creek which have retained natural eucalypts. Clearing the land of vegetation, cultivation, orcharding and the grazing of livestock has led to the sorting and turn-over of the soil and increased

erosion. It would also have impacted to some extent on the condition and integrity of any sites in the study area.

Two of the minor tributaries/ drainage lines through the property have been altered at several locations to create rammed-earth dams for water for livestock. This was undertaken with machinery; as such, these artificial dam banks—and areas nearby where grading has occurred—have been heavily disturbed and do not retain any integrity.

#### Aboriginal Archaeological Potential for the Study Area

The following trends in the archaeology of the local area have been identified:

- The site types most likely to be encountered within the study area include artefact sites (stone artefact concentrations, stone artefact scatters, isolated artefacts). Culturally modified trees, grinding grooves and quarries are also considered possible.
- Sites (in particular artefact scatters or concentrations) are likely to occur on the surface or in shallow deposits in proximity to creek lines and creek flats, although topographic units like ridges, hilltops, slopes and flats with views to these hydrological features have been found to have sites.
- Other types of sites known in the region are scarred trees and, where suitable sandstone was available, axe-grinding groove sites.

Based on archaeological models of the Cumberland Plain, there is a strong likelihood that artefact sites are present within the study area, particularly within 100 metres of Currency Creek and the two other tributaries which traverse the study area. These areas, close to potable water, would have attracted Aboriginal people in the past and may be the locations of former campsites or areas of increased movement and activity in the past.

There is also some potential for artefact scatters on the rises above the creek and drainage lines and on the high elevated places within the study area. These natural high points on the landscape would have provided Aboriginal people with a vantage point from which to target or exploit local resources. As such, they may have been areas of focused activity and contain former campsites or artefact discard.

Areas of high disturbance, such as around dams and buildings, still retain potential to contain unstratified, isolated Aboriginal objects. The remainder of the study area may contain sites that have been moderately disturbed by dispersal from ploughing, livestock trampling, erosion and de-vegetation activities.

There is potential for axe-grinding grooves, quarrying places and engraving art sites within the study area, depending on the occurrence and type of stone outcrops. Any areas of extant old-growth forest of sufficient age have the potential to contain evidence of trees modified as part of Aboriginal cultural practice. There is also potential for artefact sites to be associated with these other site types.

### 5.1.2 Historical Archaeology

The identification of the potential historical archaeological resource within the study area was based on historical research (Section 3.4), an analysis of available historical plans, aerial photographs and review of heritage listings.

Given that the above research did not provide any reference to extant heritage remains or historical archaeological sites within and in the immediate vicinity of the study area, a broader approach to the identification of the potential archaeological remains was adopted. It was based on a predictive model that assumes that historical archaeological remains are generally located in close proximity to occupation and activity areas.

If both Farlow and Lock, some of the first landowners within the Jacaranda Ponds study area, lived on their properties at Currency Creek, there may be some evidence of their occupation remaining within the study area. Other archaeological evidence that may be present within the study area could include evidence of early clearing (eg burnt-out tree stumps), cultivation and fence lines. This evidence is ephemeral in nature and not easily identifiable, is likely to be fragmentary and not very prevalent within the study area.

## 5.2 The 2009 Field Survey

### 5.2.1 Aims and Methodology

The field survey undertaken in 2009 aimed to identify, locate and evaluate visible Aboriginal and non-Aboriginal archaeological resources within the study area. This included historical-period relics (since 1788) as well as areas of archaeological potential. The field survey was preceded by a review of known sites held on the AHIMS register, as well as preliminary background research and a literature review for both the Aboriginal and non-Aboriginal contexts. This established a holistic archaeological context for the study area, facilitating the development of a predictive model to provide guidance on the types and possible locations of archaeological remains likely to be encountered during the field survey.

In terms of historical archaeology, the field survey mainly focused on general observations of the historical landscape to take note of any features or other indicators of historical occupation or activities not indicated in the documentary evidence. For Aboriginal archaeology, the survey aimed to identify any surface Aboriginal archaeological evidence and areas with potential for Aboriginal archaeological deposits.

The study area was surveyed by Erin Finnegan, Anita Yousif and Laura Farquharson of GML with Steve Randall of DLALC on Tuesday 1 September 2009, and by Erin Finnegan and representatives of DTAC, DCAC and DACHA on Thursday 3 September 2009. The size of the study area allowed for broad coverage on foot with approximately 40 per cent survey coverage achieved. For ease of survey and recording, the study area was divided into seven survey units (referred to in this report as A1, A2, A3, etc), generally following cadastral boundaries (Figure 5.10).

### 5.2.2 Limitations and Constraints

At the time of the field survey, the study area comprised two discrete poultry farming activity zones—the western properties (A1–A3) for egg production/incubation, and the eastern properties (A4–A7) for free-range meat birds. Biosecurity regulations were in place to minimise the risk of introducing and spreading infectious agents to the flocks and were strictly enforced. These regulations guided movement between farm properties, and thus determined the field survey approach—surveying the higher sensitivity farm first (egg production/incubation) and the ‘meat bird’ farm second.

Areas immediately surrounding poultry infrastructure (eg buildings, roads and paths between buildings, areas for machinery and equipment storage, and fenced chicken runs) were sensitive biosecurity zones and were excluded from the survey.

The field survey in 2009 revealed extensive grass coverage and very low soil surface visibility across the majority of the study area. Visibility ranged from 0–90 per cent depending on surface exposures and the level of ground cover (including vegetation, imported road gravels, soil and waste dumping). Poor ground-surface visibility across the majority of the study area limited the detection of archaeological remains and objects/sites in most areas. The field inspections focused largely on areas where the ground surface was exposed. These areas comprised a number of internal vehicular tracks, perimeters of dams, tree bases and fence lines. The result of the survey must be considered within the context of these site-specific limitations.

### Demonstration of Survey Coverage

The pedestrian field survey was guided by ground visibility—ie areas of interest defined by the predictive model were targeted. The survey routes were recorded and plotted using a Garmin handheld GPS set to the MGA coordinate system onto 1:25,000 ArcMap topographical maps. Digital photographic records, sketch plans and diary descriptions were also compiled as part of the field records. The team split into groups to extend coverage during the pedestrian survey and also undertook vehicular coverage, as shown in Figure 5.1.

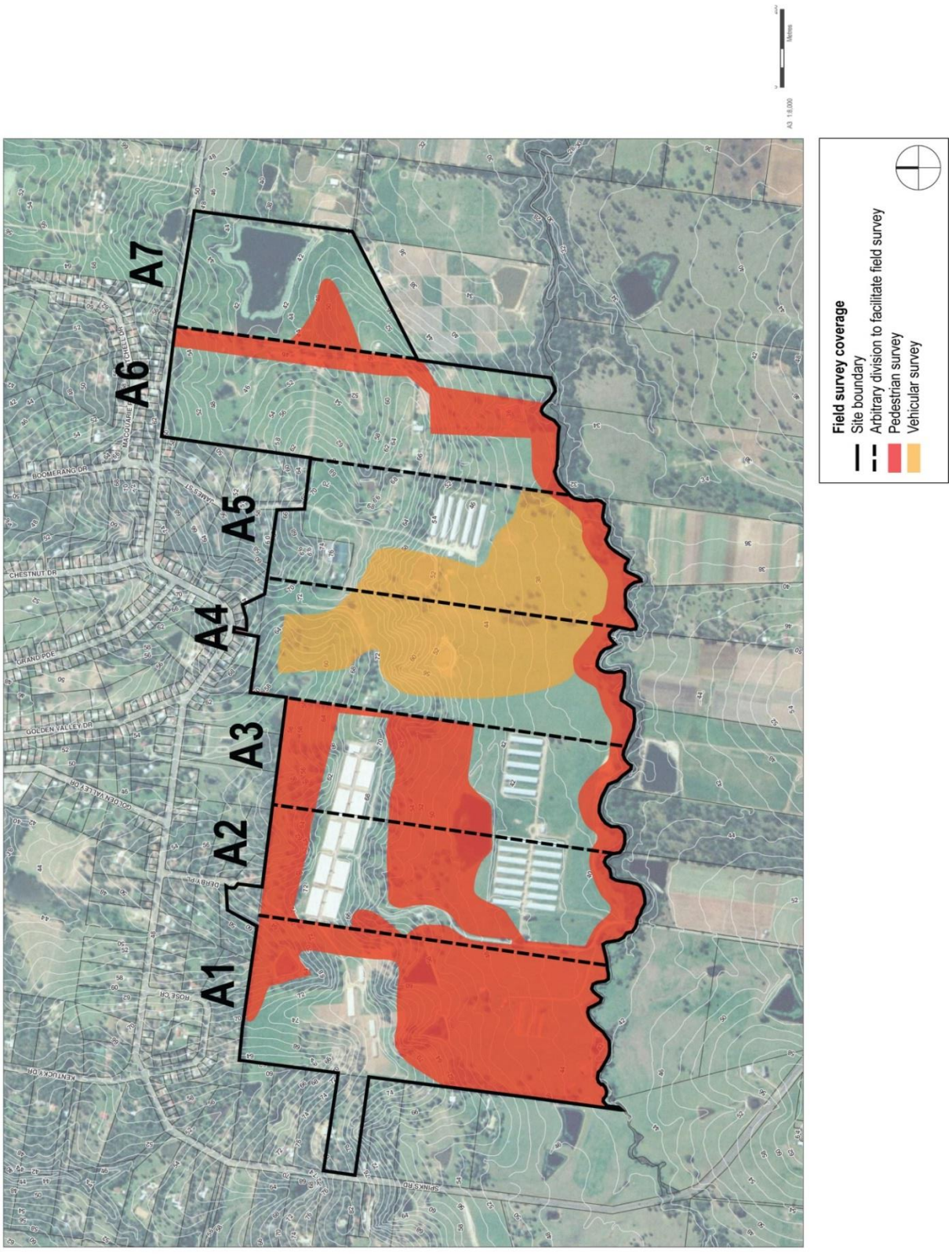



**Figure 5.1** Field survey coverage. (Source: GML 2009)

### 5.2.3 2009 Field Survey Results

This section discusses the nature and extent of the study area's heritage resources as identified through the 2009 field survey described above. Following this, the archaeological and heritage potential of the study area will be evaluated in light of the field survey findings through consideration of the observed physical evidence, examination of historical information related to the development and occupation of the study area, and documentation and evidence of activities (including construction of site features) that would have disturbed archaeological remains and other heritage resources associated with former site features and activities.

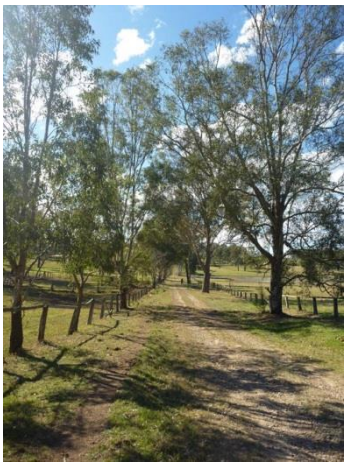
#### Land Form and Disturbance

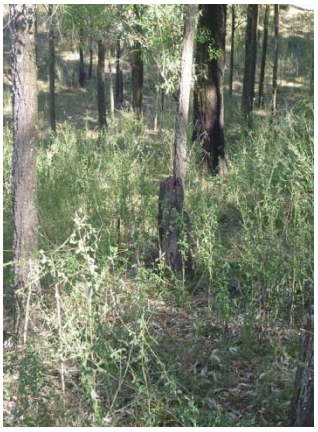
The entire study area has been subject to varying levels of disturbance, from clearing, agricultural activities and erosion to construction of poultry farm infrastructure. Areas surrounding the poultry sheds have been levelled and disturbed as platforms were cut into the natural topography (B horizon). Construction of the numerous stock dams within the study area has also modified the landscape. Five main land use zones were identified within the study area, as described in Table 5.1.

Whilst small patches of remnant vegetation were scattered across the study area, no old-growth trees large enough to have been targeted for Aboriginal cultural modification were identified. No sandstone outcrops along the creek line were observed during the survey either.

Table 5.1 presents an overview of the various types of land use forms encountered within the study area.

**Table 6.1** Land Use Forms Identified Within the Study Area During Field Survey.

| **Internal vehicle tracks (70–90% visibility)** | | |
|---|---|---|
| **Location and extent** | **Description of visibility** | **Image** |
| There were several vehicular access tracks within the study area, including a track running north–south from Spinks Road (see photo right) at the boundary of A6 and A7, and a driveway to a former residence in A1—both of which have been in place since at least 1961. The tracks to and between poultry infrastructure areas (A2 and A5) were not inspected as they formed a 'no-go' biosecurity zone. | The vehicle tracks in A1 and A6/A7 were the areas of highest ground-surface visibility within the study area. Whilst the natural B horizon was clearly evident along the roads, imported road base and aggregate was noted along both roads/tracks. |  |
| **Grazing land (0–15% visibility)** | | |
| **Extent and current use** | **Description of visibility** | **Image** |

| | | |
|---|---|---|
| This zone extended across much of the study area, with varying degrees of disturbance from previous agricultural activities. The paddocks were being used for grazing, with the southern paddocks (near Currency Creek) having had a higher degree of impact by cow trampling than the paddocks across the northern sector (higher elevation) which are generally less disturbed. | Visibility in these areas was affected by thick grass coverage and was generally very poor. |  |
| **Vegetation and scrub (5–10%)** | | |
| **Extent and current usage** | **Description of visibility** | **Image** |
| This zone extended along the Currency Creek, comprising several isolated pockets surrounding dams and along hill slopes. | This zone included remnant native bushland and scrub, with relatively dense ground and understorey coverage leading to poor ground-surface visibility. |  |
| **Dams (10–20% visibility)** | | |
| **Extent and current usage** | **Description of visibility** | **Image** |
| This zone occurred in isolated areas across the study area and comprised the bodies of water and associated bunds. There were at least 11 dams within the study area. | Ground exposure visibility varied between dams. Whilst several dams had embankment exposure, others had turf or vegetation extending right to the water's edge. |  |
| **Poultry farm infrastructure ('no-go' areas)** | | |
| **Extent and current usage** | **Description of visibility** | **Image** |
| This zone was isolated primarily to areas A1–A3 and A5 and comprised the poultry sheds (seen from a distance in photo right), runs, tracks and roads, machinery and storage areas. This was a 'no-go' zone and was excluded from the survey. | Unknown ground visibility. However, it can be assumed that cut and levelling activities impacted upon natural landforms in these areas. |  |

## Aboriginal Archaeological Resource—Identified Sites

A total of two isolated stone artefacts were identified within the study area (Figure 5.5). They both occurred on dirt vehicle tracks or internal roads where ground-surface visibility was highest (75–85%). These included one flaked piece and one flake. These artefacts (also referred to in this report as 'sites') were named with the prefix JCP (Jacaranda Ponds) and numbered 1 and 2—a complete lithics catalogue is provided in Appendix D. Both artefacts have been listed on the AHIMS register (AHIMS Site Numbers 45-5-3793 and 45-5-3794) and completed site cards for these sites are included in Appendix E.

A number of naturally occurring silcrete cobbles were identified across the study area and these are believed to be naturally derived, as they were of poor quality material and did not show evidence of working.

Ninety-five per cent of Currency Creek was inspected during the survey. Despite the predictive modelling forecasting the likelihood of artefacts being present in this area, no artefactual material was identified during the survey. This was primarily due to thick vegetation cover up to the creek banks which limited the opportunity for soil surface visibility. Furthermore, the riparian zone had been impacted by cattle trampling and erosion in places.

### *JCP1*

JCP1 is the site of an isolated flaked piece of red/yellow mudstone which was embedded in the road surface (natural B horizon) in the southwest section of the study area (A1) (Figures 5.2 and 5.3). This road was the original access road to the residence on the property and has been in place since at least 1961. The artefact had one possible negative flake scar.

It was noted that while there was very good ground visibility along the roads in A1 and A2, this was the only artefact found.

**Figure 5.2** JCP1: mudstone flaked piece. (Source: GML 2009)


**Figure 5.3.** JCP1 detail. (Source: GML 2009)


**Figure 5.4** JCP2: mudstone flake. (Source: GML 2009)

### *JCP2*

JCP2 is the site of an isolated yellow mudstone flake located on the vehicle track which runs north–south between A6 and A7 (Figure 5.4). The track's composition included introduced gravel road base in some places. As the flake was loose and among these gravels, it is highly probable that it was introduced as part of the road base. Mudstone is a material likely to be derived locally, but the original provenance of this artefact was impossible to determine.


**Figure 5.5** Locations of sites JCP1 and JCP2. (Source: GML 2009)

### Aboriginal Archaeological Resource—Potential Archaeological Deposits

At least one area within the study site has been assessed—as part of the 2009 field survey and with consideration of the background information—to have high potential to contain subsurface archaeological material. In addition, the corridor of Currency Creek is assessed to have moderate potential (Figure 6.11).

The area of high potential comprises the hill crest to the immediate south of the dam in A7, which extends in a southwesterly direction to the access road/track along the boundary of A6 and A7. There were no ground-surface exposures along the hill crest during the 2009 survey, due to thick grass coverage. Thus, the presence of surface artefactual material could not be confirmed. This relatively undisturbed area has been assessed as an area of PAD which includes potential to contain surface as well as subsurface Aboriginal stone artefacts. Its potential is indicated by good site amenity including views to the north and south, its proximity to Currency Creek and being an area of good drainage. Furthermore, this landform conforms to predictive models based on known site patterning in the Cumberland Plain—that is, sites are predominantly open campsites/artefact scatters and can occur along elevated areas proximate to creek lines. This PAD has been designated as PAD1.

In 2009, an Aboriginal stakeholder group (DCAC) identified the ridgeline in A7 as an area that they would like to have included in a test excavation program. The apex of this ridge is located to the north of the study area and only the mid-slope is situated within the study area boundary. The mid-slope may well contain a distribution of subsurface artefacts, the nature and extent of which is unknown. This area is likely to have been subject to some ground disturbance from road construction and/or service installation. Therefore, it has been deemed to have low to moderate archaeological potential—it has not been weighted as having the same degree of potential as the identified PAD (PAD1), or the moderate potential zone along Currency Creek. Nevertheless, it is recommended that this landform be included in test excavation to confirm the presence or absence of objects and thus test the predictive model. Following advice from OEH, the ridge has been designated as a PAD (PAD2) and an AHIMS site card completed for it (Appendix E).

The Currency Creek corridor is assessed as having moderate archaeological potential, based on the predictive model of sites in the region where sites occur proximate to creek lines and creek flats. This zone extends 100m north from the creek line, and effectively includes the riparian zone. This area also forms part of the development setback—that is, development regulations would prevent works and construction within the riparian zone. The proximity of JCP1 to this moderate potential zone (just outside of 100 metres from the creek line) on one of the only areas of good ground visibility may well support the assessment of potential for this zone.

The remainder of the study area is assessed as having low archaeological potential, while areas of heavy disturbance such as around dams and buildings has no potential to contain intact Aboriginal archaeological deposits based on land use history but retain low potential to contain unstratified, isolated Aboriginal objects.

A completed AHIMS site card for the hill crest PAD (PAD1) was prepared (Appendix E) and lodged with AHIMS at the conclusion of the 2009 survey. An area along Currency Creek was identified through predictive modelling as having moderate potential. As poor ground-surface visibility restricted comprehensive surveying along the Currency creek line corridor, this area was not registered as a separate PAD. Nevertheless, it should be managed in accordance with its potential to contain as yet unidentified Aboriginal artefacts.

There is no potential for culturally modified trees to exist within the study area because of its history of land use, extensive clearing and lack of old growth trees as observed during the 2009 field survey. No sandstone outcrops were observed along the creek line and there is deemed to be low to no potential for grinding grooves to be located within the study area. If they are present, they may be subsurface around creek lines, beneath leaf litter and sediments. There is low to no potential for other forms of non-archaeological Aboriginal heritage within the study area—consultation with members of the Aboriginal community in 2009 did not identify any other heritage values aside from the archaeological record within the study area. However, this could be re-investigated as part of any future Aboriginal Cultural Heritage Assessment or archaeological excavation in order to capture values that may arise from re-connection to Country through the archaeology, newly identified sites or involvement in the project.

### Non-Aboriginal Heritage Resource

During the 2009 field survey no evidence of early structures (houses, outbuildings or sheds) was found. There was no evidence of any deep features such as wells or pits, nor isolated artefacts indicating existence of a possible early homestead. A number of disused timber fence posts were observed at various locations within the study area. A wooden post fence running east–west along Currency Creek and north–south delineated a block of unworked land. The large fence posts were constructed of machine-cut timber and featured machine-drilled holes for wire (Figures 6.6 and 6.7). Former fence wire remains were scattered across the study area. Given the fabric and location of the posts they most likely represent early to mid-twentieth-century rural land use. A residence (now demolished) likely to have dated from the mid-twentieth century was located in A1. This area may include in situ subsurface features such as footings or services. This site, however, was not identified as being of archaeological interest. Several twentieth-century timber sheds and one iron shed were observed across the study area during the 2009 survey (Figures 6.8 and 6.9).

The documentary evidence does not indicate any specific development or activities within the study area that would give rise to substantial historical archaeological evidence. Development across the study area prior to the mid-to-late twentieth century appears to have been limited to general faming and land management practices such as crop raising, stock grazing, and associated features such as fence lines, sheds, dams, roads/tracks, wells and rubbish dumps. While evidence of these features may survive across the landscape (eg postholes, shed footings, former road/track surfaces, rubbish dumps, and archaeobotanical evidence), such archaeological remains have not been identified during the 2009 field survey and would probably be fragmentary. It would be difficult to predict the location and extent of this evidence. Moreover, based on their relatively recent age and lack of confirmed connections to people or events of significance, the built structures within the study area have not been identified as heritage items. There is therefore low potential for non-Aboriginal heritage resources, including historical archaeology, to exist within the study area.

**Figure 5.6** A fenced-off block of land was located in the southwest portion of the site. This west-looking view shows part of the wood post fence running along Currency Creek. (Source: GML 2009)

**Figure 5.7** North-facing view showing the north–south post alignment of the fence featured in Figure 6.6. (Source: GML 2009)

**Figure 5.8** Twentieth-century corrugated-iron shed located east of the timber fence represents one of the very few farming structures within the study area. (Source: GML 2009)

**Figure 5.9** One of several twentieth-century timber sheds across the study area. (Source: GML 2009)

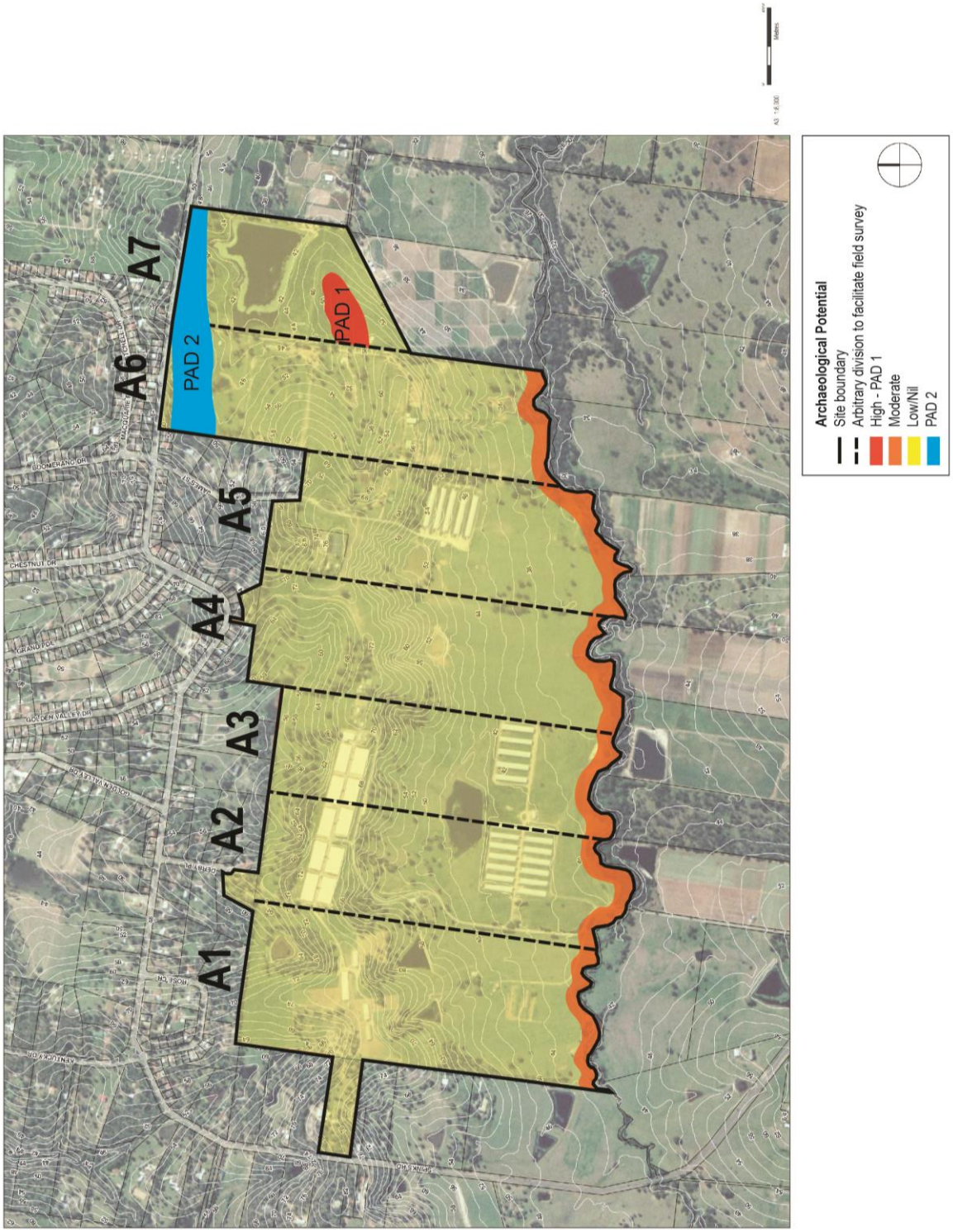



**Figure 5.10** Areas of Aboriginal archaeological potential. (Source: GML 2009 in additions, 2015)

# 6.0 Significance Assessment

## 6.1 Aboriginal Heritage Resource

### 6.1.1 Background

An assessment of significance provides important information on which decisions can be made regarding the management and protection of Aboriginal heritage sites, placed and values in New South Wales. The significance of Aboriginal cultural heritage is generally assessed under four criteria commonly applied in Aboriginal cultural heritage management. These criteria are based primarily on the standards outlined in the Burra Charter, which is generally considered to set best-practice standards for the management and conservation of places of cultural significance within Australia. Cultural significance, as defined under the Burra Charter, relates to the aesthetic, historic, scientific and social significance of a site or place, and thus emphasises not only the scientific but also the social values of a site or place. This emphasis is similarly embodied in the principles of OEH and formerly DECCW, which places emphasis on consultation with Aboriginal stakeholders when assessing the cultural significance of Aboriginal objects and/or places.[1]

Based on these guidelines, significance is assessed under four criteria:

- **Cultural value—**The cultural significance of a place relates to its value and importance to Aboriginal people, thus significance under this criterion can only be assessed in consultation with Aboriginal stakeholders.
- **Scientific/archaeological value—**This refers to the potential for a site or place to provide scientific or archaeological information, and includes a site's research potential. Assessment of significance under this criterion can consider the rarity of a particular site within the wider archaeological context.
- **Aesthetic value—**This relates to the sensory value of a site or place and is typically applied to art or mythological sites of impressive visual character or presence.
- **Educational value—**This criterion relates to the potential of a site to be used for educational or recreational purposes within the community.

### 6.1.2 Cultural Value

Cultural significance relates to the value of a site or place to the local Aboriginal community, and thus can only be determined in consultation with representatives of that community. All evidence of Aboriginal cultural heritage tends to have some level of contemporary significance to Aboriginal people through its tangible link to past people, places, lifeways and Country. These values are often very complex and cannot be considered in the same way that an assessment of scientific or archaeological significance can.

The identified isolated artefact sites within the study area, recorded during the field survey with representatives of the local Aboriginal community in 2009, are not rare or unique within the local landscape. Whilst the two sites may not be significant to the Aboriginal community as individual sites, they are likely to have inherent meanings around connection to place and their importance as tangible evidence of Aboriginal presence in the landscape.

Consultation with the local Aboriginal stakeholder groups was undertaken in the course of the 2009 study in order to determine the cultural significance of identified Aboriginal heritage sites and potential sites within the study area. Selected comments on the cultural values of the study area follow below:

> *This area is the undisputed traditional land of the Darug and is in very close proximity to some very significant sites and areas to our people, there is a silcrete quarry near Freeman's Reach school that would have been a resource used by our people, therefore our people would have revisited this area for thousands of years.*[2]

> *This area was a very important place for the local Darug clan—the Boonoobeaongal—being rich in resources, for both gathering and hunting.*[3]

In addition, during the 2009 field survey Aboriginal representatives identified PAD 2 as an area the Aboriginal community would like to investigate to understand their past better.

### 6.1.3 Scientific/Archaeological Value

Scientific or archaeological significance is measured by considering a site's potential to provide scientific information that may answer research questions, and considering its rarity or representativeness. Significance assessment under this criterion relates to identified archaeological sites as well as areas assessed to have potential for archaeological deposits.

The site types identified within the study area (isolated finds) are not rare within the local area, and could be considered as part of the 'background scatter' of isolated artefacts which occurs across the Cumberland Plain. Thus, as isolated finds, they hold no scientific/archaeological value for their potential to contribute to the further development of an archaeological understanding of the region.

Areas of assessed archaeological potential are as follows:

- The hilltop crest in A7 (PAD1) is assessed as having high potential to provide information about activity in this area through surface or subsurface deposits. However, the nature of this PAD is unlikely to present scientific information that is substantial, but rather is likely to augment existing knowledge of Cumberland Plain occupation. The existing hilltop crest is thus assessed as having low to moderate significance under this criterion.
- Due to major environmental impacts such as cattle trampling and erosion, the area along the creek line is assessed as having moderate potential to provide information about activity along this water resource and low to moderate significance.

The scientific or archaeological significance of identified sites within the study area is assessed to range from low to moderate.

Alluvial deposits adjacent to the creek may have potential for stratified Aboriginal archaeological evidence to be present which can indicate change over time and the nature of use and repetition of visitation to a site. Chronostratified deposits are rare on the Cumberland Plain but have been identified along the Hawkesbury River at Pitt Town and have some potential to exist within the current study area—this would contribute to the significance of the study area to scientific understanding of Aboriginal occupation and subsistence on the Cumberland Plain. Similarly, the presence of a representative sample of stone tools, rare features or rare information about the relationships between sites, activity areas, chronology and dating of Aboriginal use, if present within identified PADs or other areas of the study area would be highly significant under this criterion.

### 6.1.4 Aesthetic Value

Aboriginal sites identified within the study area do not at this stage demonstrate aesthetic qualities of notable value or rarity. Thus, the sites do not meet this criterion for significance.

### 6.1.5 Educational Value

Aboriginal sites identified within the study area do not possess particular qualities or attributes that would render them as being suitable educational sites. The Aboriginal stone objects themselves may be useful for teaching local school students as part of the national curriculum, about Aboriginal cultural heritage. However, significance of this site under this criterion is assessed to be low. Any Aboriginal objects contained within PADs may also contribute to this significance.

### 6.1.6 Summary Statement of Significance—Aboriginal Heritage Resource

The assessment of the Aboriginal heritage resource within the study area has determined the known and identified PADs to be of generally moderate to low significance because of their likely scientific/archaeological values, as well as their cultural and educational value.

## 6.2 Non-Aboriginal Heritage Resource

The *NSW Heritage Manual* guidelines (as amended July 2002), prepared by the (then) New South Wales Heritage Office and Department of Urban Affairs and Planning, provide the framework for assessing heritage significance under the Heritage Act. These guidelines incorporate the five types of cultural heritage values identified in the Burra Charter into a set of specific criteria for assessing the significance of an item, including guidelines for inclusion and exclusion.[4]

The Heritage Council of NSW has adapted specific criteria for heritage assessment which have been gazetted pertinent to the Heritage Act. The seven criteria, upon which the following significance assessment is based, are outlined below and then applied to the study area:

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

Given the limited potential for the study area to contain historical archaeological evidence that could contribute substantial information about the study area, a detailed assessment of the significance of

the non-Aboriginal cultural heritage resource against these criteria has not been prepared. The study area's overall heritage significance has been summarised as follows.

### 6.2.1 Statement of Significance—Non-Aboriginal Heritage Resource

The study area was divided into a number of land grants in the early nineteenth century and has generally remained farmland ever since. The study area has been predominantly used for stock grazing and crop raising throughout its post-European settlement history, with more focused land use such as orcharding and poultry farming in the mid-to-late twentieth century. The documentary evidence does not indicate any specific occupation of the site (such as houses or other structures) prior to the mid twentieth century. Historical archaeological evidence within the study area would probably be limited to generic features such as former fence lines, sheds, dams, roads/tracks, rubbish dumps and possibly deeper subsurface features such as wells or pits. This evidence would probably be scattered across the site and fragmentary. Any such evidence would have limited research potential for its ability to contribute new or substantial information about the study area that could not be obtained from other sources. On this basis, the study area is considered to have little historical archaeological potential or significance. Built structures within Jacaranda Ponds (corrugated-iron sheds, timber outbuildings, fence posts) are good examples of mid twentieth-century vernacular architecture and corresponding land management—though there are plenty remaining within NSW. They have no intrinsic heritage significance, though they contribute to the character of the rural landscape of Glossodia.

## 6.3 Overview of Heritage Values

The following provides an overview of the aforementioned values within the study area based on known sites and places. It addresses both Aboriginal and non-Aboriginal heritage resources and values.

**Table 6.1** Overview of Heritage Values, Based on Known Sites and Places Within the Study Area.

| Value | Manifest through | Grade of Significance |
|---|---|---|
| Cultural/ Social | Aboriginal archaeological evidence connects Aboriginal people in a physical way to their cultural heritage. PAD 2 has been identified as an area the Aboriginal community would like to investigate to understand their past better. | Low–moderate |
| Historic | The study area does not meet this criterion. | |
| Scientific | Representative sample of stone tools, potential presence of rare features, potential for alluvial deposits for which further investigation is needed to understand Aboriginal use of this type of landscape on the Cumberland Plain, potential provision of rare information about the relationships between sites, activity areas, chronology and dating of Aboriginal use along the first order stream (Currency Creek). | Low to moderate with the potential to be higher subject to the findings of further investigations |
| | Generic historical archaeology features (probably scattered and fragmentary) | Low |
| Aesthetic | The study area does not meet this criterion. | |

## 6.4 Endnotes

1 Department of Environment and Conservation (NSW) 2005*, Interim Community Consultation Requirements for Applicants*—as quoted in Section 4.5.1.

2 Leanne Watson, pers comm, 12 November 2009.

[3] Celestine Everingham, pers comm, 24 November 2009.

[4] New South Wales Heritage Office 2001, 'Assessing Heritage Significance', a *NSW Heritage Manual* update, New South Wales Heritage Office, Sydney.

# 7.0 Heritage Impact Assessment and Management Strategies

This section provides a description of the proposed activity and identifies the Aboriginal and historic heritage values that may be harmed (directly or indirectly by the activity) through the proposed activity.

## 7.1 Proposed Activity

J. Wyndham Prince has been commissioned by EJ Cooper and Son to prepare a development application for the rezoning and subdivision of the Jacaranda Ponds study area, with subsequent high-density residential development of this precinct to follow. This current subdivision concept includes 600 new residential lots, a riparian zone along the creek (and dividing sections of the precinct), as well as a large dam and lake with green space. The proposed activity is shown in Figure 7.1.

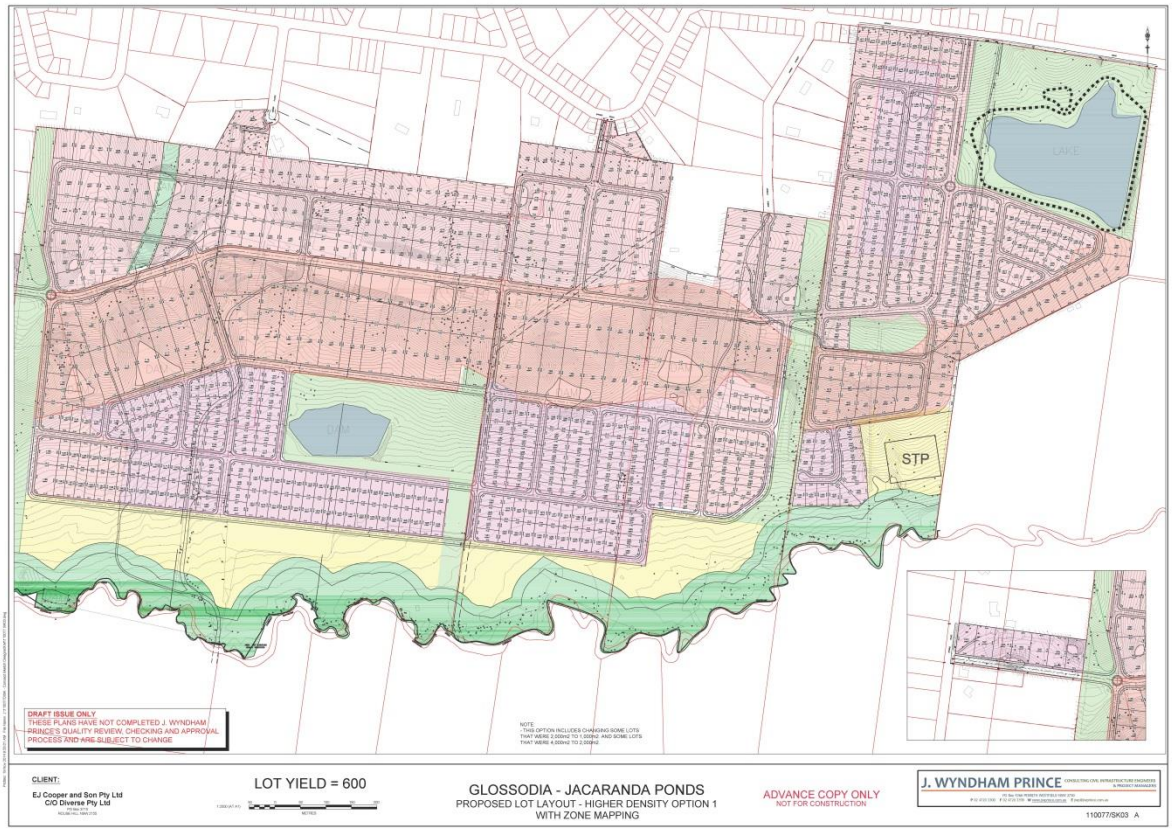



**Figure 7.1** Jacaranda Ponds proposed lot layout plan indicating the nature and extent of the residential development proposed. Pink/ orange zones are areas of development, whilst the dam and lake are marked in blue and riparian zones in green. (Source: J. Wyndham Prince 2014).

## 7.2 Impacts Arising from the Proposed Development

Activities associated with the proposed subdivision will result in significant ground surface disturbance activities. In addition to housing lots, associated infrastructure would be required (roads, electricity, sewer/water, telephone cables, etc). These activities could include use of machinery to dig, grade, bulldoze, scrape or drill the ground surface, or the removal of vegetation for the purpose of preparing the lots, roadways and eventual construction of houses. The proposed activity could result in complete removal of all artefact bearing topsoil horizons, and in some deep excavation for footings or services. Such activities would affect all parts of the study area including the riparian corridor where ground

disturbance activities may include vegetation rehabilitation. Sandstone bedrock associated with the creek corridor that has the potential to contain grinding grooves could be modified by the proposed activity. Table 7.1 summarises the potential development activities that could occur and the type and degree of impacts and harm they may cause to known and potential archaeological sites.

**Table 7.1** Development Activities and the Type and Degree of Impacts and Harm they May Cause to Aboriginal Sites.

| Activity | Type of Harm | Degree of Harm | Consequence of Harm |
|---|---|---|---|
| Filling of current topography. | Though this may cap a site, it is considered harm by the OEH. | Minimal—caps and preserves sites for future posterity but makes these sites fairly inaccessible. | Conservation with inaccessibility. |
| Topsoil stripping. | Removal of soil horizons which may contain archaeological deposits. | Destruction of Aboriginal sites. | Loss of information, loss of heritage value. |
| Removal of trees and/or exotic species, including grasses. | Removal of soil horizons which may contain archaeological deposits. | Partial or total destruction of Aboriginal sites. | Loss of information, loss of heritage value. |
| Cutting of current topography. | Removal of soil horizons which may contain archaeological deposits. | Destruction of Aboriginal sites. | Loss of information, loss of heritage value. |
| Sinking (via excavation) of foundations, footings and services. | Removal of soil horizons which may contain archaeological deposits. | Destruction of Aboriginal sites. | Loss of information, loss of heritage value. |
| Assisted natural regeneration and/or bushland reconstruction. | Mechanical weed control, soil tilling/preparation and amelioration, planting of plants including trees, shrubs, grasses and other ground layer plants will damage the integrity of the soil horizons and/or remove the natural soil horizons in certain places. This damage to the soil could result in harm to archaeological deposits. | Partial or total destruction of Aboriginal sites. | Loss of information, loss of heritage value. |

The proposed subdivision and residential development of the study area could result in an impact to two identified Aboriginal sites (JCP1 and JCP2—site cards included in Appendix E) and two areas of PAD. Removal of weeds, revegetation or machinery activities could cause direct and total harm to PADs contained in the riparian zone. Development works also have the potential to impact any subsurface historical archaeological remains, Aboriginal artefact scatters or isolated finds not yet identified. Overall, this could result in further loss or partial loss of Aboriginal site/s from the north-western extent of the Cumberland Plain, resulting in partial or total loss of their associated heritage value. Whilst the overall number of Aboriginal sites in the Cumberland Plain is in the hundreds, the gradual, continued loss of them—as a consequence of urban and infrastructure development—is resulting in a cumulative impact to overall Aboriginal heritage information and values in the region. Loss of such sites, without appropriate management and mitigation, culminates in a loss of Aboriginal heritage value and information essential to the understanding of past Aboriginal people, their culture and subsistence in this landscape.

There is potential for indirect impact to also occur within the riparian zone of the study area, even if archaeology is retained as part of the redevelopment. These indirect impacts would be from the increased recreational use of the riparian zone by the larger population facilitated by the residential

development. The impact of increased visitation and use of the zone should be planned for to facilitate effective environmental and heritage management within this zone. The incorporation and interpretation of the environmental and heritage value of this zone would be a value adding feature of the development and also assist in its conservation.

## 7.3 Harm to Aboriginal Objects and Values

As stated above, the following objects, sites, places and landscapes have been identified within the study area. Table 7.2 summarises the harm to identified physical heritage sites and places that could take place as a result of the proposed development within the study area. It is important to note that such harm would also apply to as yet unidentified Aboriginal and historical archaeological sites. Table 7.3 provides an assessment of how the heritage values identified within the study area may be directly or indirectly affected by the proposal.

**Table 7.2** Potential Harm to Identified Heritage Sites.

| Site | Type of Harm | Degree of Harm | Consequence of Harm |
|---|---|---|---|
| Aboriginal site JCP1 | Topsoil stripping and removal of exotic species including grasses. Mechanical weed control, soil tilling/preparation and amelioration, planting of vegetation including trees, shrubs, grasses and other ground layer plants. | Partial or total destruction of archaeological sites. | Loss of information and heritage value. |
| | The nature of impacts within the riparian zone (in which this site is located) are unknown at this stage. It may be possible to conserve this site within the riparian zone. However, if this were not possible, the type, degree and consequence of harm would be as above. | | |
| Aboriginal heritage site JCP2 | Topsoil stripping and removal of exotic species including grasses. Mechanical weed control, soil tilling/preparation and amelioration, planting of vegetation including trees, shrubs, grasses and other ground layer plants. | Partial or total destruction of archaeological sites. | Loss of information and heritage value. |
| | This site falls within a residential zone in the northeast of the study area. The nature of potential impacts at this particular location are not entirely known this stage. If the site was to be retained as part of a park or other form of green zone within the residential area, it may be possible to conserve it in situ. However, if this were not possible, the type, degree and consequence of harm would be as above. | | |
| PAD1 | Removal of soil horizons which may contain archaeological deposits. | Destruction of archaeological sites. | Loss of information and heritage value. |
| PAD2 | Removal of soil horizons which may contain archaeological deposits. | Destruction of archaeological sites. | Loss of information and heritage value. |

**Table 7.3** Overview of Impacts to Values.

| Value | Manifest through | Degree of Harm | Consequence of Harm |
|---|---|---|---|
| Social | Aboriginal archaeological evidence connects Aboriginal people in a physical way to their cultural heritage. PAD 2 has been identified as an area the Aboriginal community would like to investigate to understand their past better. | Destruction of the potential archaeological site and physical context of any artefacts and features within it. | Loss of information and heritage value. |
| Historic | The study area does not meet this criterion. | None. | None. |
| Scientific | Representative sample of Aboriginal stone tools, potential presence of rare features, potential for alluvial deposits for which further investigation is needed to understand Aboriginal use of this type of landscape on the Cumberland Plain, potential provision of rare information about the relationships between sites, activity areas, chronology and dating of Aboriginal use along the first order stream (Currency Creek). | Destruction of Aboriginal sites. | Loss of information, loss of heritage value. |
| | Generic historical archaeology features (probably scattered and fragmentary). | Partial or total destruction of any archaeological sites. | Loss of limited information and values of potentially low significance. |
| Aesthetic | The study area does not meet this criterion. | None. | None. |

## 7.4 Avoiding, Minimising and Mitigating Harm

The following management and mitigation statements are made in light of the findings of the study area inspection, background research, predictive modelling, heritage significance assessment, relevant NSW legislation protecting Aboriginal heritage, the OEH Aboriginal cultural heritage assessment guidelines and consultation with local Aboriginal stakeholders.

### 7.4.1 Strategy—Avoidance

In order to reduce the loss of heritage values and the negative effect on the local community as a result of this loss, the conservation of identified Aboriginal sites is recommended where possible. An accurate assessment of the significance of identified sites and areas of archaeological sensitivity within the current study area cannot be provided at this time. Further archaeological investigation is required in order to determine the significance and thus conservation opportunities of sites and any additional potential sites that may exist within the study area. Avoidance of heritage sites represents the best heritage outcome as it means no impact to the identified heritage features.

Avoidance of the known Aboriginal sites (JCP1 and JCP2) and areas with potential (PAD1 and PAD2) will result in no impact to these sites and thus the conservation and retention of their heritage values.

Currently, the development proposal includes a riparian corridor on the northern side of Currency Creek and another green zone in the north east of the development. JCP1 is located within the Currency Creek Riparian corridor and therefore has the potential to be preserved within this zone. Current plans (DWG 110077/SKA03 A as shown in Figure 7.1) and mapping indicate that JCP2 falls within the residential zone surrounded by residential development, near to the other green zone in the northeast of the study area. Co-location of the green zone with JCP2 would represent an opportunity for site JCP2 to be conserved in situ within a green zone which may become a park or other public space initiative. However, if JCP2 is to remain within a residential development zone, appropriate management and mitigation of the impacts that could be caused by the development, to this site, need to take place.

Conservation of these sites in situ would mean avoiding any disturbance to the full extent of these sites (which is currently unknown) including disturbance from weed removal, revegetation and any earthworks—alternative solutions to weed removal and revegetation would need to be found for these site areas.

The extent of both JCP1 and JCP2 may need to be more accurately defined through archaeological test excavation. This may result in the opportunity for conservation of a smaller area.

If works that would impact the ground surface in all or part of any of these green zones were required, then further archaeological investigation must be undertaken prior to development in the area to mitigate against harm to these Aboriginal archaeological sites. Where avoidance of ground impacts in either of these green zones is not possible, an AHIP application would need to be obtained prior to development commencing.

From the current layout plan, PADs 1 and 2 are within residential development lots and thus there is no potential for conservation of these sites. Therefore, unless the development layout plan were amended to conserve these areas, further heritage assessment and investigation of the sites would be required as detailed below.

### 7.4.2 Strategy—Further Heritage Assessment

If development works would impact the assessed areas of archaeological sensitivity, , a full Aboriginal Cultural Heritage Assessment would be required in order to effectively manage Aboriginal heritage impacts within the study area. Such an assessment would include community consultation with the Aboriginal community in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents.*[1] Further to this, a field survey and Aboriginal archaeological test excavation program would be necessary for those areas to be impacted, including PAD1 and 2. Test excavation would not require a permit and could be undertaken in accordance with the Code of Practice.[2] This will check for the presence of as yet unidentified Aboriginal sites and objects, define the boundaries of each Aboriginal site and facilitate a better understanding of the nature and significance of each site to be impacted.

These three activities—consultation, field assessment and test excavation (and appropriate reporting on the outcomes of them)—are required in order to apply for an AHIP to allow development works to proceed across the study area.

In terms of historical archaeology, no further work is required; however, if any relics were detected during Aboriginal archaeological test excavation, they should be reported to the OEH and managed appropriately in accordance with the Heritage Act.

### 7.4.3 Strategy—AHIP With or Without Salvage Excavation

If recorded Aboriginal heritage sites and objects within the study area cannot be conserved, as is likely to be the case for the currently identified PADs, an AHIP covering the entire study area would be required in order to proceed with the development under Section 90 of the NPW Act. The AHIP should cover all land that will be impacted by the proposal but exclude land zoned as Conservation. A whole-of-study-area AHIP will also provide approval for impact to Aboriginal objects present as a 'background' scatter and not associated with an identified site. An AHIP will define conditions under which development can proceed in areas of Aboriginal heritage value. Implementation of the conditions of an AHIP may include preparation of a Plan of Management, salvage excavation for sites identified and understood further through testing, monitoring, stone object collection, processing of finds, analysis, and reporting. The duration of salvage excavation would depend upon the extent of Aboriginal heritage impact or the ability to conserve sites during the development process. These processes are undertaken to ensure that information is not lost and the impacts to the heritage sites and values are appropriately mitigated.

## 7.5 Synopsis of Impacts Arising from the Proposed Development

The proposed development can avoid harm to Aboriginal objects present within the study area, through avoidance of ground impacts within green zones. The identified PADs within the study area are likely to be impacted by residential development in the future. Further research, including survey and test excavation to check for the presence of as yet unidentified Aboriginal sites and ascertain the nature and extent of PAD1 and PAD2, is required prior to development impacts in order to determine the most appropriate heritage management strategy for these sites.

Sites which will not be directly impacted by the development may be subject to indirect harm from increased population facilitated by it, with recreational use of the surrounding creek and remnant bushland. There is a low potential for Aboriginal isolated finds and/or small artefact scatters and historical archaeological relics in the areas outside those that have been identified as having archaeological sensitivity. Development works have the potential to impact any potential artefact scatters or isolated finds.

Given the provision under the NPW Act, and the definition of harm, it is recommended that no ground disturbance activity be undertaken as part of the proposed development without an AHIP. Whilst some zones of the study area are developed and have a low level of archaeological potential, there is a high likelihood that some Aboriginal objects remain within the development zone. Impact to such objects, known or unknown, would result in a breach of the NPW Act unless an AHIP were in place for the whole development.

In terms of historical archaeology, no further work is required; however, if any relics were detected during Aboriginal archaeological test excavation, they should be reported to the OEH and managed appropriately in accordance with the Heritage Act.

## 7.6 Endnotes

[1] Department of Environment Climate Change and Water 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, NSW Aboriginal Land Council website, viewed 4 March 2014.

[2] DECCW 2010, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Office of Environment and Heritage, viewed 3 March 2015 <http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf>.

# 8.0 Constraints and Opportunities

## 8.1 Constraints

The desktop assessment and visual inspection indicated that there are two Aboriginal sites, two areas of PAD and no known historic archaeological sites within the study area—other parts of the study area have low potential to yield Aboriginal and/or historic artefacts in surface or subsurface deposits. Aboriginal activities were likely to have been focussed in the vicinity of the creek line and along the ridge within the study area.

If possible, the Aboriginal sites JCP1 and JCP2 should be conserved within defined riparian/ green zones. Conservation must ensure no impact to original soil horizons, including restricting new planting. If works including revegetation were required within these zones, further detailed archaeological investigation and assessment would need to be undertaken to mitigate the impacts of such works on the heritage values of this site and sensitive area.

If sites such as PAD 1 and 2 are to be impacted, which is likely, then archaeological test excavation should be undertaken to determine the nature and extent of a subsurface deposit. This would need to be followed by an AHIP application prior to any development activities.

The recommendations of this Aboriginal heritage assessment should be used to underpin an Indicative Layout Plan (ILP) for development. Such a plan should demonstrate efforts to include Aboriginal heritage sites and places within conservation zones.

Impacts to sites which cannot be avoided within the study area could be mitigated by archaeological test excavation of these areas in accordance with the Code of Practice.[1] An AHIP permit is not required for this testing, provided the methodology stipulated under the code is followed.

All other landforms within the study area have a low archaeological potential. These landforms may contain Aboriginal or historic objects, in soils with diminished integrity and/or condition or places which were utilised for activities that have not left a detectable archaeological signature. The NPW Act requires a due diligence approach to the management of such sites and it is therefore recommended that a development-wide AHIP be applied for.

Should test excavation occur, community consultation, a comprehensive Aboriginal cultural heritage assessment and heritage management plan need to be prepared prior to development or the application for an AHIP (in accordance with current OEH guidelines and statutory timeframes). This would ensure the overall risk arising from Aboriginal heritage within the study area could be appropriately managed.

In view of the time required for an AHIP approval, it is recommended that Aboriginal heritage assessment and management be commenced as soon as possible to ensure that any sites that require conservation could be taken into account during the masterplanning phase. A demonstration of the proponent's conservation of significant Aboriginal sites would be looked upon favourably by the OEH during the AHIP approval process.

## 8.2 Opportunities

The presence of heritage values within the study area provides an opportunity for interpretation and the establishment of a development with historical precedence and character. The connections to the

establishment of Glossodia and historical farming on the property, in addition to the evidenced Aboriginal use and occupation of at this site prior to European colonisation, establishes the precedence for the development. There are key opportunities to:

- give the development character and connection to history through interpretation of its heritage;
- designate community park and/or nature reserve areas in green zones and/or on one or more lots to include archaeologically sensitive areas where landscaping or development works would be avoided. This negates the need for excavation works at these sites; and
- retain, conserve, reveal and interpret the heritage values of the Aboriginal archaeology as a value-adding key historic and feature in the new development.

The research and investigation of both the Aboriginal and post-European settlement histories of Jacaranda Ponds has the potential to communicate the precedence of the precinct for the development.

## 8.3 Key Risks

The key outcomes from this report are the identification of Aboriginal heritage sites/places within the study area which require proactive heritage management, as well as the identification of potential archaeological deposits.

The primary risks associated with heritage include:

- if/where avoidance strategies cannot be employed for identified Aboriginal sites, the needed for test excavation, to determine the nature, extent and appropriate management for such sites;
- The possibility of previously unrecorded Aboriginal and/or historic objects and/or sites being found through either test excavation or development works requiring management under a permit.
- A potentially lengthy timeframe required to obtain an AHIP, including completion of a full Aboriginal Cultural Heritage Assessment including community consultation, field survey, test excavation and necessary reporting. Timeframes for such work can be dependent upon Aboriginal community group responses and sufficient time should be allowed for the full assessment to be undertaken prior to lodgement of an AHIP application.
- This due diligence assessment has primarily considered the tangible values of the study area. The landforms within the study area may contain additional Aboriginal intangible values which may require protection and consideration during the planning process.

## 8.4 Endnotes

[1] DECCW 2010, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Office of Environment and Heritage, viewed 3 March 2015 <http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf>.

# 9.0 Conclusions and Recommendations

## 9.1 Conclusions

- The study area was divided into a number of land grants in the early nineteenth century.
- Since that time, the study area has been predominantly used for low-intensive farming, such as crop raising and stock grazing.
- GML has undertaken a combined Aboriginal and Non-Aboriginal Heritage due diligence assessment for the Jacaranda Ponds study area.
- There were four previously recorded Aboriginal sites within the study area—two isolated artefacts and two PADS—which were recorded as part of the 2009 field survey) and a low possibility of additional Aboriginal and/or historic objects and/or sites not yet identified in the area of the proposed activity.
- Poor ground-surface visibility across the majority of the site during the 2009 field survey limited the opportunity for identification of Aboriginal archaeological objects or sites across most of the study area.
- During the 2009 field survey, biosecurity guidelines restricted access to areas immediately surrounding poultry infrastructure (eg buildings, roads and paths between buildings, areas for machinery and equipment storage and fenced chicken runs) and these areas were excluded from the field investigations.
- The 2009 field survey employed a targeted sampling strategy, in collaboration with DLALC, DACHA, DCAC and DTAC.
- A field survey has not been undertaken since 2009 and would be required as part of any future heritage assessment or investigation.
- All identified Aboriginal objects and PADs have been registered on AHIMS.
- No other Aboriginal heritage resources, such as scarred trees, have been identified to date.
- The study area may have some potential to contain fragmentary archaeological evidence associated with generic farming activities.
- This evidence would have limited research potential to contribute new or substantial information about the study area.
- There are no previously identified heritage items within the study area or in the vicinity.
- Built structures on the site are limited to twentieth-century houses, sheds and outbuildings.
- The study area is considered to have little or no historic archaeological potential or heritage significance.

## 9.2 Recommendations

Given the nature of Aboriginal heritage associated with this area, we understand that Aboriginal values manifest through both tangible and intangible sites and values; culminating in an Aboriginal cultural landscape that encompasses and extends beyond the project area. Aboriginal heritage in the Sydney region suggests that cultural landscapes which combine intangible and tangible sites are rare and need to be treated with sensitivity and respect. Individual sites and their significance at Jacaranda Ponds may be fully understood within a wider regional context.

Future site development strategies should address the Aboriginal sites and values for both direct and indirect impacts resulting from the proposed development. The recommendations below provide a mechanism for doing this.

- Where possible, the sites of JCP1 and JCP2 should be avoided by all development activities.
- A basic archaeological test program should be undertaken across the remainder of the study area to confirm the presence/ absence of Aboriginal objects and allow for a development wide AHIP application.
- The Currency Creek and north east green zones with Aboriginal objects identified within them, along with PADs 1 and 2 would require further assessment including test excavation if they are to be impacted.
- If the avoidance strategies provided in this report are not suitable or require additional information to define the area to be avoided, further archaeological work will be required. The purpose of this work would be to:
  - develop a management strategy to mitigate the impacts from increased population and recreational use of the bushland within and surrounding the study area;
  - identify the extent and integrity of the identified sites within the proposed development area;
  - assess the scientific significance of identified sites within the development area; and
  - develop appropriate management strategies for these sites on the basis of their assessed significance and archaeological and anthropological context.
- As part of the 2009 study, DLALC requested that if avoidance strategies cannot be applied along the creek flats, any proposed activity that may disturb the topsoil in this area (along the Currency Creek corridor) be subject to archaeological monitoring.
- As DCAC has requested that the ridgeline in A7 be included in a test excavation program, this area has been labelled PAD 2 and test excavation would be required if development impacts are proposed in this area.
- Where Aboriginal heritage sites cannot be avoided, an application should be made to the OEH for an AHIP under Section 90 of the NPW Act to permit necessary management to mitigate impacts (for example of salvage excavation, community collection), and allow the development to proceed across the study area.

- If human remains are unexpectedly discovered during any development works on the property, the finding should immediately be reported to the New South Wales Coroner's Office and/or the New South Wales Police. If the remains are suspected to be Aboriginal, OEH should also be contacted and a specialist should be called in to determine the nature of the remains.
- On the basis of this assessment, there would be no requirements for approval from the Heritage Branch, OEH on non-Indigenous heritage grounds to develop this site.
- In the unlikely event that unexpected archaeological evidence relating to historical, non-Aboriginal occupation of the study area not identified by this assessment were to be discovered during site works, the Heritage Branch, OEH must be notified in accordance with Section 146 of the Heritage Act.

# 10.0 Appendices

## Appendix A

AHIMS Search Results—2009

## Appendix B

AHIMS Search Results—2015

## Appendix C

2009 Aboriginal Community Consultation Records

## Appendix D

2009 Field Survey Lithics Record

## Appendix E

AHIMS Site Cards

# Appendix A

AHIMS Search Results—2009


Aboriginal Heritage Information Unit
43 Bridge Street Hurstville NSW
PO Box 1967, Hurstville NSW 2220
Tel: (02) 95856345 Fax: (02) 95856094
ABN 30 841 387 271
www.environment.nsw.gov.au

Department of Environment, Climate Change and Water NSW

Your reference : [Unknown]
Our reference : AHIMS #29789

Godden Mackay Logan Heritage Consultants
78 George Street
Redfern NSW 2016

Tuesday, 06 April 2010

Attention: Lyndon Patterson

Dear Sir or Madam:

**Re: AHIMS Search for the following area at AHIMS/GIS Data;E:289000-299000;N:6283000-6293000**

I am writing in response to your recent inquiry in respect to Aboriginal objects and Aboriginal places registered with the NSW Department of Environment, Climate Change and Water (DECCW) at the above location.

A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) has shown that *25* Aboriginal objects and Aboriginal places are recorded in or near the above location. Please refer to the attached report for details.

The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.

The following qualifications apply to an AHIMS search:

- AHIMS only includes information on Aboriginal objects and Aboriginal places that have been provided to DECCW;
- Large areas of New South Wales have not been the subject of systematic survey or recording of Aboriginal history. These areas may contain Aboriginal objects and other heritage values which are not recorded on AHIMS;
- Recordings are provided from a variety of sources and may be variable in their accuracy. When an AHIMS search identifies Aboriginal objects in or near the area it is recommended that the exact location of the Aboriginal object be determined by re-location on the ground; and
- The criteria used to search AHIMS are derived from the information provided by the client and DECCW assumes that this information is accurate.

All Aboriginal places and Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* (NPW Act) and it is an offence to destroy, damage or deface them without the prior consent of the DECCW Director-General. An Aboriginal object is considered to be known if:

- It is registered on AHIMS;
- It is known to the Aboriginal community; or
- It is located during an investigation of the area conducted for a development application.

If you considering undertaking a development activity in the area subject to the AHIMS search, DECCW would recommend that an Aboriginal Heritage Assessment be undertaken. You should consult with the relevant consent authority to determine the necessary assessment to accompany your development application.

Yours Sincerely

Freeburn, Shannon
Administrator
Aboriginal Heritage Information Unit
Information Systems and Assessment Section
Aboriginal Heritage Operation Branch
Culture and Heritage Division
Department and Environment, Climate Change and Water (DECCW)
Phone: 02 9585 6471
Fax: 02 9585 6094


## List of Sites ( List - Short )

**Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 289000, Easting to = 299000, Northing From = 6283000, Northing to = 6293000, Requestor like 5521%, Service ID = 29789, Feature Search Type = AHIMS Features**

| Site ID | Site Name | Datum | Zone | Easting | Northing | Context | Site Features | Site Types (recorded prior to June 2001) | Recording (Primary) | Reports (Catalogue Number) | State Arch. Box No (for office use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45-2-0132 | Roberts Creek;Blaxlands Ridge: | AGD | 56 | 292283 | 6290461 | Open Site | GDG : - | Axe Grinding Groove | **Pratt** | | NRS/17798/1/307 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0351 | Glossodia Grasslands Open Site 1 | AGD | 56 | 294320 | 6286950 | Open Site | AFT : - | Open Camp Site | **McIntyre, Greer** | 260, 1018 | NRS/17798/1/370 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0352 | Glossodia Grasslands Open Site 2 | AGD | 56 | 294300 | 6288420 | Open Site | AFT : - | Open Camp Site | **ASRSYS** | 260, 1018 | NRS/17798/1/370 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0353 | Glossodia Grasslands Open Site 3 | AGD | 56 | 294320 | 6288520 | Open Site | GDG : - | Axe Grinding Groove | **ASRSYS** | 260, 1018 | NRS/17798/1/370 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0354 | Grassland open site 4 (Glossodia) | AGD | 56 | 294370 | 6288450 | Open Site | AFT : - | Open Camp Site | **McIntyre, Greer** | 260, 1018 | NRS/17798/1/370 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0395 | Glossodia Kanko | AGD | 56 | 292600 | 6288200 | Open Site | AFT : - | Open Camp Site | **Gallard** | 1018 | NRS/17798/1/370 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0812 | Glenroy 1; | AGD | 56 | 294100 | 6284900 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0813 | Glenroy 2; | AGD | 56 | 293990 | 6285010 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |


## List of Sites ( List - Short )

**Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 289000, Easting to = 299000, Northing From = 6283000, Northing to = 6293000, Requestor like 5521%, Service ID = 29789, Feature Search Type = AHIMS Features**

| Site ID | Site Name | Datum | Zone | Easting | Northing | Context | Site Features | Site Types (recorded prior to June 2001) | Recording (Primary) | Reports (Catalogue Number) | State Arch. Box No (for office use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-0814 | Glenroy 3; | AGD | 56 | 293670 | 6284850 | Open Site | AFT : -, STQ : -, TRE : - | Open Camp Site, Quarry, Scarred Tree | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0815 | Glenroy 4; | AGD | 56 | 293970 | 6285270 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0816 | Glenroy 5; | AGD | 56 | 294000 | 6285400 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0817 | Glenroy 6; | AGD | 56 | 294260 | 6285580 | Open Site | TRE : - | Scarred Tree | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0818 | Glenroy 7; | AGD | 56 | 294210 | 6285310 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0819 | Glenroy 8; | AGD | 56 | 293990 | 6284750 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0820 | Glenroy 9; | AGD | 56 | 293970 | 6284630 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0821 | Glenroy 10; | AGD | 56 | 294300 | 6285100 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |


## List of Sites ( List - Short )

**Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 289000, Easting to = 299000, Northing From = 6283000, Northing to = 6293000, Requestor like 5521%, Service ID = 29789, Feature Search Type = AHIMS Features**

| Site ID | Site Name | Datum | Zone | Easting | Northing | Context | Site Features | Site Types (recorded prior to June 2001) | Recording (Primary) | Reports (Catalogue Number) | State Arch. Box No (for office use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-0822 | Glenroy 11: | AGD | 56 | 294660 | 6284710 | Open Site | AFT : - | Open Camp Site | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-0823 | Glenroy 12: | AGD | 56 | 294670 | 6284540 | Open Site | AFT : -, STQ : - | Open Camp Site, Quarry | **McDonald** | 2042 | NRS/17798/1/376 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-2493 | Hawkesbury high Quarry site | AGD | 56 | 295700 | 6284400 | Open Site | AFT : -, STQ : - | Quarry | **Woods** | | NRS/17798/1/385 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) 1368 | | |
| 45-5-2729 | Hadden farm1 | AGD | 56 | 298820 | 6290550 | Open Site | AFT : - | None | **Austral Archaeology Pty Ltd** | 4156 | NRS/17798/1/388 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-2792 | OAS | AGD | 56 | 295100 | 6285980 | Open Site | ART : - | None | **AECOM - Gordon/Pymble** | | NRS/17798/1/389 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-2973 | Hand and Stick Shelter | AGD | 56 | 296372 | 6289725 | Open Site | ART : -, PAD : - | None | **Brayshaw** | | NRS/17798/1/390 |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | Deerubbin LALC | | | | | | Permit(s) | | |
| 45-5-3793 | Jacaranda Ponds 1 (JCP1) | GDA | 56 | 292197 | 6286001 | Open Site | AFT : 1 | None | **Godden Mackay Logan Heritage Consultants** | 101725 | |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |
| 45-5-3794 | Jacanranda Ponds 2 (JCP2) | GDA | 56 | 293745 | 6286585 | Open Site | AFT : 1 | None | **Godden Mackay Logan Heritage Consultants** | 101725 | |
| | | Status Valid | | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |


## List of Sites ( List - Short )

**Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 289000, Easting to = 299000, Northing From = 6283000, Northing to = 6293000, Requestor like 5521%, Service ID = 29789, Feature Search Type = AHIMS Features**

| Site ID | Site Name | Datum | Zone | Easting | Northing | Context | Site Features | Site Types (recorded prior to June 2001) | Recording (Primary) | Reports (Catalogue Number) | State Arch. Box No (for office use only) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-3795 | Jacaranda Ponds PAD 1 | GDA | 56 | 293738 | 6286402 | Open Site | PAD : 1 | None | **Godden Mackay Logan Heritage Consultants** | 101725 | |
| | | Status | Valid | | | | | | | | |
| | | **Primary Contact** | | | | | | | Permit(s) | | |

# Appendix B

AHIMS Search Results—2015

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Purchase Order/Reference : Glossodia-14-0484

Client Service ID : 162506

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-2493 | Hawkesbury high Quarry site | AGD | 56 | 295700 | 6284400 | Open site | Valid | Stone Quarry : -, Artefact : - | Quarry | |
| | **Contact** | **Recorders** | Robin Woods | | | | | **Permits** | 1368 | |
| 45-5-2478 | Beaumont Ave (BA-OS-1) | AGD | 56 | 288750 | 6281670 | Open site | Valid | Artefact : - | Open Camp Site | |
| | **Contact** | **Recorders** | Mr.Phil Hunt | | | | | **Permits** | | |
| 45-5-0395 | Glossodia Kanko | AGD | 56 | 292600 | 6288200 | Open site | Valid | Artefact : - | Open Camp Site | 1018 |
| | **Contact** | **Recorders** | John Gallard | | | | | **Permits** | | |
| 45-5-0812 | Glenroy 1; | AGD | 56 | 294100 | 6284900 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0813 | Glenroy 2; | AGD | 56 | 293990 | 6285010 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0814 | Glenroy 3; | AGD | 56 | 293670 | 6284850 | Open site | Valid | Artefact : -, Modified Tree (Carved or Scarred) : -, Stone Quarry : - | Open Camp Site,Quarry,Scarred Tree | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0815 | Glenroy 4; | AGD | 56 | 293970 | 6285270 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0816 | Glenroy 5; | AGD | 56 | 294000 | 6285400 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0817 | Glenroy 6; | AGD | 56 | 294260 | 6285580 | Open site | Valid | Modified Tree (Carved or Scarred) : - | Scarred Tree | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0818 | Glenroy 7; | AGD | 56 | 294210 | 6285310 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0819 | Glenroy 8; | AGD | 56 | 293990 | 6284750 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0820 | Glenroy 9; | AGD | 56 | 293970 | 6284630 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0351 | Glossodia Grasslands Open Site 1 | AGD | 56 | 294320 | 6286950 | Open site | Valid | Artefact : - | Open Camp Site | 151 |
| | **Contact** | **Recorders** | Shelly Greer,Doctor.Susan McIntyre-Tamwoy | | | | | **Permits** | | |
| 45-5-0352 | Glossodia Grasslands Open Site 2 | AGD | 56 | 294300 | 6288420 | Open site | Valid | Artefact : - | Open Camp Site | 151 |
| | **Contact** | **Recorders** | Doctor.Susan McIntyre-Tamwoy | | | | | **Permits** | | |
| 45-5-0353 | Glossodia Grasslands Open Site 3 | AGD | 56 | 294320 | 6288520 | Open site | Valid | Grinding Groove : - | Axe Grinding Groove | 151 |
| | **Contact** | **Recorders** | Doctor.Susan McIntyre-Tamwoy | | | | | **Permits** | | |

**Report generated by AHIMS Web Service on 16/02/2015 for Caitlin Dircks for the following area at Lat, Long From : -33.5793, 150.7047 - Lat, Long To : -33.4959, 150.8369 with a Buffer of 1000 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 37**

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| 45-5-0354 | Grassland open site 4 (Glossodia) | AGD | 56 | 294370 | 6288450 | Open site | Valid | Artefact : - | Open Camp Site | 151 |
| | **Contact** | **Recorders** | Shelly Greer,Doctor.Susan McIntyre-Tamwoy | | | | | **Permits** | | |
| 45-5-0821 | Glenroy 10; | AGD | 56 | 294300 | 6285100 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0822 | Glenroy 11; | AGD | 56 | 294660 | 6284710 | Open site | Valid | Artefact : - | Open Camp Site | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0823 | Glenroy 12; | AGD | 56 | 294670 | 6284540 | Open site | Valid | Artefact : -, Stone Quarry : - | Open Camp Site,Quarry | 2042 |
| | **Contact** | **Recorders** | Doctor.Jo McDonald | | | | | **Permits** | | |
| 45-5-0513 | NR 1 Axe Grinding Grooves North Richmond/ Grose Wold | AGD | 56 | 286600 | 6282360 | Open site | Valid | Grinding Groove : - | Axe Grinding Groove | 1018 |
| | **Contact** | **Recorders** | Mary Dallas Consulting Archaeologists | | | | | **Permits** | | |
| 45-5-0514 | NR 2 Axe Grinding Grooves North Richmond/ Grose Wold | AGD | 56 | 286600 | 6283370 | Open site | Valid | Grinding Groove : - | Axe Grinding Groove | 1018 |
| | **Contact** | **Recorders** | Mary Dallas Consulting Archaeologists | | | | | **Permits** | | |
| 45-5-0515 | NR 3 Axe Grinding Grooves | AGD | 56 | 286560 | 6282410 | Open site | Valid | Grinding Groove : - | Axe Grinding Groove | 1018 |
| | **Contact** | **Recorders** | Mary Dallas Consulting Archaeologists | | | | | **Permits** | | |
| 45-5-0516 | NR 4 Open Camp Site Noth Richmond/ Grose Wold | AGD | 56 | 286550 | 6282380 | Open site | Valid | Artefact : - | Open Camp Site | 1018 |
| | **Contact** | **Recorders** | Mary Dallas Consulting Archaeologists | | | | | **Permits** | | |
| 45-2-0132 | Roberts Creek;Blaxlands Ridge; | AGD | 56 | 292283 | 6290461 | Open site | Valid | Grinding Groove : - | Axe Grinding Groove | |
| | **Contact** | **Recorders** | K Pratt | | | | | **Permits** | | |
| 45-5-0057 | Blaxlands Ridge; | AGD | 56 | 286797 | 6290355 | Closed site | Valid | Art (Pigment or Engraved) : - | Shelter with Art | |
| | **Contact** | **Recorders** | Unknown Author | | | | | **Permits** | | |
| 45-5-2729 | Hadden farm1 | AGD | 56 | 298820 | 6290550 | Open site | Valid | Artefact : - | | 4156 |
| | **Contact** | **Recorders** | Austral Archaeology Pty Ltd | | | | | **Permits** | | |
| 45-5-2792 | OAS | AGD | 56 | 295100 | 6285980 | Open site | Valid | Art (Pigment or Engraved) : - | | |
| | **Contact** | **Recorders** | AECOM Australia Pty Ltd (previously HLA-Envirosciences) | | | | | **Permits** | | |
| 45-5-2740 | ISF | AGD | 56 | 291750 | 6280900 | Open site | Valid | Artefact : - | | 3327 |
| | **Contact** | **Recorders** | Ms.Alison Nightingale | | | | | **Permits** | | |
| 45-5-2973 | Hand and Stick Shelter | AGD | 56 | 296372 | 6289725 | Open site | Valid | Art (Pigment or Engraved) : -, Potential Archaeological Deposit (PAD) : - | | |

**Report generated by AHIMS Web Service on 16/02/2015 for Caitlin Dircks for the following area at Lat, Long From : -33.5793, 150.7047 - Lat, Long To : -33.4959, 150.8369 with a Buffer of 1000 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 37**

# AHIMS Web Services (AWS)

## Extensive search - Site list report

Purchase Order/Reference : Glossodia-14-0484

Client Service ID : 162506

| SiteID | SiteName | Datum | Zone | Easting | Northing | Context | Site Status | SiteFeatures | SiteTypes | Reports |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Contact** | **Recorders** | Helen Brayshaw | | | | | **Permits** | | |
| 45-5-3841 | Streetons Lookout | GDA | 56 | 293209 | 6283794 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | Miss.Felicity Barry | | | | | **Permits** | | |
| 45-5-3793 | Jacaranda Ponds 1 (JCP1) | GDA | 56 | 292197 | 6286001 | Open site | Valid | Artefact : 1 | | 101725 |
| | **Contact** | **Recorders** | Godden Mackay Logan Heritage Consultants | | | | | **Permits** | | |
| 45-5-3794 | Jacanranda Ponds 2 (JCP2) | GDA | 56 | 293745 | 6286585 | Open site | Valid | Artefact : 1 | | 101725 |
| | **Contact** | **Recorders** | Godden Mackay Logan Heritage Consultants | | | | | **Permits** | | |
| 45-5-3795 | Jacaranda Ponds PAD 1 | GDA | 56 | 293738 | 6286402 | Open site | Valid | Potential Archaeological Deposit (PAD) : 1 | | 101725 |
| | **Contact** | **Recorders** | Godden Mackay Logan Heritage Consultants | | | | | **Permits** | | |
| 45-5-4100 | Restriction applied. Please contact ahims@environment.nsw.gov.au. | | | | | Open site | Destroyed | | | 103008 |
| | **Contact** | **Recorders** | Matthew Kelleher,Mr.Josh Symons,Kelleher Nightingale Consulting Pty Ltd | | | | | **Permits** | 3542 | |
| 45-5-4191 | NR11 | GDA | 56 | 286546 | 6281745 | Open site | Destroyed | Artefact : 1 | | |
| | **Contact** | **Recorders** | Kayandel Archaeological Services | | | | | **Permits** | 3542 | |
| 45-5-4182 | NR 8 | GDA | 56 | 286265 | 6282318 | Open site | Valid | Artefact : 1 | | |
| | **Contact** | **Recorders** | Kelleher Nightingale Consulting Pty Ltd | | | | | **Permits** | | |
| 45-5-4183 | NR 9 | GDA | 56 | 286477 | 6281736 | Open site | Valid | Artefact : 2 | | |
| | **Contact** | **Recorders** | Kelleher Nightingale Consulting Pty Ltd | | | | | **Permits** | | |

**Report generated by AHIMS Web Service on 16/02/2015 for Caitlin Dircks for the following area at Lat, Long From : -33.5793, 150.7047 - Lat, Long To : -33.4959, 150.8369 with a Buffer of 1000 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 37**

# Appendix C

2009 Aboriginal Community Consultation Records

# 2009 Aboriginal Stakeholder Consultation Log – Jacaranda Ponds, Glossodia

| Date | Group | Correspondence | Method |
|---|---|---|---|
| 27 July 2009 | n/a | Placement of advertisement in Hawkesbury Courier (FL) | Email |
| 31 July 2009 | DECCW | Notification letter | Post |
| 31 July 2009 | NTS | Notification letter | Post |
| 31 July 2009 | DAA | Notification letter | Post |
| 31 July 2009 | HCC | Notification letter (Hawkesbury City Council) | Post |
| 31 July 2009 | DLALC | Notification letter | Post |
| 31 July 2009 | DACHA | Notification letter | Post |
| 31 July 2009 | DCAC | Notification letter | Post |
| 31 July 2009 | DTAC | Notification letter | Post |
| 4 August 2009 | DCAC | Response registering interest | fax |
| 5 August 2009 | DLAL | Response registering interest | post |
| 6 August 2009 | NTS | Peter Schultz, NTS, sent email stating that NTS would require a 28 notification period to identity interested native title claimants/traditional owners. Responded via email that we have identified those groups which would likely be interested and have contacted them directly, although NTS may proceed and if any further groups are identified they will be dealt with on a case-by-case basis | Voice mail, email |
| 10 August 2009 | DTAC | Spoke to Sandra Lee, verbal confirmation of expression of interest | phone |
| 13 August 2009 | DACHA | Response from Gordon Morton registering interest | fax |
| 17 August 2009 | n/a | Office of the Registrar, Aboriginal Land Rights Act – result: No registered aboriginal owners | letter |
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## NOTIFICATION AND REGISTRATION OF ABORIGINAL INTEREST

An Aboriginal cultural heritage assessment is being conducted at (Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755) in Glossodia, NSW.

Accordingly, an application to the Department of Environment and Climate Change (DECC) for approval under Part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects are identified during archaeological survey of the site.

Relevant Aboriginal groups and individuals are invited to register their interest in the Aboriginal cultural heritage assessment. Registrations must be received by Wednesday 12th August 2009. Please register in writing to:

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms. Fiona Leslie
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

31 July 2009

NSW Department of Aboriginal Affairs
Registrar
Level 13, Tower B Centennial Plaza
280 Elizabeth St
SYDNEY NSW 2000

Our Ref: 09-0254daal1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Sir/Madam

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
Godden Mackay Logan Pty Ltd

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

NSW Department of Environment, Climate Change and Water
Planning and Aboriginal Heritage Section
PO Box 668
PARRAMATTA NSW 2124

Our Ref: 09-0254deccwl1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Sir/Madam

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
**Godden Mackay Logan Pty Ltd**

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

Hawkesbury City Council
Heritage Advisor
PO Box 104
WINDSOR NSW 2756

Our Ref: 09-0254hccl1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Sir/Madam

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
Godden Mackay Logan Pty Ltd

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

NSW Native Title Service Ltd
Suite 15, 245 Chalmers Street
REDFERN NSW 2016

Our Ref: 09-0254ntsl1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Sir/Madam

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
Godden Mackay Logan Pty Ltd

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

Darug Tribal Aboriginal Corporation
PO Box 441
BLACKTOWN NSW 2148

Attention: Sandra Lee

Our Ref: 09-0254sll1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Sandra

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
**Godden Mackay Logan Pty Ltd**

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

Deerubbin Local Aboriginal Land Council
PO Box 3184
MT DRUITT VILLAGE NSW 2770

Attention: Steve Randall

Our Ref: 09-0254srl1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Steve

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
**Godden Mackay Logan Pty Ltd**

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

Darug Aboriginal Cultural Heritage Assessments
90 Hermitage Rd
KURRAJONG HILLS NSW 2758

Attention: Gordon Morton

Our Ref: 09-0254gml1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Gordon

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
**Godden Mackay Logan Pty Ltd**

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

31 July 2009

Darug Custodian Aboriginal Corporation
PO Box 81
WINDSOR NSW 2756

Attention: Leanne Watson

Our Ref: 09-0254lwl1

**Re: Aboriginal Cultural Heritage Assessment at Glossodia, NSW**

Dear Leanne

In accordance with the Department of Environment, Climate Change and Water's (DECCW) Interim Community Consultation Requirements for Applicants, we are required to notify you of an Aboriginal cultural heritage assessment of several rural properties in Glossodia, NSW [Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755].

In accordance with Part B, Section 1 of the Consultation Requirements we require a written expression of interest from all Aboriginal groups or individuals who wish to be consulted about the project. An application to DECC for approval under part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects were identified during survey of the site.

If you wish to register your interest, please forward written notification to the following address **by 14 August 2009:**

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms Erin Finnegan
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

Following the prescribed 10-day registration period, if you choose to register your interest we will contact you to arrange the survey.

Please don't hesitate to contact me if you have any queries or concerns.

Yours sincerely
**Godden Mackay Logan Pty Ltd**

**Erin Finnegan**
**Heritage Consultant and Archaeologist**

Godden Mackay Logan
Heritage Consultants

## Facsimile

| | | | |
|---|---|---|---|
| To: | Darug Aboriginal Cultural Heritage Assessments | Date: | 20 August 2009 |
| Attention: | Celestine Everingham / Gordon Morton | Facsimile: | 45677421 |
| From: | Erin Finnegan, Godden Mackay Logan | Pages: | 2 including this one |
| Subject: | Survey at Jacaranda Ponds, Glossodia | Our reference: | 09-0254cef1 |

Dear Celestine,

Thank you for confirming the availability of yourself or Mr Morton to participate in a field survey of two properties at Jacaranda Ponds, Glossodia (site location plan attached).

As discussed, the site is comprised of two poultry farms which have bio-security sensitivities. Regulations dictate that visitors must not have had contact with live poultry, or have been to any property where live birds are present, during the two weeks prior to the scheduled site visit. To meet this requirement, please ensure that you (or selected representative) are 'chook contact'-free!

Details of the survey are as follows:

**Date: Thursday 3rd September**

**Time: 8am – approximately 4pm**

**Meeting Place: Corner of Kurmond Rd and Wire Ln, Glossodia (marked as 'A' on site plan)**

**Mobile No: 0405 387 768 (Erin Finnegan)**

Laura Farquharson (GML) and I will meet you on site. The client's representative will conduct a brief (20 min) induction. You will also be given a copy of GML's Safe Work Method Statement.

Please make sure to bring an adequate supply of water, sun protection, hat and sturdy shoes.

Could you please invoice your survey fees directly to the proponent, as follows:

**EG Property Group**
**Attn: Jeremy Spinak**
**Level 14**
**345 George St**
**Sydney NSW 2000**

**Ref: Jacaranda Ponds**

GML

Sydney
78 George Street Redfern
NSW Australia 2016
T +61 2 9319 4811
F +61 2 9319 4383

Canberra
PO Box 3171 Manuka
ACT Australia 2603
T +61 2 6273 7540
F +61 2 6273 8114

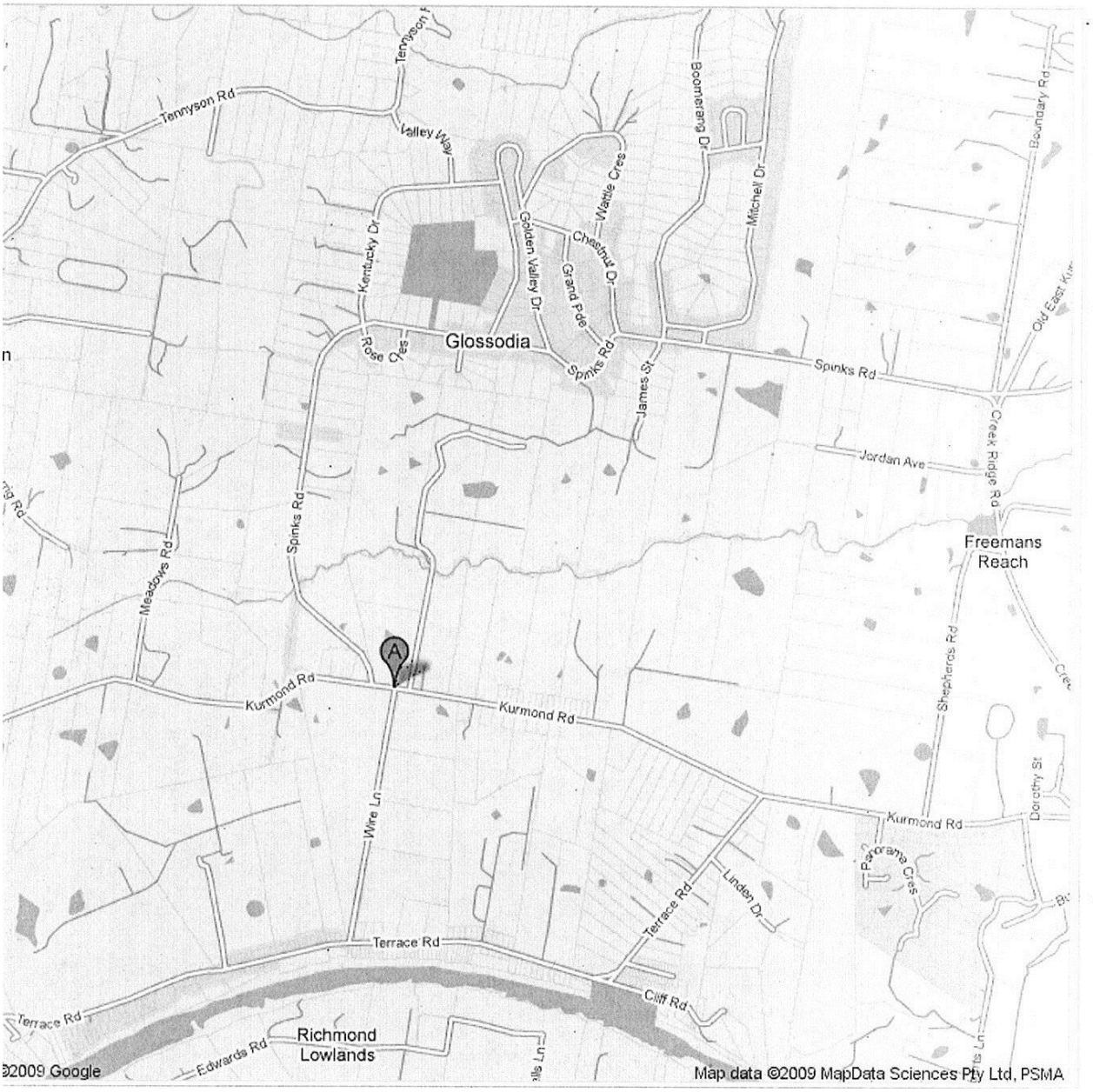
Godden Mackay Logan Pty Ltd
ABN 60 001 179 362
www.gml.com.au
heritage@gml.com.au

Thank you and I look forward to working with DACHA on this project.

Kind regards,

Erin Finnegan

Archaeologist



DARUG CUSTODIAN ABORIGINAL CORPORATION
PO BOX 81 WINDSOR 2756
PH: 45775181 FAX: 45775098 MOB: 0415770163
ABN: 81935722930
mulgokiwi@aol.com

12-11-09.

Attention: Erin Finnigan.

SUBJECT: Jacaranda Ponds, Glossodia- Heritage Assessment Draft Repot.

Dear Erin,

The Darug Custodian Aboriginal Corporation have received and read the Draft Aboriginal Cultural Heritage Assessment for Jacaranda Ponds Glossodia, we support the findings and recommendation set out within this report, we would like to add that the ridgeline (A7) be included in a s87 testing program as recent test excavations have shown that the ridgelines do have moderate to high potential, we need to move away from predictive models and test these theories.

This area is the undisputed traditional land of the Darug and is in very close proximity to some very significant sites and areas to our people, there is a silcrete quarry near freemans reach school that would have been a resource used by our people, therefore our people would have revisited this area for thousands of years.

We participated in the survey of this property and had the same conclusions as set out within this report. We look forward to working with you on this project and hopefully gain some new knowledge from the s87 process. We would also recommend that all materials found during works be reburied in a safe area after analysis.

Please contact us with any further enquiries on the above numbers.

Regards
Leanne Watson

# Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton & Associates

Mob: 0422 865 831
Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

24.11.09

Attention
Erin Finnegan
G.M.L.

re Jacaranda Ponds - Glossodia

This area was a very important place for the local Darug clan - the Boorooberongal - being rich in resources, for both gathering and hunting. On the day of our survey the land was heavily vegetated and almost no ground was visible. DECCW proposes a Darug Aboriginal archaeological testing program in the areas of moderate to high potential and we support the application for a Section 87 Permit for exploration of this important area to the Darug.

Yours Sincerely,
G.W. Morton
&
C. Everingham

# DARUG TRIBAL ABORIGINAL CORPORATION

PO Box 441
Blacktown, NSW, 2148
PH: (02) 9622 4081
Mobile 041 543 925
Email: darug_tribal@live.com.au
ABN: 77 184 151 969 ICN: 2734

27th October 2009

Erin Finnegan

**Heritage Consultant**

Godden Mackay Logan Heritage Consultants

Re: Jacaranda Ponds Heritage Assessment Draft Report

Having read and support the draft report and we cannot see why this project should not go ahead following all recommendations it contains.

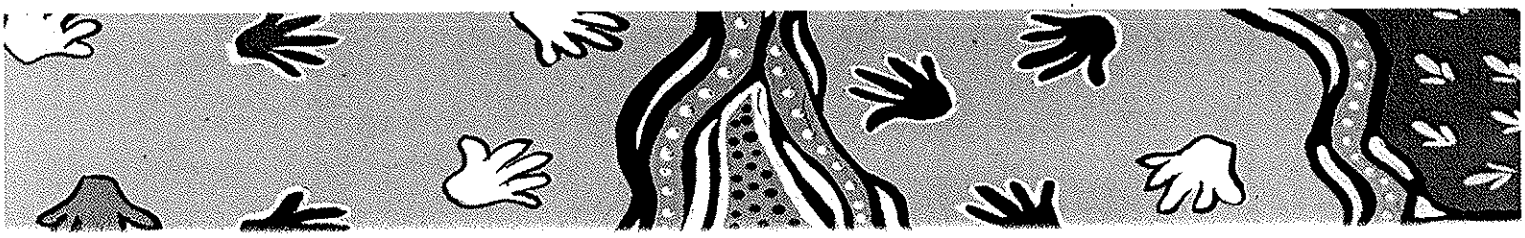
We also support the application for a section 87 permit.

*Hugs & Smiles*

*Sandra Lee*

Secretary

Darug Tribal Aboriginal Corporation



# DARUG TRIBAL ABORIGINAL CORPORATION

PO Box 441
Blacktown, NSW, 2148
PH: (02) 9622 4081
Mobile 041 543 925
Email: darug_tribal@live.com.au
ABN: 77 184 151 969 ICN: 2734

10/11/09

Dear Erin

Re: Jacaranda Ponds, Glossodia- Heritage Assessment Draft Report

Reading the draft report we support the application for section 87 permit and can see no reason this project should not proceed following all the recommendations.

*Hugs & Smiles*

*Sandra Lee*

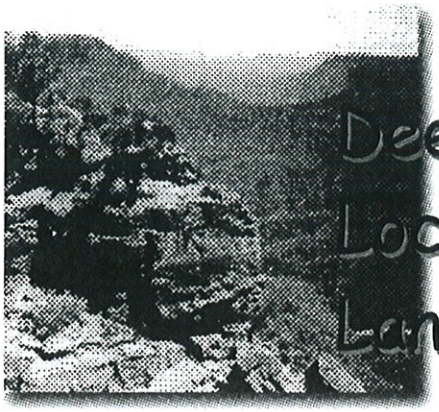
Secretary

Darug Tribal Aboriginal Corporation

DARUG

THE TRADITIONAL CUSTODIANS OF DARUG LAND

www.darug.org.au



# Deerubbin Local Aboriginal Land Council

5/271 Beames Avenue
PO Box 3184
Mt Druitt Village
NSW 2770 Australia

Ph: (02) 9832 2457
Fax: (02) 9832 2496
Email: Staff@Deerubbin.org.au
Web: http://www.deerubbin.org.au

EG Property Group
Level 14, 345 George Street
**SYDNEY NSW 2000**

Our Reference: 2075

30 October 2009

**SUBJECT: PROTECTION OF ABORIGINAL CULTURAL HERITAGE**
**Several Rural Properties, Jacaranda Ponds**
**Glossodia. NSW**

2 NOV 2009

Attention: Jeremy Spinak

A representative of Deerubbin Local Aboriginal Land Council (Steve Randall) inspected rural several properties, Glossodia on the 1st September 2009. An Aboriginal cultural heritage assessment was undertaken to evaluate the likely impact the future development has on the cultural heritage of the land. Consulting archaeologist Erin Finnegan of Godden Mackay Logan carried out a scientific survey at the same time.

Our representative reports, that visibility was poor because of the grass cover and the ground disturbance, no Aboriginal cultural materials (in the form of stone artefacts, for example) were found, however the consulting archaeologist located a potential archaeological deposit (PAD).

Deerubbin LALC therefore, recommends further investigations in the areas that have potential for subsurface Aboriginal artefacts, furthermore any construction or activity that may disturb the topsoil on the creek flats, Deerubbin Local Aboriginal Land Council will require our representative to monitor such works.

Yours Faithfully,

Kevin Cavanagh
(Chief Executive Officer)

C.c. Miranda Firman, Planning & Aboriginal Heritage Section, Dept. of Environment, Climate Change & Water

C.c. General Manager, Hawkesbury City Council

C.c. Erin Finnegan – Godden Mackay Logan, Heritage Consultants

**COPY**

# Appendix D

2009 Field Survey Lithics Record

| ID Number | Easting | Northing | Photo ID | Artefact Type | Material | Colour | Grain Size | Cortex | Max dimensions (cm) | # Flake scars (core) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JCP1 | 292197 | 6286001 | 6.4 & 6.5 | Flaked piece | Mudstone | Yellow/red | Fine | | | 1 possible | Embedded in vehicle access road, 85% visibility |
| JCP2 | 293745 | 6286585 | 6.6 | Flake | Mudstone | Light yellow | Fine | | | - | On vehicular track among gravels (likely imported) -75% visibility |

# Appendix E

AHIMS Site Cards

# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Department of Environment & Climate Change NSW

**Office Use Only**

**Site Number** | | | - | | - | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

### For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☒ **Knowledge Holder** NUMEROUS KNOWLEDGE HOLDERS – SEE ATTACHED REPORT

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name JACARANDA PONDS 1 (JCP1)

Easting 292197 Northing 6286001 AGD/GDA GDA

Mapsheet WILBERFORCE

**Zone** 56 Location Method NON-DIFFERENTIAL GPS

Other Registration

## Primary Recorder

Title | Surname | First Name | Initials

MS | ERNEGAN | ERIN | R

Organisation GODDEN MACKAY LOGAN PTY LTD

Address 78 GEORGE ST REDFERN NSW 2016

Phone number 02 93194311 Fax 02 93194383

Date recorded 03/09/2009

Client on system ☐

# NPWS Aboriginal Site Recording Form - Site Information



**OPEN/CLOSE SITE** OPEN

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

### Water

| | |
|---|---|
| Distance to permanent water source | ≈ 100 metres |
| Distance to temporary water source | metres |
| Name of nearest permanent water source | CURRENCY CREEK |
| Name of nearest temporary water | |

Directions for Relocation

REFER TO ATTACHED REPORT

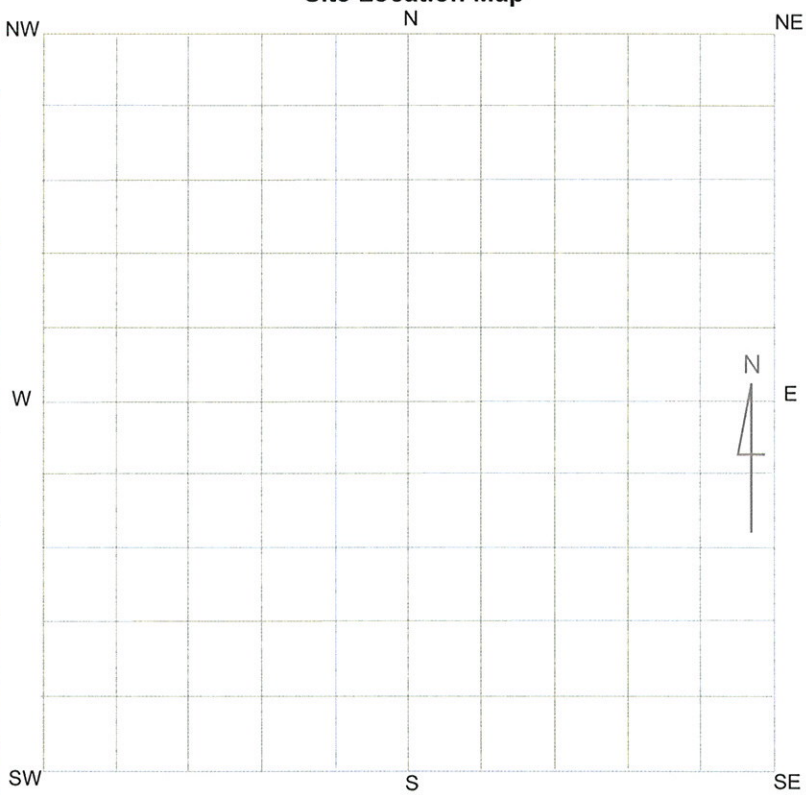
### Current Land Tenure

- [ ] Public — National Park / other Government Dept.
- [x] Private

### Primary report I.D. [ ] (I.D. Office Use only)

JACARANDA PONDS, GLOSSODIA - INDIGENOUS AND NON-INDIGENOUS HERITAGE ASSESSMENT - FINAL REPORT DECEMBER 2009

### Site Location Map



# NPWS Aboriginal Site Recording Form - Site Information



## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

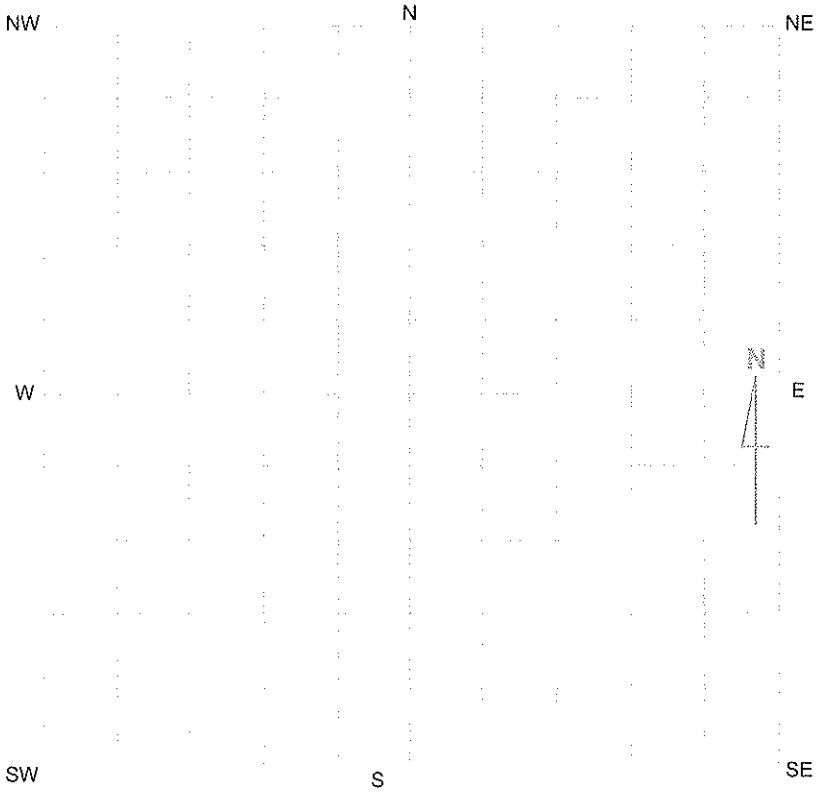
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [X] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [X] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions n/a

**Closed Site Dimensions (m)**

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

**Open Site Dimensions (m)**

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

**Aboriginal Community Interpretation and Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

This section should only be filled in by the Endorsees PLEASE REFER TO ATTACHED REPORT

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

| Title | Surname | First Name | Initials |
|---|---|---|---|
| | | | |

Organisation

Address

Phone number Fax

**Attachments (No.)**

- [X] A4 location map
- [X] B/W photographs
- [X] Colour photographs
- [X] Slides
- [X] Aerial photographs
- [X] Site plans, drawings
- [X] Recording tables
- [ ] Other
- [ ] Feature inserts-No. ☐

**Comments**

PLEASE REFER TO ATTACHED REPORT

# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Department of Environment & Climate Change NSW

**Office Use Only**

**Site Number** | | | - | | - | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

### For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☒ **Knowledge Holder** NUMEROUS KNOWLEDGE HOLDERS - SEE ATTACHED REPORT

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name JACARANDA PONDS 2 (JCP2)

Easting 293745 Northing 6286585 AGD/GDA GDA

Mapsheet WILBERFORCE

**Zone** 56 Location Method NON-DIFFERENTIAL GPS

Other Registration

## Primary Recorder

Title | Surname | First Name | Initials

MS | FINNEGAN | ERIN | R

Organisation GODDEN MACKAY LOGAN PTY LTD

Address 78 GEORGE ST REDFERN NSW 2016

Phone number 02 9319 4811 Fax 02 9319 4383

Date recorded 03/09/2009

Client on system ☐

# NPWS Aboriginal Site Recording Form - Site Information



**OPEN/CLOSE SITE** OPEN

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [X] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [X] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [X] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [X] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [X] Transport corridor
- [ ] Urban expansion
- [ ] Residential

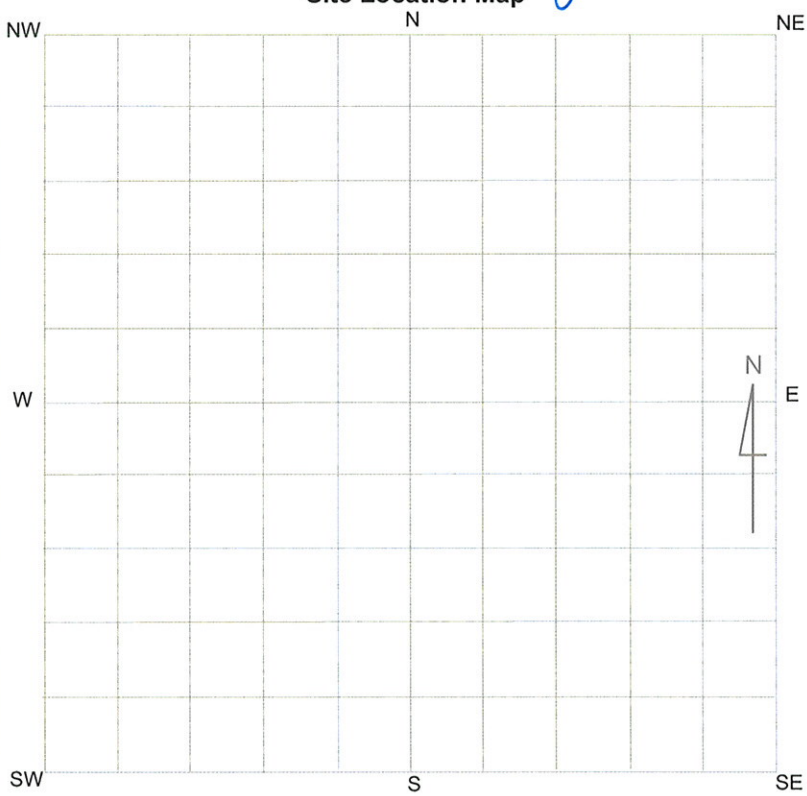
### Water

| | |
|---|---|
| Distance to permanent water source | ≈ 500 metres |
| Distance to temporary water source | ≈ 300 metres |
| Name of nearest permanent water source | (Currency Creek) |
| Name of nearest temporary water | (farm dam) |

### Directions for Relocation

REFER TO ATTACHED REPORT

### Site Location Map




### Current Land Tenure

- [ ] Public
- [X] Private

National Park / other Government Dept.

### Primary report I.D.

(I.D. Office Use only)

JACARANDA PONDS, GLOSSODIA - INDIGENOUS AND NON-INDIGENOUS HERITAGE ASSESSMENT - FINAL REPORT, DECEMBER 2009

# NPWS Aboriginal Site Recording Form - Site Information



## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

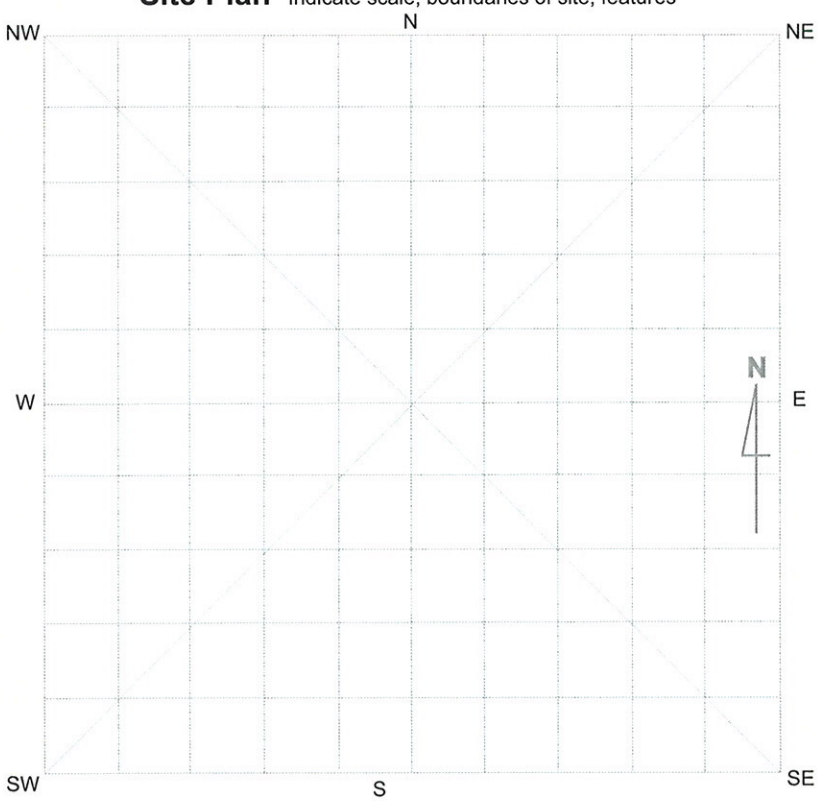
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [X] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [X] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions n/a

**Closed Site Dimensions (m)**

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

**Open Site Dimensions (m)**

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

**Aboriginal Community Interpretation and Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

PLEASE REFER TO ATTACHED REPORT.

This section should only be filled in by the Endorsees PLEASE REFER TO ATTACHED REPORT

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

| Title | Surname | First Name | Initials |
|---|---|---|---|
| | | | |

Organisation

Address

Phone number Fax

**Attachments (No.)**

- ☑ A4 location map
- ☑ B/W photographs
- ☑ Colour photographs
- ☑ Slides
- ☑ Aerial photographs
- ☑ Site plans, drawings
- ☑ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

**Comments**

PLEASE REFER TO ATTACHED REPORT

# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Department of Environment & Climate Change NSW

**Office Use Only**

**Site Number** | | | - | | - | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

### For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☒ **Knowledge Holder** - NUMEROUS KNOWLEDGE HOLDERS - SEE ATTACHED REPORT

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name: JACARANDA PONDS PAD 1

Easting: 293738 Northing: 6286402 AGD/GDA: (AMG)

Mapsheet: WICBERFORCE

**Zone**: 56 Location Method: NSW - DIFFERENTIAL GPS

Other Registration:

## Primary Recorder

Title | Surname | First Name | Initials

MS | FINNEGAN | ERIN | R

Organisation: GODDEN MACKAY LOGAN PTY LTD

Address: 78 GEORGE ST REDFERN NSW 2016

Phone number: 02 9319 4911 Fax: 02 9318 4383

Date recorded: 03/09/2009

Client on system ☐

# NPWS Aboriginal Site Recording Form - Site Information



**OPEN/CLOSE SITE** OPEN

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [X] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [X] Crest
- [ ] Flat
- [ ] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [X] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [X] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

### Water

| | |
|---|---|
| Distance to permanent water source | ≈ 500 metres |
| Distance to temporary water source | ≈ 200 metres |
| Name of nearest permanent water source | CURRENCY CREEK |
| Name of nearest temporary water | – (farm dam) |

### Directions for Relocation

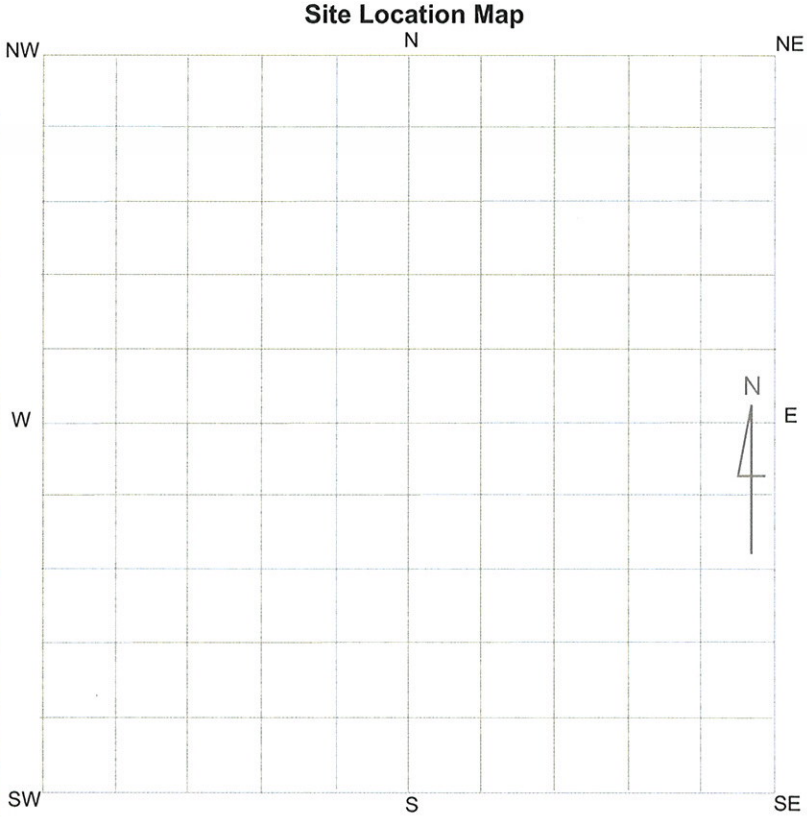
PLEASE REFER TO ATTACHED REPORT.

### Current Land Tenure

- [ ] Public
- [X] Private

National Park / other Government Dept.

### Site Location Map




**Primary report** **I.D.** [ ] (I.D. Office Use only)

JACARANDA PONDS, GLOSSODIA-INDIGENOUS AND NON-INDIGENOUS HERITAGE ASSESSMENT - FINAL REPORT, DECEMBER 2009

# NPWS Aboriginal Site Recording Form - Site Information



## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

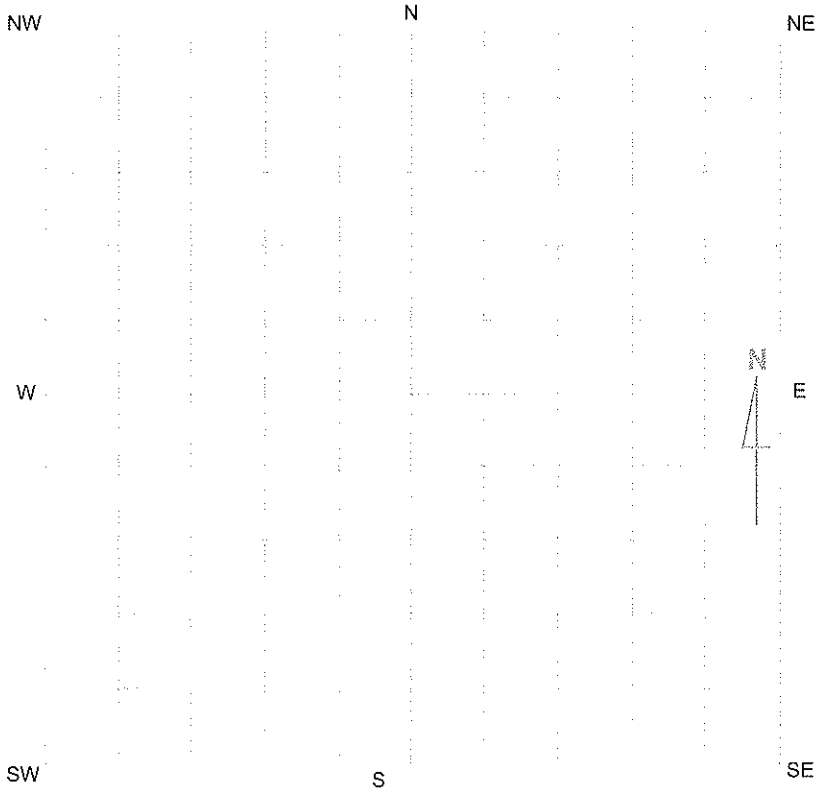
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [X] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [X] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions n/a

**Closed Site Dimensions (m)**

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

**Open Site Dimensions (m)**

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

**Aboriginal Community Interpretation and Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

This section should only be filled in by the Endorsees PLEASE REFER TO ATTACHED REPORT

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

| Title | Surname | First Name | Initials |
|---|---|---|---|
| | | | |

Organisation

Address

Phone number Fax

**Attachments (No.)**

- ☒ A4 location map
- ☑ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☑ Aerial photographs
- ☑ Site plans, drawings
- ☑ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

**Comments**

An area of moderate potential along Currency Creek was identified primarily through predictive modelling. As past ground surface visibility restricted comprehensive surveying along the creekline, this area will not be registered as a PAD at this stage, but may be in the future, upon further investigation.

PLEASE REFER TO ATTACHED REPORT.


# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

NSW GOVERNMENT Office of Environment & Heritage

**Office Use Only**

**Site Number** | | | – | | – | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

Office Use Only

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

## For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☑ **Knowledge Holder**

Title | Surname | First Name | Initials

Organisation: Numerous knowledge holders

Address: Refer to GML 2009 Report

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name: Jacaranda Ponds PAD2

Easting: 293873 Northing: 6286991 AGD/GDA: GDA

Mapsheet: Wilberforce

**Zone** 56 Location Method: Aero Photo

Other Registration

## Primary Recorder

Title | Surname | First Name | Initials

Ms | Finnegan | Erin | R

Organisation: GML Heritage Pty Ltd

Address: 78 George Street, Redfern

Phone number: 93194811 Fax: 93194383

Client on system ☐

Date recorded: 03/09/2009

# NPWS Aboriginal Site Recording Form - Site Information

**OPEN/CLOSE SITE** Open Site

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [ ] Lower slope
- [x] Mid slope
- [ ] Upper slope
- [ ] Plain
- [x] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

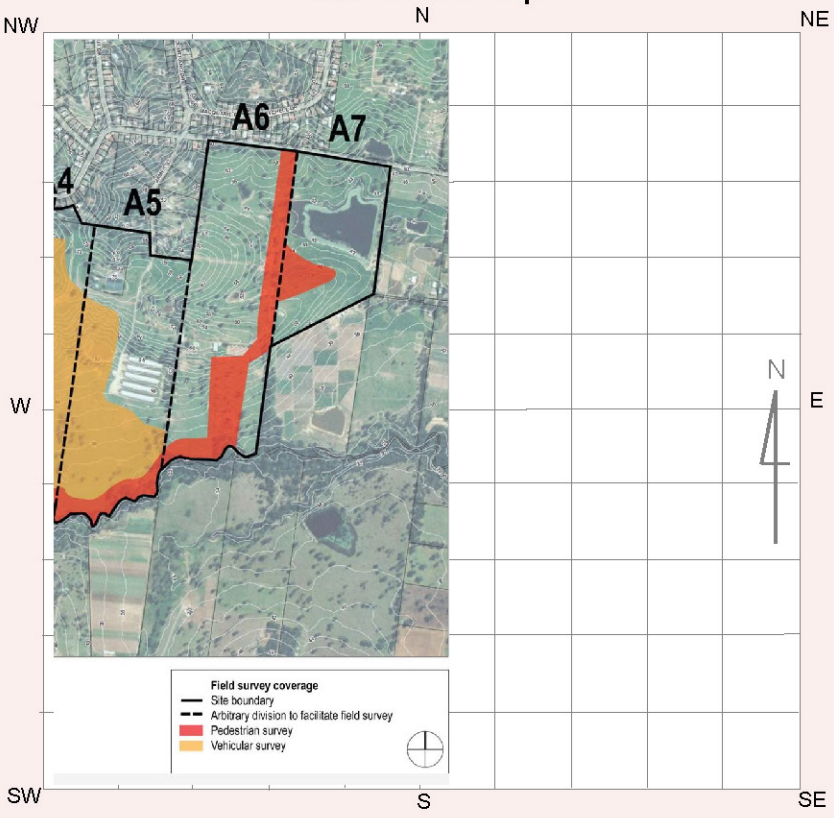
### Water

| | |
|---|---|
| Distance to permanent water source | 1,000 metres |
| Distance to temporary water source | metres |
| Name of nearest permanent water source | Currency Creek |
| Name of nearest temporary water | |

Directions for Relocation

On the midslopes to the ridgeline running into the neighbouring property (the apex of the ridge is located to the north of the Jacaranda Ponds study area)

### Site Location Map




### Current Land Tenure

- [ ] Public
- [x] Private

National Park / other Government Dept.

### Primary report

**I.D.** (I.D. Office Use only)

Godden Mackay Logan, Jacaranda Ponds, Glossodia-Indigenous and Non-Indigenous Heritage Assessment, 2009. Report prepared for EG Property Group.

# NPWS Aboriginal Site Recording Form - Site Information

## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

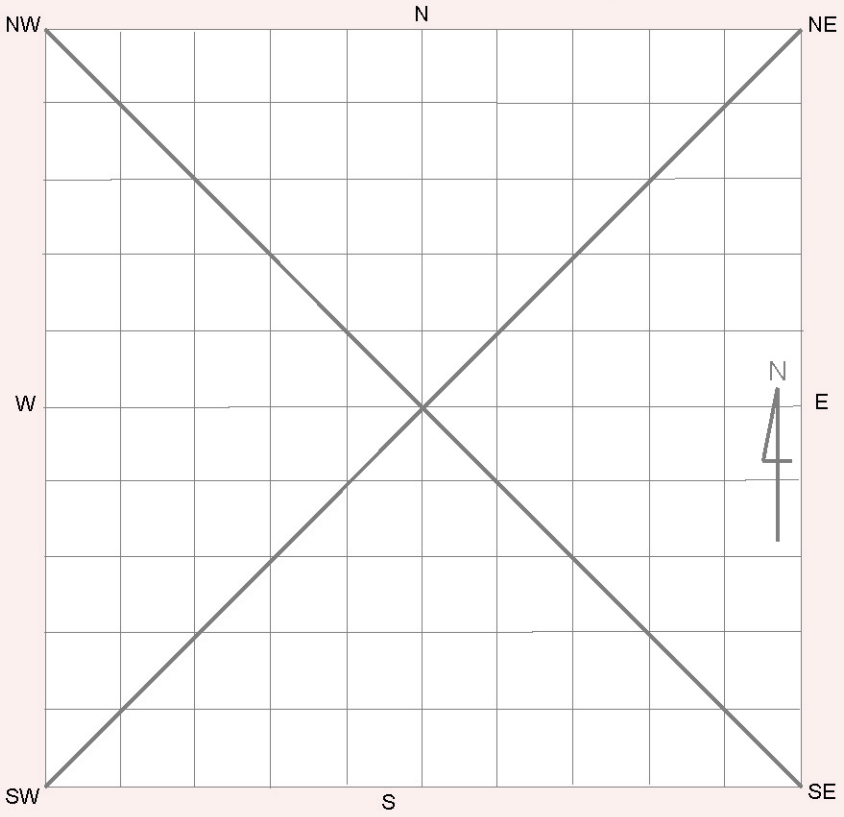
- [ ] N-S
- [x] NE-SW
- [ ] E-W
- [ ] SE-NW
- [ ] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [ ] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [x] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions

### Closed Site Dimensions (m)

| | |
|---|---|
| 300 | Internal length |
| 100 | Internal width |
| | Shelter height |
| | Shelter floor area |

### Open Site Dimensions (m)

| | |
|---|---|
| 300 (nv) | Total length of visible site |
| 100 (nv) | Average width of visible site |
| 300 | Estimated area of visible site |
| 300+ | Length of assessed site area |

**Aboriginal Community Interpretation and Management Recommendations**

An Aboriginal stakeholder group (DCAC) has identified the ridgeline in A7 as an area that they would like to have included in a testing program: "We support the findings and recommendations set out within this report [GML 2009], we would like to add that the ridgeline (A7) be included in a s87 testing program as recent test excavations have shown that the ridgelines do have moderate to high potential, we need to move away rom predictive models and test these theories."

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

The apex of this ridge is located to the north of the study site and only the mind-slope is situated within its property boundary. The mid-slope may well contain a diffused distribution of subsurface artefacts; however, this area is likely to have been subject to ground disturbance from road construction and/or service installation. Therefore, the ridgeline was deemed in the 2009 report to have less potential for subsurface Aboriginal archaeology as Jacaranda Ponds PAD2, or the zone of moderate archaeological potential along Currency Creek.

This section should only be filled in by the Endorsees

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

**Attachments (No.)**

- ☐ A4 location map
- ☐ B/W photographs
- ☐ Colour photographs
- ☐ Slides
- ☐ Aerial photographs
- ☐ Site plans, drawings
- ☐ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

**Comments**

# NPWS FEATURE RECORDING FORM - ARTEFACT



Site I.D. | Site Name

First recorded date

No. of instances

Recorded by

**Importance** Cannot be presently determined

| | Yes | No |
|---|---|---|
| Stone artefacts only | | |
| Artefacts collected | | |
| Permit issued | | |

**Percentage of Non-stone Artefacts to Percentage of Stone Artefacts**

0-9% 10-19% 20-29% 30-39% 40-49% 50-59% 60-69% 70-79% 80-89% 90-100%

## Feature Context & Condition

Scatter No. | Easting | Northing

**Density** (Artefact count per square metre)

**Dimensions** Length (m) | Width (m) | Depth (m)

| | Yes | No |
|---|---|---|
| In situ | | |
| Stratified | | |

**Feature Condition**

- Very good
- Good
- Poor

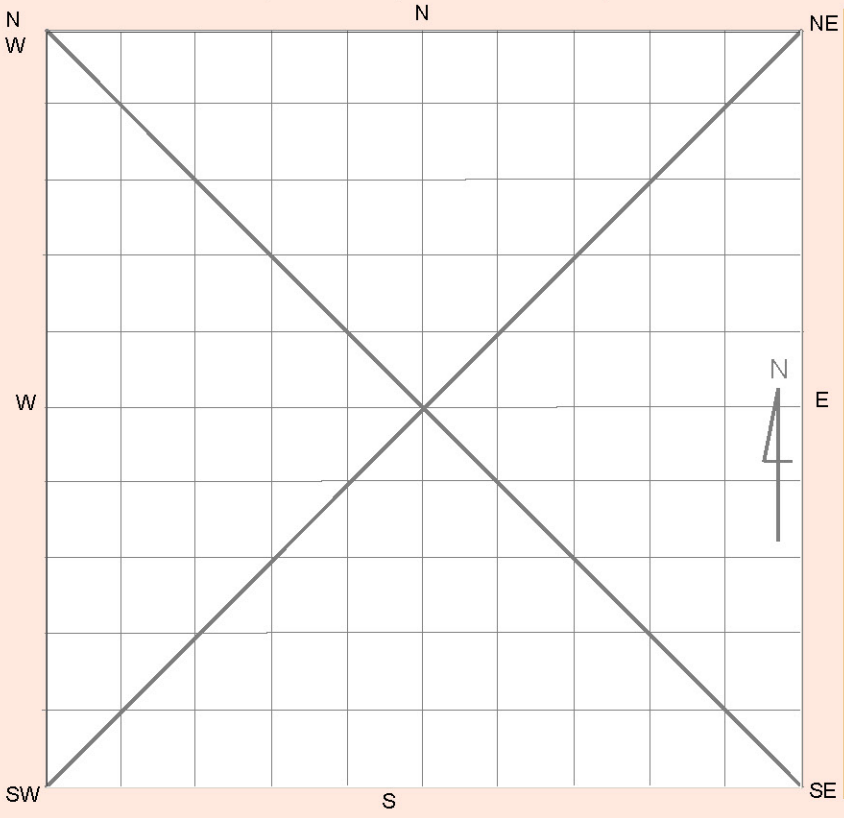
**General Condition**

- Weathered
- Vehicle damage
- Surface water wash
- Fire damage
- Erosion
- Stock damage
- Exposed archaeological material

**Recommended Action**

- Boardwalk
- Fencing
- Closure to public
- Continued inspection
- Fire hazard reduction
- Expert assessment
- Meeting with land manager
- Revegetation
- Signage
- Soil erosion control
- Track closure/re-routing
- Additional recording

## Feature Plan (Indicate scale, location of instances)




## Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

- Land form
- Land form unit
- Slope
- Vegetation
- Land use

**Water**

Distance to permanent water source metres

Distance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

# NPWS FEATURE RECORDING TABLE - ARTEFACT

## Stone Artefact

| Instance No. | Recording Date | Artefact Material | Artefact Type | Platform Surface | Platform Type | Termination | Cross Section | Length (mm) | Width (mm) | Thickness (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
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## Other Artefact Type

| Instance No. | Recording Date | Artefact Material | Artefact Type | Description | Length (mm) | Width (mm) | Thickness (mm) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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### Material

Basalt
Chert
Fine grained siliceous
Granite
Quartz
Quartzite
Sandstone
Silcrete
Green glass
Amber glass
Amethyst glass
Clear glass
Ceramic
Porcelain
Tin can
Wire
Nail
Button
Shell
Bone
Wood
Resin

### Artefact Description

Adze
Anvil
Axe
Backed blade
Blade
Core
Core tool
Cyclon
Distal fragment
Eloura
Flake
Flake tool
Flaked piece
Hammerstone
Manuport
Milling slab
Mortar
Muller
Nuclear tool
Pirri
Proximal fragment
Tula
Other diagnostic type
Modified
Unworked

### Platform Surface

Cortex
Flake scar
More than one flake scar
Faceted
Ground
Indeterminate
Bipolar

### Termination

Feather
Hinge
Step
Outrepasse
Bipolar

### Platform Type

W
Focal
Shattered
Indeterminate
Bipolar

### Cross Section

High/strong
High/weak
Low/weak
Irregular

Comments:

# NPWS FEATURE RECORDING FORM - MODIFIED TREE



Site I.D. | Site Name

First recorded date | **Importance** | **Aboriginal Information Recorded?**

No. of instances

Recorded by

## Feature description

Easting | Northing

No. of scars

No. of carved panels

**Feature Condition**

- Very good
- Good
- Poor

**Condition**

- Weathered
- Ringbarked
- Fire damage
- Vehicle damage
- Insects/termites
- Rot
- Limb fall
- Stock damage

**Recommended Action**

- Fencing
- Closure to public
- Continued inspection
- Expert assessment
- Fire hazard reduction
- Insect removal
- Meeting with land manager
- Rubbish removal
- Signage
- Tree health assessment
- Track closure/re-routing
- Additional recording

## Feature environment

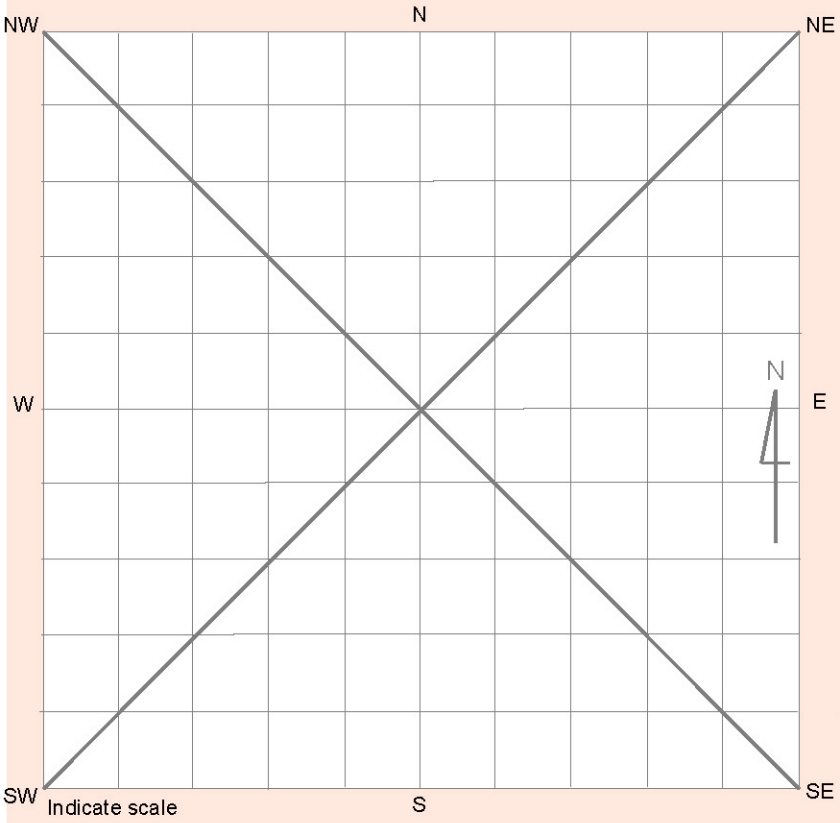
(Complete when *feature* environment differs to *site* environment, use attributes from cover card, page 2)

- Land form
- Land form unit
- Slope
- Vegetation
- Land use

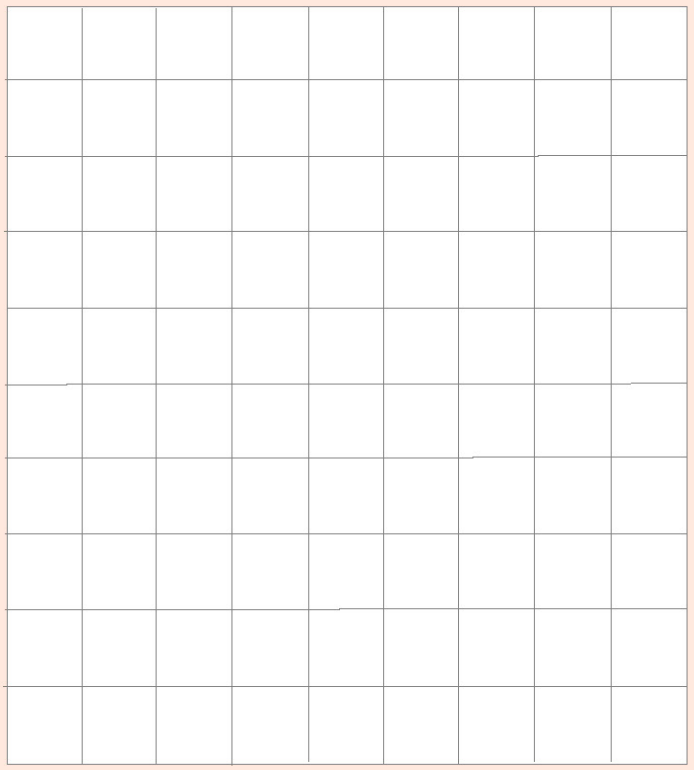
**Water**

- Distance to permanent water source ____ metres
- Distance to temporary water source ____ metres
- Name of nearest permanent water source
- Name of nearest temporary water

## Feature Location Plan




## Scar/Carved Panel Drawing



Attach additional drawings

# NPWS FEATURE RECORDING TABLE - MODIFIED TREE



| Instance No. | Recording Date | Type | Species | Living Status | Tree Status | Regrowth | Length of Scar | Width of Scar | Depth | Height Above Ground | No. of Scars | Shape | No. of Carved Panels | Carving Type | Orientation | Axe Marks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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**Type of Tree**
Carved Tree
Scarred Tree
Carved/Scarred Tree

**Tree Species**
Eucalypt
Red Gum
Angotha

**L iving Status**
Dead
Alive
Dying

**Tree Status**
Standing
Lying down
Partially felled
Subject to salinity
Not *in situ*

**Regrowth**
Yes
No

**Scar Shape**
Oval
Rectangular
Square
Round
Other

**Carving Type**
Linear
Geometric
Pictorial

**Axe Marks**
Metal
Stone
Indeterminate

**Orientation**
North East
East
South East
South
South West
West
North West
North

Comments:

# NPWS FEATURE RECORDING FORM - GROOVE



Site I.D. | Site Name | **Importance** | **Aboriginal Information Recorded?**

First recorded date / / | No. of instances | Recorded by

## Feature Description

**Type of Grinding Feature**

- Broad
- Narrow/point
- Hollow
- Flat

**Seed Species Present** | Recording date / /

**Groove Function**

**Profile Shape**

- 'U' shaped
- 'V' shaped
- Flat

**Dimensions**

| | Smallest | Largest | |
|---|---|---|---|
| Length (mm) | | | Groove count |
| Width (mm) | | | Cluster count |
| Depth (mm) | | | |

## Feature Context & Condition

Easting | Northing

**Dimensions of Whole Feature** Length (m) | Width (m)

**Feature Condition**

- Very good
- Good
- Poor

**General Condition**

- Weathered
- Vandalised

**General Condition ctd**

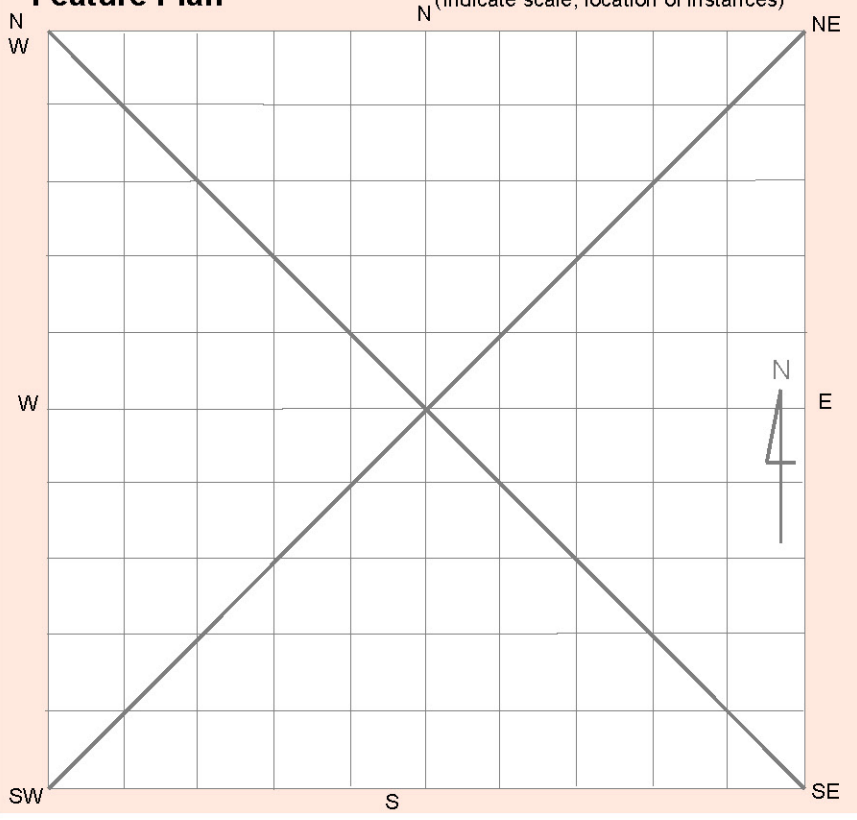
- Fire damage
- Surface water wash
- Graffiti
- Vehicle damage
- Erosion
- Stock damage

**Recommended Action**

- Boardwalk
- Cage/barrier/fencing
- Closure to public
- Continued inspection
- Expert assessment
- Graffiti removal
- Meeting with land manager
- Revegetation
- Rubbish removal
- Signage
- Erosion control
- Track closure/re-routing
- Additional recording

## Feature Plan

(Indicate scale, location of instances)




## Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

- Land form
- Land form unit
- Slope
- Vegetation
- Land use

**Water**

Distance to permanent water source metres

Distance to temporary water source metres

Name of nearest permanent water source

Name of nearest temporary water

# NPWS FEATURE RECORDING FORM - ART



Site I.D. ____ Site Name ____

First recorded date ____/____/____ **Importance** ____ **Aboriginal Information Recorded?** ____

No. of instances ____

Recorded by ____

## Feature Context & Condition

Easting ____ Northing ____

Pigment ☐ Engraved ☐ Super-impositioning ☐

**Artwork Condition**

- ☐ Very good
- ☐ Good
- ☐ Poor

**General Condition**

- ☐ Weathered
- ☐ Vandalised
- ☐ Surface water wash
- ☐ Mineralisation
- ☐ Graffiti
- ☐ Fire damage
- ☐ Insects/termites
- ☐ Erosion
- ☐ Stock
- ☐ Unstable structure

**Recommended Action**

- ☐ Boardwalk
- ☐ Cage/barrier/fencing
- ☐ Closure to public
- ☐ Continued inspection
- ☐ Dripline
- ☐ Expert assessment
- ☐ Fire hazard removal
- ☐ Graffiti removal
- ☐ Insect/bird nest removal
- ☐ Meeting with land manager
- ☐ Rubbish removal
- ☐ Signage
- ☐ Erosion control
- ☐ Track closure/re-routing
- ☐ Additional recording

## Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

- ____ Land form
- ____ Land form unit
- ____ Slope
- ____ Vegetation
- ____ Land use

**Water**

- Distance to permanent water source ____ metres
- Distance to temporary water source ____ metres
- Name of nearest permanent water source ____
- Name of nearest temporary water ____

## Art Sketch Plan

Sketch and number motif groups

# NPWS FEATURE RECORDING TABLE - ART MOTIF



| Instance | Recording Date | Motif | Application Technique | Form | Main Colour | Location | Condition |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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**Motif**

Anthropomorphic
Bird
Bird Track
Canoe
Circle
Contact material culture
Duck
Eel
Emu
Emu track
European figure
Female
Fish
Foot
Hand
Jellyfish
Kangaroo
Line
Lizard
Macropod
Macropod Track
Male
Marine-Other
Other
Pattern
Quadruped
Reptile
Rifle
Shield
Ship
Snake
Spear
Wallaby

**Application Technique**

Abraded
Drawn
Other
Painted
Pecked
Pigment & Engraved
Stencilled

**Form**

Fill
Line
Line+ Fill
Other
Pattern

**Main Colour**

Black
Mauve *
N/A
Orange *
Other
Red *
White *
Yellow *

**Art Location**

All over shelter surfaces
ceiling
Floor
Mostly near largest sheltered space
Mostly on out of the way surfaces
Other
Wall

**Condition**

Faded
Stained
Mineralisation Evident
V brant Colours
Unweathered
Weathered

Comments:

# NPWS FEATURE RECORDING FORM - SHELL



Site I.D. ☐ Site Name ☐

First recorded date ☐/☐/☐ **Importance** ☐ **Aboriginal Information Recorded?** ☐

No. of instances ☐

Recorded by ☐

## Feature Context & Condition

Easting ☐☐☐☐☐☐ Northing ☐☐☐☐☐☐☐

**Dimensions of Whole Feature**

☐ Length (m) ☐ Width (m) ☐ Depth (m)

**Shell Distribution**

☐ Surface scatter
☐ Stratified deposit
☐ Mounded

☐ Distance to high water mark (m)

**Feature Condition**

☐ Very good
☐ Good
☐ Poor

**General Condition**

☐ Weathered
☐ Vandalised
☐ Surface water wash
☐ Mineralisation
☐ Graffiti

**General Condition ctd**

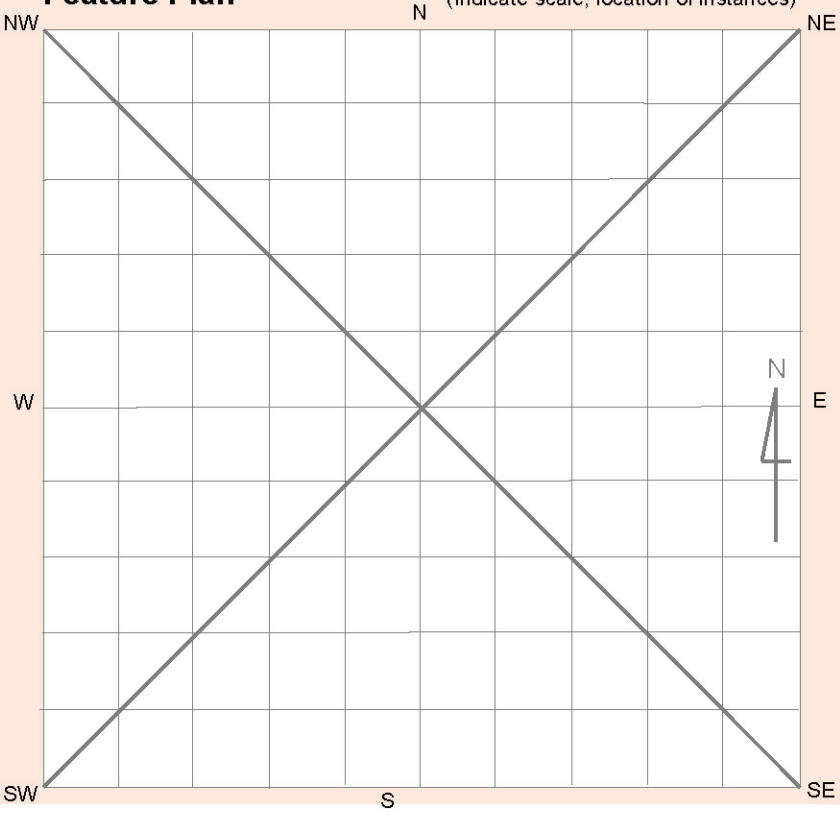
☐ Fire damage
☐ Vehicle damage
☐ Insects/termites
☐ Erosion
☐ Stock damage
☐ Unstable structure
☐ Exposed bone material
☐ Exposed archaeological material

**Recommended Action**

☐ Boardwalk
☐ Cage/barrier/fencing
☐ Closure to public
☐ Continued inspection
☐ Expert assessment
☐ Fire hazard removal
☐ Graffiti removal
☐ Meeting with land manager
☐ Insect/bird nest removal
☐ Revegetation
☐ Rubbish removal
☐ Signage
☐ Erosion control
☐ Track closure/re-routing
☐ Additional recording

## Feature Plan

(Indicate scale, location of instances)




## Feature Environment

(Complete when *feature* environment differs to *site* environment, use attributes from cover card, p. 2)

☐ Land form
☐ Land form unit
☐ Slope
☐ Vegetation
☐ Land use

**Water**

Distance to permanent water source ☐ metres

Distance to temporary water source ☐ metres

Name of nearest permanent water source ☐

Name of nearest temporary water ☐

# NPWS FEATURE RECORDING TABLE - SHELL



| Instance No. | Recording Date | Shell Species | % of this species shell to % total of other shell |
|---|---|---|---|
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**Species**

| | |
|---|---|
| Anadara | Nerita |
| Bimbala | Ocean Snail |
| Chiton | Periwinkle |
| Cowrie | P |
| Dog Cockle | Ribbed Cockle |
| Duck Bill | Rock Oyster |
| Limpit | Whiad |
| Mud oyster | Triton |
| Mutton Fish | Turban (large) |

**Percentage of this Species Shell to Percentage Total of other Shell**

0 – 9%
10 – 19%
20 – 29%
30 – 39%
40 – 49%
50 – 59%
60 – 69%
70 – 79%
80 – 89%
90 – 100%

Comments:

Godden Mackay Logan
Heritage Consultants

# Jacaranda Ponds, Glossodia

## Indigenous and Non-Indigenous Heritage Assessment

### Final Report

Report prepared for EG Property Group

December 2009

Godden Mackay Logan Pty Ltd
ABN 60 001 179 362

78 George Street Redfern
NSW Australia 2016

T +61 2 9319 4811
F +61 2 9319 4383

www.gml.com.au

## Report Register

The following report register documents the development and issue of the report entitled Jacaranda Ponds, Glossodia—Indigenous and Non-Indigenous Heritage Assessment, undertaken by Godden Mackay Logan Pty Ltd in accordance with its quality management system. Godden Mackay Logan operates under a quality management system which has been certified as complying with the Australian/New Zealand Standard for quality management systems AS/NZS ISO 9001:2000.

| Job No. | Issue No. | Notes/Description | Issue Date |
|---|---|---|---|
| 09-0254 | 1 | Draft Report | October 2009 |
| 09-0254 | 2 | Final Report | December 2009 |

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# 1.0 Introduction

## 1.1 Project Background and Initiation

Godden Mackay Logan (GML) has been engaged by EG Property Group to prepare a combined Indigenous and Non-Indigenous Heritage Assessment for a collective of properties at Jacaranda Ponds, Glossodia (herein 'the study site' or 'the site') to guide the future release and development of land for residential purposes in the Hawkesbury Local Government Area.

Glossodia is the Hawkesbury's second largest local centre north of the Hawkesbury River beyond North Richmond and is an area characterised by rural smallholdings and low- to medium-density residential allotments. Local and regional strategy documents have flagged Glossodia as a target growth area, which was a trigger for this study. The proponent's objectives in its submission to the Hawkesbury Residential Development Strategy are to have the site included in the investigations to be undertaken as part of the Residential Development Strategy, to propose a preliminary concept plan for the future development of the site, and to consider the viability of the land's being rezoned to 'Residential' from its current zoning of 'Rural—Mixed Agriculture'.

This report assesses the potential for Indigenous and non-Indigenous cultural material to be present at the site, identifies levels of significance, and outlines a mitigative strategy to manage these resources as part of any future redevelopment commensurate to their heritage significance and statutory requirements.

## 1.2 Site Location

Jacaranda Ponds is located adjacent to the township of Glossodia, approximately 60km to the northwest of Sydney's city centre (Figure 1.1). The site is 179 hectares in extent and is comprised of a 'collective' of the following properties:

- 'Jacaranda Park', Spinks Road, Glossodia, Lot 2 DP 533402, Lot 3 DP 230943, Lot 20 DP 214753, Lot 50 DP 214753 and Lot 52 DP 1104504 with total area of 94 hectares; and
- 'Annalee', 780 Kurmond Road, Glossodia, Lots 1, 2 and 3 DP 784300 with total area of 82 hectares;
- Lot 75 DP 214752 (2 hectares);
- Lot 20 DP 214753 (0.4 hectares); and
- Lot 44 DP 214755 (0.7 hectares).

The site is bounded by Spinks Road to the north and Currency Creek to the south. It is surrounded by residential housing to the north and mixed agriculture land use on all other sides.

## 1.3 Scope

This report has been prepared in accordance with the *NSW Heritage Manual*, particularly the 'Archaeological Assessment' guidelines and the New South Wales National Parks and Wildlife Service's 'Aboriginal Cultural Heritage Standards and Guidelines Kit' (1997) in response to the requirements of the *National Parks and Wildlife Act 1974* (NSW) (NPW Act). This report also

applies the principles contained in *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999.*

The scope of work included the following tasks:

- a review of previous historical and Aboriginal research within the vicinity of the study area;
- collation of existing information on the ethnohistory of the study area;
- a search of the Aboriginal Heritage Information Management System (AHIMS) for known Aboriginal objects and/or sites within the vicinity of the study area;
- historical research for the subject site, including procurement of historical plans and maps to determine the locations of any former or existing structures and buildings;
- consultation with registered Aboriginal stakeholders;
- development of a predictive model for the study area based on the background research;
- inspection of the proposed development area to identify visible archaeological relics/objects/sites and/or heritage items, sites and places and to assess their potential to contain subsurface cultural material;
- preparation of a report that complies with NSW Heritage Council and Department of Environment, Climate Change and Water (DECCW) guidelines; and
- listing of identified Aboriginal sites on DECCW's AHIMS register.

## 1.4 Exclusions

The conclusions of this report are based on a review of background information and a surface survey of the site. No excavation was undertaken. Although maximum site coverage was attempted, difficult terrain and vegetation made visibility difficult in places. 100% coverage of the site was not possible and a sampling survey strategy based on predictive modelling was used.

## 1.5 Authorship and Acknowledgements

This report has been prepared by Erin Finnegan, Consultant and Archaeologist and Anita Yousif, Consultant and Archaeologist, with input from Laura Farquharson, Consultant and Archaeologist and Fiona Leslie, Senior Consultant. The site history was prepared by Mark Dunn, Historian. The report has been reviewed by Anne Mackay, Senior Associate of Godden Mackay Logan.

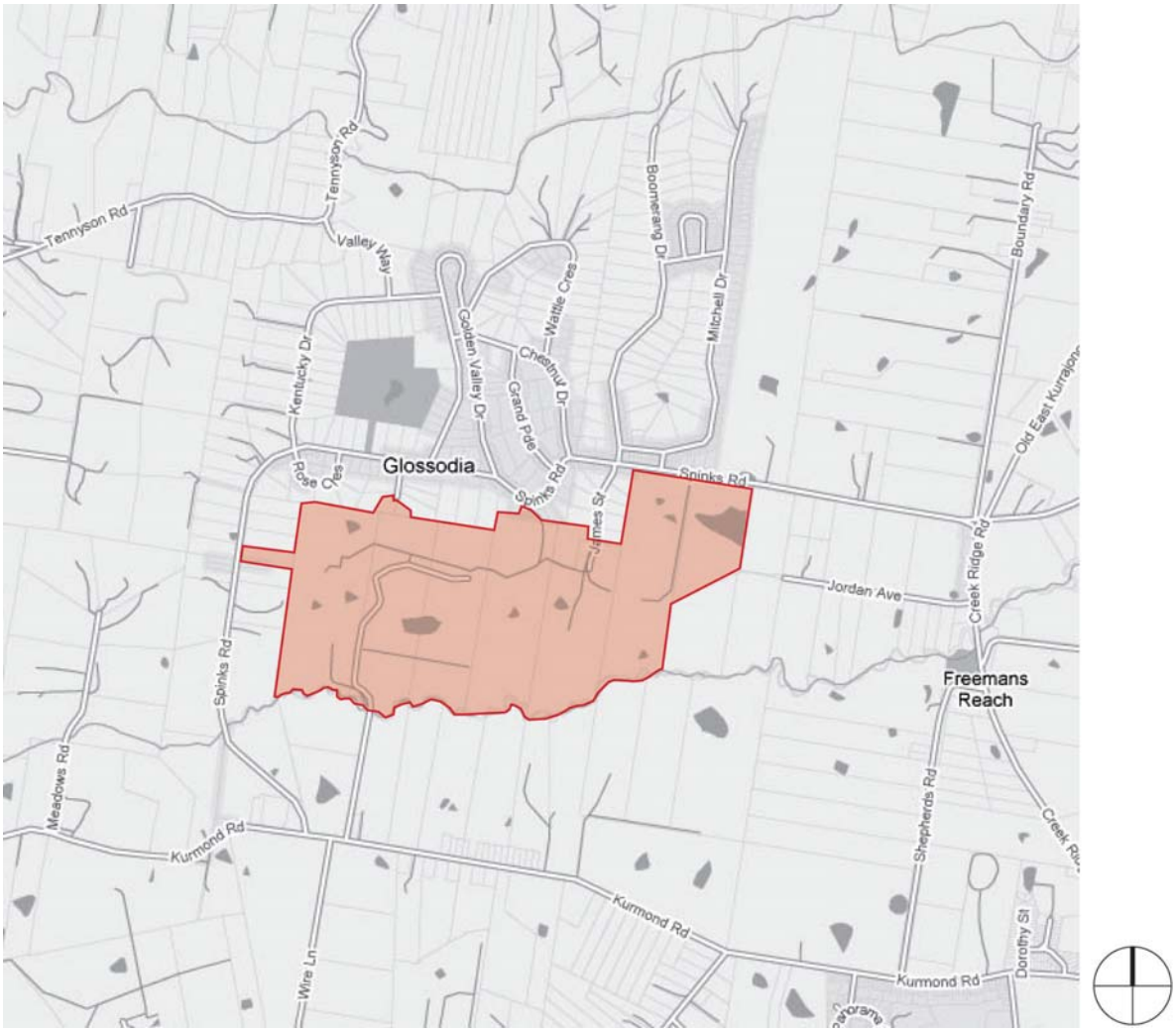



Figure 1.1 Site location, with study area indicated in red. (Source: Google Maps)

# 2.0 Statutory Context

## 2.1 Preamble

The site at Jacaranda Ponds, Glossodia is affected by a number of statutory controls which must be taken into account prior to developing the site. These controls include:

- *Heritage Act 1977* (NSW) (the Heritage Act);
- National Parks and Wildlife Act 1974 (NPW Act); and
- Hawkesbury Local Environmental Plan 1989 (Amended) (LEP).

## 2.2 The Heritage Act

The Heritage Act affords automatic statutory protection to archaeological relics across New South Wales.

A 'relic' is defined by the Heritage Act as:

> *Any deposit, object or material evidence*
>
> *(a) which relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
>
> *(b) which is 50 or more years old.*

Further to this, Section 139[1] states that:

> *A person must not disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit.*

Approval from the Heritage Branch, Department of Planning (under delegation from the Heritage Council of NSW) would be required to allow disturbance of any areas of historical archaeological potential.

There are no listed items under the Heritage Act within or in the vicinity of the study area.

## 2.3 National Parks and Wildlife Act

Aboriginal cultural heritage in NSW is protected and managed under the NPW Act. The Act is administered by the NSW Department of Environment and Climate Change and Water (DECCW), which has responsibilities under the legislation, including approvals and enforcement functions. The Act defines an 'Aboriginal object' as:

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

The Act defines an 'Aboriginal place' as:

> *any place declared to be an Aboriginal place under section 84.*

Aboriginal cultural heritage places can include human remains and burial sites, scarred trees, artefact scatters, shell middens, rock art, engravings, ceremonial or dreaming sites and natural features that are particularly significant to Aboriginal people. It can also include places with important Aboriginal associations since European settlement.

DECCW maintains the Aboriginal Heritage Information Management System (AHIMS), which is a database for all Aboriginal objects, Aboriginal places and other Aboriginal heritage values in New South Wales that have been reported to DECCW. An Aboriginal object is considered to be 'known' if it is registered on AHIMS, is known to the Aboriginal community, or is identified during an investigation of the area conducted for a development application.

Aboriginal objects and places are afforded automatic statutory protection in New South Wales whereby it is an offence (without the minister's consent) to:

> *Damage, deface or destroy Aboriginal sites without the prior consent of the Director-General of the National Parks and Wildlife Service.*

The protection provided to Aboriginal objects and places applies irrespective of the level of their significance or issues of land tenure. Sites of traditional significance that do not necessarily contain material remains may be gazetted as 'Aboriginal places' and thereby be protected under the NPW Act. However, areas are only gazetted if the minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

## 2.4 Hawkesbury Local Environment Plan 1989 (Amended)

LEPs are prepared by councils to guide planning decisions in their Local Government Areas and establish the requirements for the use and development of land. Through zoning and development controls they allow councils to supervise the ways in which land is used.

The stated aims and objectives of the Hawkesbury LEP 1989 (Amended) are:

> *(a) to provide the mechanism for the management, orderly and economic development and conservation of land within the City of Hawkesbury,*
>
> *(b) to provide appropriate land in area, location and quality for living, working and recreational activities and agricultural production,*
>
> *(c) to protect attractive landscapes and preserve places of natural beauty, including wetlands and waterways,*
>
> *(d) to conserve and enhance buildings, structures and sites of recognised significance which are part of the heritage of the City of Hawkesbury for future generations, and*
>
> *(e) to provide opportunities for the provision of secure, appropriate and affordable housing in a variety of types and tenures for all income groups within the City.*

In the LEP, 'heritage item' and 'heritage signficance' are defined as follows:

> *heritage item means a building, work, relic, tree or place of heritage significance to the City of Hawkesbury described in Schedule 1 and shown by a red circled number on the map.*
>
> *heritage significance means historic, scientific, cultural, social, archaeological, architectural, natural or aesthetic significance.*

The Hawkesbury LEP clauses that apply to cultural heritage resources are as follows:

*27. Heritage Items*

*(1) A person shall not, in respect of a building, work, relic, tree or place that is a heritage item:*

*(a) demolish or alter the building or work;*

*(b) damage or move the relic, including excavation for the purpose of exposing the relic,*

*(c) damage or despoil the place or tree,*

*(d) erect a building on or subdivide land on which the building, work or relic is situated or the land which comprises the place, or*

*(e) damage any tree on land which the building, work or relic is situated or on the land which comprises the place*

*except with the consent of the Council.*

*(2) The Council shall not grant consent to a development application under subclause (10) unless it has taken into consideration the extent to which the carrying out of the proposed development would affect the heritage significance of the item and any stylistic or horticultural features of its setting.*

*(3) Development consent is not required by this clause for development described in the Table to clause 9B if:*

*(a) in the opinion of the Council:*

*(i) the proposed development is of a minor nature or consists of maintenance of the heritage item, and*

*(ii) the proposed development would not adversely affect the significance of the heritage item, and*

*(b) the proponent has notified the Council in writing of the proposed development and the Council has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development will comply with this subclause.*

*28. The Council shall not grant consent to an application to carry out development in the vicinity of a heritage item unless it has made an assessment of the effect the carrying out of that development will have on the heritage significance of the item and its setting.*

There are no heritage items within or in close proximity to the study area which are listed in the Hawkesbury LEP 1989.

# 3.0 Understanding the Place: Cultural, Historical and Archaeological Context

## 3.1 Environment

The study site is a collective of properties where the proponents are engaged in poultry farming and husbandry/agistment. The site has over 30 agricultural sheds and a number of small- to medium-sized dams and has been subject to clearing, ploughing and grazing activities since the nineteenth century.

The site's topography is characterised by undulating hills which rise to 78m AHD (Australian Height Datum—mean sea level is assigned zero) in the northwest and slopes south to Currency Creek, where the lowest point is 35m ADH. There are views to the surrounding countryside to the southeast and the Blue Mountains to the west. Small stands of regrowth vegetation are scattered throughout the site. The site is not affected by flooding from the Hawkesbury River (located approximately 2km to the south) as it lies wholly above the Probable Maximum Flood (PMF) level for the region, which varies between 26.4 and 26.5 metres between North Richmond and Windsor.

The study area is part of the Sydney Basin geological province and the Cumberland Plain, and geologically consists of Tertiary and Triassic horizontally bedded sedimentary rock.[1] Wianamatta shale forms most of the site. The Wianamatta group consists of shales, conglomerates and sandstones which originally overlaid the Hawkesbury sandstone. In many areas of the Hawkesbury region, these rocks have been deeply eroded over time, exposing lower levels which come almost exclusively from Hawkesbury sandstone.[2] This however, is not the case at the study site, where no sandstone outcrops have been identified.

In the past, the Cumberland Plain was covered with open forest and was home to diverse flora and fauna and would have been a resource-rich environment. Historical records cited by Brayshaw indicate that by the early 1820s the 'greater part of the alluvial lands upon the Hawkesbury and Nepean have been cleared and under cultivation'.[3] The result was the clearing of almost all of the original vegetation from the site. Only a few stands of native vegetation remain, consisting of dry sclerophyll woodland.

## 3.2 Ethnohistory of the Cumberland Plains Region

Our knowledge of Aboriginal groups prior to European contact is, to a large extent, reliant on European accounts. Such documents are inherently biased by the class and cultural background of the authors. However, when combined with archaeological evidence and traditional knowledge they can provide a more holistic picture of Aboriginal life and culture.

The duration of Aboriginal presence in the Sydney region is asserted by Aboriginal oral tradition and supported by archaeological evidence. The greater Sydney region contains several thousand Aboriginal sites, with new sites being recorded constantly through academic studies and surveys undertaken for consulting projects. The types of Aboriginal sites in the region include rock shelter campsites (some with middens, stone artefact scatters and/or art), open campsites (shell middens and stone artefact scatters), rock engravings and paintings, scarred trees, axe-grinding grooves, burial sites and stone and ochre quarries. A number of Aboriginal sites have been excavated throughout the region from a variety of environments. A rock shelter site in the Blue Mountains

(Kings Tableland) has been dated to about 22,000 years ago.[4] Post-contact Aboriginal sites include former missions, reserves and historical campsites.

Determining the population of Aboriginal people at the time of European contact is notoriously difficult. Firstly, Aboriginal people were largely mobile and avoided contact with Europeans. Further, many Aboriginal people perished from European diseases such as smallpox some time after contact or through clashes with the new settlers, so the population statistics gathered in the early years may not be particularly reliable. Population estimates for the greater Sydney region, including the lower Blue Mountains, generally range from 4,000–8,000 at the time of European contact.[5] The western Cumberland Plain population, specifically, has been estimated to be between 500–1,000 people at the time of contact, which translates to a minimum population density of 0.5 people/km$^2$.[6]

Previous ethnographic research has identified 13 inland Darug clans, the three closest to the Glossodia area being the *Kurrajong* clan located at Kurrajong, the *Cattai* clan at Windsor and *Boorooberongal* clan at Richmond.[7] The name 'Kurrajong' is said to come from a tree whose bark fibres were used for making twine and fishing lines.[8]

The material culture of Aboriginal people in the Cumberland Plain at the time of European settlement was diverse and utilised the local materials at hand including plants, animals and stone. The use of plant materials was widespread with many items being made from bark and wood including shelter, canoes, weapons, tools and items of personal adornment. Canoes were noted on the Hawkesbury–Nepean River and ranged in length from 2.4–6 metres in length.[9] Spears were made of wood, with stone, bone, wood or shell barbs attached using resin. Wood was also used for axe handles, bowls and women's digging sticks used to obtain yams and other tubers.[10] Boomerangs and clubs were made from hardwoods and were used in hunting. 'Boomerang' is believed to be a Darug word.[11] Land mammals on the Cumberland Plain were hunted and eaten including kangaroos, wallabies, possums, gliders, fruit bats and kangaroo-rats. Birds were also hunted and eggs were collected for eating. Freshwater food resources available in the Hawkesbury–Nepean catchment included eel, fish, crayfish, yabbies, shellfish, platypus and water rat. Reptiles including snakes, lizards and tortoises were caught and eaten.[12] Besides plant materials being used to create useful items, Sydney's vegetation communities include over 200 species that have edible parts, including seeds, fruits, tubers, leaves, flowers and nectar.[13] Some plant products also had medicinal or ceremonial uses.

## 3.3 Contact/Invasion and Dispossession

The Aboriginal population of the Sydney region was devastated following the arrival of Europeans, who brought with them diseases to which the Indigenous inhabitants had little or no resistance. A major cause of depopulation was the 1789 smallpox epidemic which killed vast numbers of local inhabitants. The disease spread to the Hawkesbury River and beyond before the colonists themselves even reached these areas, and most of the Bediagal of the western Cumberland Plain had been severely affected by the time of Governor Phillip's expedition to the Hawkesbury and Nepean River systems in April 1791. The widespread deaths from smallpox would have had an enormous impact on the fabric of Aboriginal society in the Sydney region at the time, with the loss of support structures and traditional knowledge. This was also a trigger for initial displacement and land dispossession as survivors fled inland to escape disease.

As greater expanses of land were occupied by settlers towards the end of the eighteenth century, tensions boiled over and resistance to white settlement became increasingly violent. In 1790,

station raids led by Pemulwuy and his son Tedbury saw the use of arson to destroy buildings and burn crops, and numerous assaults on livestock and settlers themselves. A period of resistance by Aboriginal people in the Hawkesbury and Parramatta areas began in 1799 and was known as the 'Black Wars'.[14] In 1804 colonists were authorised to shoot unarmed Aboriginals.[15] The guerrilla-like wars continued until 1816.

In 1814 Governor Macquarie opened a school for Aboriginal children at Parramatta called the 'Native Institution' to 'civilise, educate and foster habits of industry and decency in the Aborigines'. While this school closed in 1820, Aboriginal people across the colony began to be moved onto mission stations and settlers tried to control growth of the Aboriginal population with a policy of absorption.[16]

In the last 30 years, processes for returning some lands to Aboriginal people have been instituted.[17] The *NSW Aboriginal Land Rights Act 1983* created a system for claiming land to provide for the spiritual, social, cultural and economic benefit of Aboriginal people. The only land available for claim is vacant Crown land (that is, unused public land). By 2000, 7,000 claims had been lodged, and 2,000 had been granted in full or in part (NSW Department of Aboriginal Affairs, 2000).[18]

## 3.4 European Settlement/Post-Contact Period

The Hawkesbury region was one of the first areas outside of Sydney town that Europeans explored after arriving in 1788. The need for the new colony to be self-sufficient led to the search for arable land away from the poor soils of Sydney Cove within the first months of landing. By 1789 the first explorers' parties had reached the Hawkesbury River, with the initial sighting coming in July 1789 near Richmond Hill, close to the study area. The wide and deep river they encountered, with rich floodplains on either side, appeared ideal for agricultural land, although it was clearly subject to major flooding, and by 1794 a small farming community had developed along the banks from South Creek (near present-day Windsor) to Canning Reach near Pitt Town.[19] The first grantees on the river were mainly emancipist convicts, with one private in the NSW Corp and one free settler amongst them. Twenty-two grants of 30 acres each were made along the river.

By 1794 the first farmers had been joined by an increasing number of emancipist convicts. Settlement had by now stretched further along both sides of the river, past Argyle Reach and Freemans Reach almost to Richmond Hill. The land was cleared of timber, with wood not used for building either burnt or discarded. The land was sown with wheat or maize and later crops such as barley, oats, vegetable market gardens and orchards of peaches, plums and apricots were planted.

In 1795 the first government storehouse was built at the Hawkesbury, signalling the beginnings of a permanent settlement in the area. The same year recorded the first flood, although only a minor one which caused minimal damage. In June 1795, 546 people were recorded as residing at the Hawkesbury with 222 hectares of land sown with wheat.[20] The main settlement was known as Green Hills, which was later renamed Windsor by Governor Macquarie.

Although increasing large floods and increasingly high debts of the farmers were features of the settled area, the Hawkesbury area continued to grow and soon became the major food-producing area for the growing colony. Cattle and grazing stock became increasingly common through the 1790s as ore ships brought stock into the colony. In 1804, in response to the growing need for land, Governor King set aside a number of commons in and around the Hawkesbury area for grazing of sheep and cattle. Six commons including Pitt Town Common, Richmond Common (later

renamed Ham Common) and Wilberforce Common were set aside, comprising 14,256 hectares of land in the district for grazing. The study area is within what was the Wilberforce Common.

These measures and the use of the riverfront and floodplain land for crops set the pattern of land use in the area which largely remains in place.

### 3.4.1 The Macquarie Towns: Wilberforce

When Governor Macquarie arrived in the colony in 1810, the Hawkesbury settlement was well established and providing good, regular harvests to Sydney. However, floods were still an issue, with two large floods in 1806 and 1809 proving to be disastrous to the region. Macquarie's solution to the ongoing problem was to lay out new towns on the high ground back from the river and encourage, or force, the settlers to relocate to them. With this in mind, Macquarie then had five new towns surveyed and laid out along the river, two at the existing townships of Green Hills (renamed 'Windsor') and Richmond and three others at the smaller settlements of Wilberforce, Pitt Town and Castlereagh. Of these, the closest to the study area at Glossodia was Wilberforce.

As the town of Wilberforce was laid out, settlers slowly began to take up the allotments in and around it. Much of the area around was withheld from grants and settlement by farmers as it was within the large Wilberforce Common. Wilberforce Common (approximately 2,491 hectares) covered the area north of the current village of Wilberforce from the Hawkesbury River in the east to the present-day Boundary Road at Glossodia and north to the boundary of the Parish of Meehan.[21]

Running through the common were a number of small creeks and streams feeding into Halls Wetlands and the Hawkesbury River in the east. One of these, Currency Creek, defines the southern boundary of the study area. Currency Creek was named prior to 1829 (as it appears in the *Sydney Gazette* in March 1829), and it appears on an 1840 map of the grants in the area (see Figure 3.1). The name is likely to derive from a colonial expression for Australian-born settlers (especially the children of emancipist convicts) to define them from those born overseas: They were colloquially known as 'currency lads or lasses', so the name may be derived from local-born farm settlers in the region. While the Wilberforce Common was withheld from sale, areas fronting Currency Creek to the west of the common, including the current study area, were granted or sold from the 1820s.

The population of the area around the study site was slow to expand and was restricted to isolated farming families for much of the nineteenth century. It was not until 1896 that enough families lived in the Currency Creek district to justify building a school house. The school was located to the east of the study area on Creek Ridge Road. It was around here that the first Currency Creek village grew up, with a post office and other services being constructed here. In 1988, after a fire destroyed the school (this was the second fire at the school since it was built), a new school was built in Golden Valley Drive north of Spinks Road near the study site.

### 3.4.2 Later Development

The development of the small settlement of Currency Creek grew around the school site. In 1922 the residents petitioned for a post office. The postmaster-general gave permission for a new post office on the provision that the district changed its name, as there was already a Currency Creek in South Australia. On Boxing Day 1922 the official re-naming ceremony took place with the district changing its name to Glossodia, after a small native orchid that grew in the area—*Glossodia major*, or the 'wax lip orchid'.

Throughout the twentieth century, most families in the area made a living from either orchards or mixed farming, with some sawmilling also being carried out.

In 1963 new large subdivisions were proposed in the Golden Valley area north of Spinks Road, but sales did not begin until 1970. The lots were across Portions 2, 3 and 7 with 876 new allotments laid out, including provision for a small shopping area. The result was the virtual relocation of Glossodia from the east of Boundary Road to the west.

### 3.4.3 First Settlement and Landuse at Currency Creek

The study area, bounded by Spinks Road in the west and north and Currency Creek in the south, encompasses the land within eight early grants in the Currency Creek area. These are Portions 46–53 in the Parish of Currency, County Cook, extending north from the banks of Currency Creek. The grants were made out to James Turner (Portion 46, pre-1840); Robert Farlow (Portion 47, 30 June 1823); W Field (Portion 48, 30 June 1823); W Perkins (Portion 49, 30 June 1823); William Clarke (Portion 50, pre 1840); Thomas Clarke (Portion 51, pre 1840); Mathew Lock (Portion 52, 5 April 1821); and Thomas Graham (Portion 52, 5 April 1821). These portions are shown on a map of the Kurrajong area from 1840, included here as Figure 2.1. The majority of the portions were 60 acres, with Portion 46 (James Turner) being 30 acres and Portion 47 (Robert Farlow) being 80 acres.

Very little information on specific land use in the study area in the early colonial period and the later nineteenth century has come to light for this project. However, the pattern of land use in the surrounding district was similar to that in the study area and can be used to speculate in regards to the study area. By the 1820s the rural scene at the Hawkesbury was well established. As early as 1799, more than half of the total area under cultivation in the colony was located at the Hawkesbury, totalling 1,398 hectares.[22] Granaries were in place at Green Hills (Windsor) by the mid 1790s and the first mills appeared around 1806-09 first at Cattai, with one at Windsor by 1815 and two at Kurrajong in 1818. These mills processed the grain from the surrounding farms. As the first grants on the study site date from 1821, it is likely that at least part of the land there was being utilised for grain crops.

The grazing of both sheep and cattle was also a common land use in the early nineteenth century in the district. Industries such as tanning and butchery were operating at Windsor from at least 1799.

Census records and colonial convict musters from 1828 give a picture of some of the landholders in the study area. These are set out briefly below:

**James Turner** Portion 46: Turner had arrived in Sydney aboard the *Perseus* in 1802 as a convict sentenced to life. By 1823 he had received a conditional pardon and was listed as a landholder at Wilberforce. The census records give no further information on him.[23]

**Robert Farlow** Portion 47: Farlow had arrived in Sydney aboard the *Canada* in 1801 as a convict sentenced to seven years. He was freed by servitude and by 1828 had 221 acres, of which 91 had been cleared and cultivated. He owned 19 horses and 20 cattle. He is also recorded as being married to Ann, with six children aged between eight and 19.[24] In 1836 he had a convict assigned to him.[25] Farlow's 221 acres included his 80 within the study area. It is not known if Farlow and the family lived on the study area, although it is recorded that he died at his residence at Wilberforce (the general term for the area) in 1853, aged 75.[26]

**William Clarke** Portion 50: Clarke had arrived in Sydney aboard the *Fortune* as a convict with a sentence of seven years. He was freed by servitude and by 1823 was living in the Wilberforce district with his wife, four sons and a daughter all born in the colony. The census records give no further information on Clarke.[27]

**Mathew Lock** Portion 52: Lock had arrived in Sydney in 1790 on board the *Surprise* as a convict sentenced to seven years. By 1828 he was an emancipist, freed by servitude and living with his wife Alice, also a former convict. Lock had 210 acres, including the 60 acres in the study site, of which 100 had been cleared and 12 cultivated. He had 6 horses and 132 sheep.[28]

Although no further information has been gathered on these individuals and their families, the census does give a glimpse of the land use of the region. As can be seen, Farlow had a large area of his land cleared and planted by 1828 whereas Lock, with almost the same area, was running livestock. This could be explained by Farlow's having a large family, which was needed to maintain the fields, whereas with Lock being married with no children, he could only manage a less labour-intensive use of the land.

The fact that, of the eight landholders shown on the parish maps, there is a record of only four of them and of those four only two are in the 1828 census suggests a high attrition rate of these small landholders in the district. It could be that Field, Perkins, Thomas Clarke and Thomas Graham had left the district by the time of the muster in 1823. Similarly, William Clarke and James Turner are not listed in the area in the 1828 census, possibly also showing they had left.

If this was the case, it is of interest that if the portions adjoining Farlow's land (portions 46, 48 and 49) were added to his own, his land would equal 220 acres. Similarly, if those adjoining Lock's land (portions 50, 51 and 53) were added to his original 60 acres, his land would equal 240 acres. These are close to the numbers shown in the 1828 census as being in the ownership of these two individuals and may indicate that Farlow and Lock purchased their neighbours' portions as they left the district. If this were the case, both Farlow and Lock may have lived on their properties at Currency Creek and there may be some evidence of their occupation within the study area.

### 3.4.4 Recent Developments in Glossodia: 1960 to the Present

From the colonial era to the current period, very little specific information has been uncovered for each of the portions. An aerial photograph from 1961 shows the subdivisions of the new town of Glossodia being laid out to the north of the site and the roads being graded, but as yet no development. Spinks Road, the northern boundary, appears new and only extends west to Kentucky Drive at this time.

By 1961, across the study area development was limited to two large orchard and farm sites, Jacaranda Park horse stud and three smaller farms. Of the orchards, one had located adjacent to Jacaranda Park stud within the boundaries of Portions 52 and 53 and one within the boundary of Portion 47. Within Portions 52 and 53, the orchards can be clearly seen in the aerial photo, with rows of plantings edged on the north by bushland (whether regrowth or remnant is not known). Both the properties here (being Jacaranda Park and the orchard) had a house on them and a collection of sheds and outbuildings clustered around. The orchard to the west of these, on Portion 47, has a large plot cleared from the surrounding bush. Two houses were located to the southeast, close to a large dam, with a third house and collection of buildings to the southwest of them closer to Currency Creek. Between these two orchard sites, located within the approximate boundary of

Portion 50, was another collection of buildings including a house and a long shed, possibly a chicken shed.

The land around these properties had been cleared and evidence of cultivation can be seen in the image. Fencelines appeared to mimic the portion dimensions on the 1840s plan and the parish maps, while a number of dams were scattered through the landscape.

By 1970, the first phase of the large Checkerboard Livestock Research farm at Glossodia was under construction. Land had been cleared for the erection of the associated sheds and buildings adjacent to the orchard property on Portion 47 and, to the south, 11 large sheds had been built, with an access road to Kurmond Road in the south. To the west, the orchards across Portions 52 and 53 appear to have been largely taken out, with only one corner block left under cultivation. New houses were also beginning to appear fronting Spinks Road in the north, although to the west Spinks Road had not yet been extended to meet Kurmond Road.

A topographic map of the area in c1975 shows a scattering of buildings, most located close to Spinks Road and the Golden Valley subdivisions.

An aerial photograph over the study site in 1991 shows that most of the structures visible in the 1961 and 1970 photos are still evident. The Livestock Research Farm with its long sheds in two groups is clearly visible, with areas of open paddock still being the main landform. Along Spinks Road, smaller allotments have been subdivided and developed as domestic house lots. The orchards have all but disappeared, with none visible within the study site boundary. A current aerial photograph (c2007) and Google Earth images (c2009) show little change from the 1991 image.

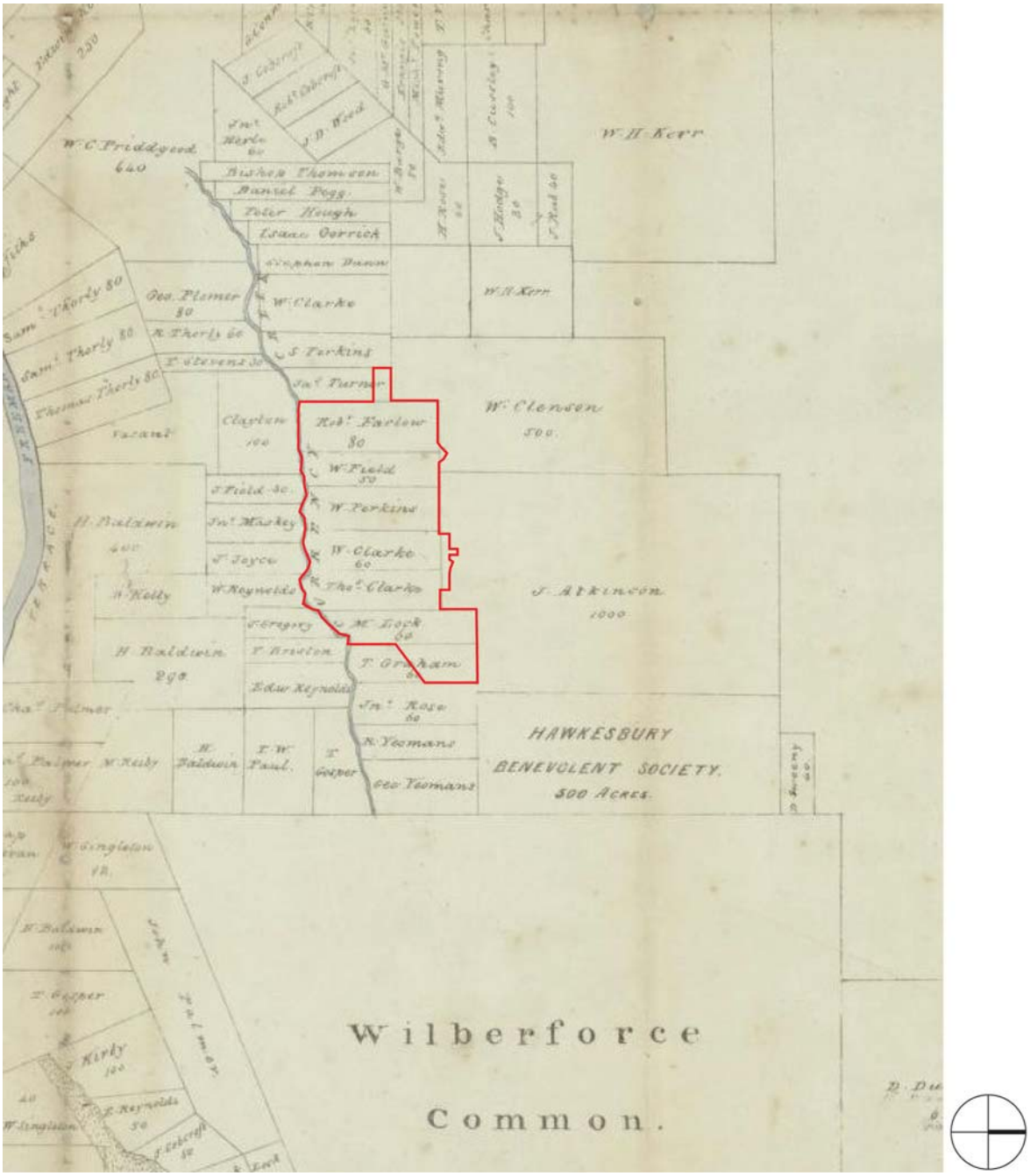



Figure 3.1 Map of Kurrajong. (Source: Mitchell Library (NLA c1840-49 Map F 461))

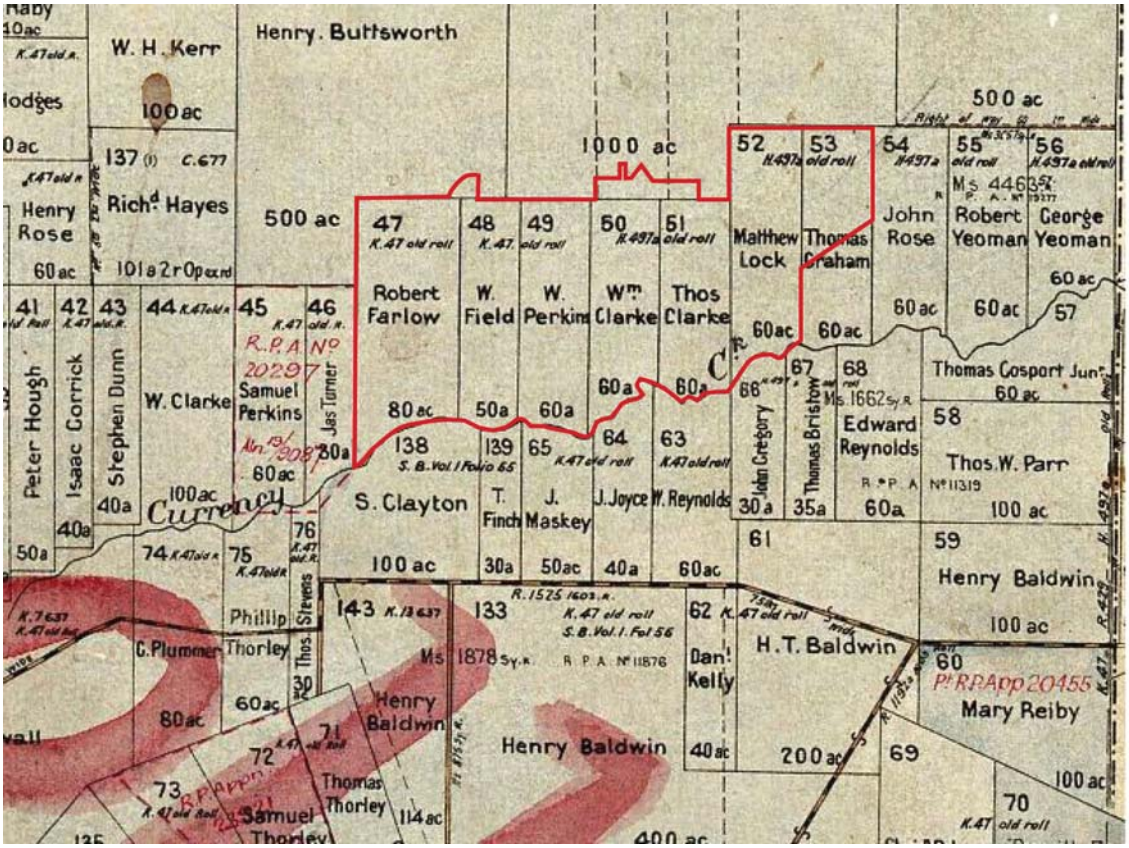



Figure 3.2 Parish of Currency Creek, c1926. (Source: Mitchell Library (AO MAP 20712))


Figure 3.3 1961 aerial with site boundary indicated in red. Note areas of clearing and cultivation, homesteads and road access. (Source: Department of Lands)

## 3.5 Endnotes

1 http://www.environment.nsw.gov.au/NationalParks/parkNature.aspx?id=N0101
2 http://www.environment.nsw.gov.au/NationalParks/parkGeology.aspx?id=N0083
3 ibid. p 7.
4 Stockton, ED and Holland, WN 1974, 'Cultural sites and their environment in the Blue Mountains', *Archaeology and Physical Anthropology in Oceania* 9(1), pp 36–65.
5 Kohen, J 1993, *The Darug and Their Neighbours – The Traditional Aboriginal Owners of the Sydney Region*, Darug Link in association with Blacktown & District Historical Society, Sydney, p 19.
6 Kohen, J 1995, *Aboriginal Environmental Impacts*, UNSW Press, Sydney, p 81.
7 Kohen and Lampert, op cit, p 351.
8 McCarthy, F 1963, *Notes on the Anthropology of the Blue Mountains*, AIATSIS PMS 1091, Sydney.
9 Attenbrow, op cit, p 87.
10 ibid p 112.
11 Turbet, P 2001, *The Aborigines of the Sydney District before 1788*, revised edition, Kangaroo Press, East Roseville, pp 37-39, 45.
12 ibid pp 69-71.
13 Attenbrow, op cit, p 76.
14 http://australianmuseum.net.au/Indigenous-Australia-Timeline-1500-to-1900
15 http://www.creativespirits.info/aboriginalculture/history/aboriginal-history-timeline-early-white.html
16 ibid.
17 Adams, Michael 2004, 'negotiating Nature: Collaboration and Conflict Between Aboriginal and Conservation Interests in New South Wales, Australia', *Australian Journal of Environmental Education*, vol. 20(1).
18 ibid
19 Barkley, J and M Nichols 1994, *Hawkesbury 1794-1994: The First Two Hundred Years of the Second Colonisation*, Hawkesbury City Council, p 8.
20 ibid, p 19.
21 Cooper, A 2009, *Glossodia: A Peep into the Past around Currency Creek*, Sydney, p 3.
22 Barkley, op cit, p 19.
23 General Muster List of New South Wales, 1823, 1824, 1825.
24 Census of New South Wales November 1828.
25 *The Sydney Gazette and NSW Advertiser,* 24 September 1836 . http://newspapers.nla.gov.au/
26 *Maitland Mercury & Hunter River General Advertiser*, 25 June 1853. http://newspapers.nla.gov.au/
27 General Muster List of New South Wales, 1823, 1824, 1825.
28 Census of New South Wales, November 1828.

# 4.0 Indigenous Context

## 4.1 Preamble

This section aims to provide an Indigenous context for the study site by summarising Aboriginal archaeological investigation in the vicinity of the study area, presenting the results from an Aboriginal Heritage Information Management System (AHIMS) database search, and outlining the consultation process undertaken with the Aboriginal stakeholder groups.

## 4.2 Previous Aboriginal Archaeological Research in the Cumberland Plain

No previous archaeological investigation has been undertaken within the study site. However, numerous survey and excavation works as a result of recent development initiatives in the immediate vicinity (as well as greater region) have provided raw data which has informed a growing understanding of site patterning across the Cumberland Plain. The site types predominant in the region are surface artefact scatters or shallow deposits—these are remnants of Aboriginal open campsites and/or stone chipping and/or tool manufacture sites. The distribution of silcrete outcrops across the region is more widespread than originally envisaged.[1] Silcrete was a preferred raw material resource exploited by Aboriginal peoples for tool manufacturing.[2] A pattern of site frequency on high ground above or between creeks and along creekbanks has been noted.[3] Undisturbed sites have been rare, and a lack of undisturbed deposit has not enabled the dating of many sites.

Kohen's (1986) analysis of Cumberland Plain site patterning is based on the notion that there is an almost continuous scatter of material across the landscape. Concentrated areas of artefacts represent concentrated occupation, while other areas represent a wide range of activities across the landscape. However, he concluded that site distribution was, most importantly, correlated to the availability of water, while other factors also included proximity to a diverse range of animal, plant and lithic resources, and elevation above water.[4]

Taking a slightly different view, Smith (1989) noted that proximity to lithic sources correlated to site location, although water sources factored highest in the data correlating to site location. She predicted that 50% of all sites would be located around creeklines and other water sources.[5] All other topographic units like ridges, hilltops, slopes and flats were found to have sites, although 45% were along creek flats.

Smith's[6] other conclusions about the Cumberland Plain included the understanding that 90% of recorded sites are artefact scatters, the majority of which are surface scatters with little or no stratigraphy. Within those open artefact scatters, 85% of artefacts are unmodified flakes and flaked pieces, 5% are cores and 10% are utilised flakes and flaked pieces. Extraction or quarry sites and artefact manufacturing sites occur in limited numbers on the Cumberland Plain and in restricted geographical locations.[7]

By 2005 there were approximately 4,000 recorded sites on the Cumberland Plain, of which the vast majority were open artefact scatters.[8] This increase in the number of recorded sites is directly attributable to the amount of archaeological survey and investigation work now being conducted across the Cumberland Plains. McDonald posited that most areas of the Cumberland Plain contain subsurface archaeological materials regardless of surface manifestations, that the complexity of the

archaeological record was far greater than previously identified on the basis of surface recording and that gross site patterning is identifiable on the basis of environmental factors, ie that sites on permanent water are more complex than those on ephemeral water sources.[9]

## 4.3 Site Types Considered in the Study Area

A wide range of site types can be encountered during archaeological investigations in New South Wales, and these reflect the range of activities carried out by Aboriginal people in the past. AHIMS sets out twenty [20] site types which are defined by the cultural activities associated with the use of a place. These site types reflect the diverse range of evidence that may be encountered relating to past Aboriginal activity. It is important to note that one site may comprise a number of different site types or attributes, indicating the diverse range of cultural activities that can be undertaken in one place.

Site types considered prior to commencement of the field survey in order to determine the site types most likely to be encountered within the study area were based on previous archaeological research in the vicinity of the site, as well as a desktop assessment of landforms and environment within the study area. This background research indicates that the site types most likely to be encountered within the study area were artefact sites (open camp sites, stone artefact scatters, isolated artefacts) and scarred trees and quarries were also considered possible. These potential site types are discussed below.

### 4.3.1 Open Camp Sites, Artefact Scatters and Isolated Artefacts

Stone artefacts occur across much of the New South Wales landscape in varying densities, and are typically classified as ‘artefact scatters’, ‘open campsites’ or ‘isolated occurrences of individual artefacts’. These sites provide a record of past Aboriginal occupation and activity across the landscape. Artefact scatters comprise visible concentrations of artefacts (although these sites often have a significant subsurface element) and typically reflect areas of concentrated Aboriginal activity and occupation in the past, either as campsites or more transient places of concentrated activity. Artefact scatters or open campsites are typically defined as the presence of two or more artefacts within 50 metres of each other. These contrast with isolated artefacts, which occur in much lower densities and are generally considered a ‘background scatter’ across the landscape in many areas of New South Wales. Thus, an artefact scatter or open campsite can be defined as a concentration of artefacts that occur in a greater density than the surrounding low-density ‘background scatter’.

### 4.3.2 Carved and Scarred Trees and ‘Possum Trees’

Aboriginal people carved trees by removing a section of the bark and then carving into the exposed wood. These carvings were done to mark burials and ceremonial sites and, as such, are still significant to Aboriginal people. Scarred trees differ in that they were created when a section of a tree’s bark and wood was removed to make a range of useful objects including canoes, shields, containers (such as coolamons) and other weapons and items.[10] The term ‘possum tree’ refers to trees that have had small notches or toeholds cut into them for the purpose of possum hunting or the collection of honey. In New South Wales, these types of evidence tend to only occur on trees above a certain age, related to the gradual cessation of traditional Aboriginal land use practices with the arrival of European ways of life. Trees of this age are also becoming rarer as they decay, fall over or are burnt.[11]

## 4.4 AHIMS Search

A search of the AHIMS register (administered by the Department of Environment, Climate Change and Water or 'DECCW') has revealed nineteen [19] known Aboriginal sites and/or places within a 5km x 5km search area surrounding the study area. These sites are summarised in Table 4.1 below.

Table 4.1 AHIMS registered sites within a 10km$^2$ search area surrounding the subject land.

| Site Type | Site Features | Frequency |
|---|---|---|
| Open campsite | Artefacts | 13 |
| Scarred tree | Tree | 1 |
| Scarred tree, quarry, open camp site | Tree, stone outcrop, artefacts | 1 |
| Axe-grinding groove | Stone outcrop | 1 |
| Open campsite, quarry | Stone outcrop, artefacts | 1 |
| Quarry | Stone outcrop | 1 |
| None | ? | 1 |

As shown in Table 3.1, the majority of identified sites in the vicinity of Jacaranda Ponds are open campsites, followed by scarred trees, quarries and axe-grinding grooves. Mapping of these sites in a geographical information system (GIS) provides valuable information as to the distribution of these site types within the various land forms (hill slope or creekline environments) around the study area and gives direction as to the site types and cultural material likely to be encountered within the study area. The majority of sites occur along creeklines, including a small rivulet just to the southeast of the Glossodia site. The frequency of sites identified may indicate a greater degree of ground visibility than was present at Jacaranda Ponds.

It is important to note that none of the 19 known sites are located within the study area itself. It is important that this is not taken to indicate an absence of Aboriginal activity or occupation within the study area, but rather this should be recognised as merely reflecting a lack of archaeological investigation in the study area.

## 4.5 The Consultation Process

### 4.5.1 Background

Input from Aboriginal stakeholders is an integral part of assessing the significance and cultural heritage values of Aboriginal objects and places that are likely to be impacted by an activity. Aboriginal community involvement is a requirement under the NPW Act, where an application is prepared for a permit or consent under Part 6 of the NPW Act. The process of Aboriginal community consultation is outlined by DECCW in its *Interim Community Consultation Requirements for Applicants* (2005). These guidelines recognise that:

- *Aboriginal heritage has both cultural and scientific/archaeological significance and that both should be the subject of assessment to inform its decision-making;*
- *Aboriginal people are the primary determinants of the significance of their heritage;*

- *Aboriginal community involvement needs to occur early in the assessment process to ensure that their values and concerns are taken duly into account, and so that their decision-making structures are able to function; and*
- *Information arising out of consultation allows the consideration of Aboriginal community views about the significance and impact, as well as the merits of management or mitigation measures to be considered in an informed way.*[12]

The consultation guidelines outline the requirements (including prescribed timeframes) for engaging with the Aboriginal community as part of the preparation of an application for consent or a permit under Part 6 of the NPW Act. These requirements (including notification and consultation in accordance with the prescribed timeframes) would be implemented if the proponent chose to apply for a Heritage Impact Permit in advance of proposed development works within the study area.

Irrespective of the need for a permit (which would automatically trigger the consultation guidelines), consultation has been conducted throughout this project with some members of the local Aboriginal community, as outlined below.

### 4.5.2 The Study Site

Aboriginal community consultation for the project was initiated by GML in August 2009. The study area falls within the administrative boundaries of the Deerubbin Local Aboriginal Land Council (DLALC), and thus DLALC was identified as one of the key stakeholder groups. In addition, a number of organisations claim traditional and historical links within the greater western Sydney area of which the study site forms a part, including Darug Tribal Aboriginal Corporation (DTAC), Darug Custodian Aboriginal Corporation (DCAC), and Darug Aboriginal Cultural Heritage Assessments (DACHA). These groups were contacted and requested to register their interest in the project.

In addition to the above organisations, the NSW Native Title Services, the Registrar of Aboriginal Owners (NSW Department of Aboriginal Affairs) and DECCW were also contacted at this time.

Concurrent with this, a public notice (see Appendix A) was placed in the *Hawkesbury Courier* in conformity with current DECCW Consultation Guidelines. Expressions of interest were subsequently received from DLALC, DTAC, DCAC and DACHA.

Representatives from each organization participated in the field survey of the property on the 1st and 3rd of September 2009.

A copy of the draft report was forward to the four Aboriginal groups for comment. Comments received from all stakeholder groups (Appendix B) indicate support for the findings and recommendations of this assessment, as follows:

- *Having read and support* [sic] *the draft report … we cannot see why this project should not go ahead following all recommendations it contains. We also support the application for a section 87 permit. (DTAC)*
- *We support the findings and recommendations set out within this report, we would like to add that the ridgeline (A7) be included in a s87 testing program as recent test excavations have shown that the ridgelines do have moderate to high potential, we need to move away from predictive models and test these theories. (DCAC)*
- *DACHA proposes a Darug Aboriginal archaeological testing program in the areas of moderate to high potential and we support the application for a Section 87 Permit for exploration of this important area to the Darug. (DACHA)*

- *Deerubbin LALC … recommends further investigation in the areas that have potential for subsurface Aboriginal artefacts, furthermore any construction or activity that may disturb the topsoil on the creek flats, Derrubbin Local Aboriginal Land Council will require our representative to monitor such works. (DLALC)*

## 4.6 Endnotes

1 Brayshaw and McDonald 1994, 'An Assessment of the Archaeological Context, Landuse History and Management Requirements for Aboriginal Archaeology in the ADI site, St Marys NSW', unpublished report for ADI Ltd NSW Property Group, p 29.

2 McDonald, J 1986, 'Preliminary Archaeological Reconnaissance of the proposed Schofields regional depot, Plumpton, NSW', unpublished report prepared for Metro Waste Disposal Authority, Sydney NSW.

3 Dallas, M 1982 'An Archaeological survey at Riverstone, Schofields and Quakers Hill, NSW', unpublished report for the Land Council of NSW, p 7.

4 Brayshaw, H 1993, 'Defence Department Land at Penrith, NSW. Archaeological Survey for Aboriginal Sites'. Report prepared for the Department of Defence, p 9.

5 ibid, p 10.

6 Smith, LJ 1989, 'Archaeological site survey and analyses of sites on the Northern Cumberland Plain. Cumberland Plain Management Study. Report to NSW National Parks and Wildlife Service', in Brayshaw, H 1993, 'Defence Department Land at Penrith, NSW. Archaeological Survey for Aboriginal Sites'. Report prepared for the Department of Defence.

7 ibid.

8 McDonald, J 2005, 'Archaeological assessment of a proposed fauna fence in the Blacktown LGA, St Marys Property'. Report to Delfin Lend Lease.

9 ibid, p 12.

10 DECCW, Online Aboriginal Site Information: http://www.environment.nsw.gov.au/nswcultureheritage/OtherSites.htm, accessed 16 October 2008.

11 ibid.

12 Department of Environment and Conservation (NSW), 2005*, Interim Community Consultation Requirements for Applicants*.

# 5.0 Survey Design and Methodology

## 5.1 Survey Aims

The field survey aimed to identify, locate and evaluate visible Aboriginal and non-Aboriginal archaeological resources within the study area. This includes historical-period relics (since 1788) as well as areas of archaeological potential (Potential Archaeological Deposits, or 'PADs'). The field survey was preceded by a review of known sites held on the AHIMS register (Section 3.6.1) as well as preliminary background research and a literature review for both the Aboriginal and non-Aboriginal contexts. This established *a holistic archaeological context of the study area* and facilitated the development of a predictive model for the study area, providing guidance as to the types and possible locations of archaeological remains likely to be encountered across the study area during the field survey.

## 5.2 Predictive Model

The most effective survey methodology can be informed by a predictive model. Such a model allows the targeting of areas assessed through preliminary desktop research to have greater potential to contain archaeological remains. A predictive model was developed for the study area prior to commencement of the field survey and thus areas of likely Aboriginal and non-Aboriginal archaeological sensitivity were targeted on the day.

### 5.2.1 Aboriginal Archaeology

The following trends in the archaeology of the local area have been identified:

- The site types most likely to be encountered within the study area include artefact sites (open campsites, stone artefact scatters, isolated artefacts). Scarred trees and quarries were also considered possible.
- Sites (in particular open artefact scatters) are likely to occur on the surface or in shallow deposits in proximity to creeklines and creek flats, although topographic units like ridges, hilltops, slopes and flats have been found to have sites.
- Other types of sites known in the region are scarred trees and, where suitable sandstone was available, axe-grinding groove sites.

These trends informed a predictive model for the study area, based on the likely archaeological site types that may be encountered within the area (Section 3.6.3). This predictive model was developed to inform the field survey strategy and enabled the targeting of certain landforms. The predictive model determined that:

- there is a strong likelihood that isolated artefacts or artefact scatters occur within the study area;
- lithic material (ie stone artefacts), while possible in any area, is most likely to occur along the creekline or higher ground units (ridges, hilltops, slopes);
- scarred trees may also occur within the study area if there are existing old-growth trees of sufficient age;
- quarrying places and axe-grinding grooves may occur within the area depending on the occurrence and type of stone outcrops.

### 5.2.2 Non-Aboriginal (Historical) Archaeology

The identification of the potential historical archaeological resource within the subject site was based on historical research (Section 3.4), an analysis of available historical plans, aerial photographs, review of heritage listings and a field survey conducted on 1 September 2009.

Given that the above research did not provide any reference to extant heritage remains or historical archaeological sites within and in the immediate vicinity of the subject area, a broader approach to the identification of the potential archaeological remains was adopted. It was based on a predictive model that assumes that historical archaeological remains are generally located in close proximity to occupation and activity areas. Therefore, the field survey that was undertaken mainly focused on general observations of the historical landscape to take note of any features or other indicators of historical occupation or activities not indicated in the documentary evidence.

# 6.0 Field Survey Results

## 6.1 Introduction

The study area was surveyed by Erin Finnegan, Anita Yousif and Laura Farquharson of GML with Steve Randall of DLALC on Tuesday 1 September 2009, and Erin Finnegan and representatives of DTAC, DCAC and DACHA on Thursday 3 September 2009. The size of the study area allowed for broad coverage on foot with approximately 40% survey coverage achieved. For ease of survey and recording, the study site was divided into seven survey units (referred to in this report as A1, A2, A3, etc), generally following cadastral boundaries (Figure 6.10).

This section also discusses Indigenous and non-Indigenous cultural heritage potential, including Aboriginal and non-Aboriginal archaeological potential which is most relevant to this study. The term 'archaeological potential' is defined as the likelihood that a site may contain physical evidence related to an earlier phase of occupation, activity or development. This term is differentiated from 'archaeological significance' and 'archaeological research potential', which are more subjective statements on the value of the archaeological resource and are discussed in more detail in Section 7.0 of this report.

### 6.1.1 Limitations and Constraints of the Survey

The study area is comprised of two discrete poultry farming activity zones—the western properties (A1–A3) for egg production/incubation, and the eastern properties (A4–A7) for free-range meat birds. Biosecurity regulations were in place to minimise the risk of introducing and spreading infectious agents to the flocks and were strictly enforced. These regulations guided movement between farm properties, and thus determined our field survey approach—surveying the higher sensitivity farm first (egg production/incubation) and the 'meat bird' farm second.

Areas immediately surrounding poultry infrastructure (eg buildings, roads and paths between buildings, areas for machinery and equipment storage, and fenced chicken runs) are sensitive biosecurity zones and were excluded from this survey.

The site inspection revealed the study area to have extensive grass coverage and very low soil surface visibility across the majority of the site. Visibility ranged from 0–90% depending on surface exposures and the level of ground cover (including vegetation, imported road gravels, soil and waste dumping). Poor ground-surface visibility across the majority of the site limited the detection of archaeological remains and objects/sites in most areas. The result of this survey must be considered within the context of these site-specific limitations.

### 6.1.2 Land Form and Disturbance

The entire study site has been subject to varying levels of disturbance, from clearing, agricultural activities and erosion to construction of poultry farm infrastructure. Areas surrounding the poultry sheds have been levelled and disturbed as platforms were cut into the natural topography (B horizon). Construction of the numerous stock dams within the study site has also modified the landscape. Five main land use zones were identified within the study area, as described in Table 6.1.

The field inspections focused largely on areas where the ground surface was exposed. These areas comprised a number of internal vehicular tracks, perimeters of dams, tree bases and

fencelines. Whilst small patches of remnant vegetation were scattered across the study site, no old growth trees large enough to have been targeted for scarring were identified. No sandstone outcrops along the creekline were observed.

Table 6.1 presents an overview of the various types of land use forms encountered within the study area.

Table 6.1 Land use forms identified within the study area during field survey.

| Internal vehicle tracks (70-90% visibility) | | |
|---|---|---|
| Location and extent | Description of visibility | Image |
| There were several vehicular access tracks within the study area, including a track running north–south from Spinks Road (see photo right) at the boundary of A6 and A7, and a driveway to a former residence in A1—both of which have been in place since at least 1961. The tracks to and between poultry infrastructure areas (A2 and A5) were not inspected as they formed a 'no-go' biosecurity zone. | The vehicle tracks in A1 and A6/A7 are the areas of highest ground-surface visibility within the study site. Whilst the natural B horizon is clearly evident along the roads, imported road base and aggregate was noted along both roads/tracks. |  |
| **Grazing land (0–15% visibility)** | | |
| Extent and current use | Description of visibility | Image |
| This zone extended across much of the study area, with varying degrees of disturbance from previous agricultural activities. The paddocks are currently used for grazing, with the southern paddocks (near the creekline) having had a higher degree of impact by cow trampling than the paddocks across the northern sector (higher elevation) which are generally less disturbed. | Visibility in these areas was affected by thick grass coverage and was generally very poor. |  |

| Vegetation and scrub (5-10%) | | |
|---|---|---|
| Extent and current usage | Description of visibility | Image |
| This zone extended along the creekline, comprising several isolated pockets surrounding dams and along hill slopes. | This zone included remnant native bushland and scrub, with relatively dense ground and understorey coverage leading to poor ground-surface visibility. |  |
| **Dams (10-20% visibility)** | | |
| Extent and current usage | Description of visibility | Image |
| This zone occurred in isolated areas across the study site and comprised the bodies of water and associated bunds. There were at least eleven dams within the study site. | Ground exposure visibility varied between dams. Whilst several dams had embankment exposure, others had turf or vegetation extending right to the water's edge. |  |
| **Poultry farm infrastructure ('no-go' areas)** | | |
| Extent and current usage | Description of visibility | Image |
| This zone was isolated primarily to areas A1–A3 and A5 and comprised the poultry sheds (seen from a distance in photo right), runs, tracks and roads, machinery and storage areas. This was a 'no-go' zone and was excluded from the pedestrian survey. | Unknown ground visibility, however it can be assumed that cut and levelling activities impacted upon natural landforms in these areas. |  |

### 6.1.3 Demonstration of Survey Coverage

The pedestrian field survey was guided by ground visibility, that is, areas of interest as defined by the predictive model were targeted. The survey routes were recorded and plotted using a Garmin handheld GPS set to the MGA coordinate system onto 1:25,000 ArcMap topographical maps. Digital photographic records, sketch plans, and diary descriptions were also compiled as part of the field records. The team split into groups to extend coverage during the pedestrian survey and also undertook vehicular coverage, as shown in Figure 6.1.

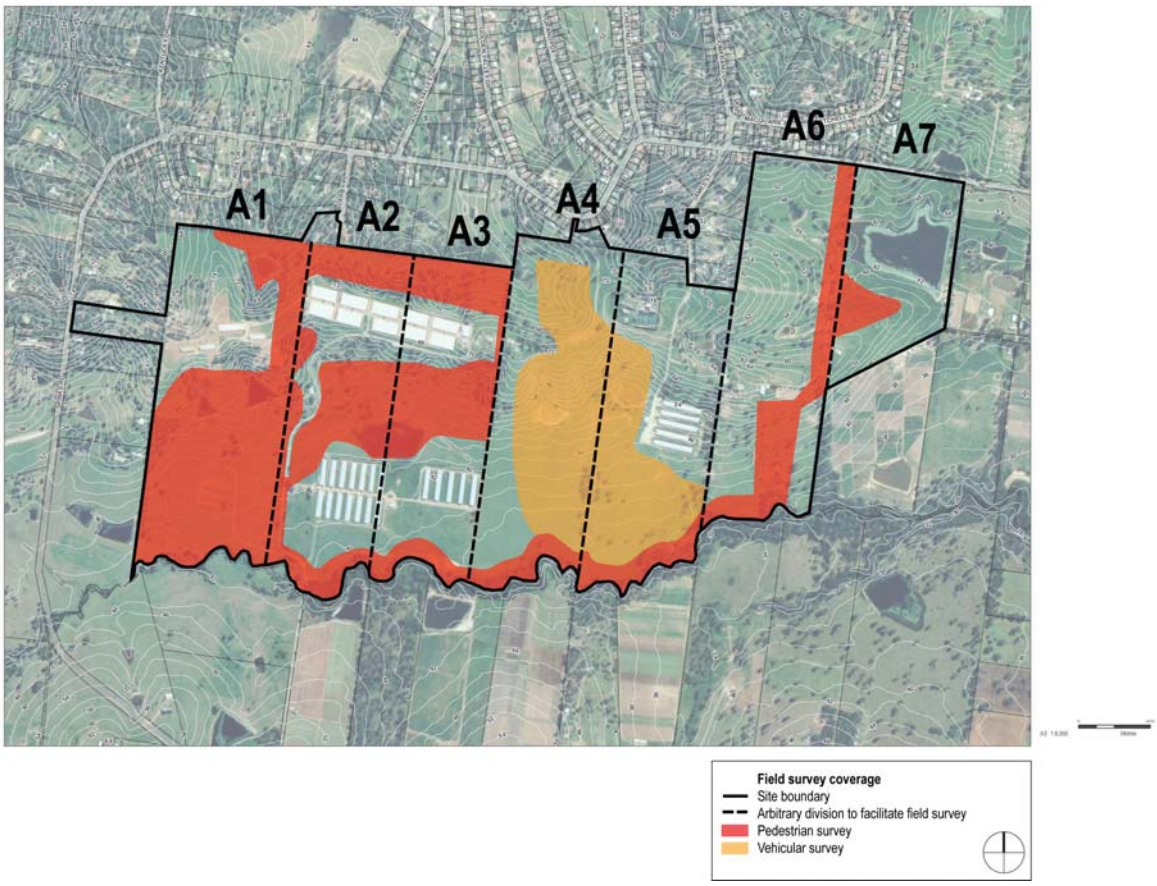



Figure 6.1 Field survey coverage. (Source: GML 2009)

## 6.2 Findings and Assessment of Heritage Potential

### 6.2.1 Preamble

This section discusses the nature and extent of the site's identified heritage resources. The archaeological and heritage potential of the site has been evaluated through consideration of the observed physical evidence, examination of historical information related to the development and occupation of the site, and documentation and evidence of activities (including construction of site features) that would have disturbed archaeological remains and other heritage resources associated with former site features and activities.

### 6.2.2 Aboriginal Archaeological Resource—Identified Sites

A total of two isolated stone artefacts were identified within the study area (Figure 6.2). They both occurred on dirt vehicle tracks or internal roads where ground-surface visibility was highest (75–85%). These included one flaked piece and one flake. These artefacts (also referred to in this report as 'sites') have been named with the prefix JCP (Jacaranda Ponds) and numbered 1 and 2. A complete lithics catalogue is provided in Appendix c Both artefacts will be listed on the AHIMS register and completed site cards for these sites are included in Appendix D.

A number of naturally occurring silcrete cobbles were identified across the site and these are believed to be naturally derived, as they were of poor quality material and did not show evidence of working.

95% of Currency Creek was walked and despite the strong prediction factor, no artefactual material was identified. This was primarily due to thick vegetation cover up to the creekbanks which limited the opportunity for soil surface visibility. Furthermore, the riparian zone has been impacted by cattle tramping and erosion in places.

### JCP1

JCP1 is the site of an isolated flaked piece of red/yellow mudstone which was embedded in the road surface (natural B horizon) in the southwest section of the study area (A1) (Figures 6.3 and 6.4). This road was the original access road to the residence on the property and has been in place since at least 1961. The artefact had one possible negative flake scar.

It is notable that while there was very good ground visibility along the roads in A1 and A2, this was the only artefact found.

### JCP2

JCP2 is the site of an isolated yellow mudstone flake located on the vehicle track which runs north–south between A6 and A7 (Figure 6.5). The track's composition includes introduced gravel road base in some places. As the flake was loose and among these gravels, it is highly probable that it was introduced as part of the road base. Mudstone is a material likely to be derived locally, but the original provenance of this artefact was impossible to determine.


Figure 6.2 Locations of sites JCP1 and JCP2. (Source: GML 2009)

Figure 6.3 JCP1: mudstone flaked piece. (Source: GML 2009)


Figure 6.4. JCP1 detail. (Source: GML 2009)


Figure 6.5 JCP2: mudstone flake. (Source: GML 2009)

### 6.2.3 Statement of Indigenous Heritage Potential

#### Archaeological Heritage Resource

The following assessment of Aboriginal archeological potential is based on land use history. At least one area within the study site is assessed to have high potential to contain subsurface archaeological material and the creekline is assessed to have moderate potential (Figure 6.11).

The area of high potential is comprised of the hill crest to the immediate south of the dam in A7, which extends in a southwesterly direction to the access road/track along the boundary of A6 and A7. There were nil ground-surface exposures along the hill crest due to thick grass coverage, thus the presence of surface artefactual material could not be confirmed. This relatively undisturbed area is assessed as an area of PAD (Potential Archaeological Deposit) which includes potential to contain surface as well as subsurface lithic material. Its potential is indicated by good site amenity including views to the north and south, its proximity to Currency Creek and its being on an area of good drainage. Furthermore, this landform would conform to predictive models based on known site patterning in the Cumberland Plain—that is, sites are predominantly open campsites/artefact scatters and can occur along elevated areas proximate to creeklines. It is identified in this report at PAD1.

An Aboriginal stakeholder group (DCAC) has identified the ridgeline in A7 as an area that they would like to have included in a testing program. The apex of this ridge is located to the north of the study site and only the mid-slope is situated within its property boundary. The mid-slope may well contain a diffused distribution of subsurface artefacts; however, this area is likely to have been subject to ground disturbance from road construction and/or service installation. Therefore, the ridgeline has not been weighted as having the same degree of potential as the identified PAD (PAD1), or the moderate potential zone along Currency Creek.

The Currency Creek corridor is assessed as having moderate archaeological potential, based on the predictive model of sites in the region where sites occur proximate to creeklines and creek flats. This zone extends 100m north from the creekline, and effectively includes the riparian zone. This area also forms part of the development setback—that is, development regulations would prevent works and construction within the riparian zone. The proximity of JCP1 to this moderate potential zone (just outside of 100m from the creekline) on one of the only areas of good ground visibility may well support the assessment of potential for this zone.

The remainder of the site is assessed as having low to nil archaeological potential based on land use history and areas of disturbance.

A completed AHIMS Register site card for the hill crest PAD (PAD1) is included in Appendix D. An area along Currency Creek was identified through predictive modelling as having moderate potential. As poor ground surface visibility restricted comprehensive surveying along the Currency creekline corridor, this area will not be registered as a separate PAD at this stage. It will, however, be noted on the PAD1 site card.

#### Non-Archaeological Indigenous Heritage Resource

There is low potential for other forms of non-archaeological Indigenous heritage such as scarred trees to exist on the site because of its history of land use and disturbance. Consultation with the local Aboriginal stakeholder groups was undertaken in the course of this study in order for the community to determine the cultural significance of identified Aboriginal heritage sites within the study area.

### 6.2.4 Non-Indigenous Heritage Resource: Findings

During the field survey no evidence of early structures (houses, outbuildings or sheds) was found. There was no evidence of any deep features such as wells or pits, nor isolated artefacts indicating existence of a possible early homestead. A number of disused timber fenceposts were observed at the various locations of the site. A wooden post fence running east–west along Currency Creek and north–south was delineating a block of unworked land. The large fenceposts were constructed of machine-cut timber and featured machine-drilled holes for wire (Figures 6.6 and 6.7). Former fence wire remains were scattered across the site. Given the fabric and location of the posts they most likely represent early to mid twentieth-century rural land use. A residence (now demolished) likely to have dated from the mid-twentienth century was located in A1. This area may include in-situ subsurface features such as footings or services. This site, however, is not identified as being of archaeological interest. Several twentieth-century timber sheds and one iron shed were observed across the site (Figures 6.8 and 6.9).

### Statement of Non-Indigenous Heritage Potential

The documentary evidence does not indicate any specific development or activities within the study area that would give rise to substantial archaeological evidence. Development across the site prior to the mid-to-late twentieth century appears to have been limited to general faming and land management practices such as crop raising, stock grazing, and associated features such as fencelines, sheds, dams, roads/tracks, wells and rubbish dumps. While evidence of these features may survive across the landscape (eg postholes, shed footings, former road/track surfaces, rubbish dumps, and archaeobotanical evidence), such remains would probably be fragmentary and it would be difficult to predict the location and extent of this evidence. Moreover, based on their relatively recent age, built structures within the study site have not been identified as heritage items. There is therefore low potential for non-Indigenous heritage resources, including historical archaeology, to exist within the study site.

Figure 6.6 A fenced-off block of land was located in the southwest portion of the site. This west-looking view shows part of the wood post fence running along Currency Creek. (Source: GML 2009)

Figure 6.7 North-facing view showing the north–south post alignment of the fence featured in Figure 6.6. (Source: GML 2009)

Figure 6.8 Twentieth-century corrugated-iron shed located east of the timber fence represents one of the very few farming structures within the study area. (Source: GML 2009)

Figure 6.9 One of several twentieth-century timber sheds across the study area. (Source: GML 2009)

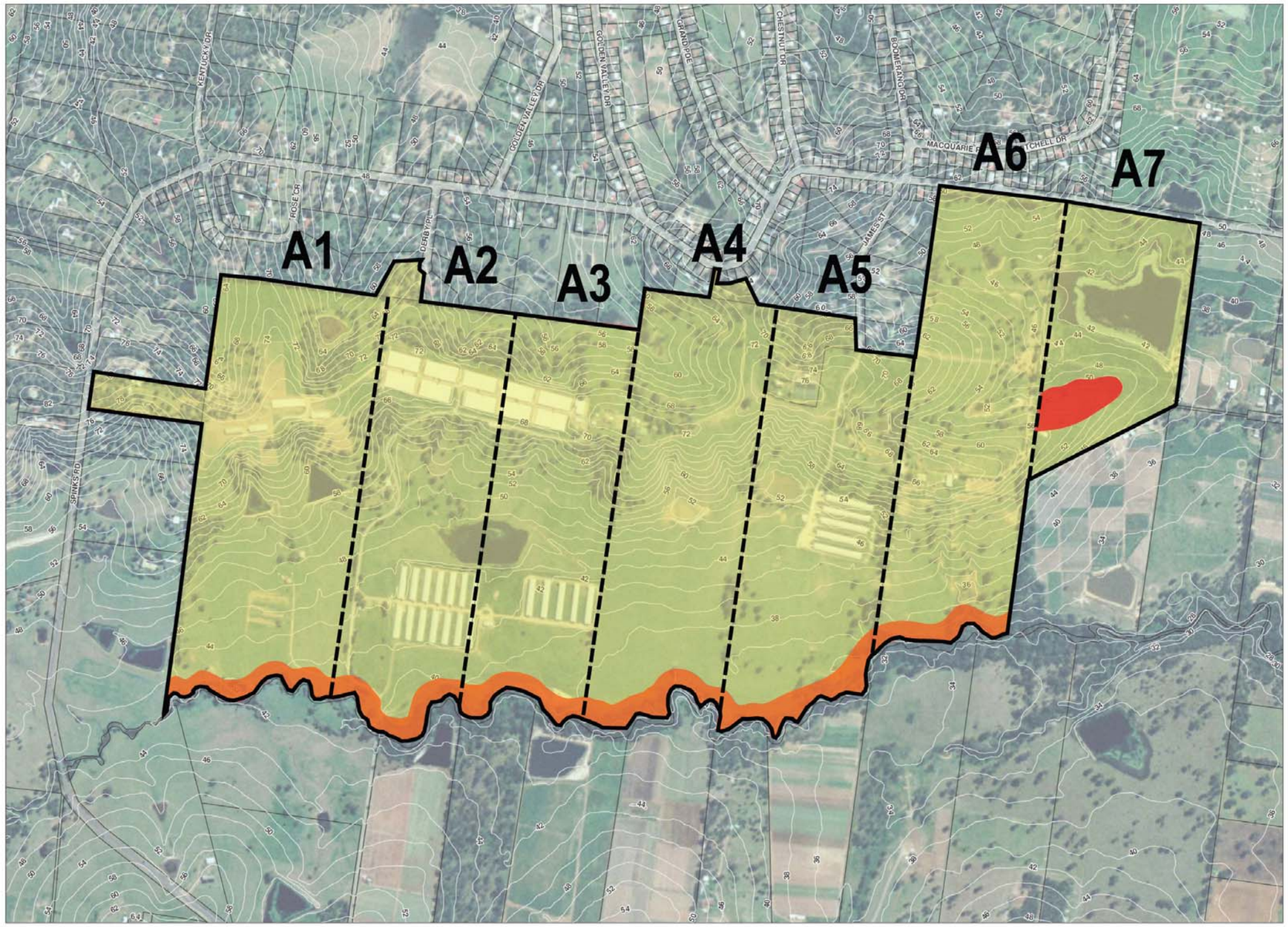



Figure 6.10 Areas of Aboriginal archaeological potential. (Source: GML 2009)

# 7.0 Significance Assessment

## 7.1 Indigenous Heritage Resource

### 7.1.1 Background

An assessment of significance provides important information on which the Department of Environment and Climate Change and Water (DECCW) can base its decisions regarding the management and protection of Aboriginal heritage sites in New South Wales. The significance of Aboriginal cultural heritage is generally assessed under four criteria commonly applied in Aboriginal cultural heritage management. These criteria are based primarily on the standards outlined in the ICOMOS Burra Charter, which is generally considered to set best-practice standards for the management and conservation of places of cultural significance within Australia. Cultural significance, as defined under the Burra Charter, relates to the aesthetic, historic, scientific and social significance of a site or place, and thus emphasises not only the scientific but also the social values of a site or place. This emphasis is similarly embodied in the principles of DECCW, which places emphasis on consultation with Aboriginal stakeholders when assessing the cultural significance of Aboriginal objects and/or places. DECCW recognises that:

- *Aboriginal heritage has both cultural and scientific/archaeological significance and that both should be the subject of assessment to inform its decision-making;*
- *Aboriginal people are the primary determinants of the significance of their heritage;*
- *Aboriginal community involvement needs to occur early in the assessment process to ensure that their values and concerns are taken duly into account, and so that their decision-making structures are able to function;*
- *Information arising out of consultation allows the consideration of Aboriginal community views about the significance and impact, as well as the merits of management or mitigation measures to be considered in an informed way.*[1]

Based on these guidelines, significance is assessed under four criteria:

- **Cultural value—**The cultural significance of a place relates to its value and importance to Aboriginal people, and thus significance under this criterion can only be assessed in consultation with Aboriginal stakeholders.
- **Scientific/archaeological value—**This refers to the potential for a site or place to provide scientific or archaeological information, and includes a site's research potential. Assessment of significance under this criterion can consider the rarity of a particular site within the wider archaeological context.
- **Aesthetic value—**This relates to the sensory value of a site or place and is typically applied to art or mythological sites of impressive visual character or presence.
- **Educational value—**This criterion relates to the potential of a site to be used for educational or recreational purposes within the community.

### Cultural Value

Cultural significance relates to the value of a site or place to the local Aboriginal community, and thus can only be determined in consultation with representatives of that community. All evidence of Aboriginal cultural heritage tends to have some level of contemporary significance to Aboriginal people through its tangible link to past people, places, lifeways and country. These values are often very complex and cannot be considered in the same way that an assessment of scientific or archaeological significance can.

In the current study, the identified isolated artefact sites are not rare or unique within the local landscape. Whilst the two sites may not be significant to the Aboriginal community as individual sites, they are likely to have inherent meanings around connection to place and their importance as tangible evidence of Aboriginal presence in the landscape.

Consultation with the local Aboriginal stakeholder groups was undertaken in the course of this study in order to determine the cultural significance of identified Aboriginal heritage sites within the study area. Selected comments on the cultural values of the site follow below:

> *This area is the undisputed traditional land of the Darug and is in very close proximity to some very significant sites and areas to our people, there is a silcrete quarry near Freeman's Reach school that would have been a resource used by our people, therefore our people would have revisited this area for thousands of years.*
>
> *This area was a very important place for the local Darug clan—the Boonoobeaongal—being rich in resources, for both gathering and hunting.*

### Scientific/Archaeological Value

Scientific or archaeological significance is measured by considering a site's potential to provide scientific information that may answer research questions and considering its rarity or representativeness. Significance assessment under this criterion relates to identified archaeological sites as well as areas assessed to have potential for archaeological deposits.

The site types identified within the study area (isolated finds) are not rare within the local area, and could be considered as part of the 'background scatter' of isolated artefacts which occur across the Cumberland Plain. *They hold no scientific/archaeological value for their potential to contribute to the further development of these regional interpretations.*

Areas of assessed archaeological potential are as follows:

> The hilltop crest in A7 is assessed as having high potential to provide information about activity in this area through surface or subsurface deposits. However, the nature of the PADs is unlikely to present scientific information that is substantial, but rather is likely to augment existing knowledge of Cumberland Plain occupation. The existing hilltop crest is thus assessed as having low to moderate significance under this criterion.
>
> Due to major environmental impacts such as cattle tramping and erosion, the area along the creekline is assessed as having moderate potential to provide information about activity along this water resource and low to moderate significance.

The scientific or archaeological significance of identified sites within the study area is assessed to range from low to moderate, as described above.

### Aesthetic Value

Aboriginal sites identified within the study area do not demonstrate aesthetic qualities of notable value or rarity, so their significance under this criterion is assessed to be nil.

### Educational Value

Aboriginal sites identified within the study area do not possess particular qualities or attributes that would render them as being suitable educational sites, so their significance under this criterion is assessed to be low.

### 7.1.2 Summary Statement of Significance—Indigenous Heritage Resource

The assessment of the Indigenous heritage resource within the study area has determined them to be of generally low significance because of their likely scientific/archaeological values, as well as their aesthetic and educational value.

## 7.2 Non-Indigenous Heritage Resource

The *NSW Heritage Manual* guidelines (as amended July 2002), prepared by the (then) New South Wales Heritage Office and Department of Urban Affairs and Planning, provide the framework for assessing heritage significance under the *Heritage Act 1977* (NSW) (the Heritage Act). These guidelines incorporate the five types of cultural heritage values identified in the Burra Charter into a set of specific criteria for assessing the significance of an item, including guidelines for inclusion and exclusion.[2]

The Heritage Council of NSW has adapted specific criteria for heritage assessment which have been gazetted pertinent to the Heritage Act. The seven criteria upon which the following significance assessment is based are outlined below and then applied to the study site:

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

Given the limited potential for the site to contain historical archaeological evidence that could contribute substantial information about the site, a detailed assessment of the significance of the

site's non-Indigenous cultural heritage resource against these criteria has not been prepared. The site's heritage significance has been summarised as follows:

### 7.2.1 Statement of Significance—Non-Indigenous Heritage Resource

The study area was divided into a number of land grants in the early nineteenth century and has generally remained farmland ever since. The study area has been predominantly used for stock grazing and crop raising throughout its (post-settlement) non-Indigenous history, with more focused land use such as orcharding and poultry farming in the mid-to-late twentieth century. The documentary evidence does not indicate any specific occupation of the site (such as houses or other structures) prior to the mid twentieth century. Historical archaeological evidence at the site would probably be limited to generic features such as former fencelines, sheds, dams, roads/tracks, rubbish dumps and possibly deeper subsurface features such as wells or pits. This evidence would probably be scattered across the site and fragmentary. Any such evidence would have limited research potential for its ability to contribute new or substantial information about the site that could not be obtained from other sources. On this basis, the study area is considered to have little historical archaeological potential or significance. Furthermore, built structures on the site (corrugated-iron sheds, timber outbuildings, fenceposts) all relate to mid twentieth-century land management and have no intrinsic heritage significance.

## 7.3 Endnotes

1 Department of Environment and Conservation (NSW), 2005, Interim Community Consultation Requirements for Applicants.

2 New South Wales Heritage Office and New South Wales Department of Urban Affairs and Planning, Sydney 2001, Assessing Heritage Significance (a *NSW Heritage Manual* update), New South Wales Heritage Office.

# 8.0 Conclusions and Recommendations

## 8.1 The Indigenous Heritage Resource

### 8.1.1 Conclusions

- GML has undertaken a combined Indigenous and Non-Indigenous Heritage Assessment for the Jacaranda Ponds site.
- There were no previously recorded sites within the study site and 19 recorded sites in the vicinity.
- Poor ground-surface visibility across the majority of the site limited the opportunity for identification of Aboriginal archaeological objects or sites across most of the study area.
- Biosecurity guidelines restricted access to areas immediately surrounding poultry infrastructure (eg buildings, roads and paths between buildings, areas for machinery and equipment storage and fenced chicken runs) and these areas were excluded from the field investigations.
- Field survey of the study area employing a targeted sampling strategy, in collaboration with DLALC, DACHA, DCAC and DTAC, identified a total of two isolated mudstone artefacts (JCP1 and JCP2). These sites have been assessed as having low overall significance given their limited research potential and educational value.
- Both artefacts have been recorded and completed site cards for these sites will be lodged with DECCW for inclusion on the AHIMS register.
- An area assessed as having high potential for surface and/or subsurface archaeological deposits (PADs) was identified along the eastern hill crest (A7); however, based on the known site types of the region, any identified sites would probably be of low to moderate archaeological significance.
- The Currency Creek corridor is assessed as having moderate potential to contain surface and/or subsurface archaeological deposits (PADs) and low to moderate archaeological significance. It is understood that development regulations would prevent any construction within the riparian zone. The area of moderate potential along Currency Creek is therefore unlikely to be affected by any future development of the site.
- A completed site card for the PAD (high and moderate areas) will be lodged with DECCW for inclusion on the AHIMS register.
- No other Indigenous heritage resources, such as scarred trees, were identified.
- All Aboriginal stakeholder groups consulted (DACHA, DTAC, DCAC and DLALC) have expressed support for the findings and recommendations of this assessment.
- DCAC has requested that the ridgeline in A7 also be included in a Section 87 testing program.
- DLALC has requested that any construction or activity that may disturb the topsoil on the creek flats should be monitored by a DLALC representative.

### 8.1.2 Recommendations

- If further development, including excavation, is proposed, an Aboriginal archaeological testing program would be appropriate for the areas of high and moderate archaeological potential and should be undertaken in accordance with a Section 87 permit issued by DECCW. The application must include an Archaeological Research Design that outlines the proposed method of surface collection, recording, archaeological excavation, and artefact analysis to answer research questions that are relevant to the site.
- Further to the recommendation above, DLALC has requested that any proposed activity that may disturb the topsoil of the creek flats (Currency Creek corridor) be subject to archaeological monitoring. However, no development activity should occur within the riparian corridor as per development regulations.
- As DCAC has requested that the ridgeline in A7 be included in a Section 87 testing program, this request should be considered at such time that any development is proposed for this area.
- The two archaeological objects located during this investigation (JCP1 and JCP2) are considered to be of low significance. If these sites cannot be avoided by development, an application should be made to DECCW for a Heritage Impact Permit under Section 90 of the *National Parks and Wildlife Act 1974* (NSW) (NPW Act) to permit the salvage or destruction of the two sites.
- Should Aboriginal objects be identified during the development in the low/nil potential zone, works must stop and a suitably qualified archaeologist should be called in to document and assess the finds, in accordance with the provisions of the NPW Act.
- If human remains are unexpectedly discovered during any development works on the property, the finding should immediately be reported to the New South Wales Coroner's Office and/or the New South Wales Police. If the remains are suspected to be Aboriginal, DECCW should also be contacted and a specialist should be called in to determine the nature of the remains.
- Draft copies of this report will be forwarded to DLALC, DTAC, DCAC and DACHA for comment. Cultural assessments and comments received from these organisations will be incorporated into the final report.

## 8.2 The Non-Indigenous Heritage Resource

### 8.2.1 Conclusions

- The study area was divided into a number of land grants in the early nineteenth century.
- Since that time, the study area has been predominantly used for low-intensive farming, such as crop raising and stock grazing.
- The study area may have some potential to contain fragmentary archaeological evidence associated with generic farming activities.

- This evidence would have limited research potential to contribute new or substantial information about the study area.
- There are no previously identified heritage items within the study area or in the vicinity.
- Built structures on the site are limited to twentieth-century houses, sheds and outbuildings.
- The study area is considered to have little or no non-Indigenous archaeological potential or heritage significance.

### 8.2.2 Recommendations

- On the basis of this assessment, there would be no requirements for approval from the Heritage Branch, Department of Planning on non-Indigenous heritage grounds to develop this site.
- In the unlikely event that unexpected archaeological evidence relating to non-Indigenous occupation of the site not identified by this assessment were to be discovered during site works, the Heritage Branch, Department of Planning must be notified in accordance with Section 146 of the Heritage Act.

# 9.0 Appendices

## Appendix A

Newspaper Advertisement—Invitation for Stakeholder Registration of Interest

## Appendix B

Response letters from Aboriginal stakeholder groups

## Appendix C

Lithics Catalogue

## Appendix D

Site Cards for JCP1, JCP2 and PAD1

## Appendix A

Newspaper Advertisement—Invitation for Stakeholder Registration of Interest

## NOTIFICATION AND REGISTRATION OF ABORIGINAL INTEREST

An Aboriginal cultural heritage assessment is being conducted at (Lot 2 DP533402, Lot 3 DP230943, Lot 20 DP214753, Lot 50 DP751637, Lot 52 DP1104504, Lots 1, 2 & 3 DP784300, Lot 75 DP214752, Lot 20 DP214753; and Lot 44 DP214755) in Glossodia, NSW.

Accordingly, an application to the Department of Environment and Climate Change (DECC) for approval under Part 6 of the *National Parks and Wildlife Act 1974* may be required if Aboriginal objects are identified during archaeological survey of the site.

Relevant Aboriginal groups and individuals are invited to register their interest in the Aboriginal cultural heritage assessment. Registrations must be received by Wednesday 12th August 2009. Please register in writing to:

EG Property Group
c/- Godden Mackay Logan Pty Ltd
Attn: Ms. Fiona Leslie
78 George Street
REDFERN NSW 2016
Fax: (02) 9319 4383

## Appendix B

Response letters from Aboriginal stakeholder groups

DARUG CUSTODIAN ABORIGINAL CORPORATION
PO BOX 81 WINDSOR 2756
PH: 45775181 FAX: 45775098 MOB: 0415770163
ABN: 81935722930
mulgokiwi@aol.com

12-11-09.

Attention: Erin Finnigan.

SUBJECT: Jacaranda Ponds, Glossodia- Heritage Assessment Draft Repot.

Dear Erin,

The Darug Custodian Aboriginal Corporation have received and read the Draft Aboriginal Cultural Heritage Assessment for Jacaranda Ponds Glossodia, we support the findings and recommendation set out within this report, we would like to add that the ridgeline (A7) be included in a s87 testing program as recent test excavations have shown that the ridgelines do have moderate to high potential, we need to move away from predictive models and test these theories.

This area is the undisputed traditional land of the Darug and is in very close proximity to some very significant sites and areas to our people, there is a silcrete quarry near freemans reach school that would have been a resource used by our people, therefore our people would have revisited this area for thousands of years.

We participated in the survey of this property and had the same conclusions as set out within this report. We look forward to working with you on this project and hopefully gain some new knowledge from the s87 process. We would also recommend that all materials found during works be reburied in a safe area after analysis.

Please contact us with any further enquiries on the above numbers.

Regards
Leanne Watson

# Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton & Associates

Mob: 0422 865 831
Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

24.11.09

Attention
Erin Finnegan
G.M.L.

re Jacaranda Ponds - Glossodia

This area was a very important place for the local Darug clan - the Boorooberongal - being rich in resources, for both gathering and hunting. On the day of our survey the land was heavily vegetated and almost no ground was visible. DECCW proposes a Darug Aboriginal archaeological testing program in the areas of moderate to high potential and we support the application for a Section 87 Permit for exploration of this important area to the Darug.

Yours Sincerely,
G.W. Morton
&
C. Everingham

# DARUG TRIBAL ABORIGINAL CORPORATION

PO Box 441
Blacktown, NSW, 2148
PH: (02) 9622 4081
Mobile 041 543 925
Email: darug_tribal@live.com.au
ABN: 77 184 151 969 ICN: 2734

27th October 2009

Erin Finnegan

**Heritage Consultant**

Godden Mackay Logan Heritage Consultants

Re: Jacaranda Ponds Heritage Assessment Draft Report

Having read and support the draft report and we cannot see why this project should not go ahead following all recommendations it contains.

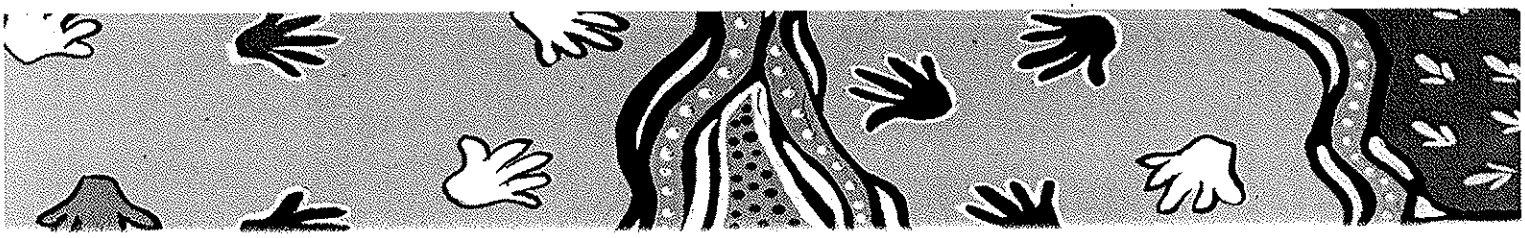
We also support the application for a section 87 permit.

*Hugs & Smiles*

*Sandra Lee*

Secretary

Darug Tribal Aboriginal Corporation



# DARUG TRIBAL ABORIGINAL CORPORATION

PO Box 441
Blacktown, NSW, 2148
PH: (02) 9622 4081
Mobile 041 543 925
Email: darug_tribal@live.com.au
ABN: 77 184 151 969 ICN: 2734

10/11/09

Dear Erin

Re: Jacaranda Ponds, Glossodia- Heritage Assessment Draft Report

Reading the draft report we support the application for section 87 permit and can see no reason this project should not proceed following all the recommendations.

*Hugs & Smiles*

*Sandra Lee*

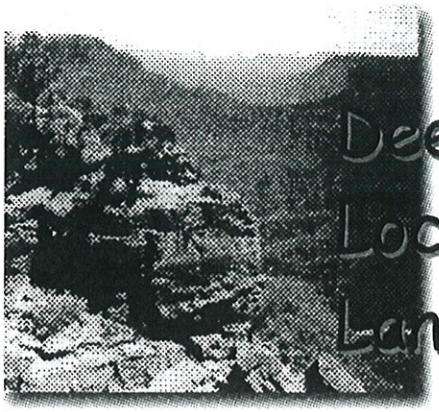
Secretary

Darug Tribal Aboriginal Corporation

DARUG

THE TRADITIONAL CUSTODIANS OF DARUG LAND

www.darug.org.au



# Deerubbin Local Aboriginal Land Council

5/271 Beames Avenue
PO Box 3184
Mt Druitt Village
NSW 2770 Australia

Ph: (02) 9832 2457
Fax: (02) 9832 2496
Email: Staff@Deerubbin.org.au
Web: http://www.deerubbin.org.au

EG Property Group
Level 14, 345 George Street
**SYDNEY NSW 2000**

Our Reference: 2075

30 October 2009

**SUBJECT: PROTECTION OF ABORIGINAL CULTURAL HERITAGE**
**Several Rural Properties, Jacaranda Ponds**
**Glossodia. NSW**

2 NOV 2009

Attention: Jeremy Spinak

A representative of Deerubbin Local Aboriginal Land Council (Steve Randall) inspected rural several properties, Glossodia on the 1st September 2009. An Aboriginal cultural heritage assessment was undertaken to evaluate the likely impact the future development has on the cultural heritage of the land. Consulting archaeologist Erin Finnegan of Godden Mackay Logan carried out a scientific survey at the same time.

Our representative reports, that visibility was poor because of the grass cover and the ground disturbance, no Aboriginal cultural materials (in the form of stone artefacts, for example) were found, however the consulting archaeologist located a potential archaeological deposit (PAD).

Deerubbin LALC therefore, recommends further investigations in the areas that have potential for subsurface Aboriginal artefacts, furthermore any construction or activity that may disturb the topsoil on the creek flats, Deerubbin Local Aboriginal Land Council will require our representative to monitor such works.

Yours Faithfully,

Kevin Cavanagh
(Chief Executive Officer)

C.c. Miranda Firman, Planning & Aboriginal Heritage Section, Dept. of Environment, Climate Change & Water

C.c. General Manager, Hawkesbury City Council

C.c. Erin Finnegan – Godden Mackay Logan, Heritage Consultants

**COPY**

# Appendix C

Lithics Catalogue

| ID Number | Easting | Northing | Photo ID | Artefact Type | Material | Colour | Grain Size | Cortex | Max dimen (cm) | # Flake scars (core) | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JCP1 | 292197 | 6286001 | 6.4 & 6.5 | flaked piece | mudstone | Yellow/red | fine | - | | 1 possible | Embedded in vehicle access road, 85% visibility |
| JCP2 | 293745 | 6286585 | 6.6 | flake | mudstone | Light yellow | fine | _- | | - | On vehicular track among gravels (likely imported) -75% visibility |

# Appendix D

Site Cards for JCP1, JCP2 and PAD1

# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Department of Environment & Climate Change NSW

**Office Use Only**

**Site Number** | | | - | | - | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

### For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☒ **Knowledge Holder** NUMEROUS KNOWLEDGE HOLDERS – SEE ATTACHED REPORT

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name JACARANDA PONDS 1 (JCP1)

Easting 292197 Northing 6286001 AGD/GDA GDA

Mapsheet WILBERFORCE

**Zone** 56 Location Method NON-DIFFERENTIAL GPS

Other Registration

## Primary Recorder

Title | Surname | First Name | Initials

MS | ERNEGAN | ERIN | R

Organisation GODDEN MACKAY LOGAN PTY LTD

Address 78 GEORGE ST REDFERN NSW 2016

Phone number 02 93194311 Fax 02 93194383

Date recorded 03/09/2009

Client on system ☐

# NPWS Aboriginal Site Recording Form - Site Information



**OPEN/CLOSE SITE** OPEN

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [x] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [x] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [x] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [x] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

### Water

| | |
|---|---|
| Distance to permanent water source | ≈ 100 metres |
| Distance to temporary water source | metres |
| Name of nearest permanent water source | CURRENCY CREEK |
| Name of nearest temporary water | |

Directions for Relocation

REFER TO ATTACHED REPORT

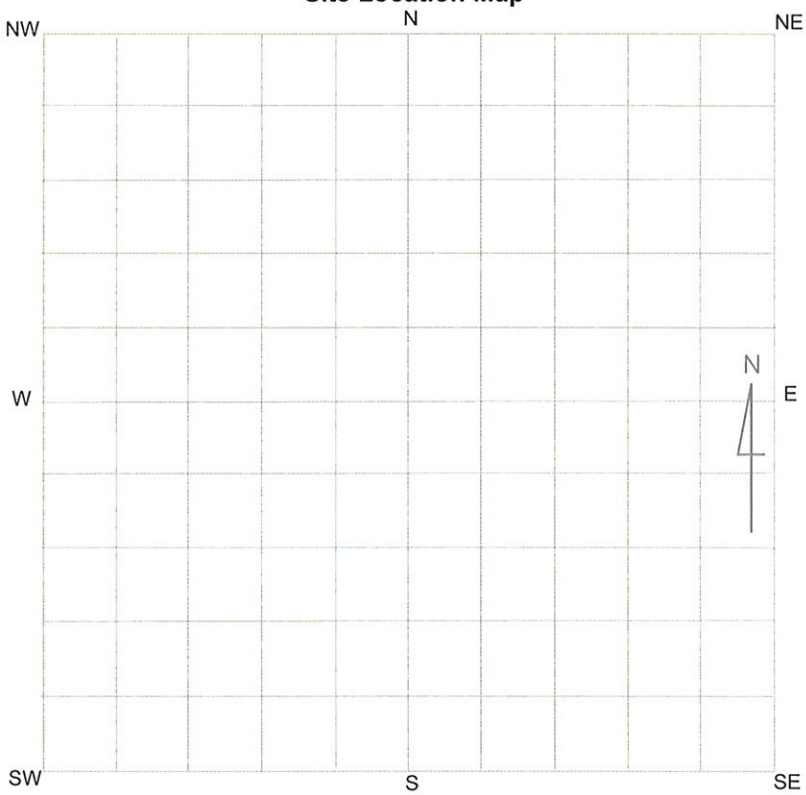
### Current Land Tenure

- [ ] Public — National Park / other Government Dept.
- [x] Private

### Primary report I.D. [ ] (I.D. Office Use only)

JACARANDA PONDS, GLOSSODIA - INDIGENOUS AND NON-INDIGENOUS HERITAGE ASSESSMENT - FINAL REPORT DECEMBER 2009

### Site Location Map



# NPWS Aboriginal Site Recording Form - Site Information



## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

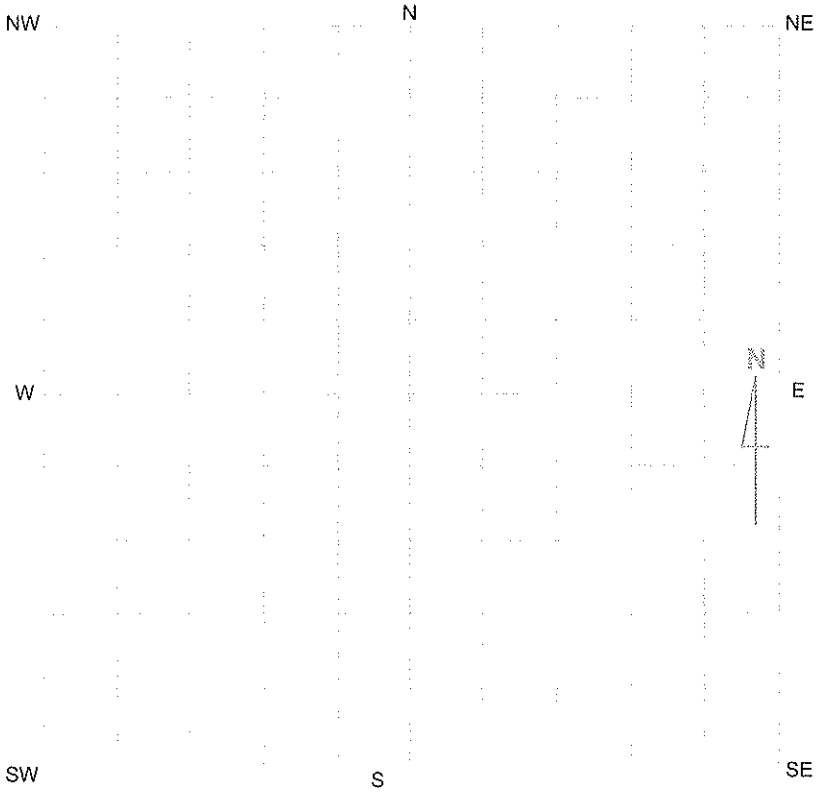
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [X] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [X] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions n/a

**Closed Site Dimensions (m)**

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

**Open Site Dimensions (m)**

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

**Aboriginal Community Interpretation and Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

This section should only be filled in by the Endorsees PLEASE REFER TO ATTACHED REPORT

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

| Title | Surname | First Name | Initials |
|---|---|---|---|
| | | | |

Organisation

Address

Phone number Fax

**Attachments (No.)**

- [X] A4 location map
- [X] B/W photographs
- [X] Colour photographs
- [X] Slides
- [X] Aerial photographs
- [X] Site plans, drawings
- [X] Recording tables
- [ ] Other
- [ ] Feature inserts-No. ☐

**Comments**

PLEASE REFER TO ATTACHED REPORT

# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Department of Environment & Climate Change NSW

**Office Use Only**

**Site Number** | | | - | | - | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

### For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☒ **Knowledge Holder** NUMEROUS KNOWLEDGE HOLDERS - SEE ATTACHED REPORT

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name JACARANDA PONDS 2 (JCP2)

Easting 293745 Northing 6286585 AGD/GDA GDA

Mapsheet WILBERFORCE

**Zone** 56 Location Method NON-DIFFERENTIAL GPS

Other Registration

## Primary Recorder

Title | Surname | First Name | Initials

MS | FINNEGAN | ERIN | R

Organisation GODDEN MACKAY LOGAN PTY LTD

Address 78 GEORGE ST REDFERN NSW 2016

Phone number 02 9319 4811 Fax 02 9319 4383

Date recorded 03/09/2009

Client on system ☐

# NPWS Aboriginal Site Recording Form - Site Information



**OPEN/CLOSE SITE** OPEN

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [X] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [ ] Crest
- [ ] Flat
- [X] Lower slope
- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [X] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
- [ ] Industrial
- [ ] Mining
- [X] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [X] Transport corridor
- [ ] Urban expansion
- [ ] Residential

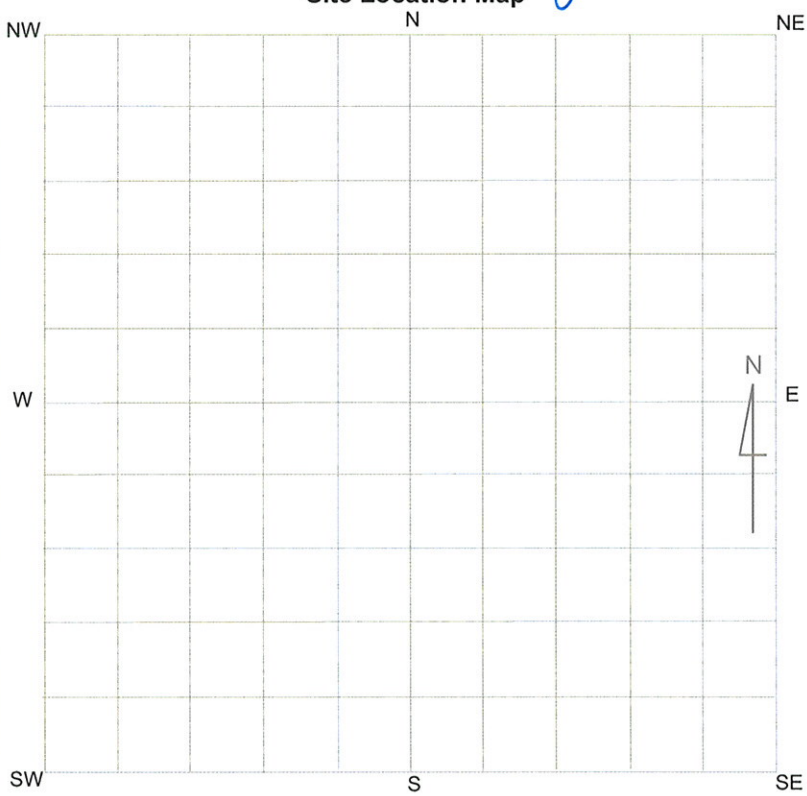
### Water

| | |
|---|---|
| Distance to permanent water source | ≈ 500 metres |
| Distance to temporary water source | ≈ 300 metres |
| Name of nearest permanent water source | (Currency Creek) |
| Name of nearest temporary water | (farm dam) |

### Directions for Relocation

REFER TO ATTACHED REPORT

### Site Location Map




### Current Land Tenure

- [ ] Public
- [X] Private

National Park / other Government Dept.

### Primary report I.D.

(I.D. Office Use only)

JACARANDA PONDS, GLOSSODIA - INDIGENOUS AND NON-INDIGENOUS HERITAGE ASSESSMENT - FINAL REPORT, DECEMBER 2009

# NPWS Aboriginal Site Recording Form - Site Information



## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

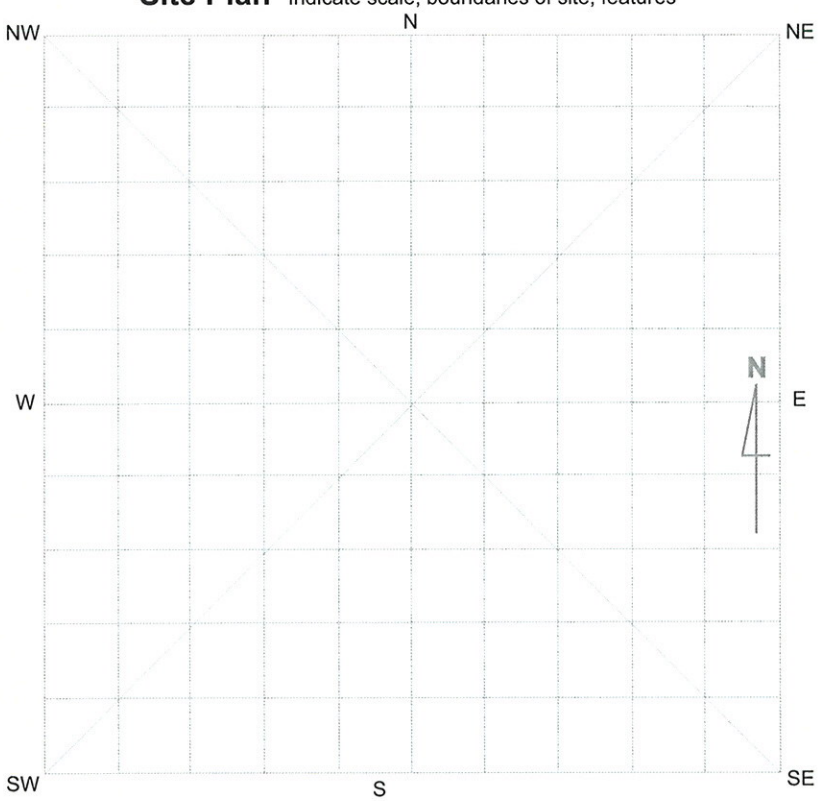
- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [X] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
- [X] 4. Artefact
- [ ] 5. Burial
- [ ] 6. Ceremonial Ring
- [ ] 7. Conflict
- [ ] 8. Earth Mound
- [ ] 9. Fish Trap
- [ ] 10. Grinding Groove
- [ ] 11. Habitation Structure
- [ ] 12. Hearth
- [ ] 13. Non Human Bone & Organic Material
- [ ] 14. Ochre quarry
- [ ] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions n/a

**Closed Site Dimensions (m)**

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

**Open Site Dimensions (m)**

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

**Aboriginal Community Interpretation and Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

PLEASE REFER TO ATTACHED REPORT.

This section should only be filled in by the Endorsees PLEASE REFER TO ATTACHED REPORT

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

| Title | Surname | First Name | Initials |
|---|---|---|---|
| | | | |

Organisation

Address

Phone number Fax

**Attachments (No.)**

- ☑ A4 location map
- ☑ B/W photographs
- ☑ Colour photographs
- ☑ Slides
- ☑ Aerial photographs
- ☑ Site plans, drawings
- ☑ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

**Comments**

PLEASE REFER TO ATTACHED REPORT

# Aboriginal Site Recording Form

AHIMS Registrar
PO Box 1967, Hurstville NSW 2220

Department of Environment & Climate Change NSW

**Office Use Only**

**Site Number** | | | - | | - | | | | |

Date received / / Date entered into system / / Date catalogued / /

Entered by (I.D.)

## Information Access

☐ Gender/male ☐ Gender/female ☐ Location restriction ☐ General restriction ☐ No access

Office Use Only

### For Further Information Contact:

☐ **Nominated Trustee**

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

☒ **Knowledge Holder** - NUMEROUS KNOWLEDGE HOLDERS - SEE ATTACHED REPORT

Title | Surname | First Name | Initials

Organisation

Address

Phone number | Fax

Client on system ☐

**Aboriginal Heritage Unit or Cultural Heritage Division Contacts**

## Geographic Location

Site Name: JACARANDA PONDS PAD 1

Easting: 293738 Northing: 6286402 AGD/GDA: (AMG)

Mapsheet: WICBERFORCE

**Zone**: 56 Location Method: NSW - DIFFERENTIAL GPS

Other Registration:

## Primary Recorder

Title | Surname | First Name | Initials

MS | FINNEGAN | ERIN | R

Organisation: GODDEN MACKAY LOGAN PTY LTD

Address: 78 GEORGE ST REDFERN NSW 2016

Phone number: 02 9319 4911 Fax: 02 9318 4383

Date recorded: 03/09/2009

Client on system ☐

# NPWS Aboriginal Site Recording Form - Site Information



**OPEN/CLOSE SITE** OPEN

## Site Context

### Landform

- [ ] Mountainous
- [ ] Plain
- [X] Rolling hills
- [ ] Steep hills
- [ ] Undulating plain

### Landform Unit

- [ ] Beach
- [ ] Coastal rock platform
- [ ] Dune
- [ ] Intertidal flat
- [ ] Lagoon
- [ ] Tidal Creek
- [ ] Tidal Flat
- [ ] Cliff
- [X] Crest
- [ ] Flat
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- [ ] Mid slope
- [ ] Upper slope
- [ ] Plain
- [ ] Ridge
- [ ] Tor
- [ ] Valley flat
- [ ] Levy
- [ ] Stream bank
- [ ] Stream channel
- [ ] Swamp
- [ ] Terrace
- [ ] Terrace flat

### Slope

[ ] degrees

### Vegetation

- [ ] Closed forest
- [ ] Grasslands
- [ ] Isolated clumps of trees
- [ ] Open forest
- [ ] Open woodland
- [ ] Scrub
- [ ] Woodland
- [X] Cleared
- [ ] Revegetated
- [ ] N/A

### Land use

- [ ] Conservation
- [ ] Established urban
- [ ] Farming-intensive
- [ ] Farming-low intensity
- [ ] Forestry
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- [ ] Mining
- [X] Pastoral/grazing
- [ ] Recreation
- [ ] Semi-rural
- [ ] Service corridor
- [ ] Transport corridor
- [ ] Urban expansion
- [ ] Residential

### Water

| | |
|---|---|
| Distance to permanent water source | ≈ 500 metres |
| Distance to temporary water source | ≈ 200 metres |
| Name of nearest permanent water source | CURRENCY CREEK |
| Name of nearest temporary water | – (farm dam) |

### Directions for Relocation

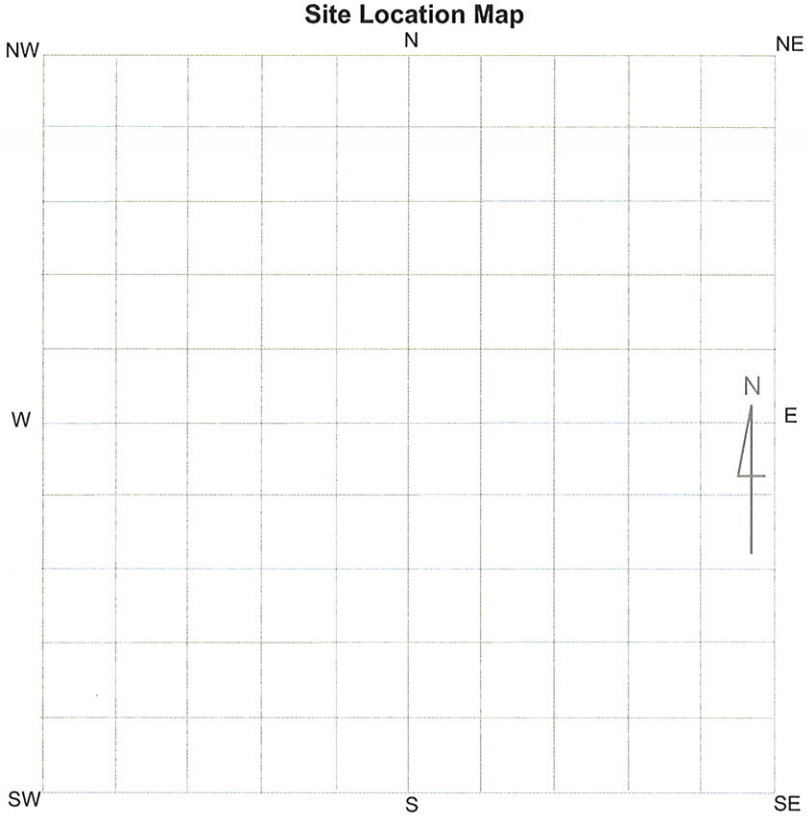
PLEASE REFER TO ATTACHED REPORT.

### Current Land Tenure

- [ ] Public
- [X] Private

National Park / other Government Dept.

### Site Location Map




**Primary report** **I.D.** [ ] (I.D. Office Use only)

JACARANDA PONDS, GLOSSODIA-INDIGENOUS AND NON-INDIGENOUS HERITAGE ASSESSMENT - FINAL REPORT, DECEMBER 2009

# NPWS Aboriginal Site Recording Form - Site Information



## General Site Information

### Closed Site

**Shelter/Cave Formation**

- [ ] Boulder
- [ ] Wind erosion
- [ ] Water erosion
- [ ] Rock collapse

**Rock Surface Condition**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Condition of Ceiling**

- [ ] Boulder
- [ ] Sandstone platform
- [ ] Silica gloss
- [ ] Tessellated
- [ ] Weathered
- [ ] Other platform

**Shelter Aspect**

- [ ] North
- [ ] North East
- [ ] East
- [ ] South East
- [ ] South
- [ ] South West
- [ ] West
- [ ] North West

### Open Site

**Site Orientation**

- [ ] N-S
- [ ] NE-SW
- [ ] E-W
- [ ] SE-NW
- [X] N/A

## Features

- [ ] 1. Aboriginal Ceremony & Dreaming
- [ ] 2. Aboriginal Resource & Gathering
- [ ] 3. Art
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- [ ] 5. Burial
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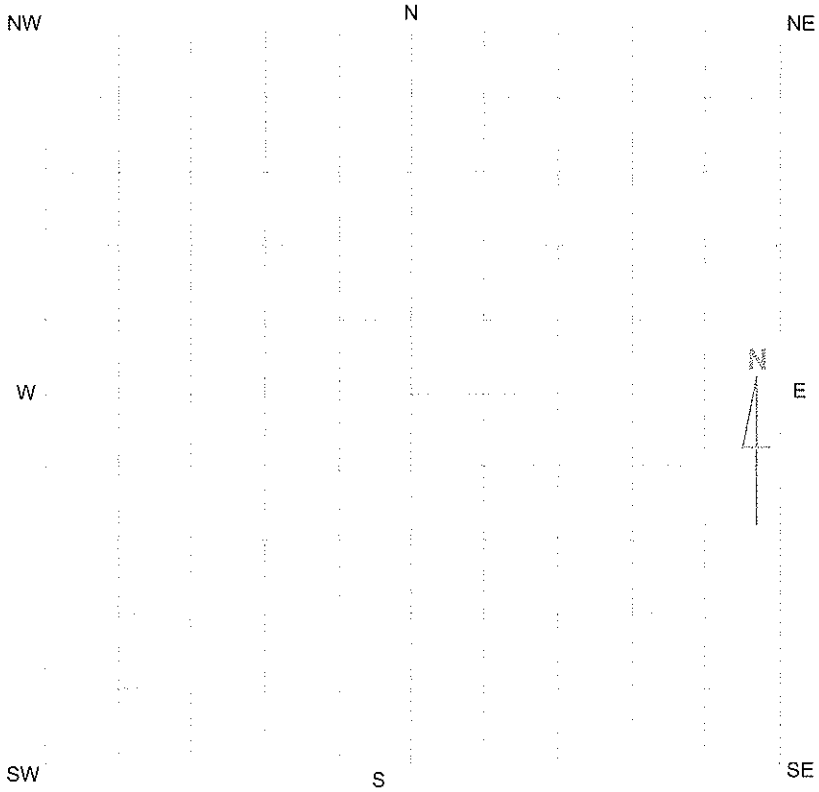
- [ ] 14. Ochre quarry
- [X] 15. Potential Archaeological Deposit
- [ ] 16. Stone Quarry
- [ ] 17. Shell
- [ ] 18. Stone Arrangement
- [ ] 19. Modified Tree
- [ ] 20. Water Hole

## Site Plan

Indicate scale, boundaries of site, features




## Site Dimensions n/a

**Closed Site Dimensions (m)**

- [ ] Internal length
- [ ] Internal width
- [ ] Shelter height
- [ ] Shelter floor area

**Open Site Dimensions (m)**

- [ ] Total length of visible site
- [ ] Average width of visible site
- [ ] Estimated area of visible site
- [ ] Length of assessed site area

**Aboriginal Community Interpretation and Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

## Preliminary Site Assessment

**Site Cultural & Scientific Analysis and Preliminary Management Recommendations**

PLEASE REFER TO ATTACHED REPORT

This section should only be filled in by the Endorsees PLEASE REFER TO ATTACHED REPORT

**Endorsed by:** ☐ Knowledge Holder ☐ Nominated Trustee ☐ Native Title Holder ☐ Community Consensus

| Title | Surname | First Name | Initials |
|---|---|---|---|
| | | | |

Organisation

Address

Phone number Fax

**Attachments (No.)**

- ☒ A4 location map
- ☑ B/W photographs
- ☑ Colour photographs
- ☐ Slides
- ☑ Aerial photographs
- ☑ Site plans, drawings
- ☑ Recording tables
- ☐ Other
- ☐ Feature inserts-No. ☐

**Comments**

An area of moderate potential along Currency Creek was identified primarily through predictive modelling. As past ground surface visibility restricted comprehensive surveying along the creekline, this area will not be registered as a PAD at this stage, but may be in the future, upon further investigation.

PLEASE REFER TO ATTACHED REPORT.