Aboriginal & Historic Archaeological and Cultural Heritage Values

Proposed Rezoning
Macquariedale Road, Appin, NSW

FINAL REPORT

Prepared by

Heritage Concepts Pty Ltd

For

Walker Corporation Pty Limited

April 2007

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EXECUTIVE SUMMARY

Introduction

In March 2006 Heritage Concepts Pty Ltd was commissioned by Walker Corporation Pty Limited to undertake a preliminary desktop review for the proposed rezoning site located on Macquariedale Road, Appin within Wollondilly Shire (see Figure 1.1). A full Aboriginal and historic archaeological and cultural heritage values assessment was also commissioned and was to follow the submission of the preliminary desktop review. As such, this report details the results of the Aboriginal and historic archaeological and cultural heritage values assessment in support of the proposed rezoning application.

Study Area

The township of Appin is located 71 kilometres south-west of Sydney on the road between Campbelltown and Wollongong. The study area is located on the western side of the Appin township. It spans the areas on the northern and southern side of Macquariedale Road, between Sportsground Rixon Road and Kerr Street to the east and Ousedale Creek to the west. Ousedale Creek forms the western boundary of the study area (see Figure 1.2). It is understood that the study area covers 60.14 hectares of which 46.52 hectares is bushland.

Proposal

The proposal involves the submission of a rezoning application to the Wollondilly Shire Council. The proposed rezoning application relates to land known as Lot 1 DP 209779, Lot 1 DP 558807 and Lot 201 DP 749272. The applicant is seeking to rezone the eastern section of the study area to residential and the western section of the study area as Arterial Road and Biodiversity Conservation.

Objectives and Tasks

The objectives of this study is the production of a 'plain English' report that identifies Aboriginal and non-Aboriginal archaeological and cultural heritage values as well as areas of archaeological potential and constraints associated with the proposed rezoning. The following tasks were undertaken as follows in accordance with the brief:

- Identification of statutory requirements relevant to the project;
- Review of relevant State and Federal heritage registers and listings, including the Department of Environment and Water Resources (DEWR) Register of the National Estate, Commonwealth and National Heritage Lists;
- Search of the Department of Environment and Conservation (DEC) Aboriginal heritage Information Management System (AHIMS);
- Search of the National Native Title Tribunal for registered Native Title claimants to assist with the consultation process (if required);
- Review and collation of any existing documents including but not restricted to previous archaeological reports, scoping studies, heritage studies and local histories as they relate to the study area;
- Review of existing Local and Regional Environmental Plans with the aim of identifying existing planning instruments as they may relate to the archaeological and cultural heritage values of the Site;
- Consultation with the relevant heritage authorities including DEC, the Heritage Office (HO), Department of Aboriginal Affairs (DAA) and local government;
- Identification and consultation with the relevant Aboriginal stakeholder groups through the lodgement of Native Title Claimant search, consultation with the regional DEC Archaeologist and Department of aboriginal Affairs (if necessary);
- Identification of other stakeholder groups such as the local historical society and other government bodies;
- Identification of any archaeological and cultural heritage values;
- Evaluate known and potential impacts;
- Prepare mitigation and management measures/strategies.

Summary of cultural heritage listings within the study area

The following is a summary of the results of the various heritage register/listings searches in relation to the study area.

☑ Register of the National Estate	There are no items within the study area listed on the Register of National Estate.
☑ National Heritage List	There are no items within the study area listed on the National Heritage List
☑ Commonwealth Heritage List	There are no items within the study area listed on the Commonwealth Heritage List.
☑ Department of Environment & Conservation (DEC) AHIMS	A total of 20 Aboriginal places and/or objects are registered with AHIMS as being located within the vicinity of the study area. No registered sites are situated within the actual study area.
☑ National Native Title Tribunal	There are no claims on the study area registered with the National Native Title Tribunal
☑ NSW State Heritage Register	There are no items within the study area listed on the NSW State Heritage Register.
☑ Wollondilly Shire Local Environmental Plan 1991	There are no items within the study area listed on the Wollondilly Shire Council LEP
☑ National Trust of Australia (NSW)	There are no items within the study area listed on the National Trust Register

Aboriginal Consultation & Involvement

Aboriginal stakeholder consultation for the current project has been undertaken by Heritage Concepts on behalf of Walker Corporation Pty Ltd in accordance with Department of Environment and Conservation *Interim Community Consultation Requirements for Applicants* (2004).

The study area falls within the boundaries of the Tharawal Local Aboriginal Land Council (TLALC) and Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTCAC). A search was lodged with the National Native Title Tribunal on 20 March 2007. The search indicated that no Native Title Claims are situated over the study area. A search of the Office of the Registrar of Aboriginal Corporations was carried out 20 March 2007.

TLALC and CBNTCAC were provided with details of the current project. Donna Whillcock (TLALC) and Glenda Chalker (CBNTCAC) participated in the field inspection of the study area.

A copy of the draft report was forwarded to all stakeholder groups for review.

The stakeholder consultation log is located in Appendix A, while the results of the NSW Native Title Searches are included in Appendix B. Written comment regarding the Aboriginal cultural resource will be included in Appendix C upon receipt of the stakeholder reviews of the assessment.

Aboriginal Cultural Material

Four Aboriginal sites/finds were located during the course of the survey. These are described below.

AP_A1: Stone artefacts

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295768 Northing: 6214212

AP_A1 was located along an unmade earthen road in the north western corner of the study area (refer Figure 6.1(Area B) and **Plate 9**). The find consisted of two isolated finds; one broken proximal white milky quartz flake measuring 15x12x3mm and one white milky quartz debitage flake, measuring7x5x3mm (**Plate 10**). The artefacts are considered to be of low archaeological significance as they are situated in a secondary context in an area of active erosional processes.

AP_A2: Stone artefact

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295460 Northing: 6213763

AP_A3 was located along an unmade earthen road in the western side of the study area up slope of Ousedale Creek (refer Figure 6.1 and **Plate 11**). The isolated find consisted of a fine grained, milky quartz flake piece, measuring 16x6x4mm (**Plate 12**). The artefacts are considered to be of low archaeological significance as they are situated in a secondary context in an area of active erosional processes.

AP_A3: Stone artefact

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295460 Northing: 6213763

AP_A3 was located along an unmade earthen road in Area B of the south eastern section of the study area (refer Figure 6.1 and **Plate 13**). The isolated find consisted of a fine grained, milky quartz flake piece, measuring 9x5x2mm (**Plate 14**). The artefacts are considered to be of low archaeological significance as they are situated in a secondary context in an area of active erosional processes

AP_A3: Glass artefact

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295466 Northing: 6213816

AP_A4 was located adjacent to an unmade dirt track, approximately 5 m north of AP_A3. The find consisted of several broken pieces of a dark green historic champagne bottle base (**Plate 15**). One piece displays three small flake scars along the base of the bottle sherd (**Plate 16**). The area has been heavily impacted with evidence of machine clearance and it is likely that the bottle was crushed and /or broken through non-Aboriginal means. Glenda Chalker of Cubbitch Barta Native Title Claimants Aboriginal Corporation requested that the flaked bottle sherd be recorded.

Historic Cultural Material

Two historic sites/finds were located during the course of the survey. These are described below.

AP_A2: Ceramic Sherds

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295749 Northing: 6214215

AP_H1 was located along an unmade earthen road in the north western corner of the study area (refer Figure 6.1 Area B and **Plate 9**). The find consisted of four ceramic sherds; one yellow glaze earthen ware bowl rim fragment, measuring 20x15x9mm and four dark brown glazed earthen war sherds, measuring 20x15x9mm, 14X29x15mm, 35x23x21and 17x9x21mm (**Plate 17**). The artefacts are considered to represent casual discard and are of low archaeological significance as they are situated in a secondary context in an area of active erosional processes.

AP_A2: Historic Dump

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295749 Northing: 6214215

AP_H2 was located along the benched sandstone side slopes approximately 50m from Ousedale Creek (refer Figure 6.1Area F and **Plate 6**). The find consisted of a collection of ceramic, metal and glass domestic artefacts as well as broken brick and slate fragments. The assemblage is dated to c 1830-1920 and was eroding down slope towards the creek line. Among the artefacts were several examples of transfer print willow ware (c1820+), brown transfer ware (c1830+), yellow ware (c1830-1900), bristol glazed ware, angular banded

earthen ware, solarised amethyst glass (c1880-1920), a champagne bottle (1850-1920) and a gin bottle (Plate 18**).** The deposit is thought to represent an historic rubbish dump site, which is of low archaeological potential however it does suggest that a domestic occupation settlement was situated near by.

Recommendations

The following recommendations are made in relation to the proposed rezoning and long-term management of the Appin study area. Impacts to Aboriginal and historic heritage should be minimised and/or mitigated whenever possible and the following recommendations have been prepared with this in mind.

- **Recommendation 1**

Aboriginal sites AP_A1, AP_A2, AP_A3 and AP_A4 will be registered on the DEC AHIMS database. Completed Site Cards will be submitted to DEC.

- **Recommendation 2**

A Section 90 Consent to Destroy with Surface Collection permit application should be lodged with DEC to allow Aboriginal sites AP_A1, AP_A2, AP_A3 and AP_A4 to be collected prior to any development impact occurring. The S90 application will include a Care and Control permit for the artefactual remains collected as part of the S90 activities.

- **Recommendation 3**

Cultural monitoring of the study area by the identified Aboriginal stakeholder groups is suggested if any vegetation clearance or ground surface disturbance takes place within areas of dense vegetation and recent sheet wash sediment deposition. This is required as there is potential for grinding groove sites and /or artefactual finds to occur.

Recommendation 4

It is recommended that a programme of historic monitoring works is conducted by a professional archaeologist prior to any future development involving the clearance and/or ground surface disturbance of the study area takes place. These works should be carried out under the auspices of a Section 139(4) Exception under the *Heritage Act 1977*.

- **Recommendation 5**

The *National Parks and Wildlife Act 1974* requires that in the event of Aboriginal cultural fabric or deposits being encountered, works must cease immediately to allow an archaeologist to make am assessment of the find. The archaeologist will then need to consult with the NSW Department of Environment and Conservation and Aboriginal stakeholders who have registered an interesting this project to determine whether mitigating measures are required.

- **Recommendation 6**

As required by the *Heritage Act 1977 (amended)*, in the event that any unexpected historic cultural fabric or deposits are encountered, works must cease immediately to allow an archaeologist to make an assessment of the finds. The archaeologist may need to consult with the Heritage Office, Department of Planning concerning the significance of the historic cultural material unearthed.

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1.0 Introduction

1.1 Background

In March 2006 Heritage Concepts Pty Ltd was commissioned by Walker Corporation Pty Limited to undertake a preliminary desktop review for the proposed rezoning site located on Macquariedale Road, Appin within Wollondilly Shire (see Figure 1.1). A full Aboriginal and historic archaeological and cultural heritage values assessment was also commissioned and was to follow the submission of the preliminary desktop review. As such, this report details the results of the Aboriginal and historic archaeological and cultural heritage values assessment in support of the proposed rezoning application.

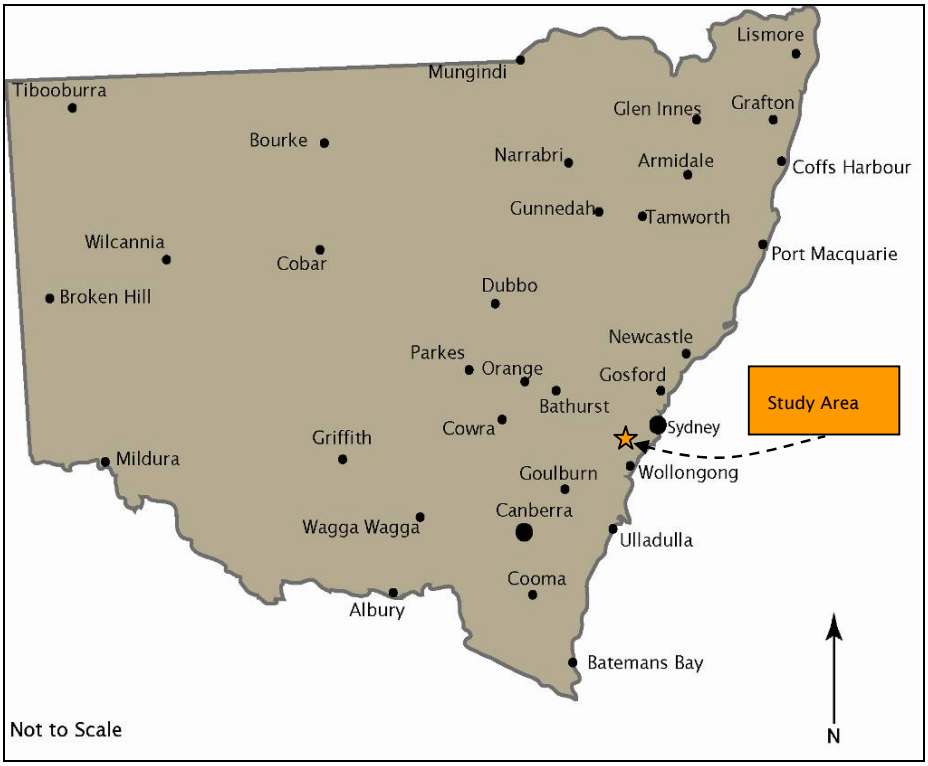

Figure 1.1: Location of Study Area

1.2 Study Area

The township of Appin is located 71 kilometres south-west of Sydney on the road between Campbelltown and Wollongong. The study area is located on the western side of the Appin township. It spans the areas on the northern and southern side of Macquariedale Road, between Sportsground Rixon Road and Kerr Street to the east and Ousedale Creek to the west. Ousedale Creek forms the western boundary of the study area (see Figure 1.2). It is understood that the study area covers 60.14 hectares of which 46.52 hectares is bushland.

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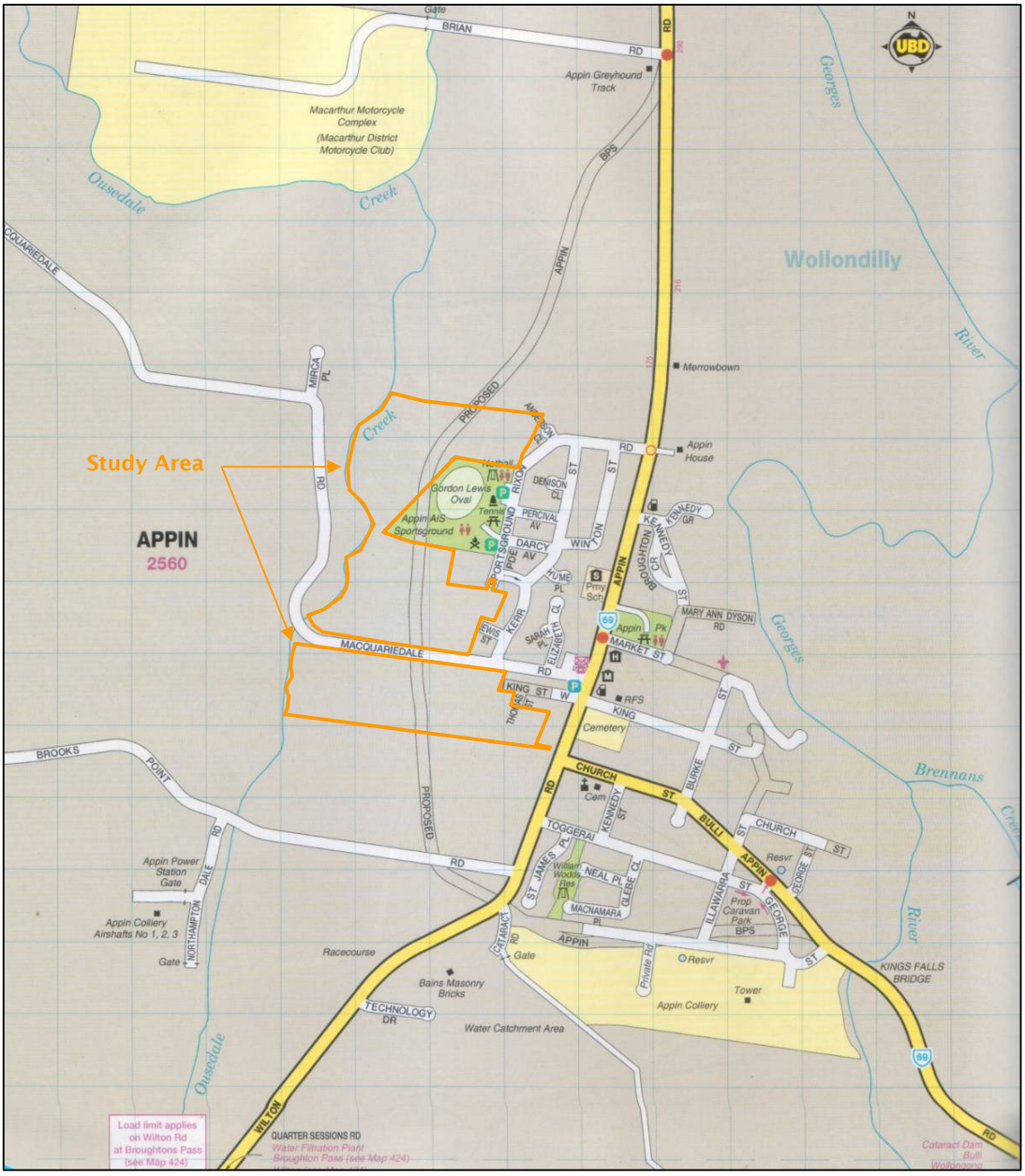

Figure 1.2: Map of Appin indicating the study area (UBD Map No. 373)

The following tasks were undertaken as follows in accordance with the brief:

- Identification of statutory requirements relevant to the project;
- Review of relevant State and Federal heritage registers and listings, including the Department of Environment and Water Resources (DEWR) Register of the National Estate, Commonwealth and National Heritage Lists;
- Search of the Department of Environment and Conservation (DEC) Aboriginal heritage Information Management System (AHIMS);
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- Review and collation of any existing documents including but not restricted to previous archaeological reports, scoping studies, heritage studies and local histories as they relate to the study area;
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- Identification of other stakeholder groups such as the local historical society and other government bodies;
- Identification of any archaeological and cultural heritage values;
- Evaluate known and potential impacts;
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1.5 Aboriginal Stakeholder Consultation

Aboriginal stakeholder consultation for the current project has been undertaken by Heritage Concepts on behalf of Walker Corporation Pty Ltd. The study area falls within the boundaries of the Tharawal Local Aboriginal Land Council (TLALC) and Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTCAC). A search was lodged with the National Native Title Tribunal on 20 March 2007. The search indicated that no Native Title Claims are situated over the study area.

Aboriginal consultation for the current project was undertaken in accordance with Department of Environment and Conservation *Interim Community Consultation Requirements for Applicants* (2004).

As such, TLALC and CBNTCAC were provided with details of the current project and participated in the field inspection of the study area. A copy of the draft report was forwarded to all stakeholder groups for review.

A search of the Office of the Registrar of Aboriginal Corporations was carried out 20 March 2007.

The stakeholder consultation log is located in Appendix A, while the results of the NSW Native Title Searches are included in Appendix B. Written comment regarding the Aboriginal cultural resource will be included in Appendix C upon receipt of the stakeholder reviews of the assessment.

1.6 Authorship

Production of this report was a collaborative process involving a number of members of the Heritage Concepts team. The collation of existing data, research, analysis and recommendations was undertaken by Lori Sciusco, Cornelia de Rochefort and Christine Costin. The site inspection and consultation were undertaken by Lori Sciusco and Cornelia de Rochefort. The report was reviewed by Lori Sciusco and Charles Parkinson (Directors Heritage Concepts Pty Ltd).

1.7 Acknowledgements

Heritage Concepts would like to thank the following individuals and/or organisation for contributing to the completion of this project:

1.8 Abbreviations

The following abbreviations have been used throughout this document:

AHC Australian Heritage Commission

AHIMS Aboriginal Heritage Information Management System

BP	Before Present
CBNT	Cubbitch Barta Native Title Claimants Aboriginal Corporation
CHL	Commonwealth Heritage List
DAA	Department of Aboriginal Affairs
DCP	Development Control Plans
DEC	Department of Environment and Conservation
DEWR	Department of Environment and Water Resources (formerly Department of Environment and Heritage
DP	Deposited Plan
EPBC	*Environment Protection & Biodiversity Conservation Act (1999)*
GSV	Ground Surface Visibility
HO	Department of Planning Heritage Office of NSW
IPOs	Interim Protection Orders
LEP	Local Environmental Plan
LGA	Local Government Area
LTO	Land Titles Office
NES	National Environmental Significance
NHL	National Heritage List
NNTT	National Native Title Tribunal
NSW	New South Wales
NT	National Trust of Australia (NSW)
REP	Regional Environmental Plan
RNE	Register of National Estate
SHI	State Heritage Inventory
SHR	State Heritage Register
TLALC	Tharawal Local Aboriginal Land Council

2.0 Legislative Framework

2.1 Introduction

Aboriginal and non-Aboriginal cultural heritage in Australia is protected and managed under a variety of legislation. The following section provides a brief summary of the Acts which are relevant to the management of cultural heritage in NSW. It is important to note that these Acts are presented as a guide and are not legal interpretations of legislation by the consultant.

2.2 Commonwealth Legislation

2.2.1 Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) took effect on 16 July 2000. Under Part 9 of the EPBC Act, any action that has, or is likely to have, a significant impact on a matter of National Environmental Significance (known as a controlled action under the Act), may only progress with approval of the Commonwealth Minister for the Environment. An action is defined as a project, development, undertaking, activity (or series of activities), or alteration to any of these. Where an exception applies, an action will also require approval if:

1. It is undertaken on Commonwealth land and will have or is likely to have a significant impact;
2. It is undertaken outside Commonwealth land and will have or is likely to have a significant impact on the environment on Commonwealth land; and,
3. It is undertaken by the Commonwealth and will have or is likely to have a significant impact.

Under Section 28 subsection (1) "The Commonwealth or Commonwealth Agency must not take inside or outside Australian jurisdiction an action that has, will have, or is likely to have a significant impact on the environment inside or outside Australian jurisdiction." The EPBC Act defines 'environment' as both natural and cultural environments and therefore Aboriginal and historic cultural heritage items included on the Register of the National Estate are regarded as part of the cultural environment.

Recently, Australia has changed legislation that protects its national heritage places. Three new laws came into effect in January 2004 and are essentially a combination of previous heritage system with a number of changes that include the establishment of a National Heritage List (NHL) and a Commonwealth Heritage List (CHL).

The National Heritage List records places with outstanding natural and cultural heritage values that contribute to Australia's National identity. The Commonwealth Heritage List will comprise natural, Aboriginal and historic places owned or managed by the Commonwealth. The new laws provide changes that offer greater legal protection under the existing *Environment Conservation and Biodiversity Conservation Act 1999* (EPBC Act). Under the new system, National Heritage will join six other important '*matters of national environmental significance'* (NES) already protected by the EPBC Act.

The three new Acts are:

- The Environment and Heritage Legislation Amendment Act (No.1) 2003
- The Australian Heritage Council Act 2003
- The Australian Heritage Council (Consequential and Transitional Provisions) Act 2003

Approval under the EPBC Act is required if you are proposing to take an action that will have, or is likely to have, a significant impact on the National Heritage values of a National Heritage place and/or any other NES matter. This action must be referred to the Australian Government Minister for the Environment and Heritage. The Minister will decide whether an action will, or is likely to, have a significant impact on a matter of national environmental significance.

The heritage provisions of the EPBC Act allow for a transition period whilst the National and Commonwealth Heritage Lists are finalised. During this transition period the Register of the National Estate acts in conjunction with the formative National and Commonwealth lists to provide full coverage for items already identified as having cultural heritage significance.

A search of the database for the Register of National Estate, Commonwealth Heritage List and the National Heritage List revealed the following:

Commonwealth Listings

There are no items within the study area listed on the Register of National Estate, the National Heritage List or the Commonwealth Heritage List.

2.2.2 Native Title Act 1993 (Amended)

The *Native Title Act of 1993,* as amended, recognises and protects native title, and provides that native title cannot be extinguished contrary to the Act. The National Native Title Tribunal (NNTT) is a Commonwealth Government agency set up under this Act to mediate native title claims under the direction of the Federal Court of Australia.

The National Native Title Tribunal maintains the following registers:

- National Native Title Register
- Register of Native Title Claims
- Unregistered Claimant Applications
- Register of Indigenous Land Use Agreements.

The objective of a search of the NNTT registers is to identify possible Aboriginal Stakeholders that would not perhaps receive representation as part of the Local Aboriginal Land council or Elders groups.

A search of the National Native Title Tribunal Registers revealed the following:

National Native Title Tribunal Registers

There are no claims on the study area registered with the National Native Title Tribunal.

2.3 State Legislation

2.3.1 National parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* provides for protection of Aboriginal objects (sites, relics and cultural material) and Aboriginal places. Under the Act (Section 5), an Aboriginal object is defined as:

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

An Aboriginal place is defined under this Act as an area that has been declared by the Minister administering the *National Parks and Wildlife Act* as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

Under Section 90 of the Act it is an offence to knowingly destroy, deface, damage or desecrate, or cause or permit the destruction, defacement, damage or desecration of, an Aboriginal object or Aboriginal place, without the prior written consent from the Director-General of the NSW Department of Environment and Conservation (DEC). In order to obtain such consent, a Section 90 Consent Application must be submitted and approved by the DEC Director-General. In considering whether to issue a Section 90 Consent, DEC will take into account:

- The significance of the Aboriginal object(s) or place(s) subject to the proposed impacts;
- The effect of the proposed impacts and the mitigation measures proposed;
- The alternatives to the proposed impacts;
- The conservation outcomes that will be achieved if impact is permitted; and

- The outcomes of the Aboriginal community consultation regarding the proposed impact and conservation outcomes.

It is also an offence, Under Section 86 of the Act, to disturb or excavate land for the purpose of discovering an Aboriginal object, or disturb or move an Aboriginal object on any land, without first obtaining a permit (Preliminary Research Permit, Excavation Permit, Collection Permit or Rock Art Recording Permit) under Section 87 of the Act. In issuing a Section 87 Permit, DEC will take into account:

- The views of the Aboriginal community about the proposed activity;
- The objectives and justifications for the proposed activity;
- The appropriateness of the methodology to achieve the objectives of the proposed activity; and
- The knowledge, skills, and experience of the nominated person (s) to adequately undertake the proposed activity.

Under Section 91 of the Act it is a requirement to notify the DEC Director-General of the location of an Aboriginal object. Identified Aboriginal items and sites are registered with the NSW DEC on the Aboriginal Heritage Information Management System (AHIMS).

A search of the AHIMS database revealed the following:

NSW DEC AHIMS Listings
A total of 20 Aboriginal places and/or objects are registered with AHIMS as being located within the vicinity of the study area.
No registered Aboriginal sites are situated within the boundaries of the study area.

2.3.2 The Heritage Act 1977 (NSW) (Amended 1999)

The *Heritage Act 1977* is the primary piece of State legislation affording protection to all items of environmental heritage (natural and cultural) in New South Wales. "Items of environmental heritage" include places, buildings, works, relics, moveable objects and precincts identified as significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values. A 'Place' is defined as an area of land, with or without improvements and a 'Relic' is defined as any deposit, object or material evidence that relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and that is 50 years or more old

The *Heritage Act 1977,* established the Heritage Council of NSW, provides advice and recommendations to the Minister for Planning relating to conservation and management of items of environmental heritage. The Heritage Council is also required to maintain a database of items of State heritage significance: the State Heritage Register (SHR), a database of items of both State and local heritage significance and the State Heritage Inventory (SHI).

If the Heritage Council believes that a heritage item or place needs to be conserved, it can make a recommendation to the Minister, who decides whether to place protection on that item. There are two types of protection available: interim heritage orders and listing on the State Heritage Register. These forms of protection are 'binding directions', which means that the heritage item that is protected in one of these ways cannot be demolished, redeveloped or altered without permission from the Heritage Council.

The *Heritage Act 1977* does not apply to Aboriginal "relics" (any deposit, object or material evidence). These items are protected under the *National Parks and Wildlife Act 1974*; however, some aspects of Aboriginal cultural heritage management and protection are covered by provisions of the *Heritage Act 1977.*

The Director-General of the Department of Environment and Conservation can recommend that the Minister of Planning make Interim Protection Orders (IPOs) to preserve areas of land that have natural, scientific or cultural significance that can include land with Aboriginal places or relics on it.

Particular Aboriginal places and items that the community has formally recognised as being of high cultural value can also be listed on the State Heritage Register. This provides an extra level of protection in addition to that provided by the *National Parks and Wildlife Act 1974.*

A search of the database for the NSW State Heritage Register revealed the following:

NSW State Heritage Register listings
There are no items within the study area listed on the NSW State Heritage Register.

2.3.3 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* ensures that environmental impacts are considered prior to development taking place. This includes impacts on Aboriginal and non-Aboriginal cultural heritage items and places. The Act also requires that Local Government Areas (LGAs) prepare Local Environmental Plans (LEP) and Development Control Plans (DCP) in accordance with the Act to provide guidance on the level of environmental assessment required. LEPs often list locally significant heritage items.

The Wollondilly Shire Council Local Environmental Plan 1991 is the principal planning instrument for the LGA. The LEP guides what development is permitted in different parts of the LGA through zoning of each parcel of land. The objective and provisions of the Wollondilly LEP in relation to heritage conservation is:

Aims and Objectives:

a) to conserve the environmental heritage of the Shire of Wollondilly;

b) to integrate heritage conservation into the planning and development control processes;

c) to provide for public involvement in the matters relating to the conservation of the Shire of Wollondilly's environmental heritage.

Part 3 Special Provisions

30 Heritage Item

(1) A person must not, in respect of a heritage item:

a) demolish or alter the building or work, or

b) damage or move the relic, or

c) excavate for the purpose of exposing the relic, or

d) damage or despoil the place or tree, or

e) erect a building on or subdivide land on which the building, work or relic is situated that comprises the place, or

f) damage any tree on land on 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 must not grant consent not a development application required by subclause (1) 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 and its setting.

A search of the heritage schedule within the Wollondilly Shire Council LEP 1991 revealed the following:

Wollondilly Shire Council Local Environmental Plan 1991
There are no items within the study area listed on the Wollondilly Shire Council LEP.

2.4 Non Statutory Listings

The National Trust of Australia (New South Wales) (NT) is a community-based organisation with independently constituted Trusts in each state and territory. The NSW National Trust compiles

a heritage list primarily of historic places, but they also include some Aboriginal and natural places. Listing helps to provide recognition, and promote public appreciation and concern for local heritage. The National Trust Register has no legal foundation or statutory power, but is recognised as an authoritative statement on the significance to the community of particular items, and is held in high esteem by the public.

A search of the National Trust Register revealed the following:

The National Trust Listings
There are no items within the study area listed on the National Trust Register.

2.5 Summary of Cultural Heritage Listings

The following is a summary of the results of the various heritage register/listings searches in relation to the study area.

☑ Register of the National Estate	There are no items within the study area listed on the Register of National Estate.
☑ National Heritage List	There are no items within the study area listed on the National Heritage List
☑ Commonwealth Heritage List	There are no items within the study area listed on the Commonwealth Heritage List.
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☑ Wollondilly Shire Local Environmental Plan 1991	There are no items within the study area listed on the Wollondilly Shire Council LEP
☑ National Trust of Australia (NSW)	There are no items within the study area listed on the National Trust Register

3.0 Environmental Background

The following section provides an environmental context to the present study area. An environmental background is important in providing a context for the archaeology of an area. The physiographical, geological and soil landscapes of an area can influence the type and frequency of historic or Aboriginal places and/or sites that are likely to exist in the area.

3.1 Physiography

The Appin study area is situated within the boundary of the Cumberland and Cataract subregions of the Sydney Basin Bioregion (SBB). Thackaway and Cresswell (1995) describe a bioregion as a complex land area composed of a cluster of interacting ecosystems that are repeated in similar form throughout. Descriptions of the bioregions describe the dominant landscape attributes of climate, geology, landform and vegetation.

Physiographically the Appin region is situated above the Illawarra escarpment along the south eastern margin of the Cumberland Lowlands and the eastern margin of the Woronora Plateau. The Plateau is a deeply dissected sandstone plateau with Wianamatta Group Shales occurring as thin lenses. Upland swamps are a common feature towards the coast. The Cumberland Lowlands typically display undulating topography based on Wianamatta Group Shales. Given the erodible nature of the shale, the plain is low lying with little out standing relief with low gradient streams.

The study area is situated in a transition zone between the Woronora Plateau and the Cumberland Plain physiographic regions. Both the Plateau and the Plain grade into each other across a relatively narrow zone in which the landscape takes on features of both of the landscape units. Navin Officer (2002) point out that from a geological perspective, the incised sandstone terrain west of the Georges River, represents a transitional zone due to the presence of Winamatta Shales on the remnant plateau and ridgeline crests. Moving further west these areas become larger and coalesce, while the incised drainage lines typical of the sandstone bedrock, become more shallow and develop in to open and moderately graded valleys formed on the shale bedrock. Morphological factors which define the transition zone are the change between sandstone and shale bedrock in creek beds, the change in valley morphology from steeply graded sandstone valleys to wide open shale based low gradient slopes, and the change in ridgeline topography from flat plateau land surfaces to broad gently graded or rounded crests.

The major vegetation formation found in the Woronora Plateau is woodland and open forests. Heaths, including Paroo Lily, Snake Grass, and fuller shrubs (She-oak and Heath Banksia) also grow on the Woronora Plateau. Common vegetation types found throughout the Cumberland Plain region consist of Grey Box, Forest Red Gum, and Narrow-leaved Ironbark woodlands with some Spotted Gum on the shale hills. Hard-leaved Scribbly Gum, Rough-barked Apple and Old Man Banksia are found on alluvial sands and gravels, while Broad-leaved Apple, Cabbage Gum and Forest Red Gum with abundant Swamp Oak are found on the river flats.

The study area is located between the Georges River and Nepean River catchments. The Georges River flows immediately to the east of the study area with its headwaters originating in Appin flowing north towards Campbelltown. Much of the upper catchment area lies within a deep narrow gorge in a fairly undisturbed landscape with many natural forested areas.

The western border of the study area is bound by Ousedale Creek which consists of a narrow steep gully comprised of very steep to near vertical cliff lines measuring up to 10m in height (Bewsher Consulting 2004; National Parks and Wildlife Service (NPWS) (2003).

3.2 Geology and Soil Landscapes

The Appin region is situated within the central part of the Permo-Triassic Sydney Basin. Much of the Basin landscape is elevated sandstone plateau, with the exceptions being the Hunter Valley and the low-lying Cumberland Plain. In the south and west the Basin ends in cliff lines formed on sandstones and conglomerates of the basal Permian sediments. The study area is underlain by a horizontally bedded sequence of rocks of the Wianamatta Group transitional Ashfield Shale and underlying Hawkesbury Sandstone of Triassic age. The Ashfield shale comprises black sideritic claystone and limonite, while the Hawkesbury Sandstone typically comprises medium to coarse grained quartz sandstone with minor shale lenses (Hazelton and Tille 1990).

The study area is situated on the Blacktown and Hawksbury soil landscapes. The Hawkesbury soil landscape is associated with Ousedale Creek and sandstone outcrops appear to dominate the majority of the study area. The Blacktown soil landscape is associated with the south

eastern perimeter of the site. Blacktown soils are residual landscape soils and comprise gently undulating rises with local relief of 10-30m. Slopes are usually <5%, while crest and ridges are broad and rounded with gently inclined slopes. Drainage depressions and valley flats are generally broad, while rock outcrops are absent. Soils consist of shallow to moderately deep (<150cm) Red Podzolic Soils and Brown Podzolic Soils on crests, upper slopes and well drained areas, and deep (150-300cm) Yellow Podzolic Soils and Soloths on lower slopes and in drainage depressions and localised areas of poor drainage. Minor to moderate sheet and gully erosion have occurred in the past in some locations (Hazelton and Tille 1990).

The Hawkesbury soil landscape is a colluvial landscape and comprises rolling to very steep hills, with local relief of 100-200m. Slopes are generally >25%, while crests and ridges are convex and narrow. Valleys are narrow and incised, while rock outcrop is common and occurs as horizontal benches and broken scarps up to 10m high. Soils consists of shallow (<50cm) Lithosols and Siliceous sands associated with rock outcrops, Earthy Sands, Yellow Earths and locally deep sands on the inside of benches and along joints and fractures, localised Yellow and Red Podzolic Soils associated with shale lenses, and siliceous sands on narrow valley flats. Severe sheet erosion often occurs during storms after ground cover has been removed by bushfires. Gully erosion, often to bedrock, occurs along unprotected tracks and fire trails (Hazelton and Tille 1990).

3.3 Vegetation

Vegetation along the western boundary of the study area, including and adjacent to Ousedale Creek, comprises open forest consisting predominantly of Eucalyptus punctata (Grey Gum), E. beyeriana (Beyer's Ironbark) and E. pilularis ssp. pilularis (Blackbutt). The tall shrub layer consists of acacia decurrens, A. binervata and Allocasuarina littoralis while the shrub stratum consists of Dodonaea triquetra, Pimelea linifolia and Kunea ambigua. Cleared sections of the study area support both indigenous and introduced grass species, while the shale sandstone geological transition is associated with regrowth forest (Dibden 2002).

3.4 Land Use History

The Cumberland Plain is the oldest settled district in Australia. In the 1790's early settlers cleared the floodplain forests for intensive agriculture and used the Cumberland Plain Woodland for grazing and timber production. In 1810, Governor Macquarie established farm lots around Castlereagh, Windsor and Richmond and in 1820 established Campbelltown.

The Southern part of the Cumberland Plain was recognised for its farming potential by 1793 when cattle that had escaped from Sydney were found near Camden. Only isolated fragments of the original woodland remain, as farming in the 19th Century, and housing and industrial development in the 20th Century have taken their toll. Urban development occurs along the northern section of the Woronora Plateau, however, the upper catchment of the Georges River, south of Campbelltown is largely undisturbed and is still in its natural forested state (Robertson *et al* 1996; Bewsher Consulting 2004).

Up to the 1880's the principal produce of the Campbelltown - Appin district was wheat, with maize, barley and oats serving as supplements. Single furrow plough and hand reaping techniques dominated early cereal farming. Crop yields gradually decrease over this period of time owing to the impact of rust disease and a lack of soil replenishment. After the 1880's stock animals such as cattle, sheep and pigs replaced wheat production, while milking cattle were introduced to the region by 1870's. In the following decades dairying became a dominant regional industry, with 80-90 dairies in the Campbelltown district by 1905 (Navin Officer 1992).

Within the immediate region of the study area various activities associated with European land use have impacted on the integrity of the landscape, including original vegetation clearance and subsequent agricultural practices. The regrowth forest of the area has been subject to tree felling and firing practices, while urban expansion has resulted in more recent disturbance with widespread land clearance (Dibden 2002)

4.0 Aboriginal Archaeological Background

This section provides the archaeological and ethnographic settings of the study area. This information can be contextualised, where appropriate, within the known environmental parameters and ultimately used to predict the likelihood of archaeological sites occurring within particular environments.

4.1 Ethnohistorical Accounts of Traditional Aboriginal Lifestyles

There is some written information recorded by non-Aboriginal settlers and visitors, available regarding the organisation, material culture and way of life of the Aboriginal people of the wider Sydney region in the late 18th century and 19th century. It should be noted that such information is, however, often patchy and sometimes of dubious reliability owing to misunderstandings following from cultural and language differences.

Attenbrow notes that exact language boundaries in the Sydney region are a matter for some debate and that any mapped boundaries can only be indicative, but suggests that four languages or dialects probably were spoken in the Sydney region. These are:

Darug, coastal dialects – the Sydney peninsula…as well as the country to the north of Port Jackson…;

Darug, hinterland dialect – on the Cumberland Plain from Appin in the south to the Hawkesbury River in the north; west of the Georges River, Parramatta, the Lane Cove River and Berowra Creek;

Dharawal – from the south side of Botany Bay, extending south as far as the Shoalhaven River; from the coast to the Georges River and Appin, and possibly as far west as Camden;

Gundungurra – southern rim of the Cumberland Plain west of the Georges River, as well as the southern Blue Mountains (Attenbrow 2002: 34).

The boundaries between the Darug and Dharawal are variously defined and typically, a line is drawn either through Campbelltown to Botany Bay (Matthews 1902) or between Appin and Campbeltown (Capell 1963). The tribes of the tablelands and the coast from Sydney to Cape Howe were also divided by Matthews (1902) and Howitt (1904) into two main linguistic groups; the Inland Yuin and the Coastal Yuin. Therefore, according to available linguistic information, the study area falls within the boundaries of the Dharawal language group, which forms part of the wider coastal Yuin group. Tindale has also identified the Appin area as the traditional lands of the Dharawal language group (Tindale 1974). The Wodi Wodi are said to be a group who spoke this language and lived in the area (NPWS 2002).

The pre-contact population numbers for the Sydney area are not known. In the early days of the Sydney Cove settlement Governor Phillip estimated that about 1500 Aboriginal people lived in the Sydney district. More recent estimates of the contact period population of the greater Sydney region place the number between five and eight thousand, although other estimates are much lower (Turbet 2001: 25-26). Within the Illawarra district , home to the Wodi Wodi, an 1838 census of Aborigines living in the area names 49 men, 25 women, 23 boys and 27 girls living in 20 different camps and belonging to ten groups, while a south coast group usually numbered 70 or 80 (NPWS 2002).

The Aboriginal population of the Sydney district declined dramatically following European settlement; some lives would have been lost in clashes, while many more were killed by smallpox which spread through the population in 1789. The epidemic is thought to have caused the deaths of well over half of the Aboriginal population of the Sydney district (Attenbrow 2002: 21). The Aboriginal people of the district also suffered from declining resources caused by European fishing, hunting and land clearing. Sixty three years after the 1838 census for the Illawarra district the 1901 census showed that the Illawarra Aboriginal population had been reduced to just 98 individuals (NPWS 2002).

There was little contact between Europeans and Aboriginal people of the inland in the earliest years of European settlement at Sydney. During the first year of the settlement, an excursion to Prospect Hill was, however, made by an exploring party which included Governor Phillip. According to Kohen "it was generally believed at this time that the inland was uninhabited, or at least that the Aboriginal population density was very low. It was with great surprise that they found traces of Aborigines everywhere" (Kohen n.d. : 2).

Settlement along the alluvial lands of the Georges and Hawkesbury River took place in what Willey has identified in the second of five stages of the European settlement of NSW. Willey notes that the "rapid growth of the colony gave the Aborigines around Sydney little time to

adjust before their tribal grounds were swallowed up and transformed irrevocably by the Europeans' hunger for farm and later for grazing lands" (Willey 1979 161).

First European contact with the Aboriginal people of the Appin area is attributed to two explorers, namely Ensign Francis Barrallier who crossed through the area in November 1802, and George Caley, a servant of Joseph Banks, who reached the area in 1802. Once Europeans began settling inland areas, hostilities between European and Aboriginal people were relatively common, particularly when the two groups began competing for resources and land. For example, European farming methods drove away the small game needed by Aborigines, and the method of burning off areas to renew vegetation commonly employed by Aboriginal people was incompatible with European farming methods.

The arrival of settlers in the region around Appin and competition for resources began to restrict the movement of hunter gatherer inhabitants from around 1813. By 1814 numbers of Aboriginal people local to the area and groups which had been pushed off their land from elsewhere began to congregate in the Appin area in search of food and resources. In May of that same year an Aboriginal boy was killed by the militia, which resulted in retaliation and the death of one militia member. The mounting pressure and trouble in the region resulted in Governor Macquarie sending a punitive military expedition in 1816. This expedition ended in the 'Appin Massacre'. In 1816 Governor Macquarie ordered his British troops to punish the Aboriginals and force them to leave the area. Captain Wallis located a group of Tharawal people camped at Cataract Gorge, where most were hiding in the bushes. The military claimed their intentions were to capture prisoners but in the ensuing conflict many Aboriginal men, women and children were driven over a cliff to their deaths with few survivors (Biosis 2006).

By 1840, the traditional food economy of the Aboriginal people, appears to have been predominantly replaced, with most Aboriginal people being employed by European farmers or selling their traditional food items for European goods (Hassell 1902, cited in Navin Officer 1992). By participating in paid work, including work for the exchange of goods and cash, Aboriginal people sought to share in the economic and social structures of the new European society as a way to keep or gain a place in that society; albeit an unequal one. They were employed as guides and farm labourers as another way of retaining important family and place associations. Aboriginal people of the Appin area and the wider Sydney and Illawarra districts continued to assert the importance of the land to their culture following the arrival of Europeans by maintaining their spiritual connection with the land through ceremony and story (NPWS 2004).

4.2 Regional Archaeological Context

Although European observers recorded various aspects of the lifestyles of Aboriginal people in the Sydney region from the beginning of European settlement in the late eighteenth century, it wasn't until the late nineteenth century that archaeological investigations of Aboriginal archaeological sites commenced (Attenbrow 2002: 5). Since then over 4,000 archaeological sites have been recorded across the region, and hundreds have been excavated (Attenbrow 2002: 48). Most commonly these contain engraved or pigmented images, midden material, or open scatters of archaeological material such as stone artefacts (Attenbrow 2002). Currently the oldest accepted date for an archaeological site in the Sydney region is a date of about 14,700 years ago which was obtained from Shaw's Creek Rockshelter K2, located to the north of Penrith (Attenbrow 2002: 20). In discussing the distribution of site types or traits across the region, Attenbrow notes that:

> shell middens…are associated with estuarine and ocean shorelines…A large number of sites are associated directly with sandstone – rockshelters with midden or deposit and/or images (usually pigmented images), engraved images and grinding grooves on rock platforms, stone arrangements, abraded channels and waterholes…In addition, almost all of the recorded open middens are located directly on sandstone as that is where they preserve best. On the other hand, the Cumberland Plain is dominated by open deposits because of its shale geology and lack of sandstone
>
> (Attenbrow 2002: 49).

Various studies have been carried out in the broader area of the Cumberland Plain however, it can be said that few relate directly to the present study area and the surrounding archaeology In 1990 McDonald suggested that there were approximately 300 recorded Aboriginal sites on the Plain, of these the majority were located in the Northern Cumberland Plain. This was arguably due to the intensive development that has occurred there over the last 30 years in

this part of the Plains. The common site type on the Cumberland Plain is overwhelmingly open artefact scatters (90% according to McDonald 1990) which have a date range between 3,500 – 600 BP. In terms of the Eastern Regional sequence, this places these site types within the mid to late Bondaian period.

Although the study area is situated along a transition zone between the Cumberland Plains and the Woronora Plateau, the archaeology of the latter landform relates most directly to the archaeology of the study area.

Much of the existing knowledge pertaining to the prehistory of the Woronora Plateau has been compiled by the Sydney Prehistory Group and the Illawarra Prehistory Group. On the plateau the most common site types identified are rock shelters with art and/or occupation deposits, and open sandstone outcrops associated with axe grinding grooves. On the Woronoara Plateau 27 rock shelters have been excavated, 14 of which are situated in an inland environment. Evidence for the earliest occupation is 2220±70 BP (Koettig 1985).Compared to the Cumberland Plain surface artefact scatters are less common. Surface scatters of stone artefacts on the Plateau are usually located adjacent to creek lines at Lower plateau level where level sandstone crops out in creek lines or adjacent to upland swamps (Sefton 1997).

It should be noted that the survey methods and interests of amateur groups have biased the resulting database towards rock shelter and outcrop based sites. Groups have tended to focus their searches on more obtrusive sites such as rock shelters, rock art sites, engravings and grinding grooves. These sites are commonly found along escarpments and large areas of rock platform exposures. Consequently, landforms with associated sites such as scar trees, potential archaeological deposits and artefact scatters have not been targeted by these groups. However, numerous archaeological studies at a more localised level within the Appin region have similarly revealed a low frequency of artefact scatters within the sandstone plateau landscape (see Section 4.3).

There has been little analysis of Aboriginal site type and distribution patterns relative to landform variables of the sandstone/shale transitional zone. Navin Officer (2002*a*) suggest that site type and location may remain consistent with the trends which have been established for the Plain and the Plateau, which dictate site type according to landform geology and soil landscape. As such, areas of sandstone outcrop are expected to be associated with rock shelter and grinding groove sites, while open artefact scatters, potential archaeological deposits in alluvium, and isolated finds would predominate on the shale landforms. However, artefact scatters and isolated finds do exist on the Plateau albeit in lower frequencies. It is plausible that the landscape transition zone may reflect relative changes in the importance of different food and raw material resources, however it is not as yet known how or if the content of archaeological deposits differs on sites on the adjacent Plain and Plateau.

4.3 Local Archaeological Context

Numerous studies have been undertaken within the Appin area, the majority of which were in relation to underground coal extraction and subsidence, with a focus on shelter sites rather than open sites. These studies give a broad picture of the wider cultural landscape and the site types, frequencies and distribution patterns that have formed the current understanding of the archaeological record in the region. The findings from these investigations overall echo those of the regional studies and define the archaeological context of the study area. The most relevant of these studies to the current study is the work conducted by Dibden in 2002.

Dibden (2002) undertook an archaeological assessment for a proposed subdivision at Appin situated adjacent to the current study area. Two rock shelter sites with art and deposit and three shelter sites with potential archaeological deposits were relocated along Ousedale Creek. No open artefact scatters were recorded during the survey despite the fact that the survey was comprehensive in nature with reasonably good ground surface visibility. This result was assessed to be a reasonably true reflection of the potential for this site type in the study area and is similar to results reported by Rich (1990) who also failed to locate any open artefact scatters in a similar topographic region with good visibility.

Immediately to the east of the study area Silcox (1986) failed to locate any sites for an Aboriginal heritage survey for the proposed Bulli/Appin Road, while further east along the Bulli/Appin Road, Brayshaw (1982) also did not locate any sites. Silcox (1986) concluded that as the survey route was associated with an absence of suitable rock surfaces and sandstone outcrops a low frequency of site occurrences was to be expected. This conclusion is consistent with the regional models forwarded for the Woronora Plateau area.

West of the present study area, several archaeological studies have been conducted for the Appin Colliery. Sefton (1996) completed an archaeological investigation of Area 4 for Appin

Colliery. Six new Aboriginal shelter sites with art and/or deposit were recorded. In 1998 Sefton reassessed a number of previously recorded rock shelters with art and deposit situated within the Nepean Gorge for the proposed Tower Colliery Longwalls 16-24. Seven overhangs with the potential for archaeological deposits were also recorded. Later in 2002, Sefton undertook archaeological investigations of proposed Longwalls 406 to 408 for the Appin Colliery. This investigation reassessed four previously recorded Aboriginal rock art shelters. These included two sandstone overhangs with art and deposit, one overhang with archaeological deposit and grinding grooves and one overhang with archaeological deposit.

In 2000 Navin Officer prepared a cultural heritage assessment for the proposed Appin Colliery Methane Gas Pipeline. One new Aboriginal site was recorded, consisting of a red silcrete flake, situated on the edge of a creek bank. Two more Aboriginal artefact sites were recorded by Navin Officer (2002*b*) near Rocky Ponds Creek as part of an assessment for a proposed optic cabel at Appin. These finds consisted of a red silcrete flake and a grey basalt ground hatchet head. Reeves *et al* (2006) undertook a EIS project for the proposed Douglas Area 7 coal mine, also situated west of the current study area. Four new archaeological sites were identified consisting of open artefact scatters.

4.4 Aboriginal Sites Recorded in the Local Context

4.4.1 Sites in the Landscape

Any attempt to form predictive models for the locations of Aboriginal cultural heritage or archaeological sites within a given region can be, at times, a problematic endeavour. Particular site types are, by their nature, inextricably tied to types of landscapes or features within it. Grinding grooves, for example, exist only where there is suitable rock, and generally some water to assist the grinding process. Rockshelters containing art or artefacts are likewise natural features within the landscape that have been modified by cultural processes – they can only exist where suitable rock formations exist. Conversely, some site types, such as known significant cultural or dreaming places, while significant parts of the cultural landscape, are not obviously or predictably tied to a particular type of landscape formation.

Descriptions and general landscape location factors for the more common types of Aboriginal archaeological sites are given below and summarised in table 4.1.

4.4.2 Middens

Generally, midden refers to a heap of shells, which sometimes also contains bone or other food remains, artefacts and/or other archaeological features, which are, in the main, considered to be the remains of past meals. Midden material may be found in the open, or in rockshelters.

Attenbrow (2002) notes the association between recorded/preserved middens and sandstone. Results from previous archaeological researches showed that middens are unlikely to be found in the present study area.

4.4.3 Grinding Grooves

Grinding grooves can be defined as:

> Grooves which formed as a piece of stone, wood or bone was rubbed on a rock surface during implement manufacture, especially to sharpen an edge or point (Attenbrow 2002: 205).

They often occur on sandstone and near a source of water to facilitate the grinding process. There is a good likelihood to encounter grinding grooves based on previous archaeological studies and the geological characteristics of the Appin area.

4.4.4 Rockshelters and Rock Art

A rockshelter, or rock overhang (Attenbrow 2002: 207) is a naturally occurring rock formation, generally created, in the study area region, by the weathering of sandstone cliffs, or by rock fall. Not all rockshelters are archaeological sites – those that are identified as such are those containing such things as stone artefacts, or rock art.

They are likely to occur wherever suitable rock formations occur, such as in Hawkesbury Sandstone. They are possible in creek valleys and escarpments. The study area possesses topographic features that may be suitable for such sites to occur; typically along Ousedale Ceek.

4.4.5 Artefact Scatters

Stone artefacts, or flaked stone, being more durable than material culture items made from organic material, are often the only artefact types that remain within archaeological deposits. In the main, they consist of tools created from stone as well as the debris (unused flakes, cores and fragments) created by the making/flaking of those tools.

It should be noted that 'stone' artefacts made from glass (generally derived from glass bottles) are found in some post-contact sites.

Being the remains of tools made and used by people they are likely to occur in almost any location in the landscape, however they generally occur in larger concentrations at areas where people camped or visited frequently. Where they exist on a depositional surface (e.g. an alluvial flat) artefact scatters have the potential to continue sub-surface as an in-situ archaeological deposit. Based on previous archaeological studies conducted in the Appin area, the likelihood of artefact scatters is low.

4.4.6 Modified or Carved Trees

Two types of modified trees are found in NSW; scarred trees and carved trees. Scarred trees are generally trees from which bark has been removed for use in the making of a shield, canoe or other implement.

The DEC defines carved trees as;

> …trees that have been scarred by Aboriginal people through the deliberate removal of bark or wood. (Long 2005).

Aboriginal scarred trees can be expected to occur upon all landform units within the study area where suitable old-growth native timber remains, however, the greatest density of scarred tree sites tend to occur within close proximity to known occupation areas generally associated with significant water sources.

The occurrence of scarred trees is likely to be reduced as old-growth timber has been removed as a result of historic European land management practices.

During the region's prehistory and early contact period, sheets or strips of bark and often sections of outer tree cambium were removed by Aboriginals for a variety of purposes – including the manufacture of wooden implements such as "boomerangs," shields and "coolamons" (containers), roofing and sides of bark shelters, "wumurah" (throwing sticks), spears, bark for canoe construction, cultural boundaries or resource site markers, and burial or ceremonial markers. In addition to the above, small areas of bark and timber were chopped out using stone axes, and later using European steel axes creating toe- and foot-holds, to facilitate the removal of birds, birds eggs, honey and possums from hollows, mainly in eucalyptus trees.

Scarred trees result when bark has been removed from a tree as a direct or indirect result of the manufacture of various goods and implements or the result of making foot holes in a tree to collect food or to facilitate the removal of bark. These sites may occur almost anywhere and identification of scars as Aboriginal in origin can often remain problematical. Many remaining scarred trees date to the historic period when bark was removed by Aboriginals for both their own purposes and for roofing on early European houses, consequently, the distinction between European and Aboriginal scarred trees is often blurred. Within the study area, scarred trees may occur anywhere where old growth trees remain and it is estimated that scars must be at least 90-100 years old to be indicative of an Aboriginal origin.

Scarred or modified trees have not been previously recorded within the current study area indicating that their potential occurrence is low.

4.4.7 Stone Arrangements

Attenbrow defines stone arrangements as:

> A humanly arranged set stones or rocks which form lines, circles as well and cairns and piles…They are sometimes found on rock platforms where engraved images occur and where they are usually identified as having a ritual or ceremonial purpose (Attenbrow 2002: 208).

Given past land use activities in the study area, such as agricultural and farming practices, stone arrangements may not be an occurrence. This is not to say that stone arrangements did not exist within this landscape, rather since settlement it is unlikely that they may survive within the study area.

4.4.8 Other site types

Potential Archaeological Deposits (PADs) - PADs are deposits, usually associated with actively aggrading landform features or rock shelter deposits. The latter is not considered likely within the study area. PADs often do not exhibit identifiable archaeological material on the surface but may contain sub-surface material. PADs are usually identified by their context within, or associated with, a landscape feature that was likely to have been exploited in prehistory.

Burial Sites - Aboriginal burial sites are known to have occurred along river systems, often in close proximity to the river, and with locations usually relying on the softer, lighter sediments such as alluvial silts of river banks and Aeolian sands. The possibility for such sites to be found in the study area is low.

Quarry Sites & Procurement Sites - These sites are typically exposures of a geological raw material where evidence for human collection, extraction, and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts, or the removal of ochre. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations and ochre sources. However, based on previous archaeological research in the current study area, the potential for quarry sites is considered to be low.

Contact Sites - Contact sites relate to places which contain evidence of Aboriginal occupation during the period of early European occupation. Evidence of this period of "contact" could potentially be Aboriginal flaked glass, burials with historic grave goods or markers, and debris from "fringe camps" where Aborigines who were employed by, or who traded with, the white community may have lived or camped. The most likely location for contact period sites would be camp sites adjacent to permanent water, and located away from the focus of European town occupation or private land use There is a low to moderate potential for the existence of contact sites within the study area.

4.4.9 Culturally Significant Sites

The landform distributions of archaeological site types that occur in the local region are summarised in the table below:

Site Type	Factors
Rockshelters containing art, midden, artefacts or other archaeological deposits	Are likely to occur where suitable formations of sandstone outcrops exist.
Rock art/engraving	Can only occur where suitable rock formations exist.
Axe grinding groove	Can only occur where suitable rock formation exists such as sandstone formations and generally in close proximity to water.
Open Artefact scatter	Are likely to occur in areas of high visibility, car tracks or eroded areas when ground visibility is otherwise poor.
Midden	Generally occur in relatively close proximity to sources of shellfish. In the Sydney region, they are often recorded on sandstone.

Table 4.1 Summary table of Aboriginal archaeological site types that are likely to occur within the study. area.

4.5 Sites Registered with DEC Aboriginal Heritage Information Management System (AHIMS)

A search of the DEC Aboriginal Heritage Information Management System (AHIMS) database conducted 20 March 2007 revealed a total of 20 Aboriginal places located within a 4km radius of the study area (AMG search coordinates Zone 56, Easting's 294000 – 297500, Northing's 6211000 – 6215000). These 20 sites represent locations at which one or many archaeological

feature(s), such as artefacts, rock art, or grinding grooves have been recorded. It should be noted that the list of sites recorded in the DEC database is not exhaustive as only formally recorded sites are included. Therefore, there exists a possibility that unrecorded sites exist in the study area. Table 4.1 lists the 20 sites recorded within the region of the study area, while Figure 4.1 represents the percentage of site types within the region of the study area. It can be seen that the most common site types recorded in the region are rock shelter sites associated with art and/or archaeological deposits and axe grinding grooves.

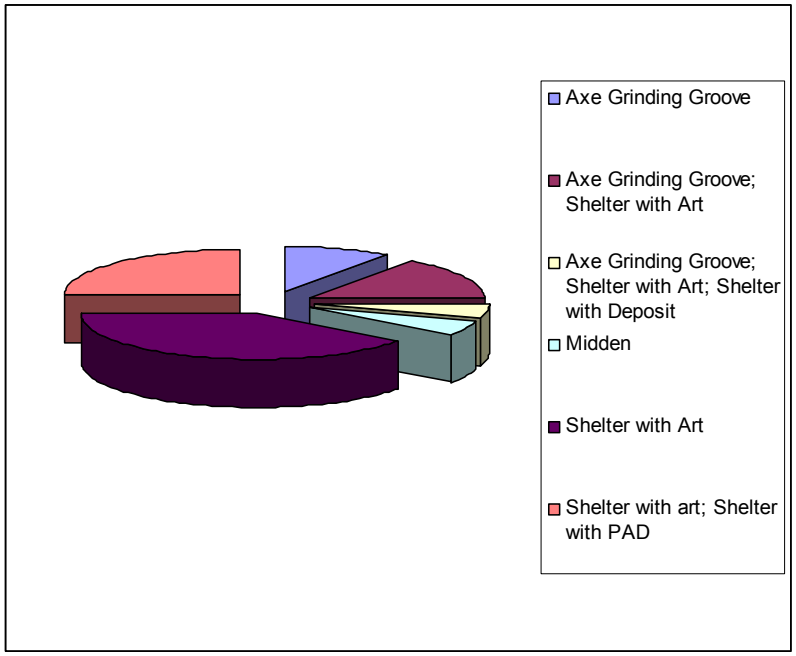


Figure 4.1: Percentage of Site Types Registered with AHIMS within a 4km Radius of the Study Area

Site ID	Site Name	Site Type
52-2-0501	Appin; Georges River	Shelter with Art
52-2-1810	Ousedale Creek 1	Midden
52-2-2034	Sawpit Gully4; Wedderburn	Axe Grinding Groove
52-2-2055	Sawpit Gully 6; Georges River Appin	Shelter with Art
52-2-2057	Sawpit Gully 7; Georges River Appin	Shelter with Art
52-2-2058	Sawpit Gully 5; Georges River Appin	Shelter with art; Shelter with PAD
52-2-2059	Ousedale Creek 1; Georges River Appin	Shelter with Art; Shelter with PAD
52-2-2060	Sawpit Gully 12; Georges River Appin	Shelter with Art

Site ID	Site Name	Site Type
52-2-2065	Sawpit Gully 8; Georges River Appin	Axe Grinding Groove
52-2-2101	Ousedale creek 1	Axe Grinding Groove; Shelter with Art; Shelter with Deposit
52-2-2103	Sawpit Gully 12t	Axe Grinding Groove; Shelter with Art
52-2-2106	Sawpit Gully 8	Axe Grinding Groove; Shelter with Art
52-2-2107	Sawpit Gully 7	Axe Grinding Groove; Shelter with Art
52-2-2108	Sawpit Gully 6	Shelter with Art
52-2-2109	Sawpit Gully 5	Shelter with Art
52-2-2198	Marhyvyes Hole 1	None
52-2-2236	Ousedale Creek No 2	None
52-2-2282	PAD 2	None
52-2-2283	PAD 1	None
52-2-3313	MD1	None

Table 4.2. Aboriginal Sites Listed on the AHIMS Register located within the region of the Appin study area.

4.6 Study Area Site Prediction

Based on the distribution of known Aboriginal archaeological sites on landforms of the surrounding region, some statements can be made regarding the likelihood of archaeological sites to exist, or to have existed on landforms within the current study area.

Rockshelter sites with art and/or deposit, and axe grinding groove sites are the most common site type recorded in the local area and therefore it is probable that these are the predominant site type that may exist in the present study area.

Both grinding grooves and rock shelter sites have been found along Ousedale Creek and as such these site types may be expected to occur within the vicinity of Ousedale Creek within the study area.

Although artefact scatters may occur within the study area, in light of past regional and localised studies along the Woronora Plateau, these site types have a moderate to low potential of occurrence. Similarly, owing to the geological nature of the Plateau, with steep incised river and creek lines, alluvial deposition and associated potential archaeological deposits are unlikely to occur within the study area. In general, soils formed on the Hawksbury sandstone are relatively shallow and highly susceptible to erosion, which is not conducive to the retention of archaeological deposits.

However, the type and location of known Aboriginal sites is more likely to reflect modern development pressures than past aboriginal land use patterns. When considering the potential distribution of Aboriginal archaeological sites within a given area consideration must be given not only to modern patterns of development, but also any possible post European contact which may have had a destructive or negative impact on the integrity and context of sites.

5.0 Historical Background

The following chapter provides a broad introduction to the historic cultural landscape which includes the study area. It is not intended to be an in depth historical account of the development of this region. Instead, the objective is to provide the reader with an understanding of the historical context in which the study area is situated. This also serves to provide the basis for which any assessment of historic cultural significance is determined.

5.1 The South West Cumberland Plains Region

Early Settlements

Soon after the arrival of the First Fleet it was realised that the soils around Sydney Cove were unsuitable for farming, while the heavy clay loam soils of the Cumberland Plain were found to be more fertile. As such the early agricultural settlements that were established outside of Sydney Cove were located on the rich alluvial soils of the Nepean, Hawkesbury and Georges Rivers areas and at the head of the Parramatta River. The first road of the colony was the track between Parramatta and Sydney Cove which skirted the marshlands on the southern side of Parramatta River. In about 1797 Parramatta Road was laid out under the directions of Surveyor-General Augustus Alt and sections of Parramatta Road to this day generally follow this early alignment. The earliest road that linked the Hawkesbury settlements of Windsor to Parramatta was known as the Hawkesbury Road. Sections of this 1790s original road and its alignment are today found beside Old Windsor Road and Windsor Road. Large portions of these roads continue to follow the 1790s and 1813 road alignments (Austral 2003; Heritage Concepts 2006*a*, 2006*b*; Tropman & Tropman 2004). Figure 5.1 shows the early main roads of the colony.

The importance of agriculture to the colony is reflected in the early settlement patterns with the agricultural settlements being established at Windsor on the Hawkesbury River and areas along the Nepean River (see Figure 5.2).

By 1804 much of the Cumberland Plain had been settled and Governor King began to look to other regions in the colony for arable land. The only suitable land within the Cumberland Plain was the area known as "The Cow Pastures" located in the south-western corner. This area was named after the discovery in 1795 of cows from the First Fleet which had wondered off into the bush. The Cow Pastures had remained unoccupied due to the official decree that reserved the land for the wild cattle (HLA 2003; Tropman & Tropman 2004).

The early settlements of the south-western area of the Cumberland Plain were located with the districts of Minto, Upper Minto, Bringelly, Appin, Cooke, Airds and Cowpastures south of the Nepean River (see figure 5.1). This south-western region was known for its forested lands and was considered to be a flood-free area. Governor Patterson was persuaded to develop the area quickly in response to the 1809 floods in the Hawkesbury area, which had virtually wiped out the colony's food supply (Austral 2003; HLA 2003). By 1817 all available land in the Minto and Upper Minto Districts had been granted with Governor Patterson making the initial land grants in the Airds District in 1809 followed by Governor Macquarie who allocated many small land grants ranging from 30 to 100 acres (Casey & Lowe 2003).

Picton was first settled by colonists in the early 1820s but had been known to explorers from as early as 1798. In 1821 a government town site was surveyed just south of Picton's present location. Land grants were made in 1822, the first going to Major Henry Colden Antill who selected a 2000 acre parcel of land known as Jervis Field to the east of Stonequarry Creek. He had been *aide-de-campe* to Governor Macquarie from 1810 and upon resigning his commission in the British Army decided to remain in Australia. Other recipients were Karl Ludvig Rumker, an astronomer and George Harper, a government employee (Austral Archaeology 2003a). By the end of 1822 six major land grants had been made for holdings around Picton.

Agricultural and pastoral activities dominated the land of the region during the nineteenth century with the crops harvested as the main food supply for the early colony. The early 1800s saw the beginnings of the establishment of the wool industry with large areas in 'The Cowpastures" owned by John Macarthur used for grazing. The establishment of the road over the Blue Mountains and the accessibility of good pastureland in the hinterland saw a general move away from sheep farming on the coastal areas. By the early twentieth century the dairy industry had been established in the region (Austral 2003; Casey & Lowe 2003; HLA 2003; Tropman & Tropman 2004).

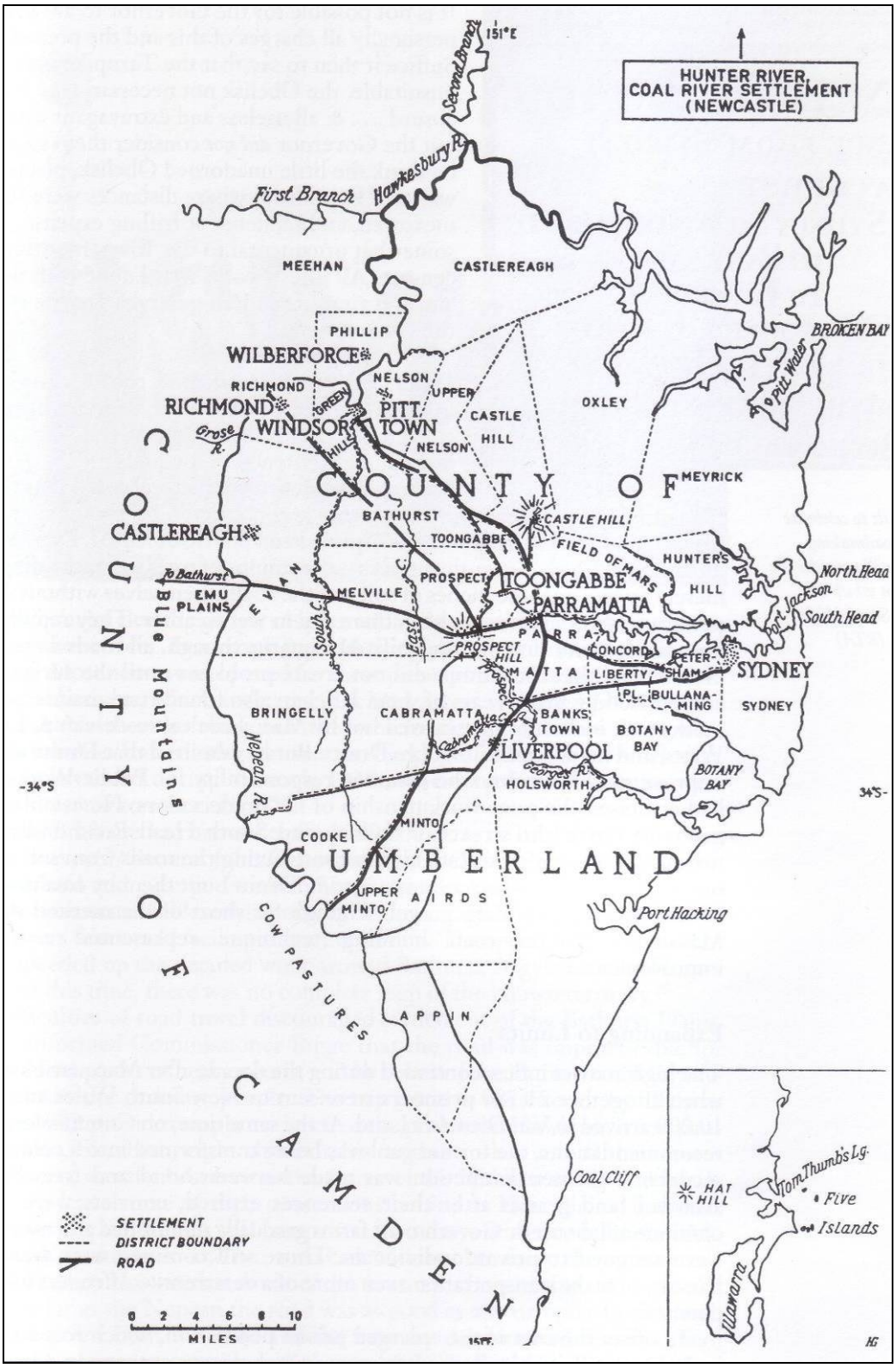


Figure 5.1:Plan of County of Cumberland Districts in 1821 (Broomham 2001)

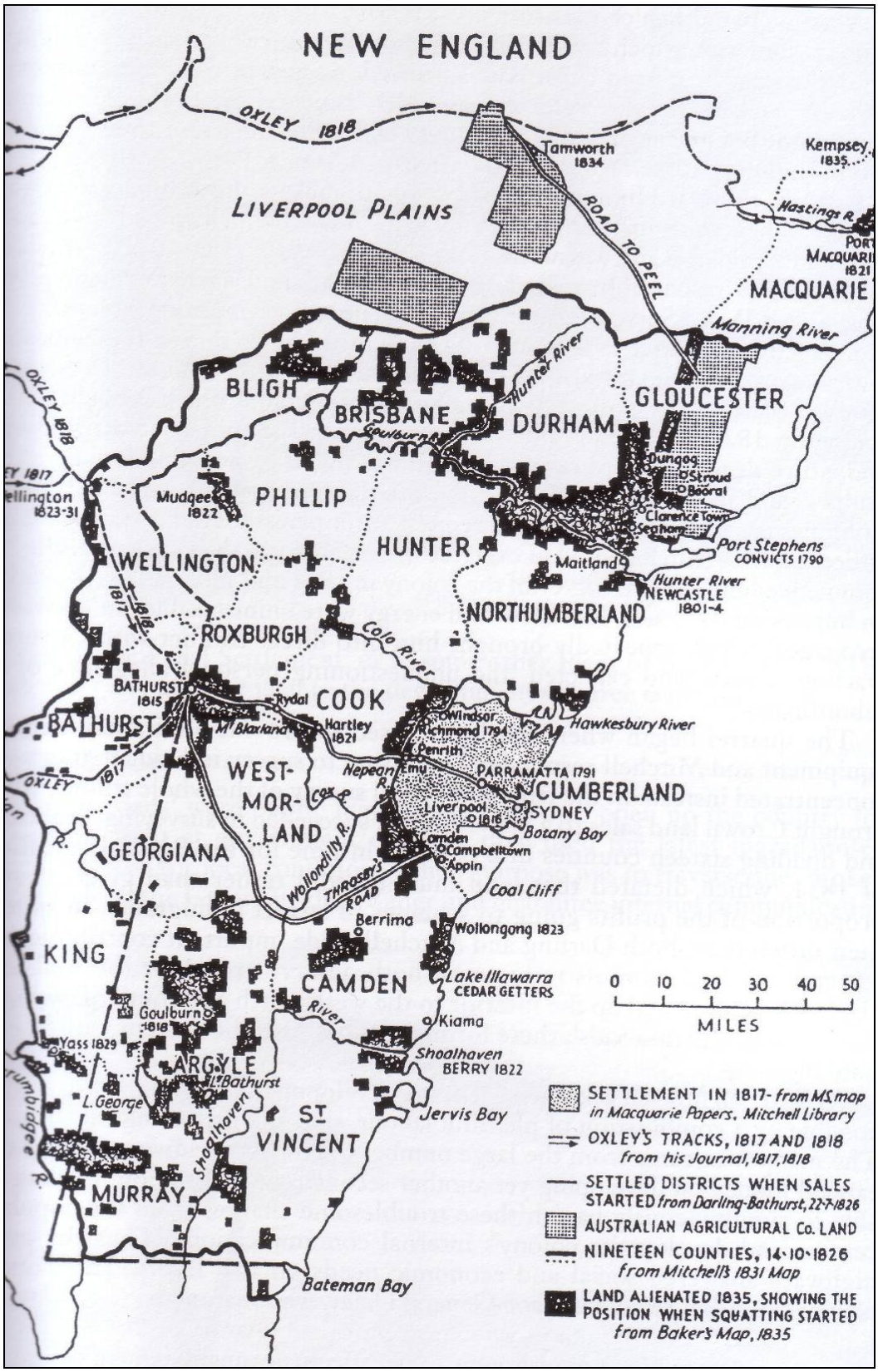


Figure 5.2: Settlement patterns from 1817 – 1835 (Broomham 2001)

The larger estates began to be subdivided by the late nineteenth century. These subdivisions consisted of smaller holdings or farming allotments for the establishment of market gardens, orchards, vineyards and poultry farms. When smaller holdings were amalgamated the land was used for dairying. The destruction of the wheat crops in the 1860s from rust disease contributed to these changes in land use for the region (Austral 2003; Casey & Lowe 2003; HLA 2003; Tropman & Tropman 2004).

Transport

The colony's public or major roads linked the settlements to Sydney Cove and each other, and provided for the movement of produce. Other local or parish roads began as tracks that linked properties and towns with these public or major roads (see Figure 5.2) (Tropman & Tropman 2004). Few of the early roads within the County of Cumberland were public roads. Public roads included: "Old South Head Road; the Great Western Road; the Great South Road; other southern roads from Liverpool to Campbelltown, Menangle and Stonequarry Creek; and the Dogtrap Road from Parramatta to Liverpool (Woodville Road)" (Broomham 2001). The early road from Liverpool to Campbelltown was surveyed by James Meehan in 1817 and was known as the Southern Road, now named Campbelltown Road, with the road into the Campbelltown area known as the Airds Road. In 1825 a road to the Nepean via Campbelltown was surveyed by William Harper and convict gangs commenced its construction later that same year. Further roads throughout the region and wider colony were established as the population increased (Casey & Lowe 2003; HLA 2003).

Another transportation and communication link for the region was established with the construction and opening of the railway. The first rail line opened in 1855 between Redfern and Parramatta. The Parramatta to Liverpool line was opened in 1856 with the Liverpool to Campbelltown section opened on 4th May 1858. The first train along the Campbelltown line left Redfern with the official party at 1:15pm and arrived at Campbelltown at 3.00 pm. The line was extended to Picton, Mittagong and Moss Vale in 1867 and onto Goulburn in 1869. When the Liverpool to Campbelltown line was first opened it consisted of a single track with no platforms between the two main stations. Platforms were added at Glenfield and Ingleburn in 1869 and Minto in 1874 after the subdivision of the rural properties during the 1860s. The line initially had four trains per day with the earliest train departing Campbelltown at 7.55 am and arriving at Redfern at 9.20 am. The evening train departed Redfern at 5.00 pm and arrived at Campbelltown at 6.30 pm (Liston 1988).

Water

After 1887 the Nepean River was developed as the principal supplier of water for Sydney and was a gravitational system (Tropman & Tropman 2004). Figures 5.3 to 5.5 are of Nepean River and the Upper Canal of the Upper Nepean Scheme in the area. The Upper Nepean Scheme consists of the Upper and Lower Canals and the Prospect Reservoir. The Upper Canal commences by tunnel from Pheasant's Nest Weir on the Nepean River and extends through the LGA areas of Wollondilly, Liverpool, Holroyd, Fairfield, Campbelltown and Camden. It has been a functioning element of Sydney's main water supply system for over 120 years (Higginbotham 2002; NSW HO)

Figure 5.3: Nepean River at Menangle 1900-1920 (Campbelltown City Library Ref: 00417)

Figure 5.4: Water race of the Upper Canal at Glenlee 1990 (Campbelltown City Library Ref: 003085)

Figure 5.5: Water Race of the Upper Canal at Glenlee 1990 (Campbelltown City Library Ref: 003084)

When the Upper Nepean Scheme was completed in 1888 it was intended to meet water needs of Sydney until the population reached 540,000. By 1902 the population that was serviced by the Scheme had reached 523,000 and a severe drought had reduced the level in the Prospect Reservoir to below the level need for gravitational discharge. A decision was made to construct a new dam at Cataract Creek with a 20,000 million gallons storage capacity, which became part of the Sydney's water supply system. Work began in 1903 with the dam completed in 1907 (see Figure 5.6) (Whitaker 2005).

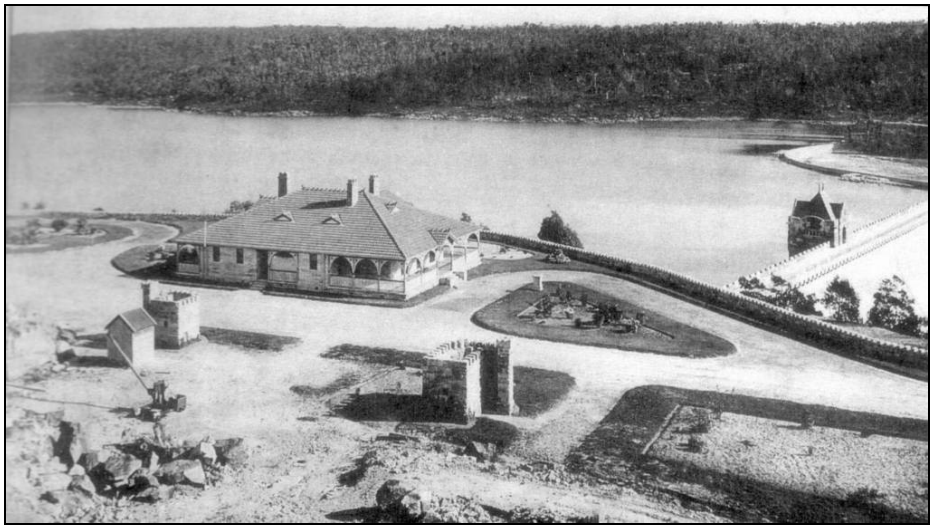


Figure 5.6: Cataract Dam in 1911 soon after it was filled (Whitaker 2005)

Further Growth

The region continued to grow during the late nineteenth century. Whilst remaining outside the metropolitan area and retaining its rural aesthetic, the region was able to take advantage of the growing communication networks and services by selling its produce to the city. This period saw the growth of the surrounding area with the establishment of the villages of Elderslie and Narellan and the provision of accommodation for the working class (Tropman & Tropman 2004).

In 1977 the Macarthur Development Board was established with the role of ensuring the optimum development of the region which included the regions of Campbelltown, Camden and Appin. The area was referred to as the Macarthur Growth Centre. The Boards' functions included the acquisition, planning, managing, developing and disposing of land for industrial, commercial, residential and recreational purposes within the Macarthur Growth Centre. Industrial areas were established at Campbelltown, Ingleburn, Minto and Narellan. The service industries were established in large regional centres such as Macarthur Square. Other regional centres were established at Minto and Camden (Hewatt et al 1980).

5.2 The Appin Area

Early Settlement

An early European visitor to the Appin area was George Caley who collected specimens of the local flora and fauna for Sir Joseph Banks for shipment back to England. While living in Parramatta Caley made expeditions into the countryside around Sydney looking for new specimens. In a letter to Banks dated 25 September 1807 he described what is now known as the Appin Falls on the Cataract River (Whitaker 2005).

Between 1811 and 1812 a total of six land grants were made in the Appin area by Governor Macquarie and included William Broughton's 1000 acre 'Lachlan Vale' (see Figure 5.7). Other grantees included John Kennedy and Andrew Hamilton Hume, the father of Hamilton and John Hume. The residents of Appin in 1813 included free settlers and former soldiers and convicts who had served their time, the majority of whom had lived in the colony since the 1790s. A further 22 land grants were made between 1815 and 1816 and included a further 700 acres to William Broughton known as 'Macquarie Dale'. Governor Macquarie toured the area during October 1815 and noted the improvements made in the various farms which included the clearing of timber, cultivation of fields of wheat, the construction of farm houses and the establishment of gardens (Whitaker 2005).

The first families to settle in Appin were the Broughton, Kennedy and Hume families who also contributed to the early exploration of the region. Broughton and teenage brothers' Hamilton and John Hume, cousins of Kennedy, explored to the south in 1814 with a Dharawal guide named Duall. They crossed the Razorback Range and travelled as far as Bong Bong through Bargo Brush. Between 1817 and 1819 Hamilton Hume made several trips to the south-west. On these trips he was accompanied by Charles Throsby in 1817, Deputy Surveyor-General James Meehan in 1818 and 1819 and Surveyor-General John Oxley in 1819, the latter held 630 acres in the Appin area. In 1824 Hume and Hovell set out from Hume's 'Humewood' property at Appin to travel overland to Port Phillip. Until 1824 all access to Port Phillip was by sea and "Hume and Hovel were the first Europeans to make the overland trip from the outskirts of Sydney" (Whitaker 2005).

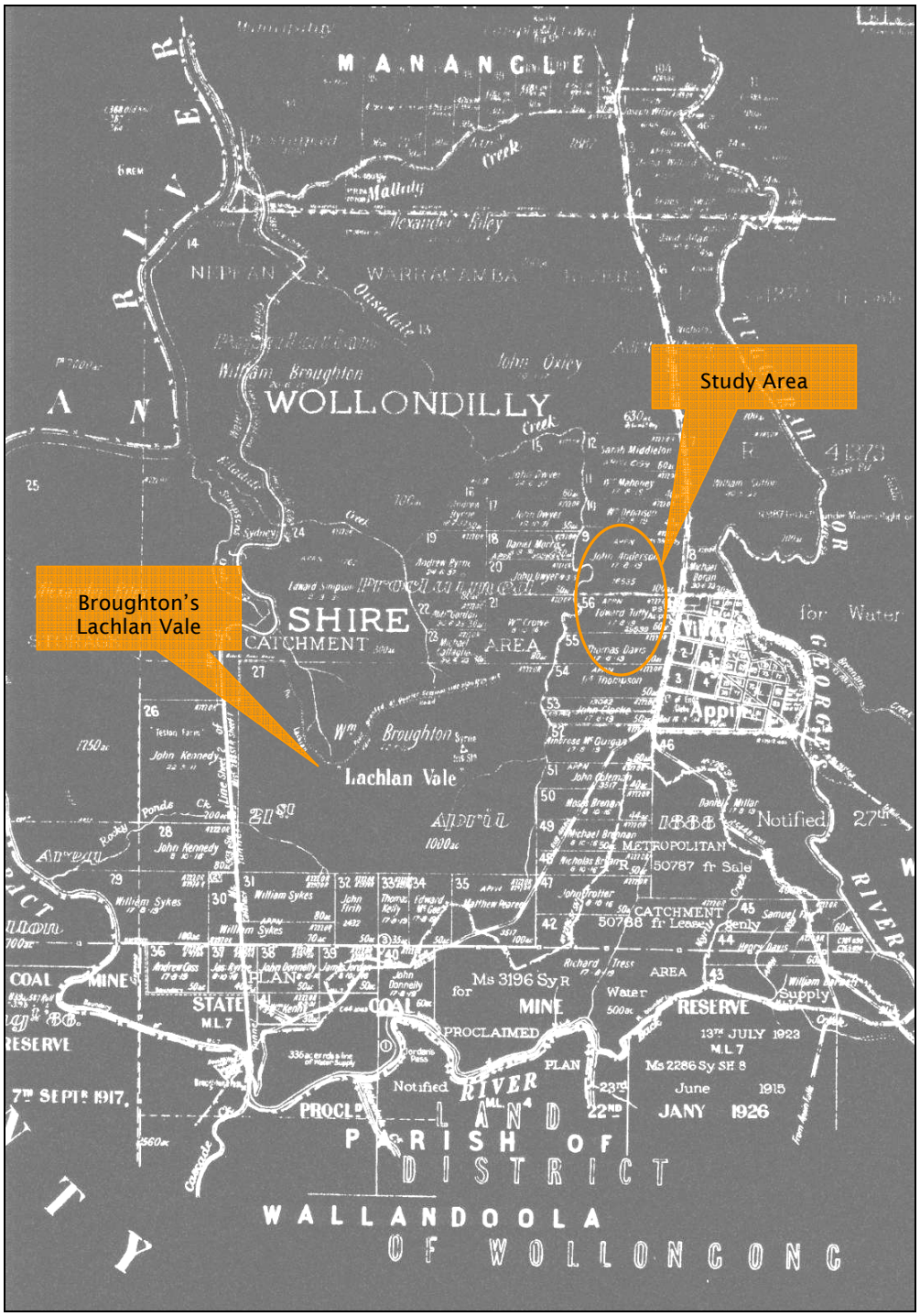


Figure 5.7: Map of Parish of Appin 1930 indicating the study area (Mitchell Library)

Roads

The early roads of the Appin area were usually tracks made by the residents, such as those made by Broughton and Kennedy for access to their properties. As the population increased in the Illawarra district a road link to Sydney via Appin was sought. Charles Throsby found a way down the escarpment to Bulli however the road was rough and was considered too steep for wagons carrying freight. A more suitable route was found in 1821 by Cornelius O'Brien which travelled down Mount Keira, and was paid for by the Illawarra cattle owners. In 1836 the Sydney to Bulli route was discovered which took some 20 miles off the Wollongong to Sydney journey. However this road was not built until 1868 and included a ferry crossing the

Woronora River, which was subsequently replaced in 1929 with the Tom Uglys Bridge. By the 1860s James Waterworth was providing a coach service from Campbelltown to Wollongong six days a week (Whitaker 2005).

The main road from Liverpool to Appin was surveyed by James Meehan in 1815 (Parramatta etc 1973). For approximately 50 years the road from Sydney to Illawarra passed through Appin in the 1800s, which contributed to the growth of the town. The 1828 census listed 233 residents of Appin and listed the Broughton, Hume and Kennedy families who continued to live in the area. The town of Appin was surveyed in 1832 and the plan completed in 1834 with the original street names surviving today (see Figure 5.8). As the town grew its layout did not always follow the 1834 Town Plan (Whitaker 2005).

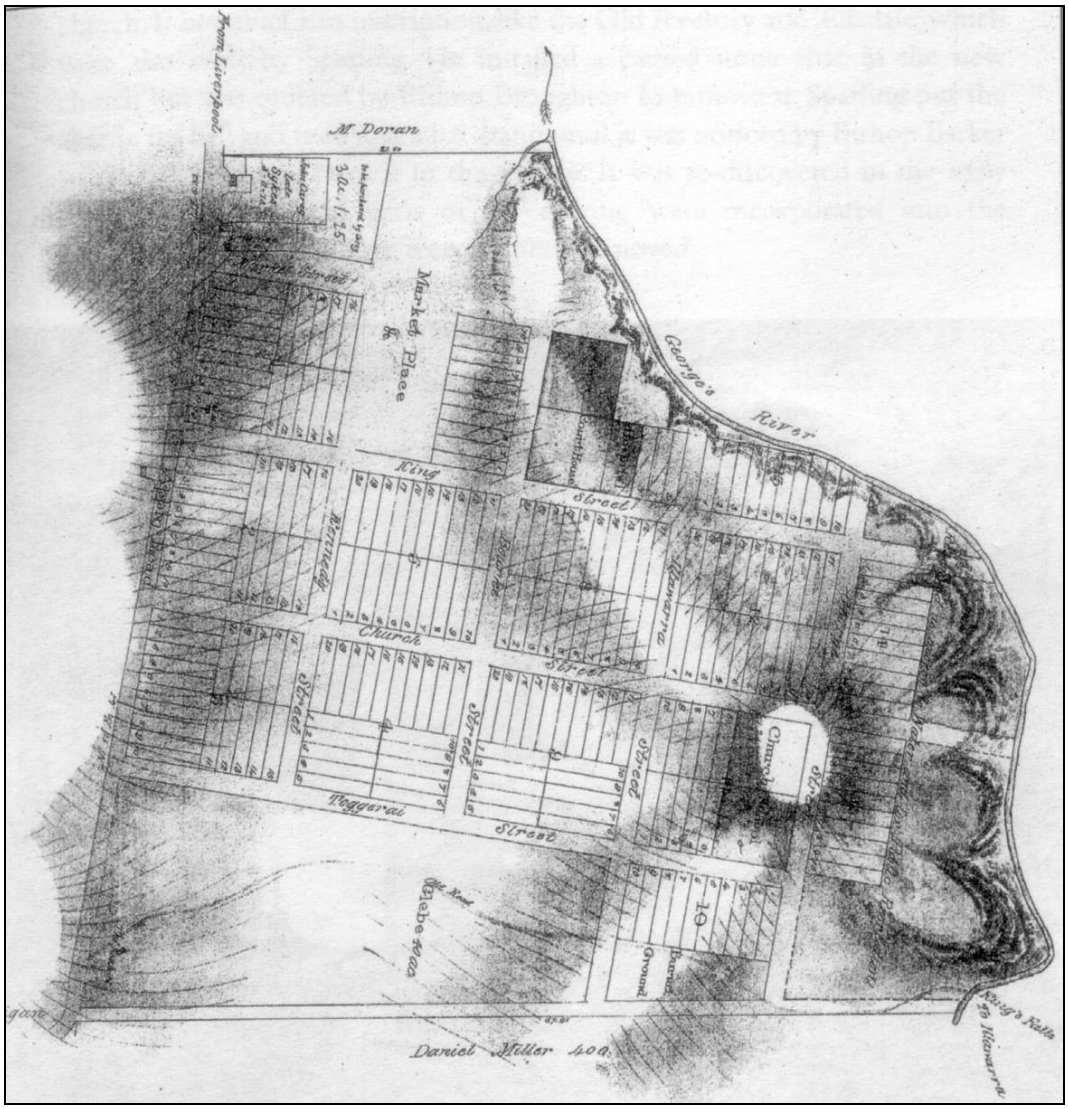


Figure 5.8: 1834 Town Plan of Appin (Whitaker 2005)

Farming

During the nineteenth century Appin was regarded as the granary of New South Wales and the Campbelltown region was second only to the Hawkesbury in terms of production. Visitors during the 1820s to the Airds and Appin districts would have seen wheat and maize crops on the majority of the holdings, while the farmers of smaller holdings of say 20 to 75 acres utilised half their land for crops and the other half for pastureland. Windmills were a feature of Appin's nineteenth century landscape with a number being built in the 1830s and 1840s. The windmills remained in operation from between 25 to 40 years. Appin's wheat growing era had

ended by 1877 due to the competition from outlying districts and the 1860s wheat rust outbreak (Whitaker 2005).

With the end of the wheat industry the local farmers turned to dairy farming. Appin established its own butter factory. However, in 1898 the Menangle Butter Factory opened which led to the closure of Appin's butter factory. The farmers either purchased their own separator or sent the milk by mail coach or their own horse drawn carts to the new factory. In 1917 the Appin dairy farmers agreed to supply Diary Farmers Cooperative their raw milk. The milk was initially transported by horse drawn vans in 5 and 10 gallon cans to Picton station to be freighted to Sydney. By 1922 the transport was done by motor vehicles. The Morrison Diary farm moved from Sefton to Appin in 1957 and closed in 2003. During its operation the farm produced approximately 10,000 litres of milk per day (Whitaker 2005).

Mining

In1962 the Appin Colliery was opened. The colliery used the longwall mining method, and extracts coal from the Bulli seam was then trucked to the BlueScope Steelworks at Port Kembla. The mine operates one longwall and three continuous miners at depths of 550 metres. The West Cliff Colliery was opened in 1976 and began using the longwall mining method in 1982 (Whitaker 2005).

The Appin Mine had high methane gas emissions during the early years of operation. It was the scene of an explosion in 1979, known as the Appin Mine Disaster, in which 14 miners were killed. Since 1981 the methane gas problem was overcome through the extraction of methane which was then harnessed to generate electricity (Whitaker 2005).

Further Growth

Appin today is considered to be a fringe suburb of Campbelltown which is approximately 17 kilometres away, although it retains some of its rural aspects. The town's early growth may be considered slow when compared to other towns in the region.

Services: -The Appin post office operated for 6 months in 1835 and was re-established in 1841. Prior to the commencement of home mail deliveries 1977 residents would collect their mail from the post office. The telegraph service operated at the post office between 1880 and 1887 and was replaced by a manual telephone exchange in 1888. The manual telephone exchange was replaced by an automatic service in 1963 (Whitaker 2005).

Education: -The Church of England school operated between 1815 and the 1860s, with the Catholic school opening between 1836 and 1875. The Appin Public School opened in 1867 and had buildings added in 1928 and the 1960s (Whitaker 2005).

Between 1903 and 1907 the town of Appin provided services to the workers, and their families, involved with the construction of the Cataract Dam. Once the Dam was completed the workers and their families moved on to the next job.

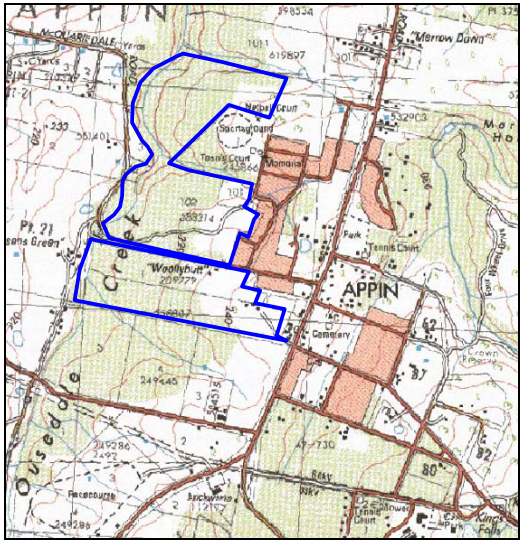
Utilities:-The electricity supply was connected to the town in 1945. Although there was a dam at Cataract that was part of the Upper Nepean Scheme Appin did not receive town water until 1961 (Whitaker 2005).

The growth of the town, since the latter part of the twentieth century, has been attributed to the opening of the Appin Mine, and other collieries in the region, which has brought new industry into the area. Also the development of the Macarthur Growth Centre has contributed to Appin's recent growth.

By comparing early twentieth century maps to maps from 1970s the growth of Appin can be demonstrated. The 1930 map of the town indicates that most of the settlement is located on the eastern side of Appin Road (see Figure 5.9). The topographic maps of 1970-1997 and the current series (see Figures 5.10 and 5.11) illustrate the growth and density of development to the north and west of the town.

Study Area

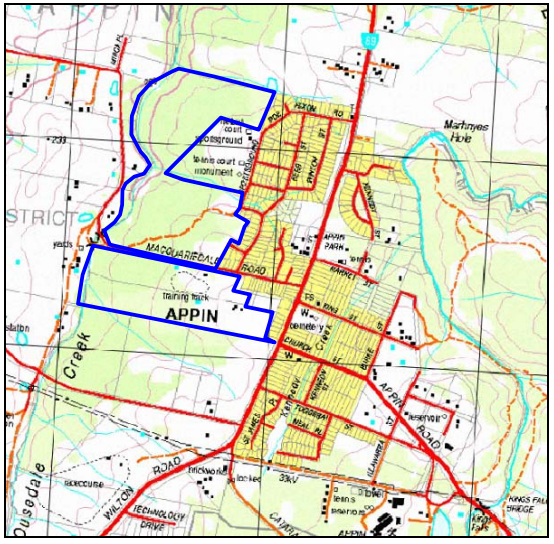
Figure 5.9: 1930 Parish of Appin Map (Mitchell Library)



Built up areas Study Area

Medium vegetation

Figure 5.10: Topographic of Appin 1970-1997 (© Department of Lands 2007)



Built up areas Study Area

Closed to open forest area

Figure 5.11 Topographic Map of Appin current series (© Department of Lands 2007)

5.3 The Study Area

The study area is located on portions of four 1819 land grants in Appin. These land grants were all made on the 17th August 1819 and the recipients were William Dennison 40 acres; John Anderson 100 acres; Edward Tutty 60 acres and Thomas Davis 60 acres (see Figure 5.12). A large portion of the northern boundary of the study area appears to follow the original boundary of the Dennison and Anderson land grants. A small portion of land in the north western corner of the study area is also located on the Dennison land grant.

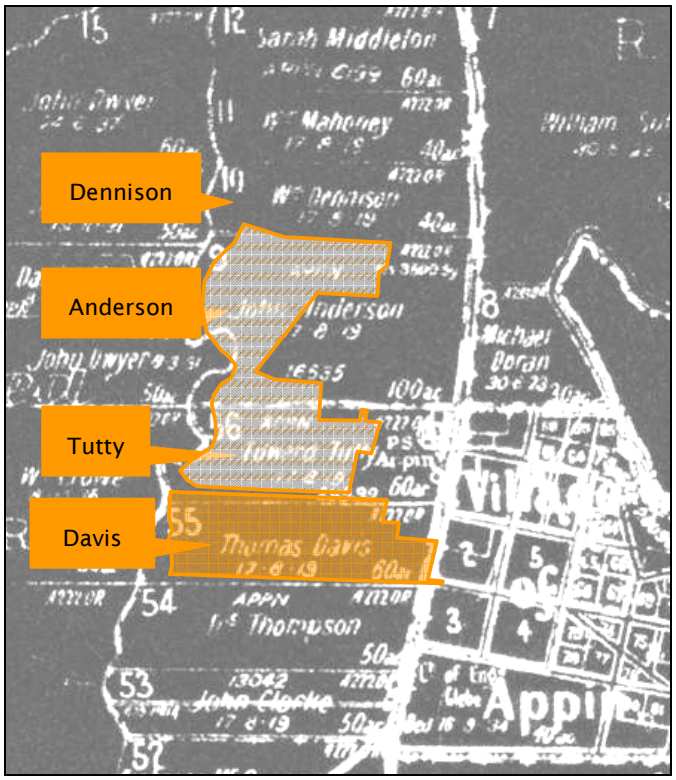


Figure 5.12: 1930 Parish of Appin Map indicating the approximate location of the study area in relation to the four land grants. The hatched area indicates Lot 201 DP 749272 with the shaded area being Lot1 DP 209779 and Lot 1 DP 558807 (Mitchell Library).

William Browne purchased the Anderson land in 1821 and named the residence "Oakham". An extract from the NSW Calender and Directory of 1835 refers to the oak and orange trees of "Oakham", the residence of the late William Browne Esq J.P. (Browne 1949). The location of the residence is unknown. There were three rows of oak tress on the property with one row surviving until 1996. The property is also referred to as "Oaklands Farm" and "Oaklands Park" in local sources. The property remained in the Browne family until 1956 (Douglas & Richards 2007). No oak trees were identified within the study area in April 2007.

The Edward Tutty's land was purchased by Charles Jenkins in 1835; John Armstrong in 1854; Fishlock in 1894; and Edward Lewis in 1908 (LTO a). In Yewen's Directory of Landholders of NSW 1900 lists a Robert J Fishlock, with an Appin Post Office address, and notes the farm as growing oats (Archive CD 2007). In 1928 Edward Lewis was described as a farmer and the land was described as being part of the Edward Tutty land grant and part of the John Anderson land grant (LTO (a)). It appears that in 1977 two parcels of land comprising the remainder of the Anderson and Tutty land grants, after subdivisions, were amalgamated into one large parcel being Lot 1 DP 749272 with the Australian Iron & Steel Proprietary Limited as the proprietor. The Macquariedale Road was construction during the early part of the twentieth century.

The southern portion of the Thomas Davis land grant, Lot 1 DP 558807, was purchased by Thomas Henry Parkinson between 1819 and 1871. In 1871 Parkinson sold the portion to Lawrence D'Arcy and the property remained in the D'Arcy family until 1967 when it was sold to Kevin Lewry, a greyhound breeder. In 1977 Lewry sold the land to the NSW Planning and Environment Commission. In 1988 the MacArthur Growth Area sold the land to Domenico and Stella Mamone (LTO (b)).

The northern portion of the Thomas Davis land grant, Lot 1 DP 209779, was purchased by Andrew Byrne in 1819; Nicolas Carberry in 1824; John Stirling and Thomas Henry Parkinson in

1850; Thomas Henry Parkinson and Michael Kelly in 1855; William Wonson and Edward McSullea in 1878; Patrick McSullea in 1880; Thomas Slater 1883; William Woolf in 1890; Thomas Slater in 1890; Edward Spearing in 1892; Edwin Spearing in 1901; Ellenor Wonson in 1901; and Ellen Ursula Lysaght in 1918. The property remained in the Lysaght family until 1983 when it was sold to Peter John and Colleen Dorn Breis. It was sold in 1985 to Jack Louis Stapleton and Vincent Borgese (LTO (c)). The documentary material available at the Land Titles Office was unable to provide clarification on when the land was subdivided.

From the historical records it has been found that Browne grew orange trees on the Anderson land grant. The Yewen's Directory identifies the farms in the area being either dairy farms or agricultural farms which produced wheat, maize, barley, oats orchard or other crops (Archive CD 2007). Some farms kept stock and cultivated the land for their own use while other farms sold their produce. The land use for the section of the study area on the northern side of Macquariedale Road had changed from the orchards and crops in the nineteenth century back to native and introduced vegetation. The land use for the section of the study area on the southern side of Macquariedale Road has also changed from once sustaining crops back to native and introduced vegetation, with small areas of cleared ground containing twentieth century structures (see Figure 5.13).

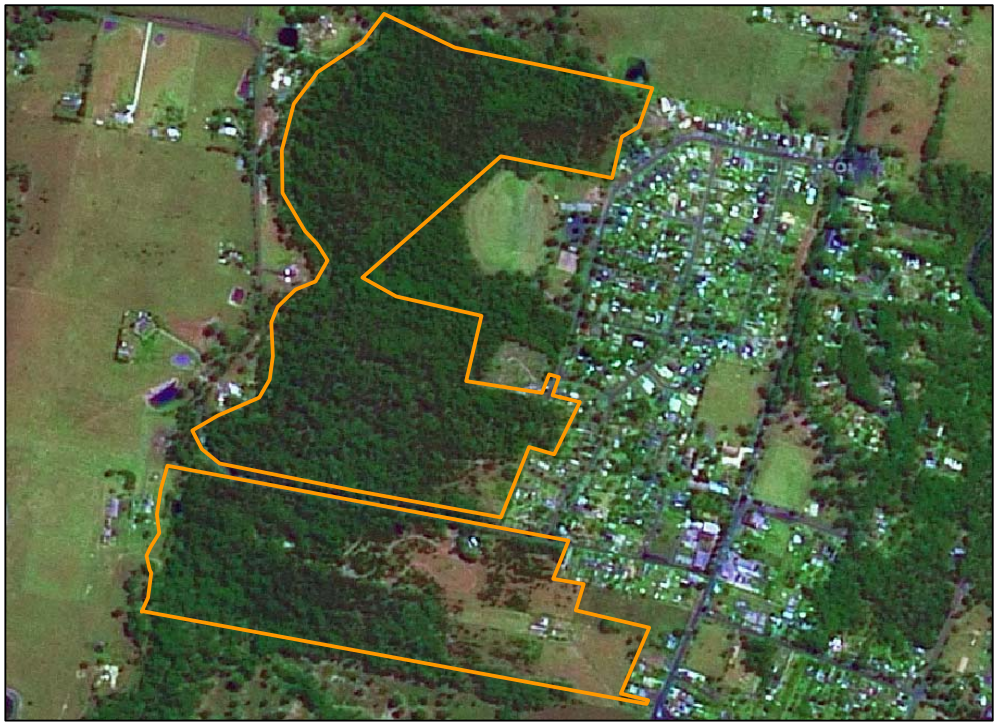


Figure 5.13: Aerial of Appin with overlay of study area (© Department of Lands 2007)

6.0 Site Survey, Archaeological Potential and Sensitivity

6.1 Introduction

The site survey was conducted on 16th April and 23rd April 2007. In attendance were Lori Sciusco and Cornelia de Rochefort (Heritage Concepts) with Donna Whillcock (TLALC) on 16th April, and Glenda Chalker (CBNTCAC) on the 23rd April 2007.

The fieldwork methodology was driven by the requirement to relocate previously recorded archaeological sites, identify extant archaeological artefacts, sites or features, as well as assessing the archaeological sensitivity (potential) of the study area. The survey was undertaken using a transect based method, whereby transects were located in relation to a range of environmental variables, most notably landform units (e.g. creekline, benched side slope and plateau). The usual approach is to spread the team members approximately five to twenty metres apart, depending on ground conditions, and have them move in a line together across a transect.

Recording was undertaken using a combination of descriptive, drawn and photographic mediums. Description of transect areas concentrated on identifying landform units, slope forms, dominant landscape processes (i.e. erosional, depositional or stable soil geomorphology), disturbance, type of vegetation cover, detectibility (see Sections 6.1.1 and 6.1.2 below), nature of ground exposures (if any), identification of suitable raw materials for artefact production and the presence of archaeological material.

6.1.1 Ground Surface Visibility Rating

Surface surveys for archaeological material require that transects or areas designated for surveys are assessed for surface visibility. Ground surface visibility, in this case, is used to define the degree to which the surface of the ground can be observed. Visibility can be influenced by natural processes such as the nature and type of vegetation coverage, erosion, or land use practices such as ploughing or grading. Visibility is expressed in terms of percentage of the surface of the ground visible for an observer on foot. An assessment of the surface visibility is useful in describing the general condition of the area surveyed.

Obtrusiveness is used to describe how conspicuous a site is within a particular landscape, and thus the chances of finding a particular site. For example, an artefact scatter is generally not obtrusive, especially in areas of high vegetation or scrub cover, yet a scar tree is.

The following table provides a guide to the assessment of ground surface visibility based on a percentage rating. It is by no means an objective method of assessment, and it is open to the assessment and interpretation of the field observer. However, it can be regarded as simply a guide to describing the ground surface visibility in a standard format.

Ground Surface Visibility	Percentage Rating
Very poor – heavy vegetation, scrub, foliage or debris cover, dense tree or scrub cover. Soil surface of the ground difficult to see.	0-9% ground surface visible
Poor – moderate level of vegetation, scrub, and/or tree cover. Some small patches of soil surface visible in the form of animal tracks, erosion, scalds, blowouts etc, in isolated patches. Soil surface visible in random patches	10-29% ground surface visible
Fair – moderate levels of vegetation, scrub and/or tree cover. Moderate sized patches of soil surface visible, possibly associated with animal /stock tracks, unsealed walking tracks, erosion, blow outs etc… Soil surface visible as moderate to small patches, across a larger section of the study area.	30-49% ground surface visible
Good – moderate to low level of vegetation, tree or scrub cover. Greater amount of areas of soil surface visible in the form of erosion, scalds, blowouts, recent ploughing, grading or clearing.	50-69% ground surface visible

Very Good – low levels of vegetation/scrub cover.. Higher incidence of soil surface visible due to past or recent land-use practices such as ploughing, grading, mining etc…	70-89% ground surface visible
Excellent – very low to non existent levels of vegetation/scrub cover. High incidence of soil surface visible due to past or recent landuse practices, such as ploughing, grading, mining etc…	90-100% ground surface visible

Table 6.1: A listing providing ground surface visibility explanations and percentage rating.

6.1.2 Effective Survey Coverage

The effective survey coverage represents an estimate of the ground visually examined during the field survey. It can be estimated by dividing the amount of area actually surveyed by the estimated ground surface visibility rating. It does not reflect the amount of the area that was surveyed, but represents an estimate of the area in which the ground could be examined. The effective survey coverage for the current study is presented in the table below. This table is to be read in conjunction with Figure 6.1 which defines the study areas A-H.

Study Area	Ground Surface Visibility Rating	Approximate Size of the Study Area	Approximate Size of the Area Surveyed	Effective Survey Coverage	Summary of Survey Results
Areas A and B	10-29%	132462.6m²	132462.6m²	1324.3-38414.2m²	Sites AP_A1, AP_A2
Areas C,E,F,G and H	50-69%	120790.36m²	120790.36m²	60395.18-83345.4m²	Sites AP_H1, AP_H2 and AP_A3
Area F (Creek Line)	0-9%	9487.24m²	1897.5m²	0-170.8m²	No Aboriginal or Historic Sites Located
Total survey area:	Average Visibility: 20-36% (Poor to Fair)	Total Area of Study Area 767236m²	Total Area Surveyed: 255150.46m² (33.3% of the total study area)	Total Effective Survey Coverage:61719.48-121930.4	Three Aboriginal sites and two historic sites recorded.

Table 6.2: Estimate of effective survey coverage and summary of survey results determined for the study area.

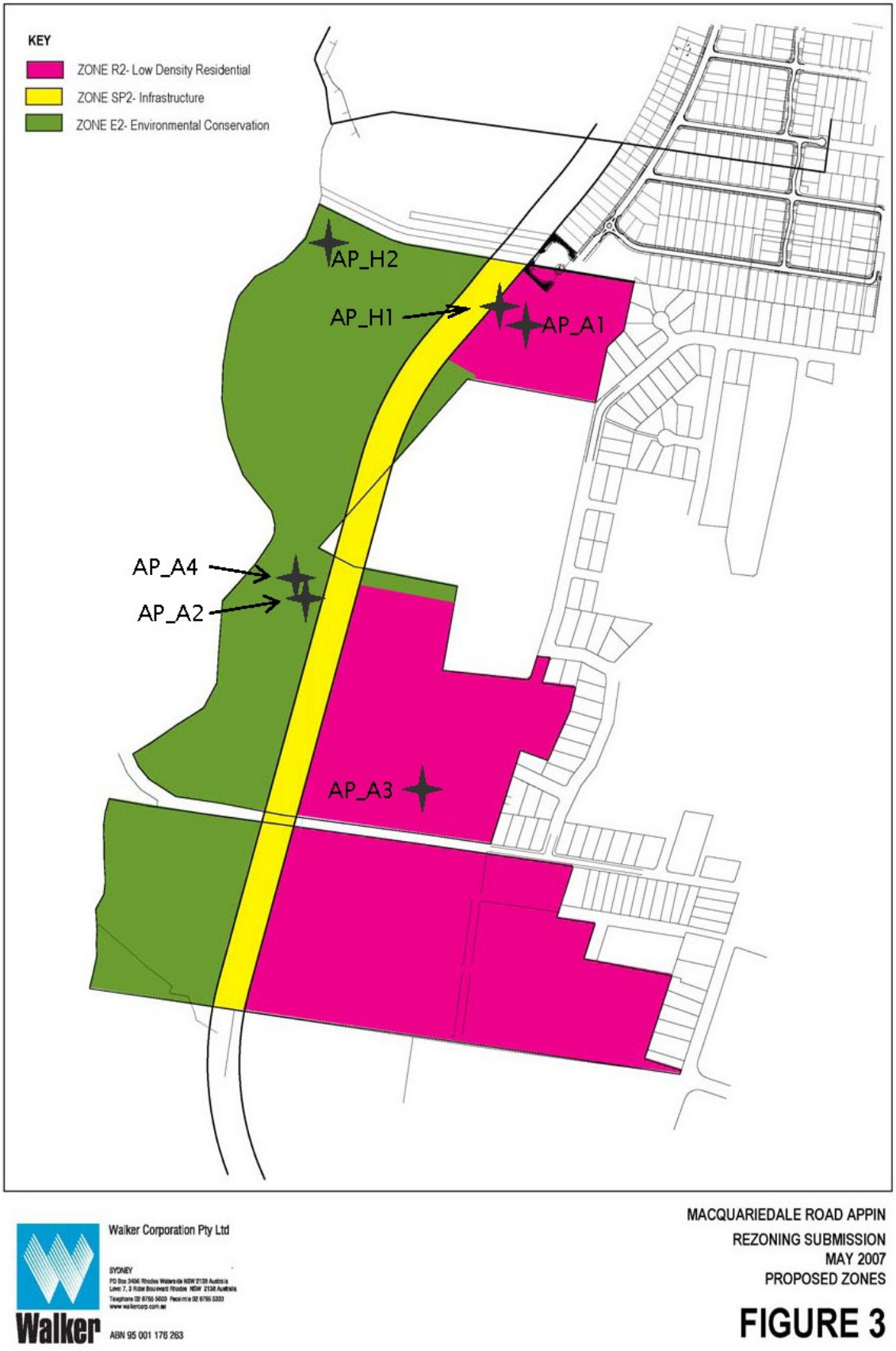


Figure 6.1Map of study area showing location of archaeological sites identified

6.2 Results

The study area was divided in to three broad survey zones according to the three main landscape units present in the study area. With reference to Figure 6.1, Areas A and B constitute a relatively flat plateau zone, areas C,E,F,G and H represent the benched sandstone side slope zone, while the third zone is delineated as the creek line situated along the western most boundary of Area F.

6.2.1 The Plateau (Areas A and B)

The plateau zone of the study area can be divided into two sub-zones north and south of the sportsground oval. The north eastern corner of the study area was highly vegetated with poor visibility (**Plate 1**). This area is characterised by shallow sandy soils with numerous sandstone outcrops (**Plate 2**), which drop off into a shallow gully marking the northern perimeter of the study area. Although visibility in this section of the study area was poor, several dirt tracks traversed the area which did afford some ground surface exposure. These unmade dirt tracks were visibly eroding and showed evidence of frequent use by pedestrians and horseback riders. The area is thought to afford little opportunity for the retention of Aboriginal surface artefact scatters owing to the active sheet erosion and the presence of shallow sandy soils and associated bedrock out crops. Although grinding groove sites were expected in this type of terrain none were located. However, these sites may be obscured in areas of dense vegetation and/or areas of sheet wash deposition. Furthermore, owing to the highly vegetated state of some areas of the site combined with the agricultural land use history of the site, there is potential for historic archaeological remains.

Plate 1 General view facing north in Area B of the north east corner of the study area. Indicative shot of landscape and vegetation.

Plate 2 General view facing south west showing detail of the natural sandstone outcrops near the edge of the gully and existing northern boundary fence line (Area B).

In contrast to the north east section of the study area, the south east section of the study area lacks notable sandstone outcrops, with continuous thick grass cover over most of the area (**Plate 3**). Throughout this region of the study area soils contain a notable increase in clay content, ranging from brown silty loams to red-brown clay loams. It is likely that this section of the study area is influenced by the Blacktown soil landscape and associated shale bedrock lenses, which can be found throughout the region. Sections further down slope along the edges of the plateau, which are delineated by Area B (refer Figure 6.1) display increased visibility values with more ground surface exposure (**Plate 4**). This area represents the transition from the shale based landscape to the sandstone based landscape. Again, numerous unmade dirt roads traverse the area and display evidence of active sheet erosion, with soil movement down slope towards Ousedale Creek. The area is thought to contain low Aboriginal archaeological potential owing to the heavy agricultural impact of the area and the active sheet erosion of the surface soil. Although grinding groove sites were expected in this type of terrain none were located. However, these sites may be obscured in areas of dense vegetation and/or areas of sheet wash deposition. Furthermore, owing to the highly vegetated state of some areas of the site combined with the agricultural land use history of the area, there is potential for historic archaeological remains.

Plate 3 General view of Area A in south eastern corner of the study area. Note green mesh indicates the boundary of Area A and Macquariedale road. Also the property boundary of an existing A frame residential dwelling

Plate 4 General view in Area B facing east, looking up towards the plateau of Area A

Summary of results: Three archaeological finds were identified in Areas A and B of the study area (refer Figure 6.1). All artefacts were found on eroded tracks which afforded good visibility and exposure. Owing to the actively eroding nature of the landscape none of these archaeological finds are considered to be *in situ* and represent Aboriginal and historic background scatters. Site AP_A1 represents two small quartz isolated finds and AP_A3 consists of one milky quartz isolated find. Site AP_H1 represents several yellow ware and glazed earthen ware ceramic sherds.

6.2.2 The Benched Side Slopes (Areas C,E,F,G and H)

This survey zone consists of gently inclined benched sandstone side slopes with shallow sandy soils. Recent fires and machine clearance in the area have cleared the majority of the ground surface vegetation providing moderate to good visibility conditions, with many ground surface exposures (**Plate 5**). However, the entire area displays evidence of mass sheet erosion with the

deposition of a fine sandy surface layer up to 5cm thick. The Hawkesbury soil landscape, typical of this region of the study area, is highly susceptible to sheet erosion during storm periods after bushfires have removed the ground surface vegetation (see Section 3.2). The area is thought to afford little opportunity for the retention of Aboriginal surface artefact scatters owing to the active sheet erosion and the presence of shallow sandy soils and associated bedrock out crops. Furthermore, despite the excellent visibility conditions only one Aboriginal isolated find was located. Although grinding groove sites were expected in this type of terrain none were located. However, these sites may be obscured in areas of dense vegetation and/or areas of sheet wash deposition. Historic remains are expected in light of the land use history of the site coupled with the discovery of an historic dump site dating to c1830-1920 eroding down the benched sandstone slopes several meters away from Ousedale Creek (**Plate 6**).

Plate 5 General view of an open grassed area approximately 100m east of Ousedale Creek, in Area F

Plate 6 View of the location of a discrete historic material dump (AP_H2), located approx 50 m east of Ousedale Creek

Summary of results: Three archaeological finds were identified along the benched side slopes of Area F (refer to Figure 6.1). AP_H2 consisted of a concentration of ceramic, metal and glass domestic artefacts dating to c.1830-1920. Several brick and slate fragments were also present. The deposit is interpreted as an historic dump site and is indicative of historic occupation of the area. Site AP_A2 consists of a single quartz Aboriginal isolated find, which was located along an unmade earthen track. AP_A4 consists of a potential flaked glass piece.

6.2.3 Ouesdale Creek (western boundary of Area F)

This survey zone consisted of the eastern bank of Ousedale Creek. The creek itself has been subject to a large amount of sediment deposition from the surrounding slopes and is heavily silted. The creek banks are highly vegetated with minimal surface exposure (**Plate 7**). Creek lines of the Woronora plateau are deeply incised and often feature steep vertical cliff lines as are found on the western banks of Ousedale Creek The eastern banks of Ousedale Creek slope steeply down towards the creek and consist of benched sandstone outcrops (**Plate 8**). No areas of alluvial sediment deposition were identified and as such are unlikely to retain buried Aboriginal archaeological material. Owing to the presence of the historic dump site, coupled with the agricultural land use history of the area, there may be in existence water management and control structures such as historic dams and weirs. No such structures were located yet their remains may be obscured by the dense vegetation along the creek bank.

Plate 7 General view of Ousedale Creek facing south. Note the dense vegetation cover.

Plate 8 View east taken from the edge of Ousedale creek up towards exposed sandstone benching

6.2.4 Aboriginal cultural material

Four Aboriginal sites/finds were located during the course of the survey. These are described below.

AP_A1: Stone artefacts

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295768 Northing: 6214212

AP_A1 was located along an unmade earthen road in the north western corner of the study area (refer Figure 6.1(Area B) and **Plate 9**). The find consisted of two isolated finds; one broken proximal white milky quartz flake measuring 15x12x3mm and one white milky quartz debitage flake, measuring7x5x3mm (**Plate 10**). The artefacts are considered to be of low archaeological significance as they are situated in a secondary context in an area of active erosional processes.

AP_A2: Stone artefact

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295460 Northing: 6213763

AP_A3 was located along an unmade earthen road in the western side of the study area up slope of Ousedale Creek (refer Figure 6.1 and **Plate 11**). The isolated find consisted of a fine grained, milky quartz flake piece, measuring 16x6x4mm (**Plate 12**). The artefacts are considered to be of low archaeological significance as they are situated in a secondary context in an area of active erosional processes.

Plate 9 General view along the track where AP_A1 & AP_H1are located

Plate 10 Detail of quartz artefacts –AP_A1

Plate 11General view of the location of AP_A2, recorded approx 30cm from the existing dirt track

Plate 12Detail of quartz artefact recorded for site AP_A2

AP_A3: Stone artefact

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295460 Northing: 6213763

AP_A3 was located along an unmade earthen road in Area B of the south eastern section of the study area (refer Figure 6.1 and **Plate 13**). The isolated find consisted of a fine grained, milky quartz flake piece, measuring 9x5x2mm (**Plate 14**). The artefacts are considered to be of low archaeological significance as they are situated in a secondary context in an area of active erosional processes

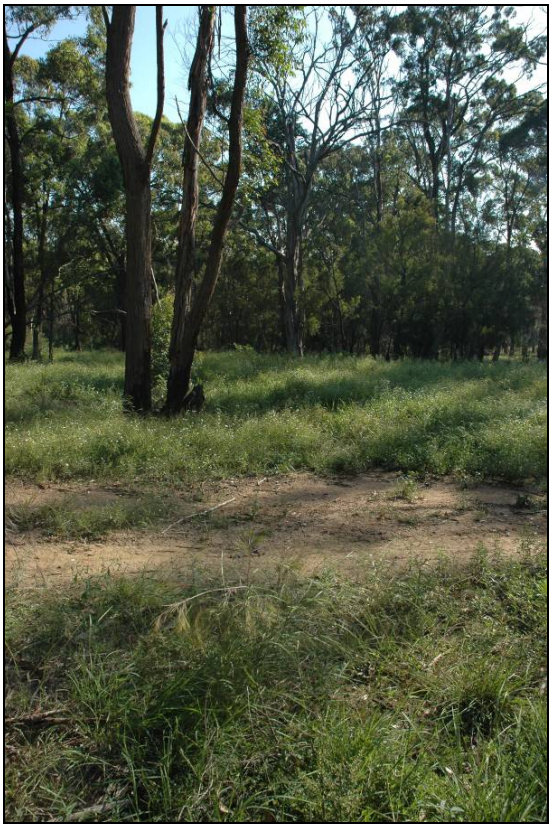


Plate 13 General view of the location of AP_A3, looking east

Plate 14 Detail of quartz flake recorded at site AP_A3

AP_A3: Glass artefact

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295466 Northing: 6213816

AP_A4 was located adjacent to an unmade dirt track, approximately 5 m north of AP_A3. The find consisted of several broken pieces of a dark green historic champagne bottle base (**Plate 15**). One piece displays three small flake scars along the base of the bottle sherd (**Plate 16**).

The area has been heavily impacted with evidence of machine clearance and it is likely that the bottle was crushed and /or broken through non-Aboriginal means. Glenda Chalker of Cubbitch Barta Native Title Claimants Aboriginal Corporation requested that the flaked bottle sherd be recorded.

Plate 15 Detail of broken champagne bottle base, identified as AP_A4

Plate 16 Detail of potential Aboriginal flaked glass piece

6.2.5 Historic cultural material

Two historic sites/finds were located during the course of the survey. These are described below.

AP_A2: Ceramic Sherds

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295749 Northing: 6214215

AP_H1 was located along an unmade earthen road in the north western corner of the study area (refer Figure 6.1 Area B and **Plate 9**). The find consisted of four ceramic sherds; one yellow glaze earthen ware bowl rim fragment, measuring 20x15x9mm and four dark brown glazed earthen war sherds, measuring 20x15x9mm, 14X29x15mm, 35x23x21and 17x9x21mm (**Plate 17**). The artefacts are considered to represent casual discard and are of low archaeological significance as they are situated in a secondary context in an area of active erosional processes.

Plate 17 Detail of glazed earthenware, site AP_H1

AP_A2: Historic Dump

Grid Coordinates (Datum: Australian Geodetic 1984):

Zone 56 H Easting: 295749 Northing: 6214215

AP_H2 was located along the benched sandstone side slopes approximately 50m from Ousedale Creek (refer Figure 6.1Area F and **Plate 6**). The find consisted of a collection of ceramic, metal and glass domestic artefacts as well as broken brick and slate fragments. The assemblage is dated to c 1830-1920 and was eroding down slope towards the creek line. Among the artefacts were several examples of transfer print willow ware (c1820+), brown transfer ware (c1830+), yellow ware (c1830-1900), bristol glazed ware, angular banded earthen ware, solarised amethyst glass (c1880-1920), a champagne bottle (1850-1920) and a gin bottle (**Plate 18).** The deposit is thought to represent an historic rubbish dump site, which is of low archaeological potential however it does suggest that a domestic occupation settlement was situated near by.

Plate 18 Sample of the type of historic material found at AP_H2

6.3 Archaeological Potential and Sensitivity

This section assesses the archaeological sensitivity of the study area, based upon the known distribution of Aboriginal and historic archaeological sites in the local region, and the results of the site inspection.

6.3.1 Aboriginal

The survey results largely conform to the site prediction statements which have been made for the Appin area and the wider Woronora plateau region.

Although artefact scatters may occur within the study area, in light of past regional and localised studies along the Woronora Plateau, these site types have a moderate to low potential of occurrence. Similarly, owing to the geological nature of the Plateau, with steep incised river and creek lines, alluvial deposition and associated potential archaeological deposits are unlikely to occur within the study area. In general, soils formed on the Hawkesbury sandstone are relatively shallow and highly susceptible to erosion, which is not conducive to the retention of archaeological deposits. No artefact scatters or potential deposits were identified throughout the course of the survey and the only stone artefacts found were small isolated finds which are of low archaeological significance. These artefacts are not associated with any *in situ* archaeological deposits and are likely to represent secondary contexts owing to the extensive sheet erosion which has occurred across the site.

The known archaeological site patterning throughout the wider Appin region indicates that the most common site types to occur are rock shelter sites and grinding groove sites. No rock shelter sites or grinding groove sites were identified through the course of the survey. However, the area of maximum bedrock exposure was Area F of the study area (Figure 6.1) and a large majority of the exposed sandstone surfaces in this area were highly disturbed with crushing and exfoliation from heavy machinery and recent fire.

Generally speaking, the Hawkesbury soil landscape rock outcrop surfaces should be exposed on approximately >50 % of the study area. However, ground conditions on the study area indicated that approximately 30 % of the study area contained exposed bedrock. This reflects the active erosional processes and the continuous downhill movement (colluvial processes) of gritty sandy sediments and organic litter across the study area, usually observed as large sheet wash deposits or fans along slopes and in particular, around breaks of slope. Obviously, this has a knock on effect for our ability to 'detect' archaeological sites, features or individual artefacts. Average ground surface visibility ratings were in the order of 20-36 % (poor to fair coverage). The overall coverage of the study area was also impacted by the ability of the team to survey through densely vegetated sections of the study area. Overall, 33% of the study area was surveyed; however, only 24-47% of the study area was effectively observed (see Table 6.2)

during the course of the fieldwork (i.e. less than half the ground surfaces across the survey area were visible to 'detect' archaeological sites or features).

Therefore, potential grinding groove sites which have been covered with sediment or are obscured by vegetation may occur throughout the study area.

In summary, no direct impacts to Aboriginal heritage have been identified at this stage of the assessment process. However, management of potential impacts to Aboriginal sites during any future development will need to be implemented prior to that development taking place. There is potential for grinding groove sites and /or artefactual finds to occur within areas of dense vegetation and recent sheet wash sediment deposition Cultural monitoring of the study area by the identified Aboriginal stakeholder groups is suggested if any vegetation clearance or ground surface disturbance takes place. Furthermore, all contractors who work on the site will need to be 'inducted' in relation to identifying and respecting Aboriginal sites.

6.3.2 Historic

No extant historic material remains of housing, agricultural structures, old fence alignments or tree plantings, were identified during the survey. The historical background research identified agricultural farming pursuits for the study area with a reference to a residence known as "Oakham" and built by Browne and located within the original Anderson land grant. The exact location of this residence is unknown and may have been located outside the study area.

Two historic sites were identified. Site AP_H1 represents the casual discard of material, while AP_H2 represents a concentrated historic dump site dating to 1830-1920. Although the dump site is suggestive of occupation of the study area no structural remains or archival references alluding to settlement of the area were identified. However, owing to the poor visibility of the study area in general (see section 6.3.1) it is probable that potential sites are currently obscured. These remains are likely to reflect historic activities common to the Cumberland Plain and Woronora Plateau and included pastoral farming, orcharding and market farming. Therefore, historic monitoring works, conducted by a qualified archaeologist are recommended if any vegetation clearance and ground surface disturbance is to take place.

7.0 Assessment of Cultural Significance

7.1 Introduction to the assessment process

The presence of archaeological remains does not necessarily equate to research potential or archaeological significance. The nature of the archaeological evidence and the information that it may provide must also be considered when making decisions about the management of the archaeological sites.

An assessment of significance seeks to understand and establish the importance or value that a place, site, or item may have to the community at large. The concept of cultural significance is intrinsically connected to the physical fabric of the item or place, its location, setting and relationship with other items in its surrounds.

The assessment of cultural significance is ideally a holistic approach that draws upon the response these factors evoke from the community. The criteria of evaluating cultural heritage value are generally applied to sites, places or items that have tangible historic structures or relics visible at the site, or where there is general understanding of the extent of the historic resources.

Archaeological sites require a different method of evaluation because of the nature of the heritage resource and because the degree to which it can contribute to our understanding of history cannot be fully comprehended at the outset. Therefore, what is subject to evaluation is the significance of the 'potential' of the site to reveal information about the past that needs to be assessed when determining the cultural significance of the archaeological resource.

Archaeological deposits can also offer different types of information that is not always available through any other source and the contribution they can make to our understanding of a place of past human activities may also be of cultural heritage significance. Despite these differences the same general set of criteria are used to assess cultural heritage value of different types of heritage resources.

The Australia ICOMOS Charter for the conservation of places of cultural significance (the Burra Charter) was formulated in 1979 and most recently revised in 1999, and is the standard adopted by most heritage practitioners in Australia. The Burra Charter defines a number of categories for the assessment of significance of a place, item or site. These categories include:

- Historical;
- Aesthetic;
- Social;
- Scientific/Technical; and
- Other (rare or representative)

These categories provide the basis for many of the States and Territories criteria for assessment

7.2 Criteria for the assessment of Aboriginal cultural heritage

The following assessment criteria are based on the Australia ICOMOS *Charter for the conservation of places of cultural significance* (the Burra Charter). These criteria have been adapted by the NSW DEC to address Aboriginal archaeological & cultural heritage values. It is important to note, however, that the determination of Aboriginal cultural heritage values can not adequately be conducted without the input of the relevant Aboriginal community groups.

Aboriginal Heritage Values based on the Australian ICOMOS Charter
Social value (sometimes termed *Aboriginal value*) refers to the spiritual, traditional, historical or contemporary associations and attachments which the place or area has for the present-day Aboriginal community. Places of social significance have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with one or more Aboriginal communities.
Historic value refers to the associations of a place with a person, event, phase, or activity of

importance to the history of an Aboriginal community. Historic places may or may not have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). Gaining a sufficient understanding of this aspect of significance will often require the collection of oral histories and archival or documentary research, as well as field documentation. These places may have 'shared' historic values with other (non-Aboriginal) communities. Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage, and the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives.
Scientific value refers to the importance of a landscape, area, place, or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place, or object and will consider the importance of the data involved, its rarity, quality or representativeness and the degree to which it may contribute further substantial information.
Aesthetic value refers to the sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

Table 7.1: Criteria used for the assessment of Aboriginal cultural heritage.

These aspects of the heritage significance of a place or object are commonly inter-related. Because all assessments of heritage values occur within a social and historical context, all potential heritage values will have a social or Aboriginal community heritage component.

7.3 Criteria for the Assessment of Historic Cultural Heritage

The State Heritage Register, which was established by the amendments to the NSW *Heritage Act* in 1999, has a separate set of significance assessment criteria broadly based on those of the Burra Charter. To be assessed for listing on the State Heritage Register an item will need to meet one or more of the following criteria:

Criterion	Description
A Historic	An item is important in the course, or pattern, of NSW's cultural or natural history;
B Associative	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;
C Technical / Aesthetic	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;
D Social	An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;
E Scientific / Technical	An item has the potential to yield information that will contribute to an understanding of NSW's cultural and natural history;
F Rare	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history;
G Representative	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments.

Table 7.2: Criteria used for the assessment of historic cultural heritage.

A central feature of the amendments to the Act is the clarification and strengthening of responsibility for the management of heritage items at the Local and State level. Subsequently, items can be assessed as having Local or State Level Significance. In addition, items can also be assigned a Grading, in order to better define its place within the cultural landscape. The criteria for grading an item or place are discussed in Section 7.3.1 below.

It is important to note that an item cannot be excluded from the Register on the grounds that items with similar characteristics have already been listed. Also, these criteria can be applied to items that do not qualify for a State significance ranking, that is, items of Local level significance.

These categories are useful in considering a wide range of heritage items, and can be applied to sites with items of standing heritage as well as areas with the potential to contain archaeological deposits.

7.3.1 Grading of Historic Heritage Significance

The following table outlines the grading of significance applicable to an item or place being evaluated as is prescribed by the NSW Heritage Office (2001). The table below is intended as a guide and designed to be modified to suit the characteristics of the heritage or archaeological resource. Modifications have been made to the grading in order to better address the characteristics of the heritage / archaeological items of this project.

Grading	Justification	Status
Exceptional/High	Rare or outstanding element directly contributing to an item's local and State significance. There is a high degree of original fabric which helps to demonstrate a key element of the item's significance. The alterations evident do not detract from the significance of the item or place.	Fulfils criteria for local or State listing
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Fulfils criteria for local or State listing
Low	Alterations may detract from the overall significance but its role, function, design or fabric can still be interpreted.	Fulfils criteria for local or State listing
Intrusive/Nil	Damaging to the item's heritage significance. Difficult to interpret.	Does not fulfil criteria for local or State listing.

Table 7.3: Criteria used for Grading of Significance.

It is worth noting that the criteria for allocating a 'grading' are only guidelines and can be modified to suit the archaeological or cultural heritage resource. An item or place can be assessed to be an item of State significance but due to alterations to the item or its curtilage, its grading has been effected and therefore assessed to be only of Low State significance.

Alternatively, an item or place may be of exceptional or high importance at the Local level, but on a broader scale it does not fulfil the criteria for State significance. The basis for these assessments is determined on a case by case scenario.

7.4 Assessment of Significance of Aboriginal Cultural Heritage Values

7.4.1 Aboriginal /Social Heritage Value

It is not the place of the consultant to provide information regarding the social, historic or aesthetic value of Aboriginal cultural places within the study area. Such information can only be provided by the local Aboriginal communities. Information regarding the socio-cultural value of the study area will be included in the final report

7.4.2 Historic Value

No historic associations with 'place' were identified during the course of the background research.

7.4.3 Scientific Value

Four archaeological finds were found throughout the course of the site assessment. The stone artefacts constitute isolated finds and it is unlikely that any of the artefacts encountered on the surface have retained the integrity of their original depositional context. As such, the finds do not possess any scientific value, however the finds will add to the growing knowledge of land use and occupation strategies in the Appin area

7.4.4 Aesthetic Value

Since no social heritage, cultural heritage items or historic associations were identified during the course of the assessment, the study area has no aesthetic value.

7.5 Assessment of Significance - Historic

The following section provides an assessment of the significance of the site identified as AP_H2 – Historic Dump located on the western side of the study area.

7.5.1 Historic Dump

Criterion E:	**An item has the potential to yield information that will contribute to an understanding of NSW's cultural and natural history**

The artefacts within the historic dump site have the potential to yield information on a range of historic domestic and agricultural practices. Historic 'dump sites' can reveal a broad range of information relating to the types of domestic material used by early settlers and occupants of the land. This information can include the type, class and quality of glass, ceramic, and other domestic material used in the past to information about people's diet. For example the range and cuts of meat provides a glimpse into what people could afford to buy and eat. This type of information allows inferences to be drawn regarding the socio-economic status of settlers in the past. .

Statement of Significance

The historic dump site and associated artefacts are assessed to be of local significance. They have the potential to further our understanding of the socio-economic status of settlers in the Appin district. This site also had the potential to yield information regarding the quality of domestic life as well as changes in use of the landscape from the earliest land grant to the present.

8.0 Management Recommendations

8.1 Discussion

The following section provides the recommended appropriate measures for the management for identified heritage items, and the recommended mitigation measures in relation to potential future development of the site, where appropriate.

8.2 Recommendations

The following recommendations are made in relation to the proposed rezoning and long-term management of the Appin study area. Impacts to Aboriginal and historic heritage should be minimised and/or mitigated whenever possible and the following recommendations have been prepared with this in mind.

- **Recommendation 1**

Aboriginal sites AP_A1, AP_A2, AP_A3 and AP_A4 will be registered on the DEC AHIMS database. Completed Site Cards will be submitted to DEC.

- **Recommendation 2**

A Section 90 Consent to Destroy with Surface Collection permit application should be lodged with DEC to allow Aboriginal sites AP_A1, AP_A2, AP_A3 and AP_A4 to be collected prior to any development impact occurring. The S90 application will include a Care and Control permit for the artefactual remains collected as part of the S90 activities.

- **Recommendation 3**

Cultural monitoring of the study area by the identified Aboriginal stakeholder groups is suggested if any vegetation clearance or ground surface disturbance takes place within areas of dense vegetation and recent sheet wash sediment deposition. This is required as there is potential for grinding groove sites and /or artefactual finds to occur.

Recommendation 4

It is recommended that a programme of historic monitoring works is conducted by a professional archaeologist prior to any future development involving the clearance and/or ground surface disturbance of the study area takes place. These works should be carried out under the auspices of a Section 139(4) Exception under the *Heritage Act 1977*.

- **Recommendation 5**

The *National Parks and Wildlife Act 1974* requires that in the event of Aboriginal cultural fabric or deposits being encountered, works must cease immediately to allow an archaeologist to make am assessment of the find. The archaeologist will then need to consult with the NSW Department of Environment and Conservation and Aboriginal stakeholders who have registered an interesting this project to determine whether mitigating measures are required.

- **Recommendation 6**

As required by the *Heritage Act 1977 (amended)*, in the event that any unexpected historic cultural fabric or deposits are encountered, works must cease immediately to allow an archaeologist to make an assessment of the finds. The archaeologist may need to consult with the Heritage Office, Department of Planning concerning the significance of the historic cultural material unearthed.

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10.0 Appendix A- Stakeholder Consultation Log

Group	Person Contacted	Details	Date	HC Representative
Tharawal LALC	Leanne Hestelow	Advised Leanne of the upcoming Aboriginal heritage assessment and faxed details of project through to her	04.04.07	Cornelia de Rochefort
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Glenda Chalker	Advised Glenda of the upcoming Aboriginal heritage assessment and faxed details of project through to her	04.04.07	Cornelia de Rochefort
Tharawal LALC	Donna Whillock	Mailed a draft copy of the heritage assessment to Donna for review	04.05.07	Cornelia de Rochefort
Cubbitch Barta Native Title Claimants Aboriginal Corporation	Glenda Chalker	Mailed a draft copy of the heritage assessment to Glenda for review	04.04.07	Cornelia de Rochefort

11.0 Appendix B- Native Title search Results

NATIONAL NATIVE TITLE TRIBUNAL

Level 25
25 Bligh Street
SYDNEY NSW 2000
AUSTRALIA

GPO Box 9973, SYDNEY NSW 2001
Telephone: (02) 9235 6300
Facsimile: (02) 9233 5613
Website: www.nntt.gov.au

Our Ref: 1592/07to
Your Ref: HC 070151

21 March 2007

Ms Lori Sciusco
Director
Heritage Concepts Pty Ltd
PO Box 1075
Leichhardt NSW 2040

Dear Ms Sciusco

Native title search results of Lot 201 DP 749272, Lot 1 DP 558807 and Lot 1 DP 209779 (NSW)

Thank you for your letter of 15 March 2007.

My search on 20 March 2007 found:

Register Type	NNTT Reference Numbers
National Native Title Register	Nil.
Register of Native Title Claims	Nil.
Unregistered Claimant applications	Nil.
Register of Indigenous Land Use Agreements	Nil.

I have included an NNTT Registers fact sheet to help you understand the search result.

Please note that there may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed in the Federal Court may not appear on the Tribunal's databases.

If you need more information please call me on 1800 640 501.

Yours sincerely

Tom O'Reilly
National Native Title Tribunal
Ph: (02) 9235 6315
Fax: (02) 9233 5613
Email: tomo@nntt.gov.au

FOR MORE INFORMATION, PLEASE CONTACT FREECALL 1800 640 501

12.0 Appendix C- Aboriginal Community Response Letters

To be included when received.