

DECCW (2010); *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*, Department of Environment, Climate Change and Water, Sydney.

DECCW (2010); *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW*, Department of Environment, Climate Change and Water, Sydney.

Australia ICOMOS (2013); *Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013*, Australia ICOMOS

Consultation with the local Aboriginal community is not a formal requirement of the due diligence process as defined by the OEH, however a complete assessment of Aboriginal cultural heritage values including the social, spiritual and cultural values associated with a place cannot be undertaken without consultation with relevant community stakeholders⁴. This is an issue raised in the OEH review and is managed as a recommendation of this evaluation.

2.5 Statutory Context

Aboriginal heritage in NSW is afforded protection by two parliamentary Acts; the Environmental Planning and Assessment Act 1979 (EPA Act) and National Parks and Wildlife Act 1974 (NPW Act).

2.5.1 Environmental Planning and Assessment Act 1979

The EPA Act provides a legislative framework for the assessment and determination of development proposals in NSW. Heritage items can be identified and protected by their inclusion on Heritage Schedules within planning instruments such as local environment plans (LEPs), regional environmental plans (REPs) and state environmental planning policies (SEPPs). The EPA Act also requires that potential archaeological resources are managed in compliance with the policies and regulations of the NPW Act.

The study area is located within the Sutherland Shire Council local government area (LGA). The Clause 5.10 of the Sutherland Shire LEP 2015 includes the following provisions for the protection and management of heritage within the LGA:

(1) The objectives of this clause are as follows:

- (a) to conserve the environmental heritage of Sutherland Shire,
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- (c) to conserve archaeological sites,
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

(2) Requirement for consent Development consent is required for any of the following:

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

- (i) a heritage item,
- (ii) an Aboriginal object,

⁴ DECCW, 2010, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*, Department of Environment, Climate Change and Water, Sydney; DECCW, 2010, *Aboriginal cultural heritage consultation requirements for proponents, Part 6 National Parks and Wildlife Act*, Department of Environment, Climate Change and Water, Sydney.

- (iii) a building, work, relic or tree within a heritage conservation area,
- (b) altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,
- (c) disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,
- (d) disturbing or excavating an Aboriginal place of heritage significance,
- (e) erecting a building on land:
 - (i) on which a heritage item is located or that is within a heritage conservation area, or
 - (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,
- (f) subdividing land:
 - (i) on which a heritage item is located or that is within a heritage conservation area, or
 - (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

(6) Heritage conservation management plans

The consent authority may require, after considering the heritage significance of a heritage item and the extent of change proposed to it, the submission of a heritage conservation management plan before granting consent under this clause.

(7) Archaeological sites

The consent authority must, before granting consent under this clause to the carrying out of development on an archaeological site (other than land listed on the State Heritage Register or to which an interim heritage order under the Heritage Act 1977 applies):

- (a) notify the Heritage Council of its intention to grant consent, and
- (b) take into consideration any response received from the Heritage Council within 28 days after the notice is sent.

(8) Aboriginal places of heritage significance

The consent authority must, before granting consent under this clause to the carrying out of development in an Aboriginal place of heritage significance:

- (a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement), and
- (b) notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent.

2.5.2 National Parks and Wildlife Act 1974

The NPW Act provides for the statutory protection for Aboriginal objects and places in NSW. An Aboriginal object is defined as:

'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of

*that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*⁵

An Aboriginal place is defined as a place declared under Section 84 of the NPW Act that, in the opinion of the Minister, is to be of special significance to Aboriginal culture.

Provisions of the NPW Act require that a person must not harm an Aboriginal object; this includes to move, destroy, deface or damage the object without an Aboriginal Heritage Impact Permit (AHIP). Defence for harming an Aboriginal object or place includes the undertaking of a due diligence assessment of the likelihood for Aboriginal objects to be impacted by any proposed works.

2.5.3 Heritage Act NSW 1977

This assessment addresses land that is afforded protection by the NSW Heritage Act 1977. Heathcote Hall and its grounds are listed in the NSW State Heritage Register (SHR) as item 00191. Heathcote Hall is listed for its architectural values and its representative values. The latter refers to its illustration of a period of development and type of development (great estate) in the Sutherland region.

2.6 Reporting

This report provides an assessment of the Aboriginal archaeological potential of the project area and the regional context of that potential profile. The assessment has been undertaken in accordance with current best practice guidelines (*refer Section 2.4*).

CRM recognises that Aboriginal people are the primary determinants of the cultural significance of their heritage. Cultural heritage can include social, cultural, historic, aesthetic values as well as scientific values associated with archaeological sites. Cultural heritage is not restricted to tangible objects or sites it 'also includes peoples' memories, story-lines, ceremonies, language and 'ways of doing things' that continue to enrich local knowledge about the cultural landscape.'⁶

As discussed in Section 2.4 this evaluation did not encompass consultation with Aboriginal stakeholders regarding Aboriginal cultural heritage values for this project. The process to define a comprehensive assessment of cultural significance is a recommendation of this work.

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2.7 Authorship and Acknowledgements

This report was written by was written by Erin Mein, Archaeologist for Cultural Resources Management. The site inspection was undertaken by Erin Mein and this report was reviewed and edited by Wendy Thorp, Principal of Cultural Resources Management. Images in the report have been taken by Erin Mein except where otherwise captioned.

⁵ *National Parks and Wildlife Act 1974*, Part 1, Section 5.

⁶ Department of Environment, Climate Change & Water, 2010, *Aboriginal cultural heritage requirements for proponents 2010 (April)*, Department of Environment, Climate Change & Water, Sydney.

2.8 Abbreviations Used in the Text

ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
CMP	Conservation Management Plan
CRM	Cultural Resources Management
DECC	Department of Environment and Climate Change
ICOMOS	International Council on Monument and Sites
LPI	Land and Property Information, NSW
OEH	Office of Environment and Heritage
EPA Act	Environmental Planning and Assessment Act 1979
NPW Act	National Parks and Wildlife Act 1974
SHR	State Heritage register

3

The Environmental Context



The environmental context of a place determines the resources of the area which may have been of value to Aboriginal people and the conditions which are likely to have influenced the way in which the landscape was used or occupied by those people. It also considers processes which may have been influential in the formation of a site and its preservation or otherwise.

3.1 Topography and Geomorphology

The town of Heathcote is situated on the Woronora Plateau, an uplifted and deeply incised sedimentary landform. Heathcote is positioned across a wide, convex ridgeline which runs roughly north-south. Heathcote Hall is located on the eastern side of the ridgeline, approximately 210 metres above sea level. To the east of the study area lies the Royal National Park; here the topography comprises deeply incised gullies, falling sharply to the southeast towards Heathcote Brook (Figure 1). A number of major spurs extend eastward from the main ridgeline including Goondera, Gooingal and Kangaroo Ridges to the south of the study area and Karloo Spur, Yaala Ridge and Tuckawa Ridge to the east (**Error! Reference source not found.**).

3.2 Geology

The Woronora Plateau is comprised of four major geological formations. The deepest and oldest formation is the Illawarra Coal Measures; this is mined in several locations across the Plateau. Overlying this is the Narrabeen Group comprising thick beds of sandstone interspersed with beds of red claystone which are most likely volcanic in origin.⁷ Overlying the Narrabeen Group is Hawkesbury Sandstone, a quartz grained, cross bedded sandstone. This thick layer of sandstone (183m thick) was overlaid by softer and more clay-based shales and lateritic mantles; it has largely been eroded through the incision of the Plateau over time. Caps of this material exist across small areas of the Plateau including at Heathcote. Basaltic dykes are also found within the Plateau including in close proximity to the study area at Engadine (Figure 1).

3.3 Geomorphology

The *Soil Landscapes of the Wollongong-Port Hacking 1:100 000* sheet provides broad scale, low resolution soil landscape mapping for the region. It indicates that the project area and much of Heathcote is located across the Gynea soil landscape (Figure 2). This erosional landscape is produced via weathering of the underlying Hawkesbury Sandstone. It comprises shallow to moderately deep, sandy soils with isolated areas of gleyed, podzolic soils over shale lenses.⁸ As a loose, quartz grained soil the Gynea landscape is generally highly susceptible to erosion, particularly sheet wash and impacts of bushfire.

Soil profile logging provided by the Office of Environment & Heritage (via eSpade) is relevant at Profile No 904. Profile No. 904 was observed at 316304E, 6225690N (Zone 56), approximately 800 metres to the south of the project area. The texture of the sedimentary material at this site was described as very dark brown sand grading into

⁷ Branagan, D.F., 1993, 'Geology and Geography of the Sutherland Shire', in *Sutherland Shire Studies*, no. 3, pp. 1-8.

⁸ Soil Conservation Service of New South Wales & Tille, P. J., Bannerman, S. M and Hazelton, P. A., 1990, *Soil landscapes of the Wollongong-Port Hacking 1:100 000 sheet & Land Information Centre (N.S.W.)*, Soil Conservation Service of N.S.W, Sydney.

yellowish brown sandy loam. The soil profile demonstrated weak pedality and the surface conditions were generally described as loose.⁹

Areas of shale are known within the Heathcote area; they were reportedly exploited for brickmaking in the nineteenth century (Figure 1).¹⁰ The shale remains as caps across the sandstone ridgetop. It is poorly described in existing literature but is generally characterised as highly fragmented plates or conglomerates of laterite pebbles.¹¹

The position of the project area on the edge of a major ridgeline means that erosion through water, wind and human activity is likely to be a significant factor in the preservation of subsurface archaeological sites. Loose sandy soils such as the Gynea soil landscape would be highly susceptible to erosion while soils derived from the shale caps are likely to be slightly less susceptible due to the soil clay content and stronger soil structure.

⁹ Office of Environment and Heritage, NSW Soil and Land Information System Soil Profile Report – Profile 904, accessed 12 February 2017 <http://www.environment.nsw.gov.au/eSpade2WebApp>.

¹⁰ Branagan, D.F., 1993, 'Geology and Geography of the Sutherland Shire', in *Sutherland Shire Studies*, no. 3, pp. 1-8.

¹¹ Central Conservation Programs and Planning Division, National Parks & Wildlife Service, 2003, *Native Vegetation of the Woronora, O'Hares and Metropolitan Catchments*, NSW National Parks and Wildlife Service & Sydney Catchment Authority.

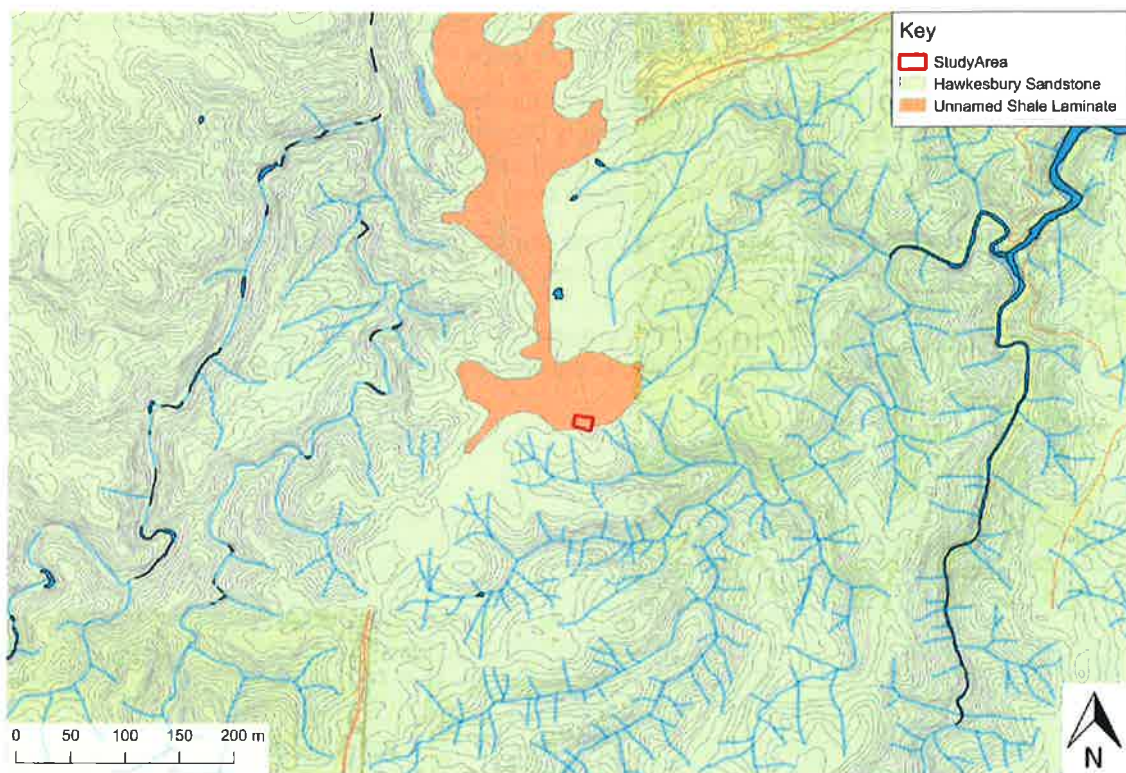


Figure 1 Map of the geological formations within the vicinity of the project area, after the Wollongong-Port Hacking 1:100 000 sheet. (Source: topographic data supplied by LPI with additions by CRM 2017)

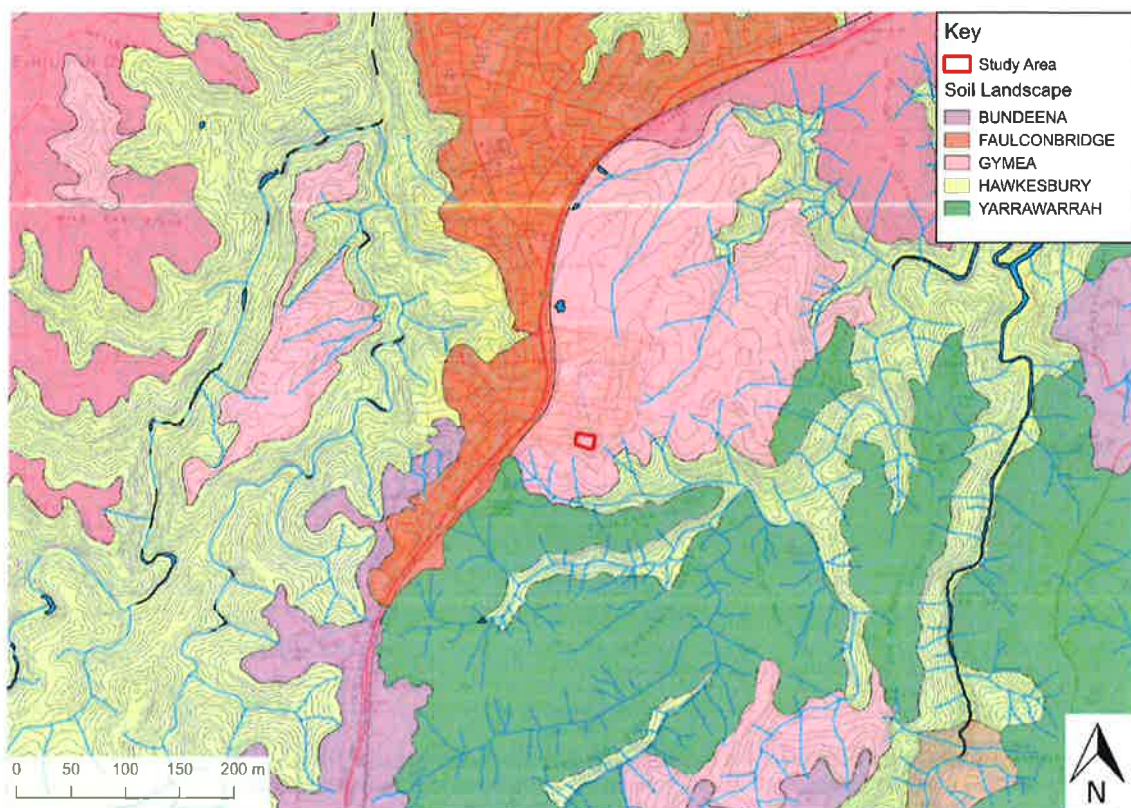


Figure 2 Map of the soil landscapes within the vicinity of the project area, after the Wollongong-Port Hacking 1:100 000 sheet. (Source: topographic data supplied by LPI with additions by CRM 2017)

3.4 Hydrology

The Woronora Plateau is drained by several large river systems including the Woronora, Cordeaux, Cataract, Avon and Hacking rivers. All but the latter drain towards the west due to the uplift of the plateau; they have been dammed for Sydney's freshwater supply. The Hacking River, located approximately 3.5km from Heathcote drains to the northeast, emptying into Port Hacking 14km away. During the last Glacial Maximum the sea level was up to 130m below its current level and the coastline was up to 6-15km east of the Royal National Park region.¹² As sea levels rose, salt water encroached into the formerly freshwater streams and rivers. Today estuarine conditions extend almost 30km inland into the Georges and Hacking Rivers.¹³ Audley, within the Royal National Park marks the extent of the tidal influence on the Hacking River and is approximately 4km northeast of Heathcote.

The rivers are fed in part by upland dells, areas of swampy heath located on Hawkesbury Sandstone which form on the high flat areas of the plateau.¹⁴ The dells act as basins or collection points for moisture, slowly feeding the streams and rivers downstream. The dells have the added effect of increasing the humidity of the upland areas across the plateau and causing frequent heavy fogs.¹⁵ Hawkesbury Sandstone has a low level of vertical permeability, this forces water to flow horizontally creating aquifers within the rock. This results in seeps and springs across the plateau where the aquifers are interrupted.¹⁶

The study area is within 120m to 220m of several first order streams and drainage channels which run off the break in slope of the ridgeline towards Heathcote Brook approximately 530m from the study area (Figure 2). Heathcote Brook is a tributary of Kangaroo Creek which feeds into the Hacking River to the northeast.

3.5 Flora

Geology and hydrology determine the ecological communities which exist across the Woronora Plateau. There are at least four different ecosystems. To the west, open woodlands with a grassy understorey grow on the Wianamatta Shale soils.¹⁷ Areas dominated by Hawkesbury Sandstone are vegetated with open Eucalypt forest. There is a shrubby understorey of banksia and acacia.

The lower slopes of the plateau, comprising the Narrabeen Group are dominated by warm temperate rainforests, particularly on south facing slopes. The wet areas of the dells on the plateau create generally treeless, hanging swamps containing sedges and rushes.¹⁸

¹² Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

¹³ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

¹⁴ Young, A. R. M., 1982, *Upland swamps (dells) on the Woronora Plateau, N.S.W.*, PhD thesis, School of Geography, University of Wollongong, 1982.

¹⁵ Young, A. R. M., 1982, *Upland swamps (dells) on the Woronora Plateau, N.S.W.*, PhD thesis, School of Geography, University of Wollongong, 1982.

¹⁶ Young, A. R. M., 1982, *Upland swamps (dells) on the Woronora Plateau, N.S.W.*, PhD thesis, School of Geography, University of Wollongong, 1982.

¹⁷ Sefton, C., *Archaeological Survey of the Cordeaux and Woronora River by the Illawarra Prehistory Group*, report prepared for the Australian Institute of Aboriginal Studies, November 1989.

¹⁸ Sefton, C., *Archaeological Survey of the Cordeaux and Woronora River by the Illawarra Prehistory Group*, report prepared for the Australian Institute of Aboriginal Studies, November 1989; Young, A. R. M., 1982, *Upland swamps (dells) on the Woronora Plateau, N.S.W.*, PhD thesis, School of Geography, University of Wollongong, 1982.

Typical vegetation in the Heathcote area comprises dry sclerophyll open woodland, dominated by smooth barked apple (*Angophora costata*) and Turpentines (*Syncarpia glomulifera*). Other common species include Red Bloodwood (*Eucalyptus gumnifera*), Scribbly Gums (*Eucalyptus sclerophylla*) and Stringybark (*Eucalyptus oblonga*). The understorey contains *Hakea* sp., *Acacia longifolia*, *Banksia serrata*, *B. spinulosa* and Casuarina scrub.¹⁹

Archaeological surveys undertaken by JMcDCHM in 2001 and 2004 noted species around the northern Woronora Plateau which are known to have been eaten or used by Aboriginal people. These plants include Geebung (*Persoonia* spp.), Burrawangs (*Macrozamia* sp.), Long-leaf Mat Rush (*Lomandra longifolia*), Bracken Fern (*Pteridium esculentum*), Flax Lily (*Dianella* sp.), Grass tree (*Xanthorrhoea arborea*) and Gynea Lily (*Doryanthes excelsa*).²⁰

3.6 Fauna

There are three major resources zones within the region of the project area; coastal, estuarine and forest hinterland.²¹ This range of ecological communities across the Woronora Plateau region provides habitat for a wide variety of fauna. These include terrestrial woodland and rainforest animals such as possums, bandicoots, wallabies, echidna, koalas, swamp rats, bats, birds, reptiles and frogs. The grassy open forests to the west would have supported larger macropods and emus. Eels, fish, turtles and freshwater crayfish would have been found in the freshwater streams and swamps.²²

The coastline is approximately 11km from the study area and is home to a wide range of marine fauna including mammals such as seals, dolphins and whales as well as fish, molluscs, crustaceans and seabirds. Access to marine resources from Heathcote would have increased substantially over the past 10,000 years through the establishment of estuarine environments in the Hacking River.²³

3.7 Overview

The environmental context of the region encompassed numerous and varied resources for Aboriginal people. The landform provided places for shelter or materials to create them ([Section 4](#)) but it had disadvantages in the rugged terrain and occasional climatic conditions such as fog that may have influenced the frequency or duration of occupation. Generally, the area would have supported Aboriginal people and would have been attractive to them.

¹⁹ JMcDCHM, *Archaeological Site Survey – Forum Drive, Heathcote*, report prepared for Wallis and Moore P/L on behalf of Landcom, August 2001

²⁰ JMcDCHM, *Archaeological Site Survey – Forum Drive, Heathcote*, report prepared for Wallis and Moore P/L on behalf of Landcom, August 2001; JMcDCHM, *Archaeological Survey of Project 12021 Precinct 3, between Barden Road, Foreman Place and Landor Close, Barden Ridge NSW*, report prepared for Site Plus Pty Ltd on behalf of Landcom, December 2004.

²¹ Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

²² Department of Environment, Climate Change & Water, 2011, *The Vertebrate Fauna of Royal & Heathcote National Parks and Garawarra State Conservation Area*, Department of Environment, Climate Change and Water NSW, Hurstville.

²³ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

4

Ethnographic Evidence



4.1 Tharawal People

The Heathcote region comprises the north eastern portion of the Tharawal (also Dharawal or Thurawal) language group.²⁴ The Tharawal region takes in the coastline south of Botany Bay to the Shoalhaven River and the steep, forested hinterlands west to the Georges River and Appin, possibly as far south as Camden.²⁵ To the west of Tharawal people were the Gundungurra people and to the north the Darug peoples.

The Tharawal people lived in small family groups or clans with defined territories. Each individual had specific responsibilities and obligations towards the well-being of their country; these were often determined on age, gender and totemic associations. Each clan was responsible for their territory and land management methods such as fire-stick farming was used in the Illawarra region to promote clearing of the dense forest and regrowth of young plants.²⁶

Like many cultures, Tharawal society operated using gendered division of labour. Women were generally responsible for gathering plants and vegetables and hunting small game such as bandicoots or birds while men were taught to hunt larger animals such as kangaroos with weapons such as spears or possums with axes.²⁷

4.2 Connections and Beliefs

Strong cultural, spiritual, familial and economic links existed between the different peoples of the Sydney region. Groups such as the Tharawal and the Darug would regularly meet for the purpose of undertaking important ceremony, to arrange marriages and to trade in materials such as axe heads, spears, possum skins etc.²⁸

Common belief systems were shared between the nations around the Sydney Basin although each group would generally have their own dreaming stories associated with their Country. Belief in Biaime, the Creator, was common across the Sydney region, although beliefs about the number of his sons and their role in Aboriginal life may have varied from region to region. The Tharawal people believed that Biaime's son, Daramulan was responsible for giving men the Law, teaching them laws and customs relating to kinship, totems, cultural restrictions and religious observance.²⁹

Ceremonies were generally gender restricted. Like other groups around the Sydney region, the initiation of young Tharawal men was carried out within bora grounds and was marked by the removal of one front tooth, a symbol that a boy had achieved manhood.³⁰ Much less is recorded in ethnographic sources regarding the ceremonial and spiritual life of Tharawal women due to the gendered bias of male European recorders as well as cultural restrictions against revealing this information to the opposite sex.

²⁴ Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, 7-22.

²⁵ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

²⁶ Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, pp. 7-22.

²⁷ Organ, M. K., 1993 *Illawarra and South Coast Aborigines 1770-1900*, report to the Australian Institute of Aboriginal and Torres Strait Islander Affairs, Canberra.

²⁸ Attenbrow, V., 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of NSW Press, Sydney.

²⁹ Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, pp. 7-22.

³⁰ Organ, M. K., 1993 *Illawarra and South Coast Aborigines 1770-1900*, report to the Australian Institute of Aboriginal and Torres Strait Islander Affairs, Canberra.

4.3 Material Culture

Early European accounts in Sydney and the Illawarra indicate that men used canoes and spears for fishing while women fished from canoes using line and shell hooks as well as collecting shellfish.³¹ Some accounts also describe Tharawal women diving for lobsters near the Shoalhaven River.³²

Tharawal people would construct canoes out of bark, cutting off a large piece of bark using ground stone axes commonly referred to in the historical literature as 'mogos'.³³ The technique was frequently observed by European settlers, one such account by Baron Charles von Hugel in 1834 describes the technique near Wollongong in the following way:

"One species of Eucalyptus, Stringy Bark, is eminently suitable for this purpose. Its thick bark - 2 to 3 inches - is easy to peel off. The natives do this with great skill and speed. They begin by cutting a circle round the tree with diagonal cuts like these: V V V using their Tomahawk, then they cut in a vertical straight line as high as they can reach and from there, by using small notches cut into the bark for their big toes, they climb to whatever height they wish to peel the bark off the tree, cutting through the bark all the way and then cutting a horizontal line round the tree, as lower down. To do this they swing their hatchet (which is precisely the same as what Austrians call a Hackel, with a peculiar cross stroke above their heads. When it has been cut through like this the bark is not always easy to detach from the trunk".³⁴

Plants were not only used for food but many were also utilised as raw materials for the creation of tools such as fishing line, weaving of containers and creating ceremonial costume. Other plants would be used for medicinal purposes and even for hunting. One such example is the use of bark from the Dog Tree to catch fish. This technique required the damming of a creek, after which bundles of the bark would be soaked and then heated over a fire. The steaming bundles would be placed into the water, the chemicals released would temporarily stun any fish which could then be easily collected and eaten.³⁵

4.4 Shelters

Rock shelters were reportedly used as shelters and this is confirmed by the archaeological evidence however historical accounts commonly describe the use of small, relatively temporary timber and bark huts called 'gunyahs'. These would be erected at open campsites such as along beaches to provide shelter from the elements.³⁶

³¹ Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, pp. 7-22; Attenbrow, V., 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of NSW Press, Sydney.

³² Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, pp. 7-22.

³³ Corkhill, T., 2005, 'Sourcing stone from the Sydney region: A hatchet job' in *Australian Archaeology*, no. 60, pp. 41-50.

³⁴ Charles von Hugel, 1834, *Journal of a Visit to New Holland, 1833-34*, in Organ, M. K., 1993 *Illawarra and South Coast Aborigines 1770-1900*, report to the Australian Institute of Aboriginal and Torres Strait Islander Affairs, Canberra, p. 97

³⁵ Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, pp. 7-22.

³⁶ Organ, M., and Speechley, C., 'Illawarra Aborigines,' in Hagan, JS and Wells, A (eds), *A History of Wollongong*, University of Wollongong Press, 1997, pp. 7-22; Attenbrow, V., 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of NSW Press, Sydney.

5

The Historic Period



The preservation or otherwise of evidence of Aboriginal occupation and use is often subject to the impacts of later settlement in the historic period. Understanding the scope of this settlement is an important component in determining the potential of a place to encompass Aboriginal archaeological potential. In this section there is a brief discussion of the historical development of the project area. The information is drawn from the draft Conservation Management Plan and the historic period archaeological assessment³⁷.

5.1 Early Settlement

The Heathcote area first attracted European settlers for its hardwoods including ironbark and turpentine which were extensively logged. The Parish of Heathcote was established in 1835 and the township was originally known as Bottle Forest. In 1843 as part of the survey and construction of the new Illawarra Road, allotments in Bottle Forest were laid out by Assistant Surveyor William Wedge Darke.³⁸ Construction of the railway between Sydney and the Illawarra in the 1880s prompted the development of a series of small towns along the rail line.

5.2 Creating Heathcote Hall

Heathcote Hall was constructed in 1887 for Tempe brick-maker and business man Abel Harber. Harber capitalised on the construction needs of the new railway by establishing a brickmaking business.³⁹ The economic crash of the 1890s created severe financial difficulties for Harber; the property was taken over by the mortgagees in 1892.⁴⁰

There are some reports that the property was offered by the mortgagees as first prize in a Queensland lottery; it was won by Samuel Gillette. Gillette appears to have undertaken some minor farming on the 48-acre property, growing potatoes and 'other crops' however electoral rolls at the time suggest he did not reside there permanently.⁴¹ In 1901 the property was sold by Gillette to Mrs Jessie Fotheringham Brown.

5.3 Subdivision

In 1901 the property was sold by Gillette to Mrs Jessie Fotheringham Brown and in 1927 the larger portion of the property was subdivided and slowly sold off as 168 residential lots. These now make up the south-eastern portion of the town of Heathcote.⁴² The remaining four acres surrounding Heathcote Hall were retained as gardens and land belonging to the hall. During the 1920s and 1930s the hall was variously leased out and used as public

³⁷ Ann Warr Heritage Consulting (2016); *Heathcote Hall 1-21 Dilwynnia Grove Heathcote NSW Conservation Management Plan*. Casey Lowe Pty Ltd (2016); *Heathcote Hall, 1-21 Dilwynnia Grove Heathcote Archaeological Assessment*

³⁸ Anne Warr Heritage Consulting, 2016, *Heathcote Hall 1-21 Dilwynnia Grove, Heathcote NSW, Conservation Management Plan*, report prepared for Fuzotinn Pty Ltd.

³⁹ Anne Warr Heritage Consulting, 2016, *Heathcote Hall 1-21 Dilwynnia Grove, Heathcote NSW, Conservation Management Plan*, report prepared for Fuzotinn Pty Ltd.

⁴⁰ Anne Warr Heritage Consulting, 2016, *Heathcote Hall 1-21 Dilwynnia Grove, Heathcote NSW, Conservation Management Plan*, report prepared for Fuzotinn Pty Ltd; Casey & Lowe Pty Ltd, 2016, *Heathcote Hall, 1-21 Dilwynnia Grove, Heathcote, Archaeological Assessment*, report prepared for Tropman & Tropman Architects on behalf of Fuzotinn Pty Ltd.

⁴¹ Anne Warr Heritage Consulting, 2016, *Heathcote Hall 1-21 Dilwynnia Grove, Heathcote NSW, Conservation Management Plan*, report prepared for Fuzotinn Pty Ltd.

⁴² Casey & Lowe Pty Ltd, 2016, *Heathcote Hall, 1-21 Dilwynnia Grove, Heathcote, Archaeological Assessment*, report prepared for Tropman & Tropman Architects on behalf of Fuzotinn Pty Ltd.

tearooms.⁴³ Photographs from this period show formal gardens surrounding the house and first-hand accounts indicate that a tennis court, a sports oval and landscaped parkland were at one time maintained on the property.⁴⁴ Aerial photographs from this time indicate that the four acre property had largely been cleared with the exception of some established trees along the eastern boundary and surrounding the hall (Figure 3).



Figure 3 1943 aerial photograph of the study area (Source: SixMaps)



Figure 4 1984 aerial photograph of the study area showing the extent of lightweight buildings constructed to stable horses across the project area (Source: <http://www.sutherlandshire.nsw.gov.au/Development/Shire-Maps>)

⁴³ Anne Warr Heritage Consulting, 2016, *Heathcote Hall 1-21 Dilwynnia Grove, Heathcote NSW, Conservation Management Plan*, report prepared for Fuzotinn Pty Ltd.

⁴⁴ Anne Warr Heritage Consulting, 2016, *Heathcote Hall 1-21 Dilwynnia Grove, Heathcote NSW, Conservation Management Plan*, report prepared for Fuzotinn Pty Ltd.

5.4 Alterations

Mrs Mimina Farrelly bought the four-acre property in 1945 and the Farrelly family occupied the hall until 2016. During this time a number of alterations were made to modernise and adapt the house for family use. A number of lightweight sheds were also constructed and periodically demolished across the site during the twentieth century. During the 1980s and 1990s much of the property was covered in small corrugated iron sheds used for stabling horses; several of these stables are still standing although in poor condition (**Error! Reference source not found.**). This period also saw the construction of circular corral and an oval-shaped road in the northern portion of the site to service the stables (**Error! Reference source not found.**).

5.5 Impacts of Development

The overview of development from the pre-settlement environment described in the preceding section to the present-day identifies a number of events and activities that are likely to have impacted the ground and, therefore, evidence of Aboriginal life and occupation. These impacts may be summarised as follows:

- Deforestation which encompasses not only the removal of large trees and the attendant disturbance to the ground surface but the creation of logging paths and pits
- Excavation and extensive ground disturbance for the construction of the hall, its out-buildings, gardens and orchards.
- Later periods of building; light-weight structures that are unlikely to have created the same impacts on the ground as the first phases of work but certainly would have required some measure of levelling
- Land-forming that appears to have encompassed some areas of levelling but also the introduction of fill to raise parts of the site
- The creations of paths and driveways

While many of these impacts are likely to have disturbed, removed or fragmented evidence of Aboriginal life land-filling may have acted to preserve some part of the older landscape.

6

Archaeology



6.1 AHIMS Search Results

The NSW Office of Environment and Heritage (OEH) maintains the Aboriginal Heritage Information Management System (AHIMS), a database of all recorded Aboriginal sites in NSW. A search of the AHIMS database was undertaken on 6 February 2017 for an area between -34.0986°, 150.9972° to -34.0768°, 151.0317° using a buffer of 1000 meters (Appendix A).

A total of 107 recorded Aboriginal sites were returned for the local region (Figure 5). No sites are recorded within the project area.

Table 1 provides a breakdown of the site types in the local region surrounding Heathcote. Almost half (46.7%) of the sites recorded on AHIMS for the local region are rock-shelter sites, either with pigmented or engraved art and/or archaeological deposits within the shelter. Rock-shelter sites in the vicinity of the study area occur on mid to upper hillslopes, generally between the 60m - 180m contour (Figure 5).

Axe grinding grooves are the next most common site type followed by rock engravings in open site contexts. Grinding grooves predominately occur in association with water courses, either first order streams or higher (Figure 5). This is likely to be due to the use of water as a lubricant during the sharpening of ground edge tools on sandstone surfaces.

Only one open artefact site (potential campsite) and one scarred tree has been recorded in this area. The open artefact site was recorded 360m south of the project area along the walking track leading from Heathcote to Karloo Pools. It was most likely identified within an eroded exposure along this track. One potential archaeological deposit was recorded approximately 1.4km to the south of the current study area in association with a rock-shelter with archaeological deposit (Figure 5).

Site Type	Quantity	Percentage of Sample
Rock-shelter	50	46.7%
Shelter with Art	21	19.6%
Shelter with Deposit	6	5.6%
Shelter with Art & Deposit	23	21.5%
Axe Grinding Groove	41	38.3%
Rock Engraving	13	12.1%
Potential Archaeological Deposit	1	0.9%
Scarred Tree	1	0.9%
Open Campsite/Artefact Scatter	1	0.9%
Total	107	100%

Table 1 Recorded Aboriginal sites in the vicinity of the subject site (Source: AHIMS 6 February 2017)

The distribution of sites identified from the AHIMS search with the 1000 metre buffer is shown on the following image.

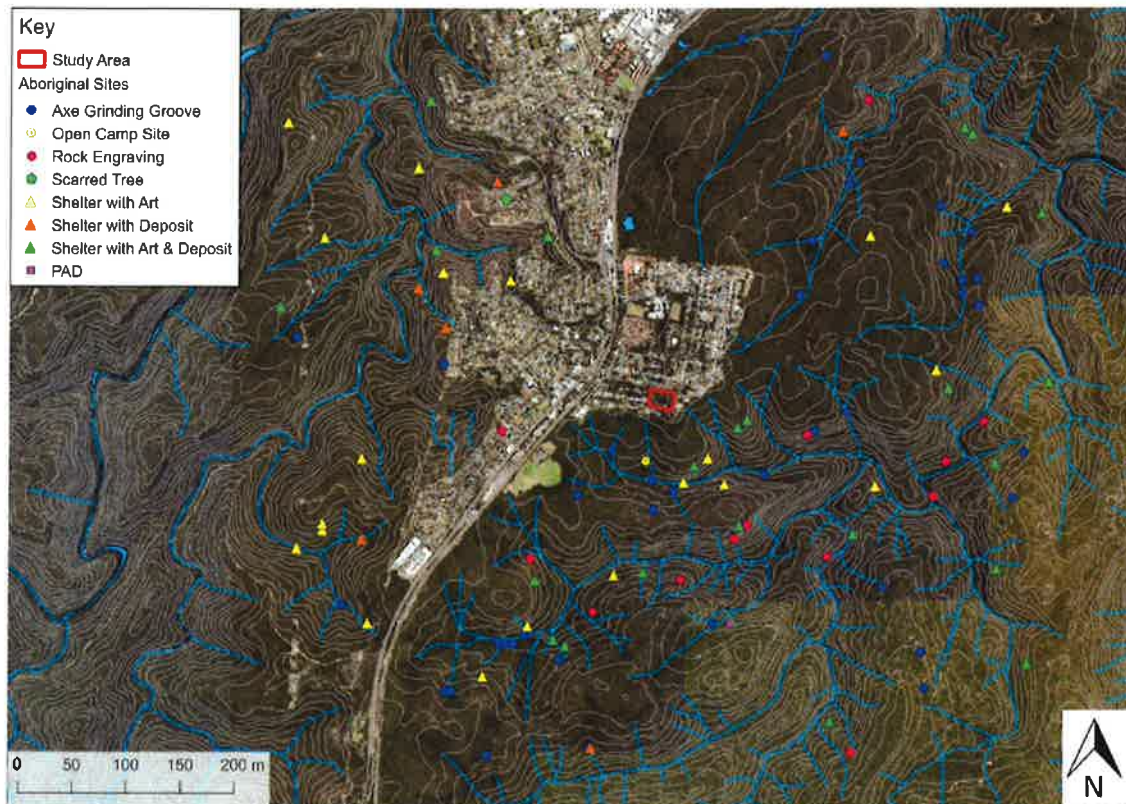


Figure 5 Map of the known Aboriginal sites registered on AHIMS within the vicinity of the study area. (Source: CRM 2017, aerial imagery supplied by LPI)

6.2 Regional Archaeological Evidence

6.2.1 Chronology

Archaeological evidence from across Australia confirms that Aboriginal people have been in the southern portion of the continent for at least 40,000 – 45,000 years.⁴⁵ It is possible and likely that the Sydney region was also occupied at this time, however archaeological evidence dating to this period is rare, poorly preserved or potentially submerged due to rising sea levels over the last 10,000 years.

Archaeological evidence from Burrill Lake and Bass Point have radiometric dates that show Aboriginal occupation of the NSW south coast extends to 23,000 – 26,000 years cal BP and 19,000 - 22,000 years cal BP respectively. Excavations of rock-shelters on the

⁴⁵ Turney, C.S.M., Bird, M.I., Fifield, L.K., Roberts, R.G., Smith, M., Dortch, C.E., Grün, R., Lawson, E., Ayliffe, L.K., Miller, G.H., Dortch, J. and Cresswell, R.G., 2001, 'Early Human Occupation at Devil's Lair, Southwestern Australia 50,000 Years Ago', in *Quaternary Research*, vol. 55, no. 1, pp. 3-13; Bowler J.M., Johnston H., Olley J.M., Prescott J.R., Roberts R.G., Shawcross W., Spooner N.A., 2003, 'New ages for human occupation and climatic change at Lake Mungo, Australia' in *Nature*, vol. 421, no. 6925, pp. 837-40; Balme, J., 2000. Excavations revealing 40,000 years of occupation at Mimbi Caves, south central Kimberley, Western Australia. *Australian Archaeology*, 51(1), pp.1-5; Roberts, R., Yoshida, H., Galbraith, R., Laslett, G., Jones, R. and Smith, M., 1998. Single-aliquot and single-grain optical dating confirm thermoluminescence age estimates at Malakunanja II rock shelter in northern Australia. *Ancient TL*, 16(1), pp.19-24.

Woronora Plateau indicate that the occupation of the deeply incised, plateau uplands may be much more recent, dating to approximately 3,000 years ago.⁴⁶

6.2.2 Site Types

Extensive evidence for the Aboriginal occupation of the Woronora Plateau has been recorded over the last forty years, the most common site types comprising rock-shelters with engraved or painted art and/or archaeological deposits, open sites containing axe grinding grooves and rock engravings and shell middens. Less common are open sites with artefact concentrations although this may likely be due to the poor visibility caused by heavy leaf litter within the plateau environment.⁴⁷

Over the last thirty years the Illawarra Prehistory Group has recorded over 3100 Aboriginal sites across the Woronora Plateau. This includes over 2100 rock-shelters with rock art and/or surface artefact concentrations.⁴⁸ Rock-shelters with evidence for Aboriginal occupation make up the most common site type within the sandstone plateau due to the availability of rocky overhangs on the steep slopes of the numerous gullies. The average shelter site on the plateau is thirteen metres wide, three metres deep and two metres high.⁴⁹

The Woronora River catchment near Heathcote has been identified as having the highest density of rock art sites on the entire Woronora Plateau.⁵⁰ The most common rock art technique is charcoal drawing followed by red pigmented drawing, red stencils, white drawings and bichrome paintings.⁵¹ Rock engravings are also found across the plateau although the frequency of engravings is higher in the northern part of the plateau than to the south.⁵²

Research on the rock art of the Sydney region has identified a stylistic boundary to the north and south of the Georges River. To the south, rock engravings are less commonly found than in other sandstone upland areas such as the Blue Mountains and Central Coast and a stylistic difference in motif style can be observed.⁵³ This includes a reduced motif repertoire, lack of profile anthropomorphic figures, a high proportion of unidentifiable motifs and a lower number of tracks including culture hero footprints (mundoes). The style of depicting macropods, whales and echidna also differs north and south of the Georges River boundary.⁵⁴ Within the Woronora Plateau there is also spatial variation in motif depiction, with a gradual south-westerly decline in the depiction of macropods, echidnas and fish with a corresponding increase in the depiction of human figures and eels.⁵⁵

Excavation of rock-shelters within the Royal National Park, Mills Creek at Lucas Heights and Bardens Creek near Barden's Ridge have indicated that the Eastern Regional

⁴⁶ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁴⁷ Sefton, C., 2011, 'The Effects of Fire on the Rock Art of the Woronora Plateau', in *Rock Art Research*, vol. 28, no. 1, pp. 49-52.

⁴⁸ Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

⁴⁹ Sefton, C., 2011, 'The Effects of Fire on the Rock Art of the Woronora Plateau', in *Rock Art Research*, vol. 28, no. 1, pp. 49-52.

⁵⁰ Sefton, C., 2011, 'The Effects of Fire on the Rock Art of the Woronora Plateau', in *Rock Art Research*, vol. 28, no. 1, pp. 49-52.

⁵¹ Sefton, C., 1990, *Archaeological Survey of the Cordeaux River and Woronora River by the Illawarra Prehistory Group*, report prepared for the Australian Institute of Aboriginal and Torres Strait Islander Studies.

⁵² Sefton, C., 2011, 'The Effects of Fire on the Rock Art of the Woronora Plateau', in *Rock Art Research*, vol. 28, no. 1, pp. 49-52.

⁵³ McDonald, J., 2008, 'Dreamtime Superhighway: Sydney Basin Rock Art and Prehistoric Information Exchange', in *Terra Australis*, no. 27, Australian National University Press, Canberra.

⁵⁴ McDonald, J., 2008, 'Dreamtime Superhighway: Sydney Basin Rock Art and Prehistoric Information Exchange', in *Terra Australis*, no. 27, Australian National University Press, Canberra.

⁵⁵ Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

Sequence of stone tool production identified by McCarthy can also be applied to the Woronora Plateau.⁵⁶ However, to date, archaeological excavations of rock-shelters in this region have only identified occupation of the rough plateau country from the Middle Bondaian onwards (circa 3,000 BP).⁵⁷ The Middle Bondaian is characterised by a general increase in the use of quartz, bi-polar knapping techniques and a decrease in the production of backed blades and artefacts with retouch.⁵⁸

Over 650 Aboriginal sites are recorded in the Royal National Park alone, many of these comprise rock-shelters with engraved or pigmented art and/or archaeological deposits within the plateau.⁵⁹ Sites along the coast are more commonly open campsites marked by artefact concentrations and shell middens.

A number of midden sites have been documented and excavated along the coastline south of Sydney. These sites include middens at Kurnell, Gymea Bay in Port Hacking and within the Royal National Park. Remains of a wide variety of fish and terrestrial animals have been identified within these middens including rock oyster, mud oyster, large and small turban, a range of mussel species, Sydney cockles, black nerite, limpets, tritons and whelks. Fish species include snapper, bream, groper, leatherjackets, flatheads and catfish.⁶⁰ Terrestrial animal remains found in these middens have included kangaroo, wallaby, possum, potoroo and bandicoots.⁶¹

Fish hooks made from shell have been found within middens as well as rock-shelters in the coastal hinterland.⁶² Archaeological evidence suggests that this type of tool only appears to have been used by Aboriginal people of the NSW south coast within the last 1000 years. It is associated ethnographically with Aboriginal women during the contact period.⁶³ Pierced shell has also been found within coastal middens in the Sydney region. In 1899 William Harper reported excavating six black nerita shells with rectangular holes cut through the back in association with a polished kangaroo fibula from a midden in Bundeena.⁶⁴ Harper described the shells as possible beads, used for personal ornamentation. Similarly pierced black nerita shells have since been found in 2007 in Bundeena and in 2009 at Little Bay during auger sampling of a shell midden.⁶⁵ An alternative interpretation of these shells was made by Farquharson and Brown based on a rock engraving at Allambie Heights that the shells were part of a jingling musical instrument called a *systrum*.⁶⁶

⁵⁶ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁵⁷ JMcDCHM 2001, *Survey for Aboriginal Sites: Forum Drive, Heathcote*, report prepared Wallis and Moore P/L on behalf of Landcom.

⁵⁸ JMcDCHM 2001, *Survey for Aboriginal Sites: Forum Drive, Heathcote*, report prepared Wallis and Moore P/L on behalf of Landcom.

⁵⁹ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁶⁰ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁶¹ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁶² Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

⁶³ Attenbrow, V., 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of NSW Press, Sydney.

⁶⁴ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁶⁵ Godden Mackay Logan, 2009, *Little Bay Shell Midden. Test Excavation Report*, report prepared for Landcom; Irish, P., 2010, *Final Report on Aboriginal Archaeological Monitoring and Salvage Excavations. Meeting Place Precinct, Botany Bay National Park, Kurnell, NSW*, report prepared for Design Landscapes Pty. Ltd and Department of Environment and Climate Change. Australian Archaeologists Consulting Association Monograph No 3.

⁶⁶ Farquharson, L. and Brown, O., 2010, 'From Little Things: Management and Archaeological Investigation at the Little Bay Midden, NSW', paper presented at the Australian Archaeological Association Annual Conference, Batemans Bay.

Shell middens containing coastal species are found up to 7km from the coast within the Woronora River catchment and up to 12km in other areas.⁶⁷ Estuarine shellfish have been found up to 11km from estuarine environments.⁶⁸ Both Sefton and Attenbrow argue that this indicates the regular movement of people between the coast and rugged hinterland.⁶⁹ While it is likely that some of the shell material was carried as raw material for later tool production, Sefton suggests that the use of canoes to carry the spoils of coastal foraging inland may account for the occurrence of coastal shellfish and fish species inland within the Woronora and Hacking River catchments.⁷⁰

Other raw materials have also been shown to have been moved or traded between linguistically distinct areas across the Sydney region. Use of Portable X-Ray Fluorescence (PXRF) devices have demonstrated that some hatchets found within the Sutherland and Illawarra regions derived from sources over 100km away, despite dykes of volcanic material suitable for ground edge tool production occurring within the Illawarra region. This includes a tinguait hatchet excavated from rock-shelter Curracurrang 1 in the Royal National Park; it was likely derived from the Minnamurra area. A basalt hatchet from Botany Bay likely came from a source near Mangrove Mountain on the Central Coast.⁷¹

6.3 Local Archaeological Context

6.3.1 Survey Data

Of specific relevance to the current study area are a series of archaeological surveys undertaken by the Illawarra Prehistory Group and Jo McDonald Cultural Heritage Management (JMcDCHM). In 1989 the Illawarra Prehistory Group undertook a survey of parts of the Heathcote National Park, a large area between the Woronora Dam and the Princes Highway to the west of Heathcote. The survey was commissioned by the Australian Institute for Aboriginal and Torres Strait Islander Studies (AIATSIS).

At the time only twenty-four sites were recorded within that study area. The Illawarra Prehistory Group survey identified a further sixty-two sites of which twenty were open sites which included grinding grooves (N=18), artefact sites (N=11) and rock engravings (N=3). The remaining 42 sites were shelter sites with rock art and/or archaeological deposits.

Only two of the twenty open sites were found on ridgetop locations; one with grinding grooves and the second with rock engravings and grinding grooves although it is not clear whether either featured artefactual material. Almost 50% of the sites identified by the Illawarra Prehistory Group were located within upper basin or upper valley slope locations. Other cultural heritage management researchers working in the Heathcote area have also noted the lack of Aboriginal sites located on ridgetops and hypothesised that this is due to:

- the lack of sandstone outcrops suitable for rock engraving or forming shelters,
- poor visibility of open sites within heavily vegetated survey areas,

⁶⁷ Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

⁶⁸ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

⁶⁹ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64; Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

⁷⁰ Sefton, C., 2013, 'Molluscs and Fish in the Rock Art of the Coast, Estuary and Hinterland of the Woronora Plateau, NSW' in *Rock Art Research*, vol. 30, no. 1, pp. 97-102.

⁷¹ Attenbrow, V., 2012, 'The Aboriginal Prehistory and Archaeology of Royal National Park and Environs: A Review', in *Proceedings of the Linnean Society of New South Wales*, no. 134, pp. B39-B64.

- the degree of historical disturbance or
- the use of ridgetops as travel routes with temporary overnight camping occurring within the more protected rock-shelters immediately below the ridgelines.⁷²

A series of archaeological surveys carried out by JMcDCHM in the Heathcote and Barden Ridge area in 2001, 2004 and 2010 found a similar Aboriginal site patterning to that identified by the Illawarra Prehistory Group.⁷³ Few archaeological sites were identified during these surveys with the exception of one rock-shelter (LC1) with potential archaeological deposit and pigmented rock art at Barden Creek and one scarred tree between Forum Drive and Corinth Ave, Heathcote (Figure 5).

JMcDCHM reviewed the results of previous surveys undertaken by Brayshaw (1982), Byrne (1985, 1987), Greer et. al. (1983), McDonald (1995), McDonald & Brayshaw (1983) and Rich (1986) and found that almost half of these surveys resulted in no sites being identified. Those surveys where no sites were identified were almost without exception confined to ridgetop locations.

The discussion in the JMcDCHM report argues that the lack of rock art sites, including open engraving sites in ridgetop locations, may be explicable not only by the influence of the Georges River style boundary but also by the presence of the shale capping in the Heathcote area which would reduce the availability of suitable sandstone platforms for engraving along the ridgetops.

6.3.2 Overview

The physical and ethnographic evidence available for this area allows the following conclusions to be made:

- There is extensive evidence for Aboriginal occupation of the local region surrounding Heathcote
- Rock-shelters are the most commonly recorded Aboriginal site
- These sites most commonly occur on upper hillslopes or mid hillslopes where rocky sandstone outcrops are likely to occur
- There is a lack of archaeological investigation into subsurface deposits outside of rock-shelters in the plateau environment
- Open artefact sites are extremely uncommon however this may due to recorder bias, that rock-shelter sites are more visible and easier to find than artefact scatters which are easily obscured by heavy vegetation and leaf litter.

6.4 The Site

An inspection of the study area was undertaken by Erin Mein, CRM archaeologist on 11 February 2017. The purpose of this visit was to examine current site conditions, the extent of disturbance caused by historical development and to identify whether any Aboriginal

⁷² Smith, L., and Rich, E., 1986, *Heathcote Project 752, Precincts 1 and 2, Archaeological Survey for Aboriginal Sites*, report prepared for the Land Commission of NSW; McDonald, J., 1983, *Waterfall Sewerage Scheme, Archaeological Survey of the Sections within Heathcote National Park*, report prepared for the Metropolitan Water, Sewerage and Drainage Board; JMcDCHM 2001, *Survey for Aboriginal Sites: Forum Drive, Heathcote*, report prepared Wallis and Moore P/L on behalf of Landcom.

⁷³ JMcDCHM 2001, *Survey for Aboriginal Sites: Forum Drive, Heathcote*, report prepared Wallis and Moore P/L on behalf of Landcom; JMcDCHM 2004, *Archaeological Survey of Project 12021, Precinct 3, between Barden Road, Foreman Place and Landor Close, Barden Ridge, NSW*, report prepared for Site Plus Pty Ltd on behalf of Landcom; JMcDCHM 2010, *Aboriginal Heritage Assessment for Precinct 002, Forum Drive, Heathcote*, report prepared for Wallis and Moore INSITES on behalf of Heathcote Gospel Trust.

objects or sites exist or are likely to exist within the project area. No Aboriginal artefacts or sites were observed during the site inspection.

The study area has been divided into four quadrants for the purposes of this discussion (Figure 6). These quadrants are discussed in the following sections.

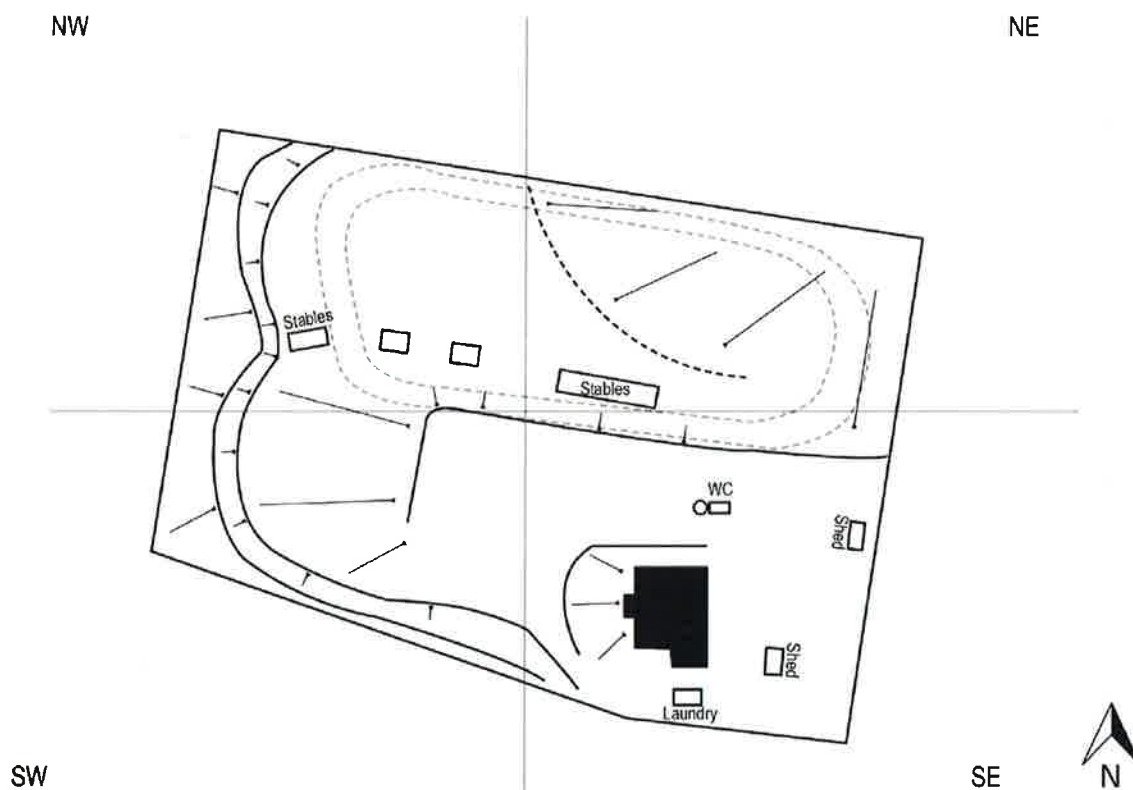


Figure 6 Schematic sketch of the study area showing Heathcote Hall and major extant structures. Note Heathcote Hall is in the southeast corner of the site. (Source: CRM 2017)

6.4.1 The South-east Quadrant

- The south-east quadrant primarily contains Heathcote Hall and the gardens in its immediate vicinity. These gardens are part of a formal landscape design that once surrounded the house.
- A number of outbuildings are situated in the south-east quadrant including a former laundry, two lightweight timber and corrugated iron sheds and an outside toilet (**Error! Reference source not found.** and **Error! Reference source not found.**). The external toilet appears to have a septic tank to the rear (**Error! Reference source not found.**).
- The ground surface slopes from the verandah of the hall towards the west. To the rear of the hall the ground is relatively flat.
- The ground surface falls away sharply at the southern boundary towards Dilwynnia Grove, shale based gravels can be seen in the section along this boundary (**Error! Reference source not found.**).
- Patches of blue metal were observed within the grassy areas in front of the house indicating that some gravel surfaces were introduced as some point most likely associated with the carriageway (**Error! Reference source not found.**).

- Remains of garden beds can be observed across the south-east quadrant. These are built from different materials including sandstone, concrete, brick and tile.
- A number of hard paving surfaces have been laid in the gardens immediately surrounding Heathcote Hall. These are of varied quality and materials (**Error! Reference source not found.**).
- Ground surface visibility across the project area was extremely poor due to dense, overgrown vegetation and heavy leaf litter.
- The ground surface within the gardens appeared highly disturbed with many pits and piles of introduced material (**Error! Reference source not found.**).
- The ground surface immediately north of the house is undulating, contains sheets of corrugated iron and appears to have been substantially land-formed.
- Soils observed immediately around the hall comprised of very dark brown, sandy loam overlying shale or laterite gravels. No pedological development was observed in small sections visible in the lawns of the house, suggesting that at least some of this material has been introduced as garden fill (**Error! Reference source not found. to 18**).
- Stockpiles of building materials are present across the south-east quadrant.
- A small stockpile of what appears to be laterite is located to the rear of the hall, near a shed (**Error! Reference source not found.**). This material may be locally derived from the shale/laterite capping known in the Heathcote area.



Figure 9: Rear of Heathcote Hall showing former gardens now overgrown (Source: CRM 2017)



Figure 10: An example of one of the garden beds and paved surfaces behind the house (Source: CRM 2017)



Figure 11: The former laundry located to the south of the house (Source: CRM 2017)



Figure 12: The external toilet and septic tank (Source: CRM 2017)



Figure 13: Stockpile of laterite possibly sourced locally – it is in the garden behind the house: scale 500mm (Source: CRM 2017)



Figure 14: Oak tree hit by lightning strike north of the house (Source: CRM 2017)



Figure 15: Overgrown gardens and twentieth century shed in the south-eastern quadrant (Source: CRM 2017)



Figure 16: Soil section exposed in the garden behind the house; it exposes shale and laterite gravels; scale 100mm increments (Source: CRM 2017)



Figure 17: Clayey-silty loam soil exposed immediately adjacent to the house; scale 500mm (Source: CRM 2017)



Figure 18: Soil profile exposed in the lawn in front of the house; scale 100mm increments (Source: CRM 2017)



Figure 19: Southern boundary along Dillwynnia Grove showing the excavation into the natural ground surface (Source: CRM 2017)

6.4.2 South-west Quadrant

- The south-west quadrant is largely free from built structures. The landowner identified a small area of terraced flat ground as the location of former tennis courts. These courts are bounded by a road and three large trees and are visible in the 1943 aerial photograph (*Figure 3 and Error! Reference source not found.*).
- Remains of a former fence line marking the driveway leading up to Heathcote Hall can be seen as decaying timber posts (*Error! Reference source not found.*).
- The ground surface drops away sharply along the southern and western boundaries of the property. Large amounts of mulch and fill material appear to have been placed across the south-west quadrant. This has effectively terraced the quadrant and created a steep drop which is now highly overgrown in the south-western corner, obscuring any evidence of the former ground surface. The latter was likely to have been a gentle slope (*Error! Reference source not found. and Error! Reference source not found.*).
- A small exposed profile to the south-west of Heathcote Hall indicates that multiple layers of gravel fills have been introduced across this area of the site. This most likely relates to the surfacing of the former carriageway (*Error! Reference source not found.*).
- Despite mature vegetation across the property, a clear view across the Woronora Plateau can be seen to the west and south from the south-west quadrant.



Figure 20: the location of the former tennis courts (left) lined by mature trees (Source: CRM 2017)



Figure 21: Remains of a fence post marking the boundary of the formal gardens and carriageway leading to the house (Source: CRM 2017)



Figure 22: Terraced fill along Dillwynnia grove (Source: CRM 2017)



Figure 23: An exposed section of fill located south-west of the house showing multiple layers of fill. The probably relate to different events of resurfacing the drive; scale 100mm increments (Source: CRM 2017)



Figure 24: Fill and mulch which covers much of the south-western quadrant of the project area. The bamboo in the background is at the point where the ground drops steeply to the western boundary (Source: CRM 2017)

6.4.3 North-west Quadrant

- The ground surface in the north-west quadrant generally slopes to the east towards the north-east quadrant.
- Three corrugated iron stables remain standing within the north-west quadrant. Each building has a small fenced yard to the north of the structures (**Error! Reference source not found.**).
- Remains of the oval road visible in the 1984 aerial photograph can be seen on the ground; it is very overgrown. Exposures of decayed blue metal and gravels indicate the road was covered in gravel at some point during the twentieth century.
- The circular corral remains standing within the north-west quadrant. This structure is at a higher level than the roadway, indicating that it was either built up or the road was cut down (**Error! Reference source not found.**).
- Similar to the south-west quadrant large amounts of fill and rubbish have been introduced and pushed towards the western boundary of the quadrant. This has created a steep terrace approximately 2-3m high of rubbish including tyres, bricks, concrete, metal and plastic along the western boundary of the property (**Error! Reference source not found.** and **Error! Reference source not found.**).



Figure 25: remains of the westernmost stable and yard in the north-west quadrant (Source: CRM 2017)



Figure 26: Example of the fill material prevalent across much of the ground surface in the north-west quadrant; scale 500mm (Source: CRM 2017)



Figure 27: A bank of fill and building debris on the western boundary of the property in the north-west quadrant (Source: CRM 2017)