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**Historical Heritage Assessment
Illawarra Mountain Bike Trails Concept Designs
Illawarra Escarpment and Kembla Height area**

Prepared for NPWS NSW

Prepared by Niche Environment and Heritage | June 2022



Document control

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This report recognises and acknowledges that the Subject Area and identified built historic structures and items are located on Dharawal/ Thurawal Country. It respects the Dharawal/ Thurawal and all First Nations communities, their Elders past and present, and their continuing care for Country.

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1. Introduction

1.1 Project Overview

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by New South Wales National Parks and Wildlife Services (NSW NPWS) (henceforth referred to as the proponent) to prepare a Historical Heritage Assessment (HHA) for the Historical Heritage components for a Review of Environmental Factors (REF) for the Illawarra Escarpment Mountain Bike Trail Network (IEMB Network) (hereafter referred to as ‘the Project’).

1.1 Location of the Subject Area

The focus of this report is within the area of land located along the Illawarra Escarpment, to the west of the Wollongong suburbs of Figtree and Cordeaux Heights, southwest of Mt Keira and northeast of Kembla Heights (see Figure 1 for further clarity) (henceforth referred to as the ‘Subject Area’). The Subject Area is comprised of:

- Lot 22 DP 1076092
- Lot 2 DP 1103666
- Lot 1 DP 1103666
- Lot 21 DP 1190749
- Lot 1 DP 203263
- Lot 1 DP 45861
- Lot 3 196426
- Lot 110 DP 579512
- Lot 2711 DP 1190953
- Lot 2 DP 263263
- Lot 1 DP 255281
- Lot 1130 DP 1138956
- Lot 112 DP 751278



Plate 1: Approximate location of the Subject Area (red) with impact areas in white (Source: Google Earth)

1.2 Project Background

The proposed IEMB network is approximately 50 km in total length, spanning multiple land tenures, including approximately 250ha of the Illawarra Escarpment State Conservation Area (IESCA), managed by NSW National Parks and Wildlife Services (NPWS). Other land tenures within the proposed IEMB network include:

- Wollongong City Council (WCC)
- WaterNSW
- Sydney Water
- South32 (Private landholder)

The proposed IEMB network aims to provide safe, sustainable recreation for a broad range of mountain bike riders on a variety of trail types. The IEMB network has been designed with consideration to the physical, environmental, and cultural constraints identified by NPWS and stakeholder groups in response to the Draft Illawarra Escarpment MTB Strategy (NPWS and WCC 2018).

The IEMB network comprises all levels of the International Mountain Bike Association (IMBA) trail gradings, ensuring that the network would accommodate a broad range of rider skills levels:

- Green Circle (easiest)
- Blue Square
- Black Diamond
- Double Black Diamond (most difficult).

A key goal of the IEMB network is to provide a sustainable alternative to the building and use of unsanctioned trails along the Illawarra Escarpment, particularly those at nearby Mount Keira. Without proper design features, unsanctioned trails are unsustainable and can cause adverse safety, environmental and cultural impacts.

The proposed IEMB network includes 27.72 km of entirely new trail. A number of existing unsanctioned trails (21.42 km in total length) have been incorporated into the IEMB network to minimise environmental impacts from creating new trails. The existing trails that have been incorporated into the IEMB network require modification to meet the IMBA trail standards. The success of the proposed IEMB network would allow unsanctioned trails on Mount Keira to be closed and rehabilitated by NPWS.

The proposed IEMB network is structured in three distinct interconnected tiers. Each of the tiers can be ridden individually or as an interconnected network. The network is designed to enable a large variety of riding options and routes, with the possibility of creating unique loops that suit an individual rider's ability and/or preference.

Multiple network entry points and dispersed parking provide ease of accessibility to the IEMB network, enabling riders to easily access the ride start point of their choice. Climbing trails enable riders to cycle into the network from surrounding suburbs including Mount Kembla and Mount Keira, Keiraville, Cordeaux Heights, and Farmborough Heights.

The IEMB network also includes important non-trail features, such as parking, amenities, signage and predetermined shuttle pick up locations, to ensure functionality of the network and a pleasant experience for all users.

Table 1: Trail network sections

Trail Network Tiers	Description
Upper Tier	O’Brien’s Drift trail head with a short flowing cross-country network and descending trail to the mid-tier. It is also the start location for the advanced full-length descents. The entire trail network can be accessed from the Mt Keira foothills in proximity to the Mt Keira RFS station. The entire network is therefore linked internally by climbing trail and management trails, minimising the need for mountain bikers to access trails via the road.
Mid-Tier	Located behind the Motocross track in NPWS land above Kembla Heights and comprises the bulk of the trail network with a range of trails available for different riding genres and skill levels. This area has the greatest variety of trail types and is specifically designed to provide diversity of trail types and difficulty levels.
Lower Tier	Descending trail network into Kembla Village for more experienced riders, including a return climb to Harry Graham Drive.

Table 2: Comparison of existing unsanctioned trails and new proposed trails that will be included in the trail network.

Trail Types	Sum of Length (km)
Existing Trail*	21.42
Proposed	27.72
Total	49.13

*Includes existing unsanctioned trails and fire/access trails

Table 3: Summary of trail categories included

Trail Type	Skill Level	Number	Length (km)
Fire/Access Trails (existing)	All (connecting trail)	2	1.96
Black Trails	Advanced	13	7.54
Blue Trails	Intermediate	24	18.42
Green Trails	Beginner	15	6.48
Red (Climbing) Trails	Intermediate to Advanced	13	14.74
Total		67	49.13

1.2 Report aims and objectives

This Historical Heritage Assessment aims to focus on the historical period of the Subject Area in order to assess the heritage values and significance of historical sites and places. This report will aim to identify and summarise the historical heritage places within the Subject Area which will include statutory listed places as well as identified, unlisted built and archaeological items and places. The identification of these items

and places and the data from the physical inspection of the Subject Area will also provide indication of archaeological potential.

This HHA has been written in parallel with *the Statement of Heritage Impact - Illawarra Mountain Bike Trails Concept Designs* report (Niche 2021) which should be read in conjunction with this report.

This HHA aims to address the following objectives:

- Outline the purpose and background of the proposed project
- Provide an environmental and historical context of the Subject Area
- Identify all statutory listed historical heritage places within the Subject Area
- Identify all non-listed historical heritage place both archaeological and built heritage items
- Identify these heritage places values and assess their significance
- Consider archaeological potential within the Subject Area
- Provide any recommendations for their protection or conservation

1.3 Methodology

This report will aim to use the follow methodology for this HHA:

- **Statutory overview:** identification of the statutory constraints which apply to the proposed works.
- **Historical overview:** analysis of the history of the Subject Area in order to inform the assessment of heritage significance and archaeological profile of the site.
- **Previous archaeological studies:** review previous assessments relevant to the Subject Area.
- **Physical evidence at the site:** a site inspection of the Subject Area which is used to further inform this assessment and amend or confirm the historical analysis.
- **Significance assessment:** use of the standard NSW assessment criteria to develop a statement of heritage significance which entails the assessment of the Subject Area with respect to the immediate region and the individual significance of items identified within the Subject Area.
- **Recommendations:** recommend strategies to manage the impacts of the proposed works on the heritage significance of the Subject Area and its components. The assessment will also provide recommendations for unexpected finds during excavation activities.

This HHA has been prepared in accordance with the principles and methodology contained in *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (2013), hereafter referred to as 'the Burra Charter'.

The Burra Charter outlines a series of best practice principles and measures for heritage investigation and conservation. The Burra Charter is supported by a series of Practice Notes that provide practical advice in the application of the Burra Charter. The Burra Charter was first adopted in 1979 and has been subject to numerous updates with the most recent iteration adopted in October 2013. The policies and legislative guidelines developed by the Heritage Council of NSW are guided by the Burra Charter.

This report has also been prepared in accordance with the best practice standards set out by the NSW Heritage Division including:

- *Assessing Heritage Significance* (Heritage Office (former), 2001)
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (Heritage Council, 2009).

1.4 Previous Archaeological Studies and Assessments

The following previous studies and assessments were reviewed as part of the background of this report to gain an understanding of the archaeological potential of the Subject Area:

- *AHMS (2012) Mount Kembla Mine Site Survey for NSW Department of Environment and Heritage, Final.*
- *AMBS (2010) Mount Kembla Mine Site, Kembla Heights, Moveable Heritage Assessment.*
- *Benefit Cost Analysis of the Proposed Illawarra Escarpment Mountain Bike Project*, PPM Economics and Strategy, August 2021
- *City of Wollongong Heritage Study, Vol. 1*, McDonald McPhee Pty Ltd, June 1991
- *City of Wollongong Heritage Study, Vol. 5*, McDonald McPhee Pty Ltd, June 1991
- *A Thematic History of the City of Wollongong*, Kass, T, Dec 2010
- *What makes a green public sphere? A case study of the Illawarra Escarpment*, Wilson, H, 2012
- *Dendrobium Area 3 Archaeological and Cultural Heritage Assessment, Biosis, August 2007*

1.5 Authorship and acknowledgements

This HHA has been written by John McLellan Gillen (Historical Heritage Consultant, Niche) and Nick Brodie (Historian) with document review and quality control provided by Wendy Thorp (Principal, Cultural Resource Management) and review amendments by Jo Nelson (Associate Heritage Consultant, Niche). The field survey and physical inspection was conducted by Samuel Ward (Historical Heritage Consultant, Niche) and Rebecca Chalker (Aboriginal Heritage Consultant, Niche) with technical assistance provided by Neil Berry (GIS Consultant, Niche). Unless otherwise attributed, images used in this report are produced by Niche.



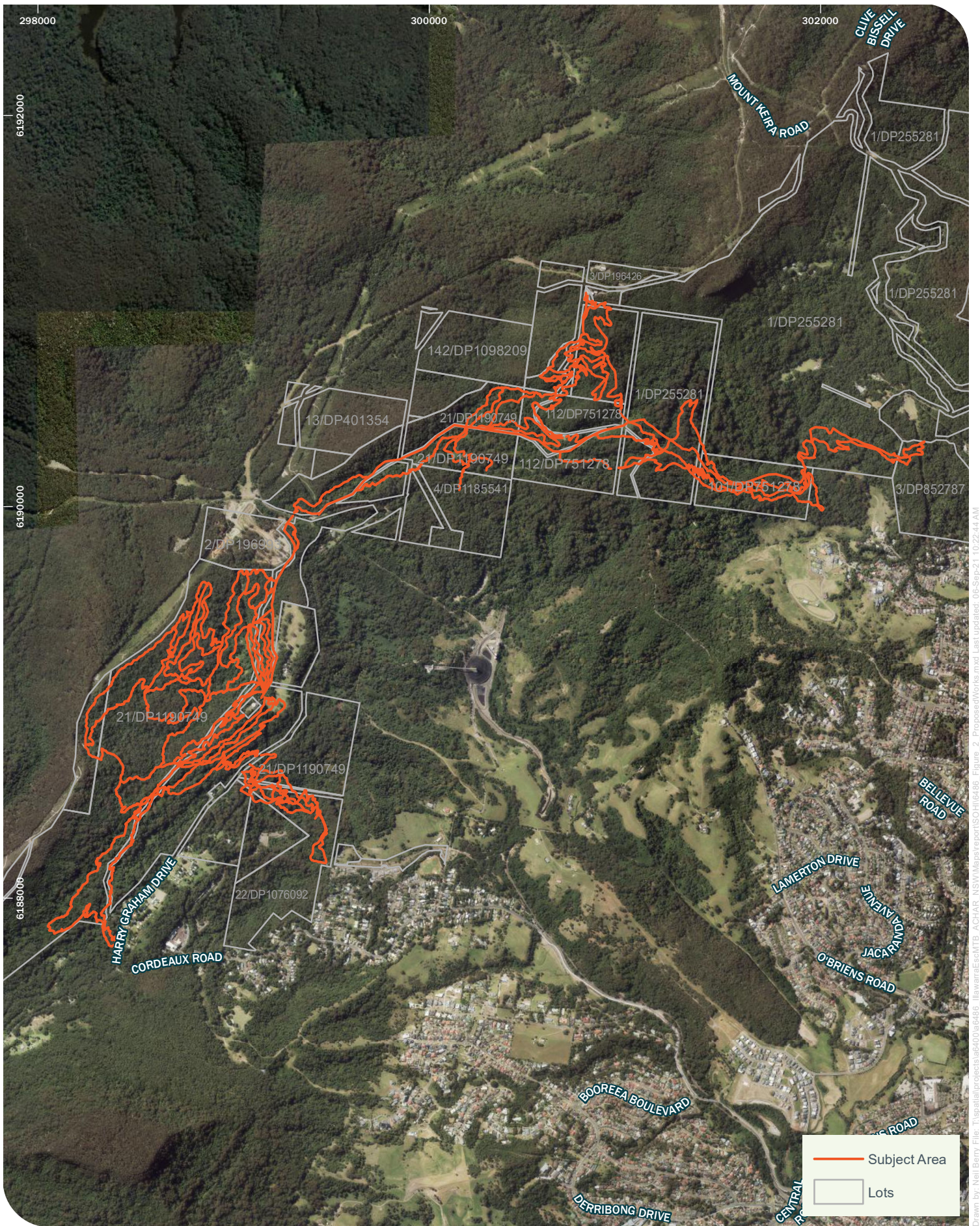
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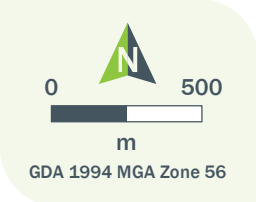
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Location Map
 Illawarra Escarpment Mountain Bike Concept Plan SOH1

Figure 1



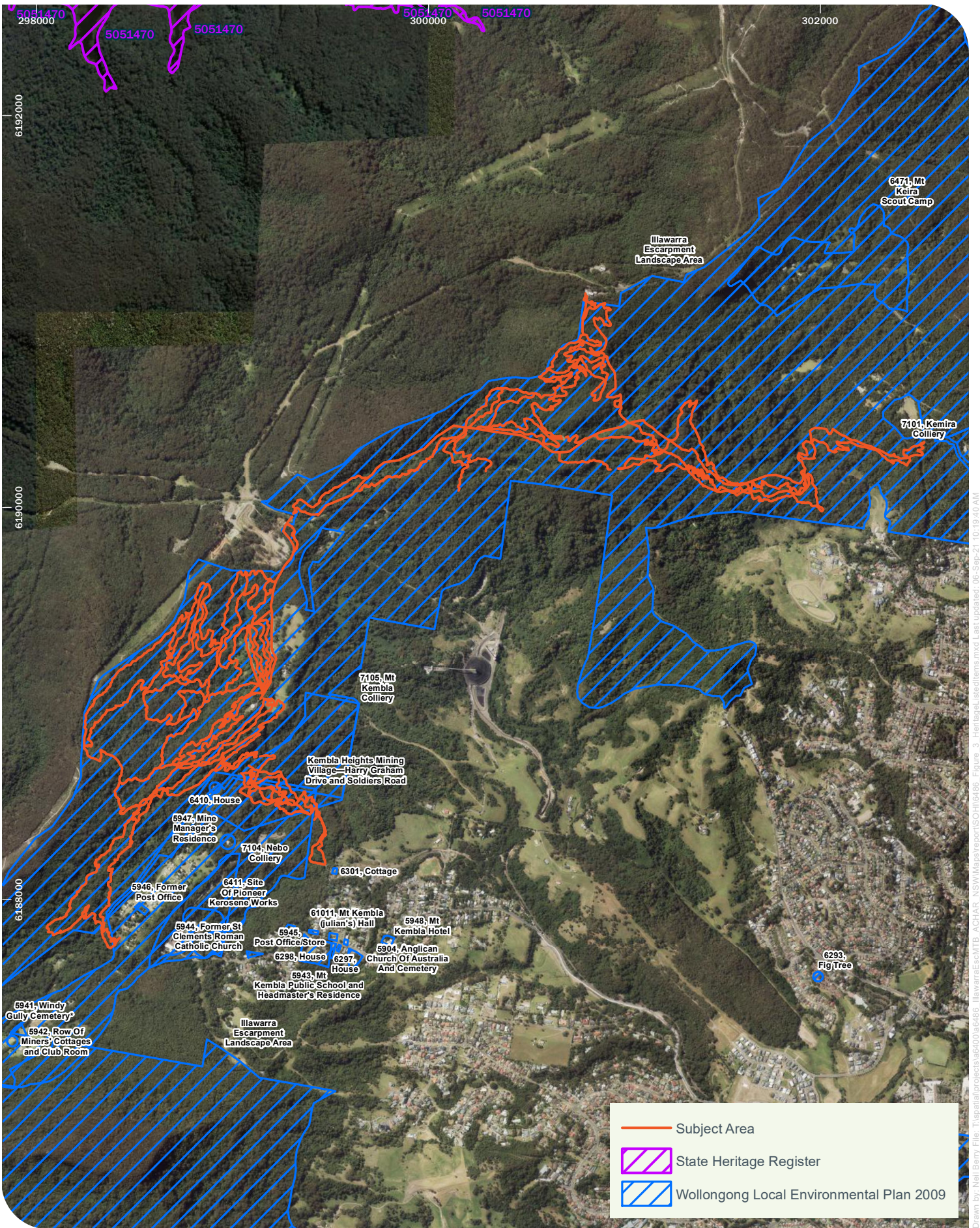
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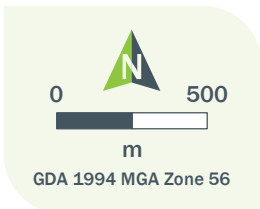
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Figure 2



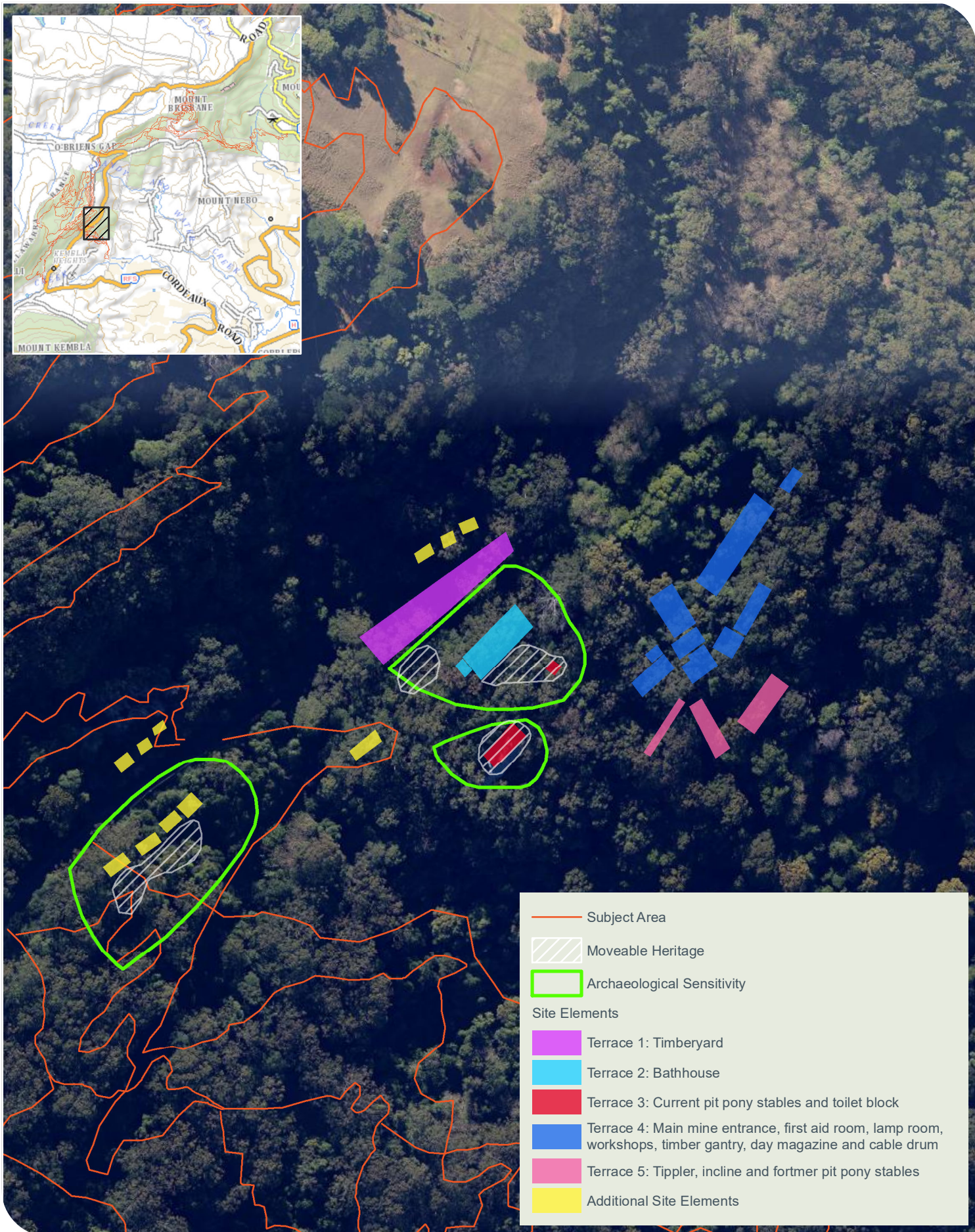
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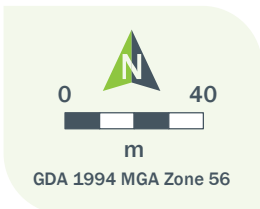
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Figure 3



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**Previous Archaeological Investigations (after AMBS, 2010: Figure 49)
Illawarra Escarpment Mountain Bike Concept Plan SoHl**

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Figure 4

2. Regulatory and Assessment Framework

This section provides a summary of relevant legislation and associated planning instruments designed to protect and conserve significant heritage items and their values.

1.6 Commonwealth and National Legislation

1.6.1 Environment Protection and Biodiversity Conservation Act 1999

The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places. Under the EPBC Act, protected heritage items of significance are listed on the National Heritage List (NHL) or the Commonwealth Heritage List (CHL). The NHL provides protection to places of cultural significance to the nation of Australia, while the CHL comprises natural, Aboriginal and historic heritage places owned and controlled by the Commonwealth.

No items on the CHL or NHL were identified within the Subject Area.

1.7 NSW State Legislation

Heritage Act 1977

The *Heritage Act 1977* (hereafter referred to as 'the Act') affords statutory protection to those items identified as having heritage significance and which form part of the NSW heritage record. The Act defines a heritage item as "a place, building, work, relic, moveable object or precinct". Items that are assessed as having State heritage significance are listed on the NSW State Heritage Register (SHR). Proposals to alter, damage, move or destroy heritage items listed on the SHR (or protected by an Interim Heritage Order [IHO]), require an approval under s60 of the Act.

Archaeological features and resources are afforded statutory protection by the 'relics provisions' of the Act. A relic is defined as "any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and is of State or local heritage significance". Land disturbance or excavation that will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed is prohibited under the provisions of the Act, unless carried out in accordance with a permit issued under s140 or s139 for Local heritage sites and s60 for State heritage sites of the Act. Archaeological potential will be assessed in more detail later in this report.

There are no SHR listing within the Subject Area.

State Heritage and Conservation (s.170) registers

Under s.170 of the Act, NSW government agencies are required to maintain a register of heritage assets under their control or ownership. Each government agency is responsible for ensuring that the items entered on its register under s.170 are maintained with due diligence in accordance with State Owned Heritage Management Principles. Items listed on s.170 Heritage and Conservation Registers are listed on the State Heritage Inventory (SHI), and some are also listed on the SHR.

There are two s.170 (and one potential s.170) listed items within the Subject Area (see Table 5).

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the framework for cultural heritage values to be formally assessed in the land use planning process in NSW. The EP&A Act also requires local governments to prepare planning instruments, such as Local Environmental Plans (LEPs) to provide guidance on the level of environmental assessment required.

Wollongong City Local Environmental Plan 2009

Heritage items within the Wollongong City Local Government Area are listed in Schedule 5 of the Wollongong City Local Environmental Plan (LEP) 2009. Wollongong City Development Control Plan (DCP) 2009 gives guidance and outlines controls in place to regulate development within the Wollongong City LGA. These items are subject to the planning controls and provisions set out in Clause 5.10 (Heritage Conservation) of that LEP.

There are three LEP listed heritage items within the Subject Area (see Table 5).

1.7.1 The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (2013)

This HHA has been prepared in accordance with the principles and methodology contained in the Burra Charter.

The Burra Charter outlines a series of best practice principles and measures for heritage investigation and conservation. The Burra Charter is supported by a series of Practice Notes that provide practical advice in the application of the Burra Charter. The Burra Charter was first adopted in 1979 and has been subject to numerous updates with the most recent iteration adopted in October 2013. The policies and legislative guidelines developed by the Heritage Council of NSW are guided by the Burra Charter.

2.1.1 Summary of Listed Heritage items

The following tables are a summary of the statutory listed heritage items within the Subject Area as well as the statutory listed heritage items within the near vicinity of the Subject Area.

Table 4: Listed heritage items within the near vicinity of the Subject Area

Item #	Item Name	Location	Level of Significance	Approximate proximity to Subject Area
1538 (RNE)	Village of Mount Kembla, Cordeaux Rd, Mount Kembla, NSW, Australia	Mount Kembla	Local (Indicative Place)	50m
6301 (LEP)	Cottage	2 Kirkwood Place, Mount Kembla, NSW 2526	Local	30m
6410 (LEP)	House	Lot 1 Harry Graham Drive Kembla Heights, NSW 2526	Local	70m
5946 (LEP)	Former Kembla Heights Post Office	Lot 3 Harry Graham Drive Kembla Heights, NSW 2526	Local	100m

Item #	Item Name	Location	Level of Significance	Approximate proximity to Subject Area
6229 (s.170)	Upper Level Building remains, Mount Kembla	56 299249 E 618875 N	Local	50m
2146 (s.170)	Mount Kembla Mine Site	56 299267 E 618872 N	Local	50m
11949 (s.170)	Explosives Magazines and tramway, Mount Kembla	56 299267 E 618872 N	Local	50m
6228 (s.170)	Pit Pony Stables, Mount Kembla	56 299278 E 618874 N	Local	50m
11947 (s.170)	Mine Entrance Building Remnants; Mount Kembla	56 299323 E 618877 N	Local	50m
11948 (s.170)	Top of Incline Group; Mount Kembla	56 299354 E 618873 N	Local	50m
6230 (s.170)	Air Shaft Chimney; Mount Kembla	56 299389 E 618905 N	Local	130m

Table 5: Listed heritage items within the Subject Area

Item #	Item Name	Statutory listing	Location	Level of Significance
6480	Illawarra Escarpment Landscape Conservation Area	Wollongong City LEP 2009	Macquarie Pass, NSW 2577	Local
6409	Kembla Heights Mining Village Heritage Conservation Area	Wollongong City LEP 2009	Kembla Heights, NSW 2526	Local
7105	Mount Kembla Colliery Including Site of Mine workings, Portal, Mine Air Shaft and Pit Pony Stables	Wollongong City LEP 2009	Harry Graham Drive Kembla Heights, NSW 2526	Local (Endorsed. State assessed)
11950	House remains	s.170	56 299142 E 618875 N	Local
2147	Remnants Of Original O'Brien's Road	Potential s.170	56 300124 E 619007 N	Local

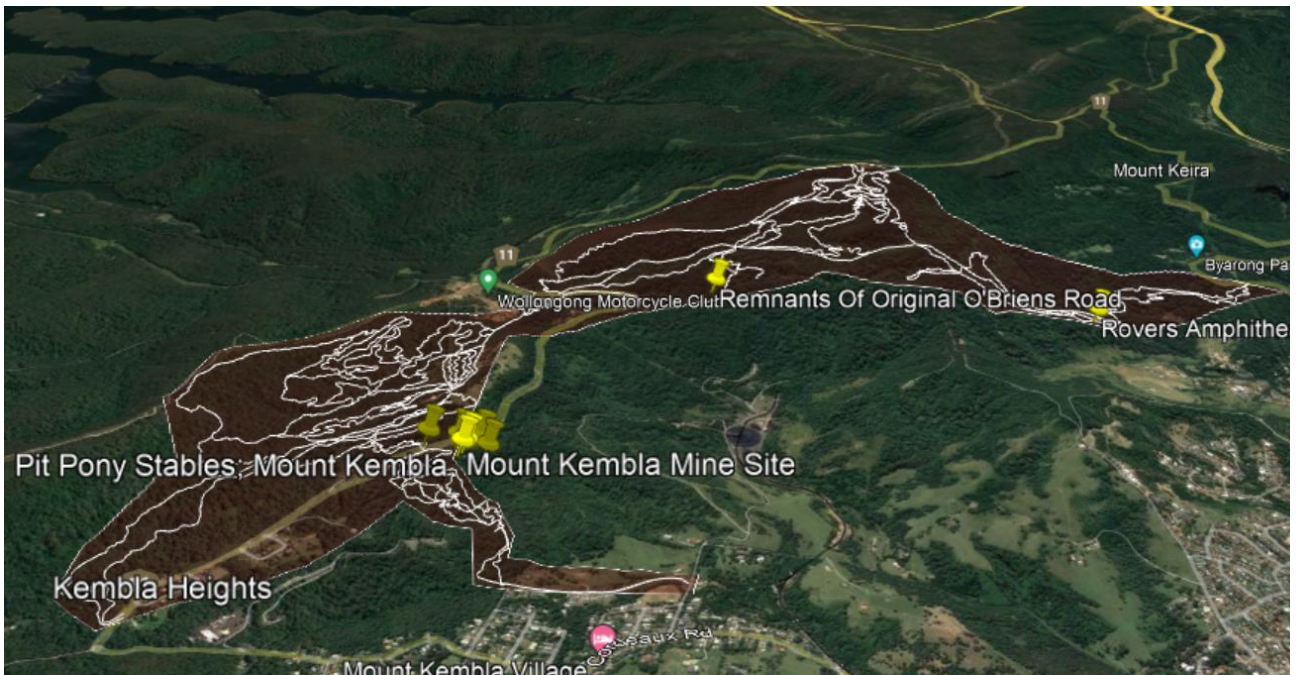


Plate 2: Map showing all s.170 listed heritage assets with approximate location of Subject Area (Source: Synergy Trails, SEED HHIMS, Google Earth)



Plate 3: Close up of s.170 site within and in the near vicinity of the Subject Area around the Pit Pony site (Source: SEED HHIMS)



Plate 4: Close up showing s.170 site – Remnants of Original O’Briens Road connecting with the Subject Area, bottom right of aerial. (Source: SEED HHIMS)

The SEED (The Central Resource for Sharing and Enabling Environmental Data in NSW) HHIMS (Historic Heritage Information Management System Sites) dataset states that the Rovers’ Amphitheatre is within the Subject Area. However, after conducting the desktop research, it is clear that this is a mislabelled heritage asset. The Rovers’ Amphitheatre site is a related element to the listed historical site, the Mt Keira Scout Camp. The Scout Camp has been listed as a locally significant site on the Wollongong City LEP 2009 as item #6471 and the Rovers’ Amphitheatre as element E7. The ‘Mount Keira Scout Camp Conservation Analysis Report’ conducted by Robertson & Hindmarsh in 2013 shows that E7 is located within the locally listed item #6471. Therefore, Rovers’ Amphitheatre will not be impacted on by this proposed scope of works.

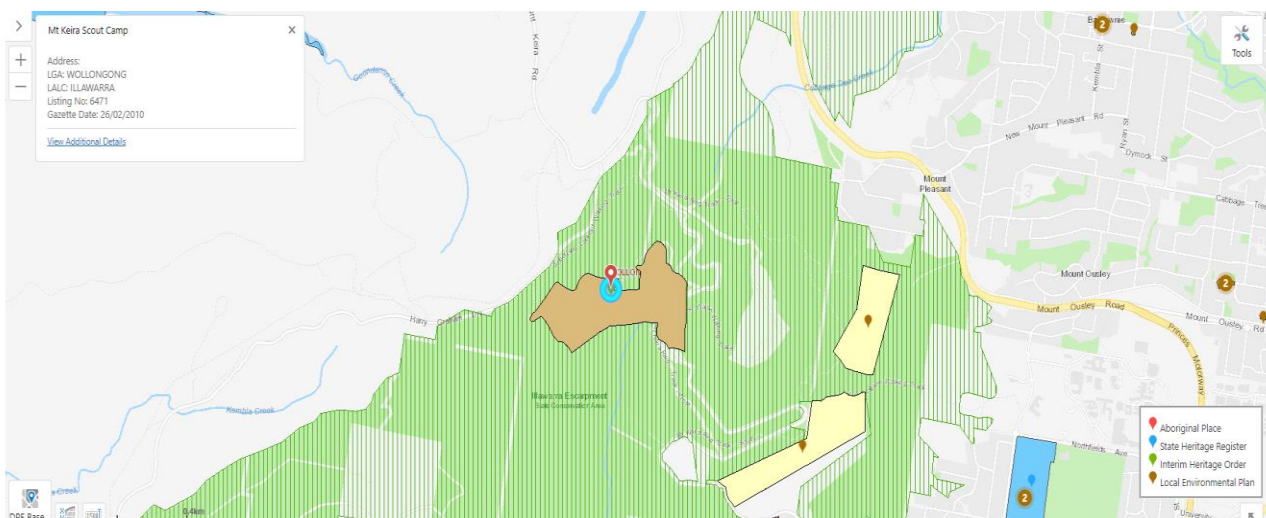


Plate 5: Screenshot of the Heritage NSW Heritage Management System (HMS NSW) listed curtilage of Mt Keira Scout Camp (Source: HMS NSW)

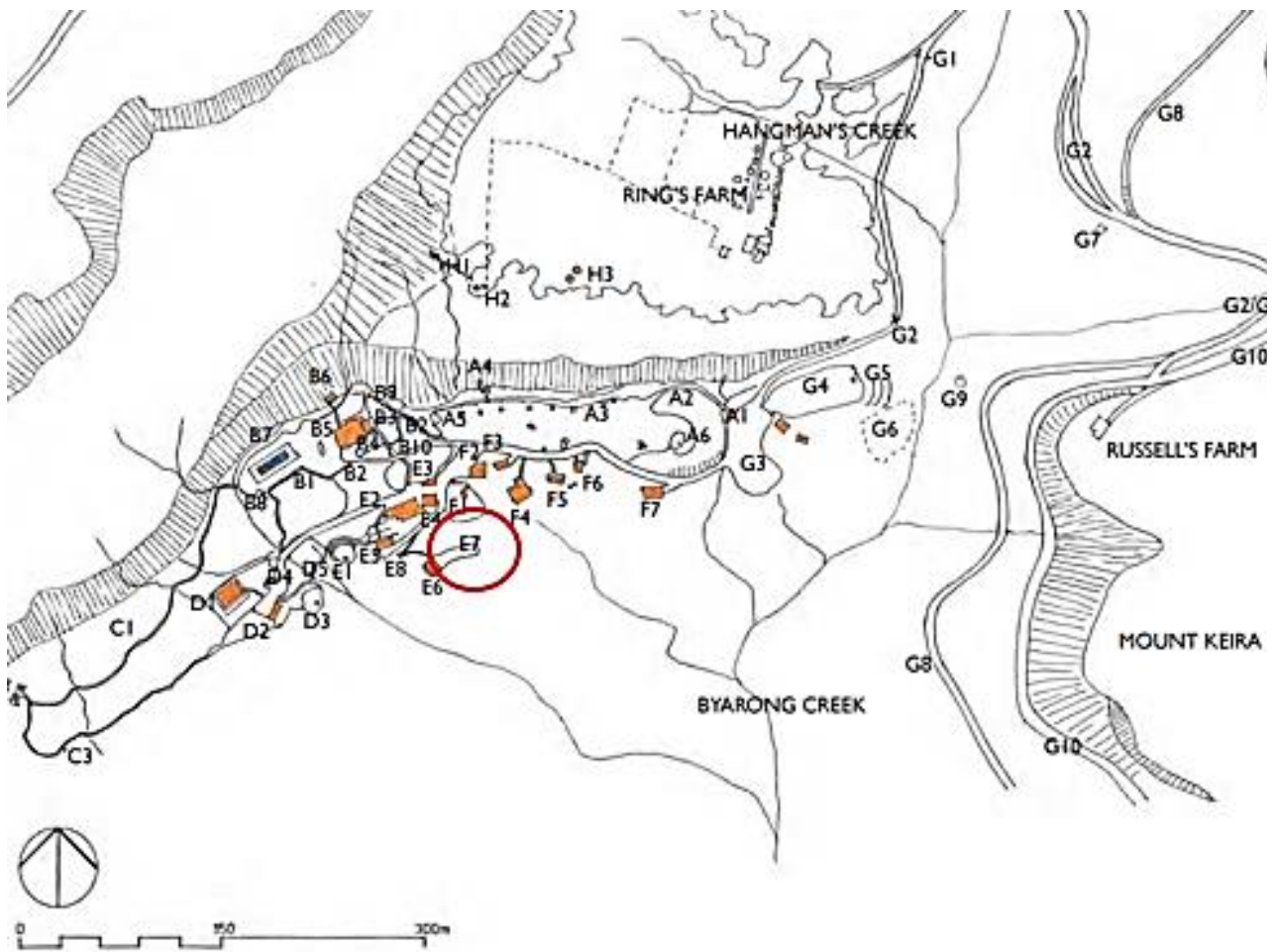


Plate 6: Robertson & Hindmarsh (2013) report, Vol.2, pg.10 showing locations of all elements of Mt Kiera Scout Camp including E7 – Rovers’ Amphitheatre circled in red (Source: Robertson & Hindmarsh 2013)

2. Environmental Context

The information in this section has been based on secondary source available online as well as the NSW government website eSpade, NSW department of planning (2021).

2.1 Topography and Geology

The topography the Subject Area is situated within is characterised primarily by moderate to steep slopes (>35%), which are key features of the Illawarra Escarpment. There are differences identified within the geology and topography of the Subject Area as the proposed trails span across four different landscapes: Warragamba, Gwynneville, Hawkesbury and Illawarra Escarpment.

The geology of the Warragamba landscape consists primarily of the Narrabeen Group, which is fine-grained lithic sandstone occasionally interbedded with thin shale lenses. Its topography is characterised as narrow convex crests, ridges and steep colluvial side-slopes on Narrabeen Sandstone. Local reliefs are approximately 80 to 130 m with slopes generally steeper than 35%. Tall, open forest populates the area (wet sclerophyll forest). This landscape generally has slopes that are too steep for rock overhangs suitable for Aboriginal sites. On more moderately inclined slopes from 25-30% Aboriginal sites may be located.

The geology of the Gwynneville landscape is characterised as Illawarra Coal Measures, resistant inter bedded quartz lithic sandstone, grey siltstone and claystone, clay and laminite. Its topography consists of undulating to steep hills (3 to 25%). Landform elements include broad to moderate ridges, steeply inclined to moderately inclined foot slopes, and isolated rises on the coastal plain.

The geology of the Illawarra Escarpment landscape, of which a large percentage (>40%) of the Subject Area is located, is characterised as Quaternary talus, blocks of sandstone, deep colluvial detritus and soil materials. The topography of the Illawarra Escarpment is mainly steep to very steep slopes (20 to 50%). Large landslips are very common, and the landscape is mostly populated by uncleared tall open-forest (wet sclerophyll forest) and closed-forest (rainforest).

The Hawkesbury landscape is the least prevalent landscape that the proposed trails span across. The geology of the landscape consists of Hawkesbury Sandstone medium to coarse grained quartz sandstone with minor shale and laminite lenses. Its topography is rugged with rolling to very steep hills on Hawkesbury Sandstone (>25%). It features narrow crests and ridges, narrow incised valleys, and steep side slopes. This landscape is archaeologically sensitive as the blocks and weathered scarps provide suitable overhangs to be used for shelter. Within these overhangs there are often suitable surfaces for art, as well as floor space for the accumulation of archaeological resources.

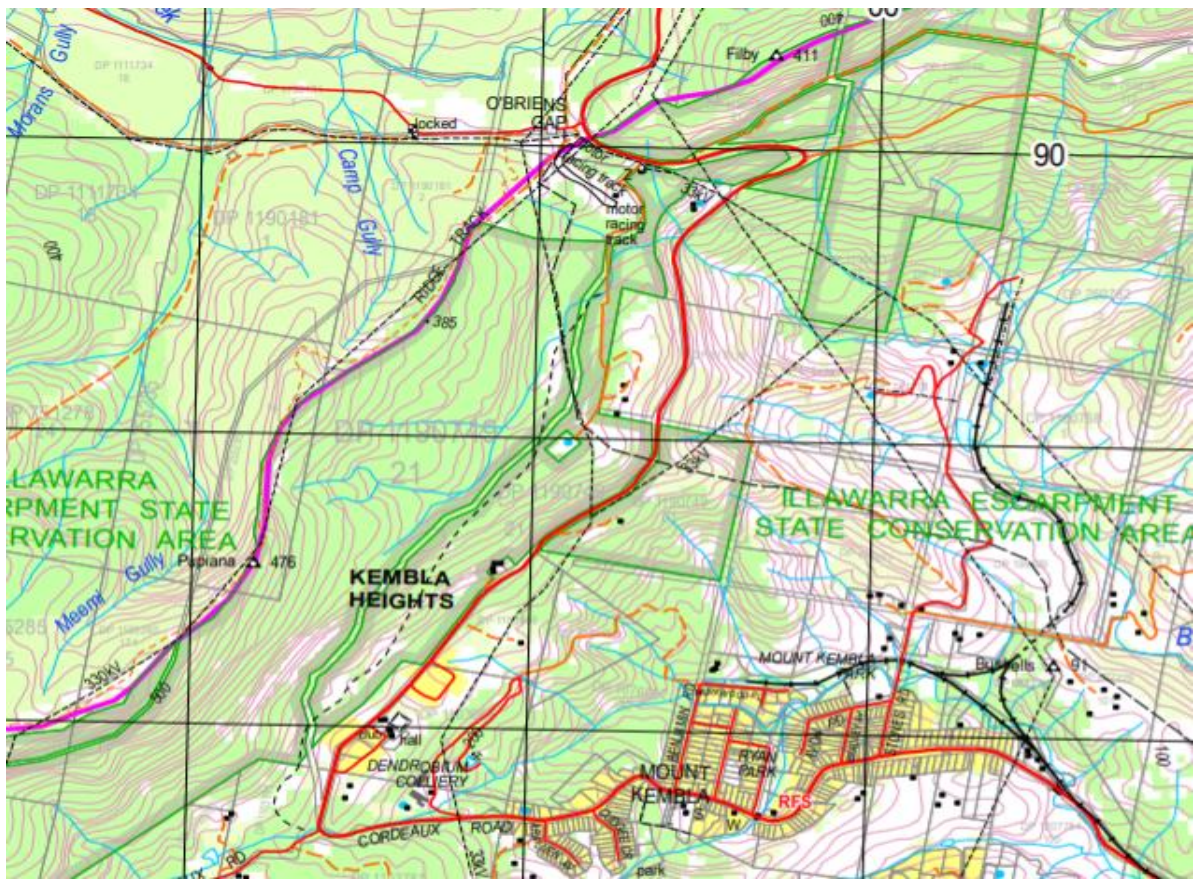


Plate 7: Topographic map of area near Kembla Heights, sheet 9029-2S (Source: SIX Maps- eTopo)

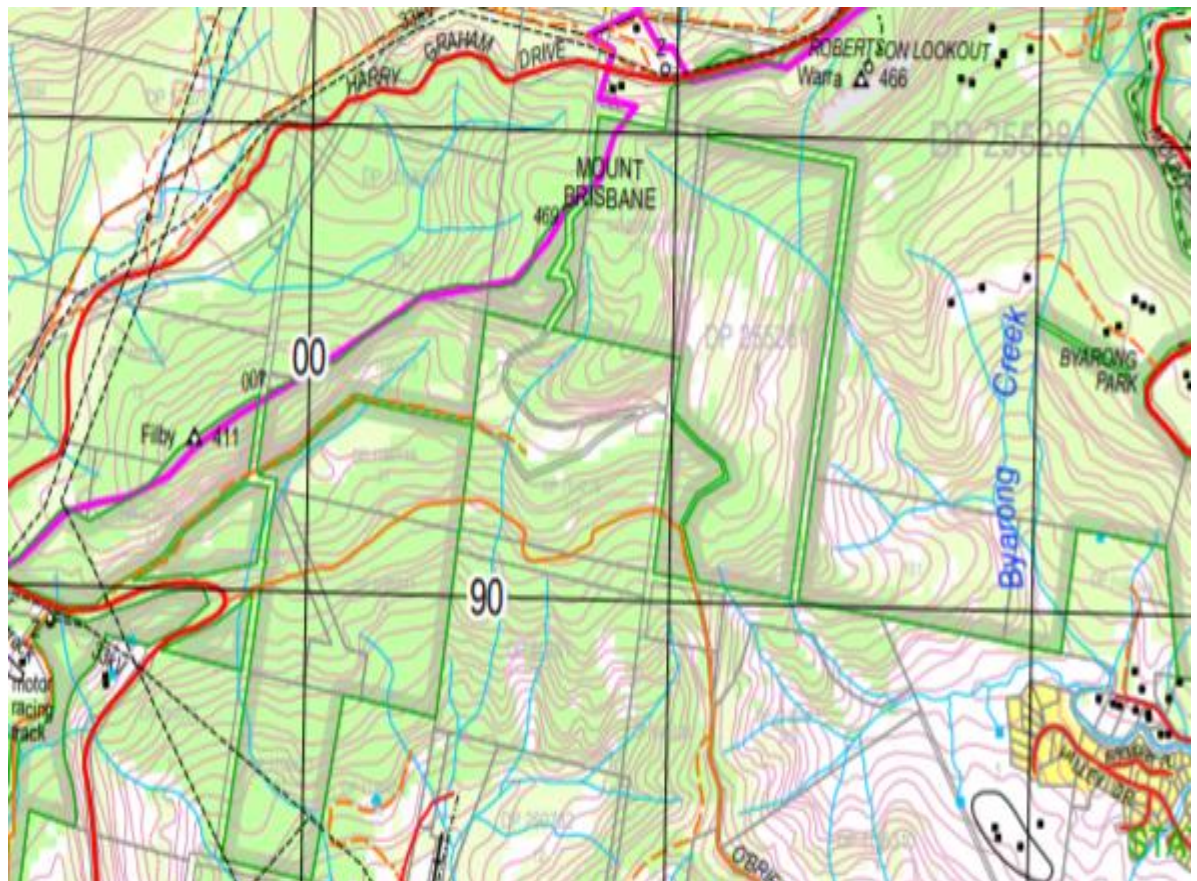


Plate 8: Topographic map of area south of Harry Graham Drive, sheet 9029-2S (Source: SIX Maps- eTopo)

2.2 Soils

The Subject Area spans across four soil landscapes; Warragamba, Gwynneville, Hawkesbury, and Illawarra escarpment (see Figure 1). The soil characteristics of each soil landscape are summarised below in

Soil landscape	Characteristics
Warragamba	Characterised by dark brown loamy sand, dark reddish-brown clayey sand and pedal clay.
Gwynneville	Soils are generally shallow (50-100cm) Brown Podzolic Soils and Xanthozems on upper slopes, Lithosols on simple slopes and shallow Brown Earths on mid slopes and lower slopes.
Illawarra Escarpment	Soils consist of deep colluvial soils, Red and Brown Podzolic Soils on mid slopes. Siliceous Sands occur along drainage lines and Lithosols occur where the talus is recent.
Hawkesbury	Soils include Lithosols/Siliceous Sands, Earthy Sands, Yellow Earths, Yellow and Red Podzolic Soils and Siliceous Sands.

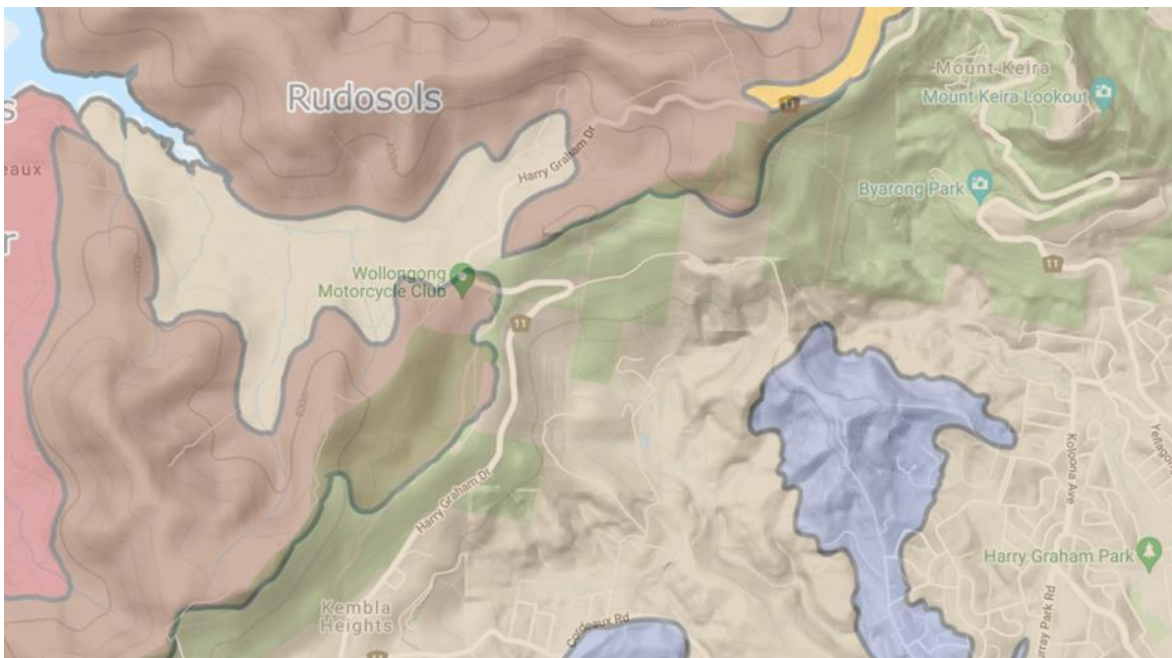


Plate 6: Soil mapping of Subject Area and surrounding area (ASC: Beige – Kurosols. Brown – Rudosols. Blue – Hydrosols) (Source: eSpade)

2.3 Hydrology

The Subject Area contains multiple first and second order streams that the proposed trails either cross or are located in close proximity to (Figure 2). Kembla Creek and Camp Gully is located north of the proposed trails and features drainage lines that are in close proximity to the Subject Area. Brandy and Water Creek, American Creek and Byarong Creek are located south of the proposed trails and feature tributaries that are in close proximity to the Subject Area. American Creek falls directly on a section of the proposed trails and was investigated during the site inspection.

2.4 Vegetation

Across the multiple landscapes that exist within the Subject Area, the vegetation in the Illawarra Escarpment is predominantly tall open-forest (wet sclerophyll forest) and closed-forest (rainforest). Common species of the tall open forest include Sydney blue gum, blackbutt and turpentine. The tall open forest is also dominated by blackbutt and includes Lilly-pilly, sandpaper fig, Moreton Bay fig, small-leaved fig, Port Jackson fig, deciduous fig, coachwood and red cedar. Rainforest of the escarpment includes grey myrtle, burhs bloodwood, whitewood, and cabbage tree palm.



Plate 9: Painting by Martins, 'View of Five Islands' c.1861 (Source: National Library of Australia)



Plate 10: Painting of 'Illawarra', no date (Source: Wollongong City Council Library)

3. Historical Context

This section discusses the history of the immediate area surrounding the Subject Area and provides an overview of the historical context of this site. The purpose of this context is to shape the understanding of heritage values connected with the site, and to provide a baseline for examining the archaeological potential of the Subject Area.

3.1 Regional Historical Context

3.1.1 Aboriginal Australian Context

The Wodi Wodi are the Aboriginal custodians of the Illawarra who spoke a variant of the Dharawal language (NPWS 2005:6). Dharawal speakers lived and live in the country from Botany Bay and Campbelltown in the north through the Nepean, Wollondilly, Georges, and Cataract water catchments, west to Moss Vale and south to the Shoalhaven River and Jervis Bay. Dharawal people are distinguished as fresh water, bitter water or saltwater people depending on whether they occupied the coastal regions, the swamps or the plateaus and inland river valleys (NPWS 2005:6). Traditional stories tell of their arrival at the mouth of Lake Illawarra in canoes when the Ancestors were animals.

Historic accounts of Lake Illawarra and its hinterland, which specifically reference the Aboriginal inhabitants are scarce. Early ethnography accounts (e.g., research compiled by Sullivan 1992 and Organ 1990) suggest that at the time of European occupation, a highly mobile, dispersed Aboriginal population occupied the region. Based on the varied environmental zones along the south coast it is unlikely that consistent, large-scale movement from east to west was prevalent. Navin Officer (2000:35) note that a common theme within the ethno-historic data of the region describes the movement of people from the coast to the plateau lands, for season, ceremonial commitments or the receipt of Government rations. It is likely that a formalised network of pathways and mountain pathways connecting east to west across the Illawarra escarpment and ranges existed (Biosis 2007:27).

The arrival of the First Fleet in Sydney Cove in 1788 was followed the next year by a smallpox epidemic, which spread to the neighbouring regions and, although the exact effects are not known, killed over half the Aboriginal population of the areas effected (Organ 1990: 5).

Access to traditional and everyday resources (such as water) and clearing the land of trees would have had a major impact on the ways in which Aboriginal people would have been living, and also caused significant social disruption between Aboriginal groups, and pressure between Aboriginal people and the ever-increasing European population. This period was a time of drought, and the competition for resources between the Europeans and the Dharawal, who were adapting to the massive changes that were so quickly upon them, led to several years of conflict. Organ (1990) documents the various skirmishes, killings and reprisals between Europeans and the Dharawal during the 1814 – 1815 period in the Cowpastures, Camden and Appin districts. Eventually this sporadic bloodshed would lead to larger scale conflict, with Governor Macquarie implementing a sustained punitive action against the Aboriginal population in the district. This resulted in the Appin Massacre on the 17th of April 1816, in which Aboriginal people were shot and driven over the steep cliffs (probably near Broughtons Pass) to their death during a surprise attack by a detachment of the 46th Regiment, in the middle of the night.

3.1.2 Post-Invasion Context

Early European exploration of the Illawarra region was widespread and indiscriminate. Historical examples of European exploration into the region include a pair of soldiers tracking south from Sydney with Aboriginal guides in 1794 and the seaborne landing near Red Point by George Bass, Matthew Flinders, and

“the boy Martin” in the Tom Thumb in 1796 (Organ 1990). The Tom Thumb party also first identified coal at Coal Cliffs (Mitchell 1993b:72). This pattern of non-selective exploration of Europeans continued into the early years of the nineteenth century.

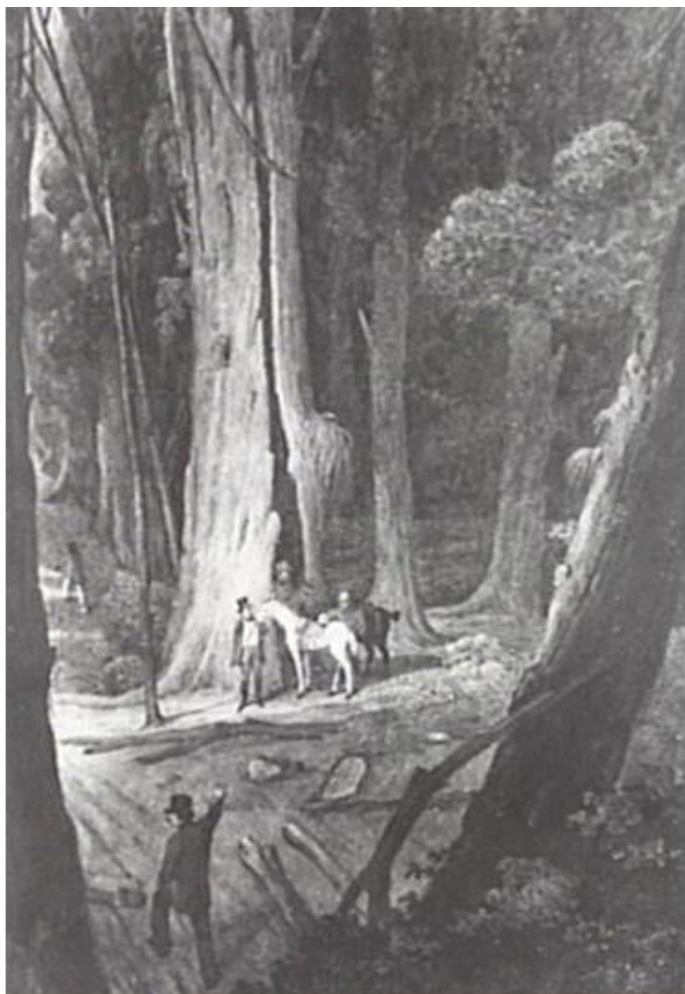


Plate 11: "The hollow tree on the Illawarra Mountains", by Augustus Earle 1793-1838 (Source: National Library of Australia)

The earliest well-recorded European settler was Charles Throsby who came into the region overland from the already settled districts of Campbeltown to the Illawarra's north and west. Charles Throsby played a significant role in the exploration of the region by Europeans and lead an expedition to the Illawarra in 1815 upon the information and guidance of local Aboriginal men and accompanied by servants (Jervis 1922:75). Throsby's expedition descended into the Illawarra valley from Bulli and, once apprised of the quality of grazing land to be had, arranged for cattle to be grazed in the Illawarra soon afterwards, at which time a stockyard was erected, likely among the first European structures in the region (Jervis, 1922:75).

Subsequent to this, the Illawarra became a grazing ground for other European settlers, with land being surveyed and granted by the colonial government during the 1810s and 1820s (Jervis 1922: 77-83). In 1817 the colonial government established the settlement of Red Point at Port Kembla, with William Elyard RN placed in command (McCaffrey 1922: 25). Later reports mention that during this time and outside of the major European settlement areas, few structures were constructed within the landscape. Reminiscing in the 1890s about the 1820s, Alexander Stewart, an early European settler in the area, stated that:

Fences in Illawarra were rare – very rare. [...] The whole of the Illawarra lowlands were then used for grazing, with the exceptions of a few solitary patches – mere handfuls of land – on which a few of the small settlers grew maize. [...] The stockmen, mostly miles apart, lived in very primitive huts in

a most pastoral and hermetical fashion [...] (Alexander Stewart, (interviewed by John Brown), "Reminiscences of Illawarra I", Illawarra Mercury, 17 April 1894, p. 3)

The middle years of the nineteenth century saw a general shift within the Illawarra from open pasturage and select timber felling to more permanent and smaller farmsteads and urban growth. The settlement of Wollongong grew into one of regional Australia's more significant cities. The Municipality of Wollongong was gazetted in 1859, and Wollongong was proclaimed a city in 1942 (Mitchell 1993d: 104-6).

Major changes during the nineteenth century included improvements to Wollongong Harbour from the 1840s to the 1870s, and the advent of railway connections with Sydney and Moss Vale in the 1880s and 1890s (Mitchell 1993c).

3.2 Local Historical Context

This section outlines the general industries and history of the immediate surrounding areas to the Subject Area.

Cedar-getting in the Illawarra

Cattle running dominated much of the grassland in the lowlands of Illawarra in the late 1810s (McCaffrey, 1922: 25). However, as Alexander Stewart described colonial expansion into the Illawarra as also coming via the sea and involved other economic interests. He stated that:

In 1828 the real pioneers in Illawarra were the peripatetic cedar-cutters, who ferreted out the cedars on the mountain slopes, felled them, drew them with bullock teams to the coast, and shipped them to Sydney.

Red cedar was by far the most valuable of the timbers in the forested lands of the coastal areas of NSW. Such cedar-gathering was a notable part of the early exploitation of the Illawarra, although one relatively secondary to more documented industry of pastoral cattle grazing and therefore relatively difficult to ascertain information about these groups of people.

In the Illawarra, the cedar forests were generally small stretches along the mountain slopes or along almost every stream. There was a large patch between Wollongong and Dapto which includes the Illawarra Escarpment Conservation Area and the Subject Area.

Cedar was hauled to then transported from Lake Illawarra in small craft to the rest of the NSW and beyond in 1810 approximately 15 years before any substantial settlements had been constructed (McKinnon accessed 2021 via <http://ekiama.com/K%20Museum/Cedar/index.htm>). Bullock teams would have been used to haul cedar logs and planks to the edges of the Lake.



Plate 12: Bullocks hauling cedar near Bulli Pass (Source: McKinnon, Mitchel Library)

In 1802, the Governor of NSW issued an order that no cedar could be felled without his permission. Land grants were not issued in the area which includes the Subject Area until 1817 (McKinnon, no date).

When Governor Macquarie himself toured the Illawarra district in early 1822 he wrote one of the more detailed accounts of the surrounding area, of which the Subject Area is a part of, from this period. On 15 January 1822 he commented that:

The whole face of this mountain is clothed with the largest and finest Forest Trees I have ever seen in the Colony. — They consist chiefly of the Black-Butted Gum, Stringy Bark, Turpentine, Mountain Ash, Fig, Peppermint, Box-Wood, Sassafrass, and Red Cedar; but the latter is now very scarce, most of it having been already cut down and carried away to Sydney. (Macquarie, 1822)

Macquarie also names parts of the Subject Area. He made multiple references to Cornelius O’Brien’s Road, by which Macquarie’s party returned to the Appin district:

The Road is perfectly safe and passable for Cattle and is what may be termed a good Bridle Road; — and it might be made a good Cart Road with very little more trouble. (Macquarie, 1822)

O'Brien's Road still runs from Wollongong up the escarpment between Mount Kembla and Mount Keira, and through the Subject Area. It is one of last remaining elements of early European settlement of this region within the Subject Area, albeit significantly improved from its original state.



Plate 13: An example of the mountain roads in the area of which O'Brien's Road would have looked similar to (Source: McKinnon, Mitchel Library)

Judge Barron Field also visited the district in 1822 and wrote

"[T]he cedar planks, as they are formed by the sawyer at the pit, are carried on men's backs up to the mountain summit, where carts convey the planks to all parts of the colony, or they are carted to the shores of Illawarra and navigated to Port Jackson in large open-boats. The government has not (by reason of its ample supply from Hunter's River and Port Macquarie) secured any portion of these cedar grounds to itself, simply compelling each person to take out a permit from the Colonial Secretary's Office, which must specify the number of feet of timber required, as without which protection, the cart and horse, or boat, and the cedar are liable to seizure by any constable.

In a new run in the wild forest, the sawyers have to perform the preparatory labour of clearing their path, and a fall for the trees, which would otherwise be prevented from reaching the ground by amazingly strong vines. They then pit the stem, cut into short cylinders of from eight to twelve feet in length, and cut them into planks of one or two inches thick. For these they receive 22 shillings for every hundred feet, from which is deducted six shillings per hundred paid to the carrier from the pit to the cart, leaving 16 shillings to be divided between the pair of sawyers. The carters, after carrying an average load of 300 feet in the plank, upwards of 60 miles to Parramatta, over a road very rocky and difficult, obtain 45-50 shillings per 100 feet from builders, carpenters, etc" (Judge Barron Field in Garden of New South Wales pp. 28-29)



Plate 14: Cedar-getters mid felling (Source: McKinnon)



Plate 15: Cedar-getters posing for pictures (Source: McKinnon)

In July 1825 a notice in the Government Gazette stated that in the future, permission must be obtained from the Colonial Secretary for the cutting down and removal of cedar from "unlocated" ground (unclaimed land). It further stated that any vessel attempting to unload cedar in Sydney without obtaining prior permission would have its cargo seized. At the time, this was interpreted by many as a move to restrict cedar-getting to a few wealthy merchants in Sydney and as a result created unemployment for a time. Protest was raised, and after a short while, these controls were relaxed.



Plate 16: "Skirmish between bushrangers and constables, Illawarra.", by Augustus Earle 1793-1838 (Source: National Library of Australia)

In 1834 an Illawarra correspondent to the Sydney Herald stated that the illegal cutting of cedar has cost the Government “£100,000 in revenue, a sum of money which would have provided a good road from Illawarra to Sydney and also have given harbour accommodation” (McKinnon, no date).

This correspondent complained of the disorderly conduct of the “cedar thieves”, referring to them as “a set of lawless people, addicted to bushranging and cattle stealing” (McKinnon, no date). Another correspondent said that they had “kept the district in a state of drunkenness and iniquity for years. “These cedar cutters certainly led hard and lonely lives, living for the most time in humpies with even less comfort than the stockmen had. They were not popular with the settlers or their stockmen who looked on them as intruders. They had no rights whatever on the land, except the possession of a hut, and were not allowed to grow a stalk of grain” (Sydney Gazette, July 'L 1826, McKinnon, no date)



Plate 17: Cedar-getters and, in the background, an example of their huts or ‘humpies’ (Source: McKinnon, no date)

By the 1840s, so much cedar had been cut down, that the owners of the lands where the trees had once stood often decided to clear the remaining timber to establish crop and grazing land . By the 1870s the majority of useable cedar timber had been removed from Illawarra and Shoalhaven. Remnant old growth and mature cedar trees currently occur across mountain slopes in the Illawarra, with younger cedars growing in open paddocks (McKinnon, no date; Garden of New South Wales pp.31-33).

The cedar getting industry ceased to be of importance in the Illawarra by about 1850 cedar. It is difficult to assess the earnings of the cedar getters. In the 1840s they were said to earn up to £47 per week on the North Coast. It is recorded that a pair of sawyers in Illawarra cut 3500 feet of cedar in a week, however this was recognised as the highest record. (McKinnon no date, Royal Australian Historical Society Journal and Proceedings pp 139-140).

Mining

While early surveyors noted the presence of a “Coal Cliff” marking the western edge of the Illawarra in the 1820s, it was some decades before coal mining was firmly established in the area (Jervis 1942: 79). Coal mining commenced in the Illawarra in 1849 at Mount Keira (Mitchell 1993d:108).

A visitor to the Mount Keira Mine in 1850 described it as follows:

The mine has at present been worked to the extent of about three quarters of a mile into the mountain; there is no decent, but simply an entrance into the side of the rock, and the coal, when obtained, is run in trucks upon a wooden tram road, for the purpose of being carted away... (People’s Advocate and New South Wales Vindicator, 20 July 1850, p. 5)

Mount Kembla Mine drove the development of Port Kembla as shipping port and industrial centre. Coal jetty opened at Port Kembla in 1883, and construction of a harbour breakwater wall began in 1900 (Mitchell 1993d:109). The Electrolytic Refining and Smelting Company established in Port Kembla in 1908, Metal Manufactures in 1917, and Australian Fertilisers in 1920 (Mitchell 1993d:110).

Land sales in the Mount Kembla area in the 1840s led to a small settlement at American Creek, Mount Kembla by the 1850s. In 1865 oil-bearing shale on Mount Kembla was tested and analysed on the property owned by John Graham of American Creek, where mineral kerosene was identified and refined (Sydney Mail, 15 April 1865: 2). One tonne yielded 50 gallons of kerosene. John Graham was the son of John and Jane Graham, Irish immigrants farming at Avondale. He was in business with the Mulholland company as Commission Agents in Sydney and the owner of the property on which the shale was discovered (The Pioneer Kerosene Works available at <https://www.illawarracoal.com/minebase/minebase-m-s/313-the-pioneer-kerosene-works.html>).

The Pioneer Kerosene Company was established shortly after. By 1885 commercial kerosene was being extracted and produced at Mount Kembla, the first in Australia (Mitchell, 1993d:108). By 1870 there were 23 distilling retorts (industrial, large-scale and airtight vessel) processing shale under a company was known as “Graham’s Pioneer Kerosene Oil Works”. The company operated from 1865 to closure in 1880, over a 15-year period.



Plate 18: One of the retorts used in the kerosene works (Source: Niche Environment and Heritage)

Throughout the late 19th century coal fields and their associated harbours were intensively investigated and proposed, as the map below outlines. Notably referenced as they are within the close proximity to the Subject Area are: Great Wollongong, Mt Pleasant, Kiera and Kembla Coal Mines. By the mid-1950s there were ‘seventeen coal mines operating in the City of Greater Wollongong, producing over two million tons of coal per annum’ (Mitchell 1993d:108) (Plate 19).

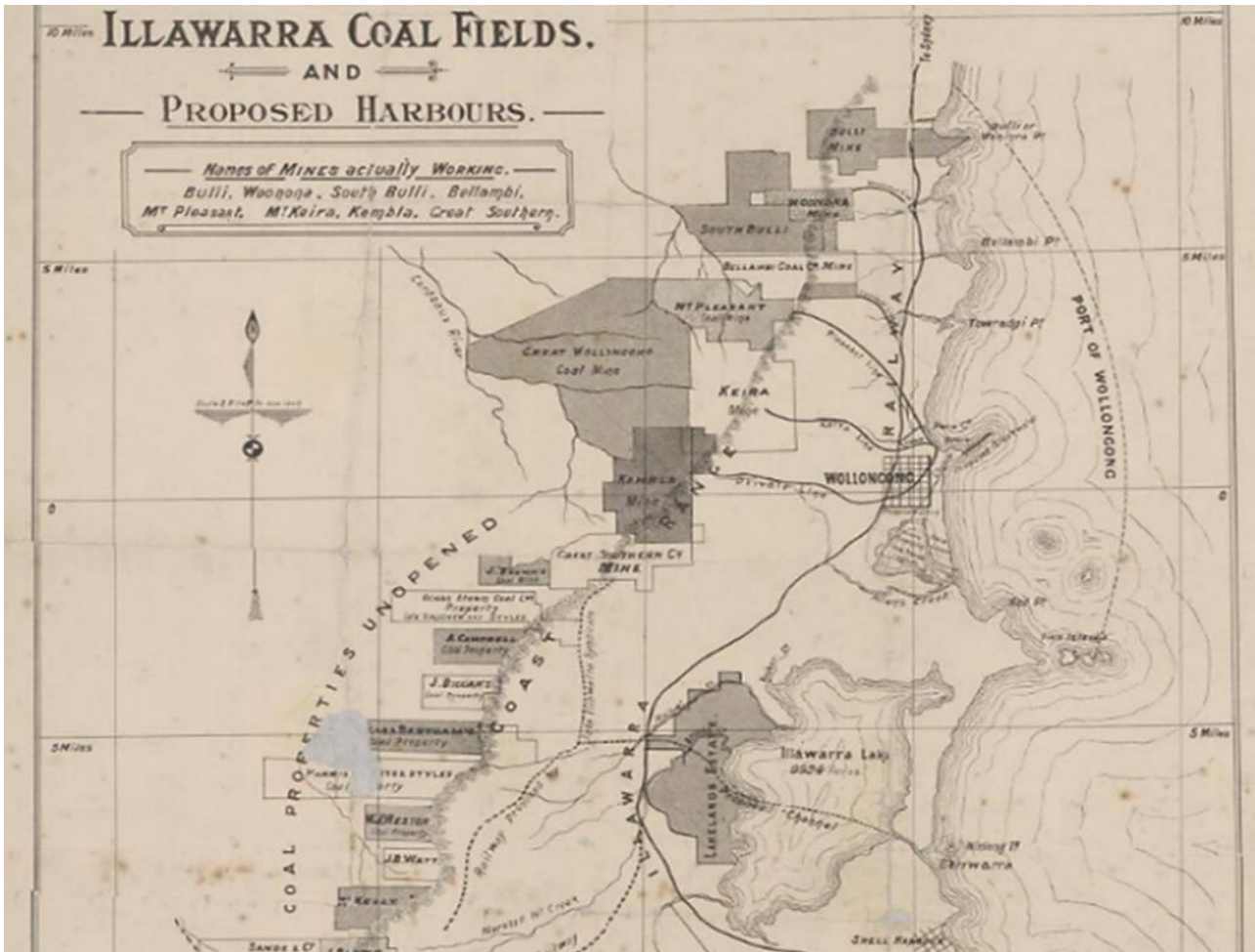


Plate 19: Illawarra coal fields compiled for government plans (Source: Charles Kerry, NLA)

3.2.1 The Illawarra Escarpment Conservation Area and Subject Area history

The Subject Area has undergone very little development since European arrival (Plate 20). Its history is related to the surrounding area's history, outlined above, of Aboriginal Australian use (Wodi Wodi, Dharawal and others), European exploration, cedar-getting, mining and conservation. The most recent land use of the Subject Area is the unsanctioned mountain biking trails.

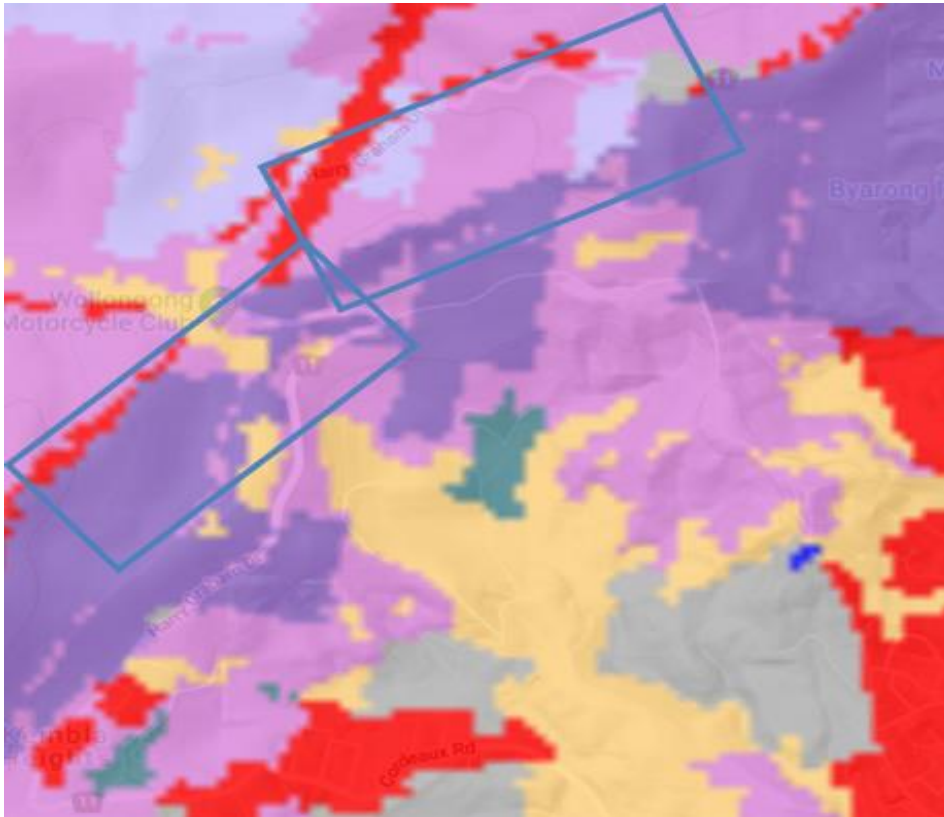


Plate 20 Current land use mapping of the Subject Area (Blue boxes. Approximate). Dark purple – Nature conservation, Lilac – Minimal use, Red – Urban area/easements (Source: eSpade)

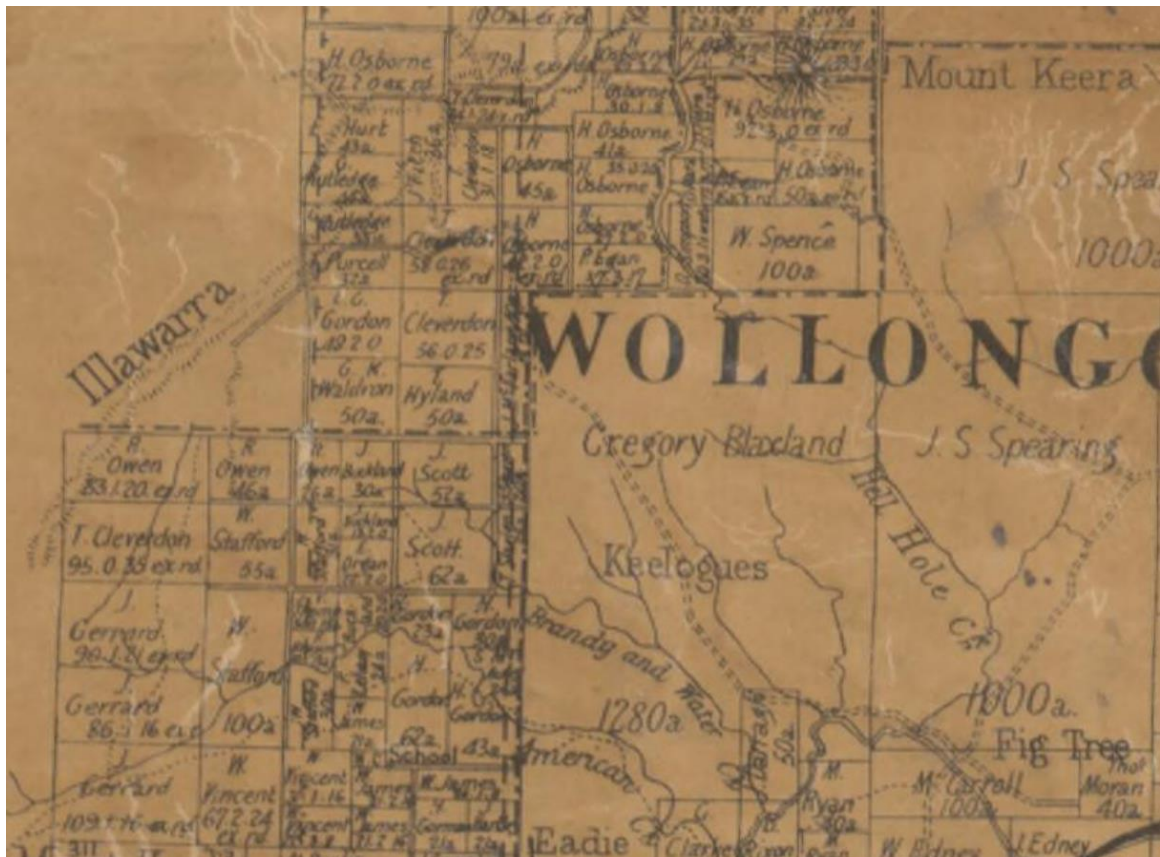


Plate 21: Parish map of Subject Area with Mt Keira labelled “Mount Keera”, c.1885 (Source: Gibbs, Shallard & Co)

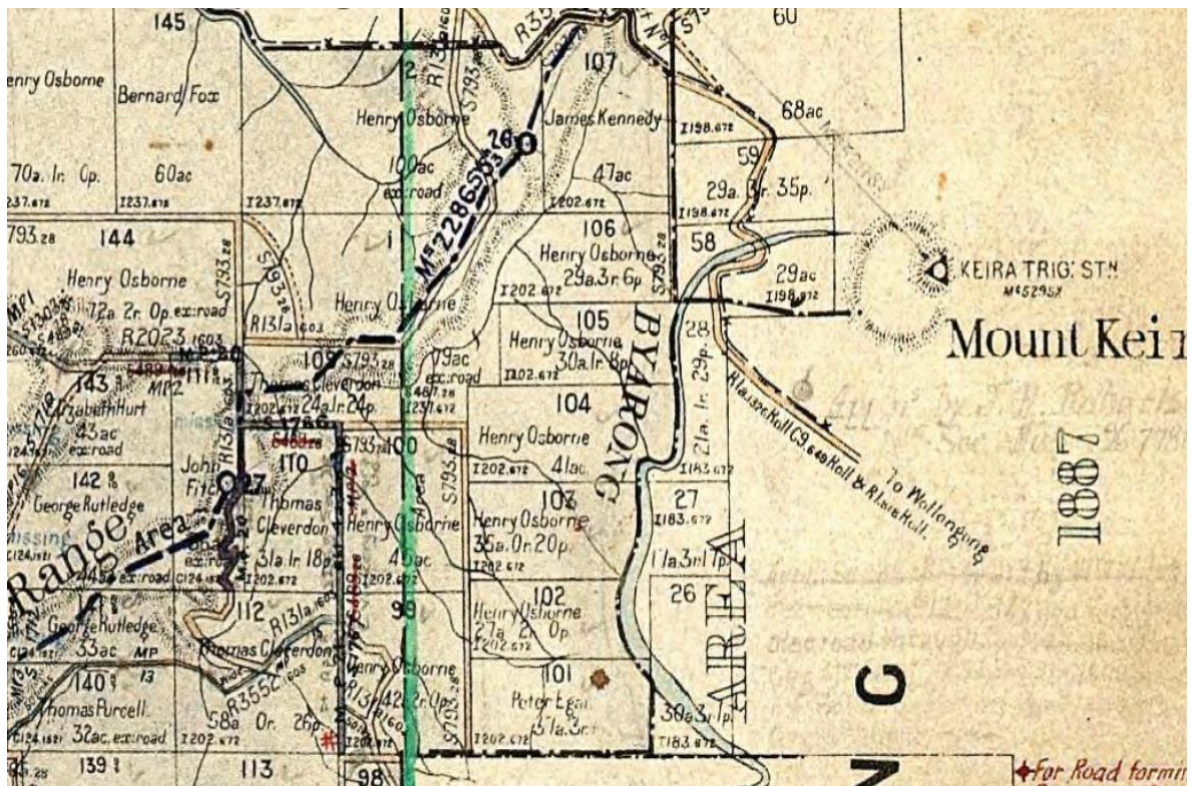


Plate 22: Parish Map of Mount Keira and Subject area c.1895 (Source: Lands Registry of NSW)



Plate 23: Map of Illawarra, by Great Britain. War Office. General Staff. Australian Section, c. 1938 (Source: Australian Section, Imperial General Staff)

3.3 Historical Development of the Subject Area

The development of Subject Area and the components within it can be largely understood in terms of four main phases of historical use:

- Exclusive Aboriginal Australian use
- Cedar-getting
- Mining
- Illawarra Escarpment Conservation Area
- Unsanctioned mountain biking.

These phases are briefly outlined and summarised in the following sections which relate to the Subject Area.

3.3.1 Phase 1: Exclusive Aboriginal Australian use

Dharawal speakers historical and presently live in the country from Botany Bay and Campbelltown in the north through the Nepean, Wollondilly, Georges, and Cataract water catchments, west to Moss Vale and south to the Shoalhaven River and Jervis Bay. Dharawal people are distinguished as fresh water, bitter water or saltwater people depending on whether they occupied the coastal regions, the swamps or the plateaus and inland river valleys (NPWS 2005:6).

Historic accounts of Lake Illawarra and its hinterland, which specifically reference the Aboriginal inhabitants are scarce. Early ethnography accounts (e.g., research compiled by Sullivan 1992 and Organ 1990) suggest

that at the time of European occupation, a highly mobile, dispersed Aboriginal population occupied the region. Dharawal people use the land which constitutes the Subject Area for thousands of years prior to European arrival and will have likely used it throughout the period of European invasion.

3.3.2 Phase 2: Cedar-getting

Cedar-getting

In the Illawarra, the cedar forests were generally small stretches along the mountain slopes or along almost every stream. However, there was a large patch between Wollongong and Dapto which includes the Illawarra Escarpment Conservation Area and the Subject Area.

In 1802, the Governor of NSW issued an order that no cedar could be felled without his permission indicating that cedar-felling had already begun in the Subject Area and surrounds. Land grants were not issued in the Subject Area or surrounding area until 1817 (McKinnon, no date). Cedar was hauled to then transported from Lake Illawarra in small craft to the rest of the NSW and beyond as early as 1810 approximately 15 years before any substantial settlements had been constructed in the Illawarra region. By the 1840s so much cedar had been cut down, the owners of the lands that these trees stood often decided to cut all the timber down to make farm lands. The cedar getting industry ceased to be of importance in the Illawarra by about 1850 cedar.

O'Briens Road

O'Briens Road was built as a private toll road in the early 19th century to connect Sydney and the Illawarra. O'Briens Road began at the locally infamous fig tree that gave the name to the suburb of Figtree. Views from the top look over Wollongong, Lake Illawarra and the local mountains. From the end of the trafficable part of O'Briens Road a short trail climbs to the summit area where the Illawarra Coastal Plain is visible, with the hills of Mount Mangerton, Mount Saint Thomas and Cobblers Hill visible amidst residential areas (King 1965).

Cornelius O'Brien was the son of Henry O'Brien of Hallimont, County Mayo, Ireland, and Catherine Browne. At 16 years old, Cornelius O'Brien left Ireland and migrated to Australia. O'Brien had an uncle who had previously migrated to the Appin region who offered him employment in Abbotsbury where he was promised farmland. (King 1965).

O'Brien is said to have joined his uncle, Charles Browne, and established himself in the region by 1820 as an application for a land grant was filed to then governor, Lachlan Macquarie. O'Brien writes to Macquarie in the application stating:

"Sir, having since my arrival in this colony about five years ago been actively engaged in farming concerns connected with my uncle Mr. Charles Browne and having thus acquired experience as a grazier and cultivator and a property in cattle which may be valued at one thousand pounds sterling, I venture to solicit Your Excellency for a grant of land and such other indulgences as Your Excellency deem proper".

The acquired experience O'Brien states is also evident in primary resources from 1817 and 1818. In the Sydney Gazette of October 18th, 1817, it lists O'Brien as an army contractor supplying 2000lbs of beef to the government. On March 21st, 1818, an advert from O'Brien states that he is looking for extra hands to assist with his dairy business:

"Wanted by Mr. C. O'Brien of Illawarra, a man well acquainted with milking cows and making butter, to whom suitable encouragement will be given. Enquire Mr. H. O'Brien, Macquarie Place, Sydney".

Cornelius O'Brien was set on establishing himself in the Illawarra. This is evident in the fact that whilst he was waiting to be granted land in the Illawarra, he set about looking for an easier way from Appin to the Illawarra which at the time was extremely steep and dangerous to navigate. Much of this landscape is which the Subject Area. O'Brien explored the area of what is now the Illawarra Escarpment for a route back to Appin across the Cataract River which is now known as O'Brien's Gap, over Mount Nebo to Figtree.

Articles from the Sydney Gazette, April 7th, 1821 state that:

"Mr. Cornelius O'Brien informs the proprietors of land in the District of Illawarra that a track, much shorter and of far less and more gradual declivity is discovered; Should the proprietors think proper to subscribe towards the expense of cutting away the bush and etc, to make a passage for cattle, Mr. O'Brien will be happy to point out the track to those who may be employed on the work. It is estimated that £10 sterling from each proprietor, supposing them to be seven in number, would be sufficient to make a cattle road from Illawarra to the District of Appin by the new track".

The appeal was successful, and the road was built between 1821 and early 1822. An article from the Sydney Gazette on January 18th, 1822, describes the road as not only passable and safe for cattle but also a good bridle road which for with a little more development would also be an excellent road for carts. The road however remained underdeveloped for many years as a bridle track and is currently used as a fire trail or access track.



Plate 24: Map showing O'Brien's Road labelled "10 metres wide", c.1979 (Source: Land Registry of NSW)

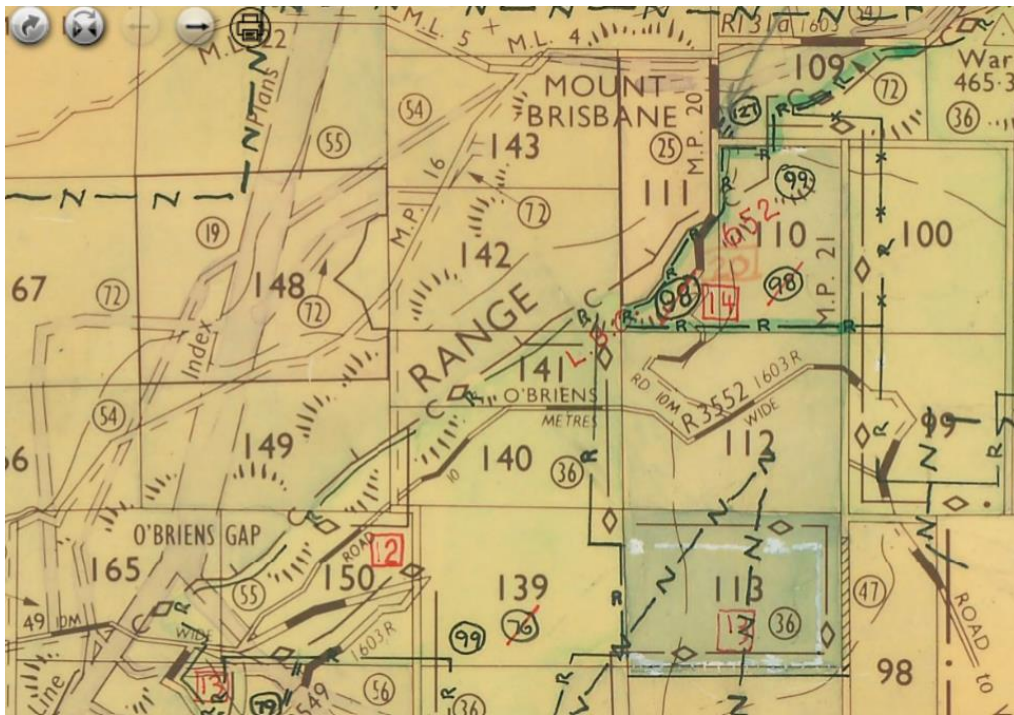


Plate 25: Map showing O'Brien's Road and O'Brien's Gap (Source: Land Registry of NSW)

3.3.3 Phase 3: Mining

Mount Kembla Mine and Colliery

The Mount Kembla Mine and Colliery came about due to the closure of the Pioneer Kerosene Works which closed in 1877. After the closure of the Pioneer Kerosene Works moves were made to establish a new mine in the area as soon as possible and to build a railway from the mine to Five Islands, now called Port Kembla where a jetty which would harbour ocean-going vessels was to also be built. The Mount Kembla Coal Company brought the leases, and the Government granted the Mount Kembla Mine and Colliery company to be built the jetty and railway line in 1881. The jetty and railway line were completed, under the supervision of the mine's engineer, William Burrell in 1882 (Department of Mines Annual Report 1882). As part of the mining operation, the redundant retorts were utilised as water tanks for miners' cottages near the operating mine, prior to the advent of water supply in 1910.

The Mount Kembla Mine and Colliery was constructed north-northwest of the village of Kembla Heights and north of Mount Kembla village in 1883. It is most famous due to the major mine explosion that took place in 1902. At 2pm on the 31st of July 1902, Mt Kembla Mine suffered the worst mining disaster in Australia's history when a gas explosion killed 96 men and boys. The resulting royal commission concluded that a fallen roof pushed inflammable gasses into contact with a wheeler's naked flame triggering a series of coal dust explosions. Many bodies were laid to rest in a purpose-built cemetery in the Cordeaux Road. Prior to the Mount Kembla tragedy, another mine disaster in 1887 had befallen the region with the Bulli Mine Disaster which claimed the lives of 81 men and children. The cause of explosion in the Bulli mine was also due to the build-up of methane ignited by a naked flame. These two mining disasters, together, place the region within the context of cultural significance, albeit infamous significance (Mitchell, 1993d:108).



Plate 26: Worker using boiler at the established Mt Kembla Mine (Source: Arthur Wigram Allen)

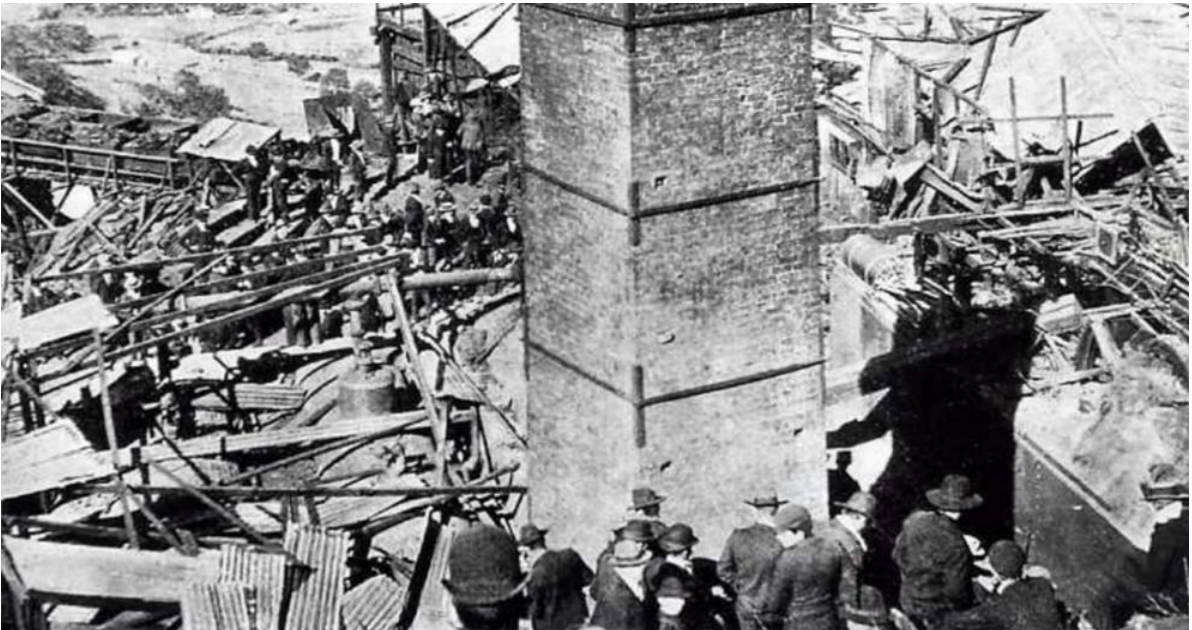


Plate 27: Mount Kembla Colliery Disaster 1902. (Source: Wollongong City Library)

The first shipment of coal from Port Kembla was made in February 1883 where over 21,000 tons of coal was mined at Mount Kembla by 110 men. By 1901, the staffing numbers had grown to over 300. A new furnace shaft and chimney was constructed in 1891 with a second furnace shaft being built in 1896 to the north west of Mount Kembla village. On 9 May 1903, the South Coast Times reported that the Mount Kembla Colliery had recently installed “a most thoroughly efficient and up-to-date electric light plant.” The main rope roads, the engine house, workshops, offices and all the outbuildings at the mouth of the tunnel

were fitted this lighting. It is possible that the decision to introduce electric power into the mine came from the reports covering the 1902 mine explosion, which destroyed the mine which was reopened the same year. Mount Kembla Colliery was the first coal mine in Illawarra to use electric power. The surviving pit pony stables probably date from the 1950s.

In the 1880s and early 1890s, the mine had frequent disputes between managers and workers over conditions, safety, pay and the right of the workers to unionise. This would culminate in the worst mining disaster in Australian history; the 1902 Mount Kembla mine explosion.

The Mount Kembla Lodge conducted three major strikes before the disaster in 1885, 1889 and 1893. The first strike arose from difficulties encountered particularly at Mt Kembla. After Jack Lang's government came into power Mount Kembla mine had the 1st first aid room in the region with a qualified ambulance paramedic.

The colliery and the railway line were eventually acquired by the Australian Iron and Steel company on 1 July 1946. The hand worked contract method of mining was replaced by a mechanised system using rubber tyred front-end loaders in 1968.

The mine ceased working and was closed in 1970 but the railway continued to be operated by AIS to haul coal from the nearby Nebo, and later, Dendrobium collieries. The railway is still in service hauling coal to the BlueScope Steel steelworks. Mt Kembla mine was the first colliery to use mechanical coal cutters.



Plate 28: Pit Pony Stables. Part of Mount Kembla Mine (Source: Heritage Management System, Heritage NSW)



Plate 29: Mine shaft. Part of Mount Kembla Mine (Source: Heritage Management System, Heritage NSW)



Plate 30: Mount Kembla Mine and Colliery (Source: Heritage Management System, Heritage NSW)

Kembla Heights Village

Kembla Heights village is a protected conservation area (#6409) due to its history and significance in relation to the mining activities, timber getters as well as the infamous mining disaster.

The discovery of oil bearing shale and coal the land surrounding Kembla Heights was purchased to become a mining settlement. The Pioneer Kerosene Works (1860–1878) was Australia's first shale mining and kerosene manufacturing plant was situated at Kembla Heights. This factory was eventually purchased by the Mt Kembla Coal and Oil Company (1878–1913) who developed a new coal mine to the north of Kerosene site, later renamed Mt Kembla Colliery Ltd (1913–1946) and finally purchased by Australian Iron and Steel, AIS (1946–1970). Nebo Colliery (1946–1993) was developed by AIS on the site of the original Kerosene works at Kembla Heights.

The Mt Kembla Coal and Oil Company's mine in Kembla Heights was the site of the worst industrial accident in Australia's history, the Mt Kembla Mine Disaster. The disaster took place on Thursday 31 July 1902, at precisely three minutes past two o'clock in the afternoon. The disaster was caused by gas seeping undetected from the coal seam in a disused area of the mine that had been mined out. A rock fall pushed the gas out into the tunnels where men were working. When the gas reached the naked flame of colliery workers light, it ignited instantly and caused a series of further gas and coal dust explosions. The initial blast killed some instantly, but the majority died from Carbon monoxide poisoning which penetrated the tunnels from the incomplete combustion of fuel. Both men and children worked and died during the disaster.

Windy Gully cemetery was created on a half-acre of company land to receive the bodies of the victims of the Mt Kembla Mine Disaster of 1902. In all, about a third of the victims were buried at Windy Gully. It was originally known as the Kembla Heights Cemetery or Presbyterian Cemetery.

Miners Houses

Many 'home-made' cottages were built by the workers around Kembla Heights and Mt Kembla in general to serve as cheap accommodation. The materials used varied depending on availability but mostly consisted of timber and brick. The cottages within the village can still be found however the ones outside of Kembla Heights Village no longer remain. The remnants of these cottages are still present in some places, however.

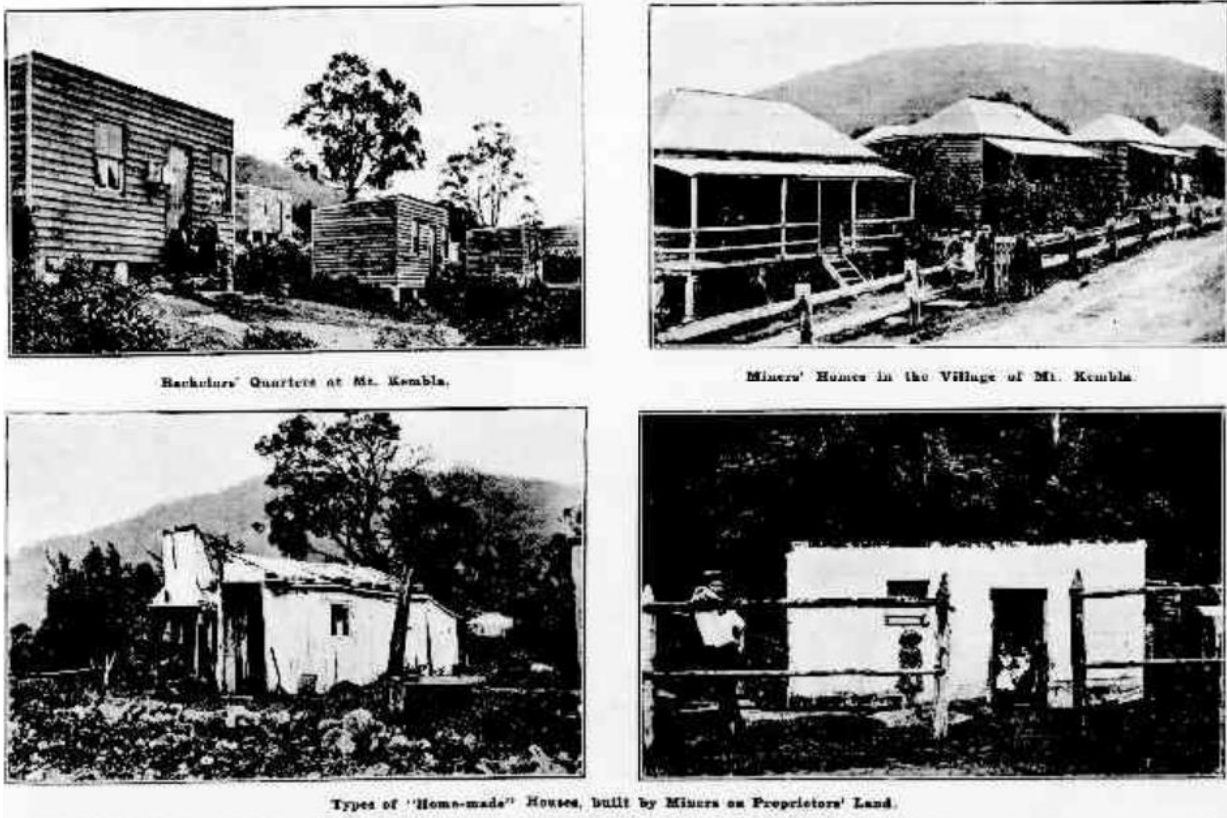


Plate 31: Example of Miners house in the Kembla area (Source: *Australian Town and Country Journal (Sydney, NSW: 1870 - 1919)*, p. 27)

3.3.4 Phase 4: Illawarra Escarpment Conservation Area

Conservation Area

The Illawarra Escarpment Conservation Area is an extensive native bushland area measuring approximately 3900 hectares and spans over 3 LGAs at the eastern extremity of the Illawarra Range. It includes the edge of the Woronoria Plateau and the associated upper foothill slopes and possesses attributes which include the natural rock exposures, forests and pasture lands as well as threatened and protected species. The adjacent coastal plain emphasises the vertical scale of the escarpment and acts as a dramatic background (HMS NSW, Item C058)

The escarpment forms a backdrop to the heavily developed industrial (both historically and recently) and newly emerging residential areas of the Illawarra region. The area has a number of historic features from pioneer cedar cutting activities and associated settlements, mining sites and early isolated homes. The heritage values encompass scenic, ecological, historic, and indigenous cultural, social (including tourist and recreational), visual, and natural history. Many smaller areas within the escarpment are of specific scientific, historic, and scenic importance also. The towns on the coastal plain adjacent to the escarpment were first founded to harvest the cedar trees on the slopes of the escarpment or the coal seams beneath it. With the original logging industry of the area came the need for passes over the escarpment, creating such ones as Rixons Pass, Bulli Pass, O'Briens Road, and Macquarie Pass.

The conservation area was listed in 2013 for its natural landscape values with cultural overlays.

3.3.5 Phase 5: Unsanctioned Mountain Biking

Currently, the Subject Area is used as a tourist and recreational area with many using it for unsanctioned mountain biking. The current mountain biking trails have been made by enthusiasts which the proposed works aims to use most of with only a few additional trials. The trails are currently unsanctioned as Wollongong City Council (WCC), WaterNSW, Sydney Water and, South32 currently possess the land and have not given permission for these trails to be made.

3.3.6 Conclusions

The Subject Area has a long spanning history dating to early settlement of New South Wales and early industrialisation of the region with the longest period of industrial activity being from the coal mining phase.

Much of the Subject Area is undeveloped however, it does form a significant part of New South Wales' and Australia's historical development. This is due to the wider historical cultural landscape of industrial coal processes but also as a historical cultural landscape itself due to the timber getting industry which forms part of the historical development of much of the greater area as well as the site of Australia's worst industrial disaster.

Although the historical development can be said to be constrained to two phases, the Subject Area also has heritage values due to its scenic, social (including tourist and recreational), visual, and natural history also. The Subject Area was likely explored in the early 19th century by European settlers and its natural and scenic values were described as exceptional. Tourists and visitors continue to visit the area for similar values.

The historical development phases be summarised as follows:

Table 6: Historical Development Phases of the Subject Area

Historical Phase	Description of phase
Phase 1: Exclusive Aboriginal Australian use. Prior to late 18 th century.	Dharawal speakers historical and presently live in the country from Botany Bay and Campbelltown in the north through the Nepean, Wollondilly, Georges, and Cataract water catchments, west to Moss Vale and south to the Shoalhaven River and Jervis Bay. This First Nations Country includes the Subject Area
Phase 2: Cedar-getting – Prior to 1802 – 1850. Height of activity 1840s.	In the Illawarra, the cedar forests were generally small stretches along the mountain slopes or along almost every stream. However, there was a large patch between Wollongong and Dapto which includes the Illawarra Escarpment Conservation Area and the Subject Area.
Phase 3: Mining in Mt Kembla. 1877 - 1970	The Mount Kembla Mine and Colliery came about due to the closure of the Pioneer Kerosene Works which closed in 1877. Mount Kembla Colliery was the first coal mine in Illawarra to use electric power. The surviving pit pony stables probably date from the 1950s. The mine closed in 1970.
Phase 4: Illawarra Escarpment Conservation Area. 2013 – present.	The Illawarra Escarpment Conservation Area is an extensive native bushland area measuring approximately 3900 hectares and spans over 3 LGAs at the eastern extremity of the Illawarra Range. The heritage values encompass scenic, ecological, historic and indigenous cultural, social (including tourist and recreational), visual, and natural history.
Phase 5: Unsanctioned Mountain Biking. Unknown date, likely 21 st century.	Currently, used as a tourist and recreational area with many using it for unsanctioned mountain biking. The current mountain biking trails have been made by enthusiasts which the proposed works aims to use most of with only a few additional trials.

3. Physical Site Inspection

3.1 Site Inspection

3.1.1 Methodology

The physical site inspection (site inspection) was undertaken between August and September 2021 and, January 2022, by Niche personnel Rebecca Chalker (Heritage Consultant) and Samuel Ward (Heritage Consultant) and, accompanied by representatives of the Local Aboriginal Land Council as part of the Aboriginal heritage component. The entire Subject Area was covered in a systematic pedestrian survey, with areas of potential or disturbance inspected where access was available. Site data was recorded as field notes and digital images see (Section 3.2).

3.1.2 Physical Description of Subject Area

3.1.2.1 General Subject Area

The Subject Area is mostly within a large and undeveloped native bushland. Due to the nature of the environment, ground coverage is very high, and visibility is very low. The native vegetation is very dense in some places. The topography of the Subject Area slopes steeply from north to south and consists of many rises, dip and gully valleys. The majority of the ground surface within the general subject area comprised of leaf and branch litter, with intermittent areas of exposed A horizon soils and weathered sandstone.

3.1.2.2 Kembla Height Village

Kembla Heights village consists of a small settlement that largely spans across the main road (Harry Graham Drive) running through the town however some building can be found set back from the road. The buildings vary but are mostly late Victorian and early Federation period cottages with the notable exception of the community hall which appears to be more modern in date (20th century). There is also a large open, landscaped space adjacent to the community hall surrounded by pine trees.

3.1.2.3 Mount Kembla Mine and Colliery

The LEP listing for the Mount Kembla Mine and Colliery states that the condition of the heritage item is as follows:

The site has been substantially cleared with some incomplete sandstone retaining walls remaining. The stables erected in about 1954 are constructed of a steel frame and are clad in corrugated steel sheeting with an unusual construction using railway tracks. The floor slab of the bath house can be identified nearby, although it is partially obscured by overgrown vegetation. The area originally used as the mines pit timber storage yard and located next to Harry Graham Drive was reworked to create a picnic area by the Rotary Club of Unanderra in the mid-1980s and includes a marker with details of the mine and the 1902 explosion. Mine air shaft: approximately 500 metres north of the site and beside the Harry Graham Drive is a circular brick chimney - a furnace shaft dating from the 1890s. A coal fire set in a grate at the base of the shaft helped to draw air through the mine.

The mine managers cottage (manager of old Pioneer Kerosene works) still stands below the old mine and is situated at Slow's Corner (A Profile History of Mount Kembla, K.C. Stone). The path of the incline can still be seen as part of the landscape from Mt Kembla village.

The site of the Pioneer Kerosene works is now buried. The pit pony stables are in a stable condition with some vandalism to the timber flooring. All other pit top buildings have been demolished. A

2008 landslip covered the Haulage Road entrance adit. In 2009 the Traveling Road mine entrance was partly collapsed, with a landslip above the area and the general area overgrown.

The site inspection focused on the elements of the Mount Kembla Mine and Colliery heritage item that are within or in the near vicinity to the Subject Area (Figure 4). This consisted of an air shaft and the pit pony stables. The pit pony site was in a relatively good condition. The building associated with the pit pony site comprised of a two-story, timber framed and corrugated building with pitched corrugated roof supported by timber A-frame trusses (Plate 62-Plate 68). An access ramp ran from the first level of the northside of the building to an elevated earthwork. The ramp appeared to be made of rail girders. The air shaft of brick coursework, also associated with the pit pony building, was observed outside of the Subject Area boundary. The brick shaft was located within dense vegetation which impeded inspection of the item

3.1.2.4 Identified Heritage Items

During the site inspection, some additional heritage items were discovered many of which were debris or demolished elements however two sites had enough integrity to still hold heritage values. A homestead was discovered south of the intersection of Harry Graham Drive and Firetrail No 15c (see Plate 97). The site consisted of a series of internal and external sandstone drywall as well as a possible paver footpath leading down a steep slope westward to a cleared, flat area with a possible entrance way and wall (see Plate 86 to Plate 97). The condition of the site elements is moderate.

The other heritage items were two possible cedar pits, however their historical uses is, as of yet, unclear. The pits are approximately 0.9m to 1m deep with sandstone drywalls which appear to be used as shoring. The condition of these sites is moderate to poor and have large branches and debris covering most of the sites. Some chicken wire and plastic sheeting were also found within them indicating modern disturbance.

3.2 Imagery

3.2.1 General



Plate 32: General view of the Illawarra Escarpment
(Source: Niche)



Plate 33: General view of the Illawarra Escarpment
(Source: Niche)



Plate 34: General view of the Illawarra Escarpment
(Source: Niche)



Plate 35: General view of the Illawarra Escarpment
(Source: Niche)



Plate 36: General view of the Illawarra Escarpment
(Source: Niche)



Plate 37: General view of the Illawarra Escarpment
(Source: Niche)



Plate 38: General view of the Illawarra Escarpment
(Source: Niche)



Plate 39: General view of the Illawarra Escarpment
(Source: Niche)



Plate 40: General view of the Illawarra Escarpment
(Source: Niche)



Plate 41: General view of the Illawarra Escarpment
(Source: Niche)

3.2.2 Unsanctioned Mountain Bike Trails



Plate 42: Example of illegal mountain bike trails
(Source: Niche)



Plate 43: Example of illegal mountain bike trails
(Source: Niche)



Plate 44: Example of illegal mountain bike trails
(Source: Niche)



Plate 45: Example of illegal mountain bike trails
(Source: Niche)



Plate 46: Example of illegal mountain bike trails
(Source: Niche)



Plate 47: Example of illegal mountain bike trails
(Source: Niche)

3.2.3 Kembla Heights Village and Mount Kembla



Plate 48: Moveable Heritage at Kembla Heights
(Source: Niche)



Plate 49: Small shack at eastern end of Kembla Heights
200m from “Ruby’s” (Source: Niche)



Plate 50: Eastern side of Kembla Heights (Source: Niche)



Plate 51: Community Hall, Kembla Heights (Source: Niche)



Plate 52: "Ruby's" in Kembla Heights (Source: Niche)



Plate 53: Heritage building, Kembla Heights (Source: Niche)



Plate 54: Heritage building, Kembla Heights (Source: Niche)



Plate 55: Open area next to Community Hall (Source: Niche)



Plate 56: Small hut, possible miner's home (Source: Niche)



Plate 57: Listed Heritage home (#6301), Mount Kembla at the base of Memorial Pathway (Source: Niche)



Plate 58: Pedestrian footpath at base of Memorial Pathway, proposed to be used as track. Adjacent to American Creek (Source: Niche)



Plate 59: Base of Memorial Pathway, Mount Kembla (Source: Niche)



Plate 60: View of Listed Cottage from Memorial Pathway (Source: Niche)



Plate 61: Signage for Memorial Pathway (Source: Niche)



Plate 62: Footbridge in Memorial Pathway (Source: Niche)

3.2.4 Mount Kembla Mine and Colliery, Pit Pony site and possible miners house remains



Plate 63: Inside of Pit Pony site (Source: Niche)



Plate 64: Inside of Pit Pony site (Source: Niche)



Plate 65: Ramp to first level of building (Source: Niche)



Plate 66: Outside of building (Source: Niche)



Plate 67: Ramp made of rail girders (Source: Niche)



Plate 68: Ramp made of rail girders (Source: Niche)



**Plate 69: Telephone masts outside of Pit Pony site
(Source: Niche)**



**Plate 70: Material object remain at house remains site
(Source: Niche)**



**Plate 71: Brick remains at House remains site (Source:
Niche)**



**Plate 72: Brick remains at House remains site (Source:
Niche)**



Plate 73: Brick remains at House remains site (Source: Niche)



Plate 74: Corrugated iron remain at House remains site (Source: Niche)

3.2.5 Views and Vistas



Plate 75: Views from the Illawarra Escarpment (Source: Niche)



Plate 76: Views from the Illawarra Escarpment (Source: Niche)



Plate 77: Views from the Illawarra Escarpment (Source: Niche)



Plate 78: Views from the Illawarra Escarpment (Source: Niche)



Plate 79: Views from the Illawarra Escarpment (Source: Niche)



Plate 80: Views from the Illawarra Escarpment (Source: Niche)



Plate 81: Views from the Illawarra Escarpment (Source: Niche)

3.2.6 Identified Heritage Items



Plate 82: Possible cedar pits located north-east of the Subject Area (Source: Niche)



Plate 83: Possible cedar pits located north-east of the Subject Area (Source: Niche)



Plate 84: Surrounds of possible cedar pits (Source: Niche)



Plate 85: Glass bottle fragment found at Homestead site (Source: Niche)



Plate 86: Material objects at Homestead (Source: Niche)



Plate 87: Remains of Homestead (Source: Niche)



Plate 88: Remains of Homestead (Source: Niche)



Plate 89: Remains of Homestead (Source: Niche)



Plate 90: Remains of Homestead (Source: Niche)



Plate 91: Remains of Homestead (Source: Niche)



Plate 92: Remains of Homestead (Source: Niche)

Plate 93: Remains of Homestead (Source: Niche)



Plate 94: Remains of Homestead (Source: Niche)



Plate 95: Path leading to Homestead, used as mountain bike trail (Source: Niche)



Plate 96: Path leading to Homestead, used as mountain bike trail (Source: Niche)

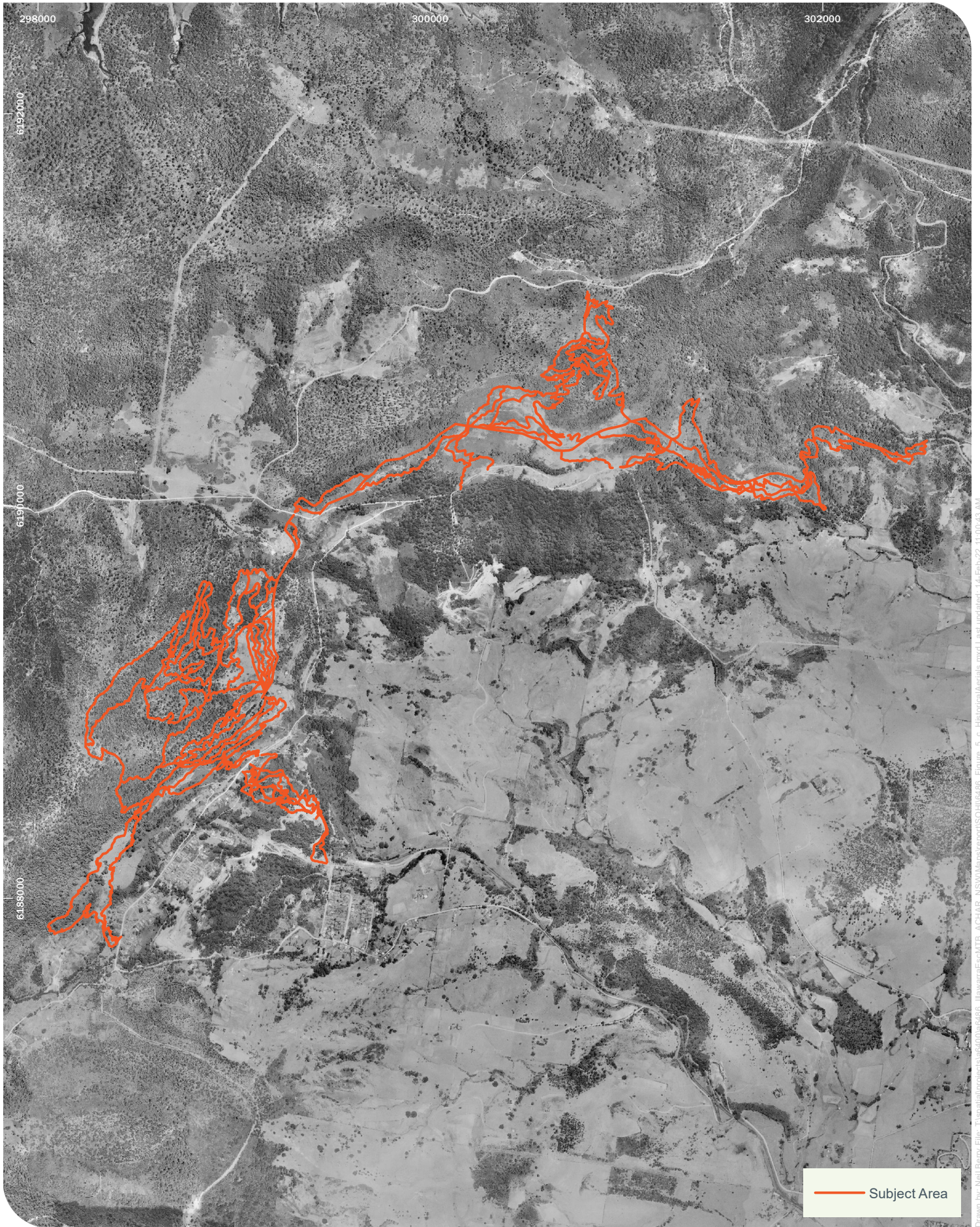


Plate 97: Walled entrance to path leading to Homestead (Source: Niche)

3.3 Historical Aerial imagery

The 1948 (Figure 5); aerial illustrates large areas to the south of the Subject Area had been cleared of native vegetation for pastoral lands. The subsequent aerals however show the clearances of bushland regenerated and return to bushland.

An analysis of historical aerial images from 1993 and 2020 (Figure 6; Figure 7) shows that the Subject Area has had very little overall development and remained largely native bushland. Areas which do contain development are associated with Mount Kembla and Kembla Heights.



Drawn by: Neil Berry File: T:\spatial\projects\6400\64466_IllawarraEscMtb_ACHAR_NSW\Maps\report\SOHI\6486_Figure_5_c_HistoricalAerials.mxd Last updated: 14-Feb-22 11:00:43 AM



Historical aerial photographs - 1948
Illawarra Escarpment Mountain Bike Concept Plan SoHI

Niche PM: John Gillen
 Niche Proj. #: 6486
 Client: National Parks and Wildlife Service - South Coast Branch

Figure 5c



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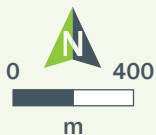
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— Subject Area

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Environment and Heritage

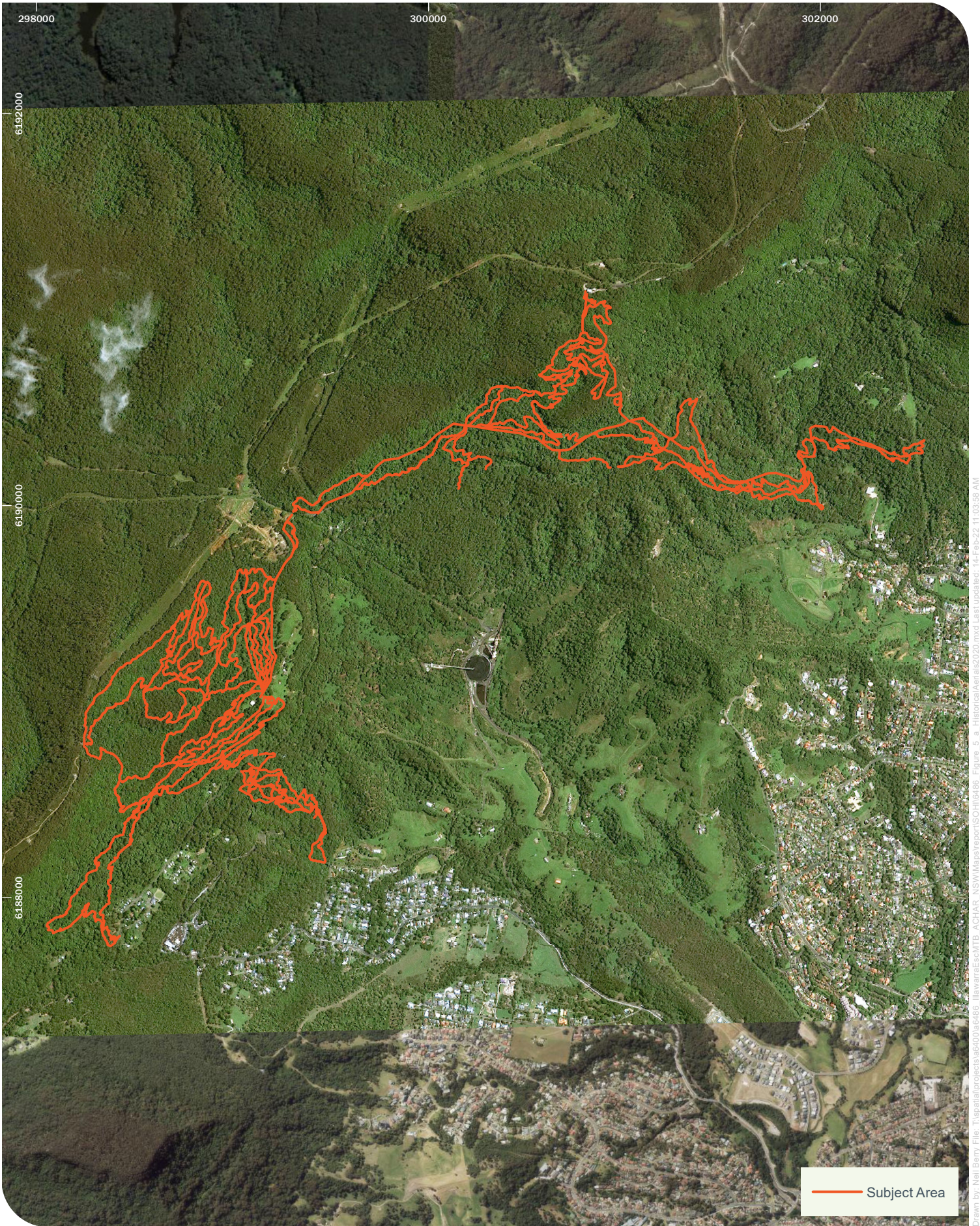


GDA 1994 MGA Zone 56

Niche PM: John Gillen
Niche Proj. #: 6486
Client: National Parks and Wildlife Service – South Coast Branch

Historical aerial photographs - 1993
Illawarra Escarpment Mountain Bike Concept Plan SoHI

Figure 5b



Drawn by: Neil Berry File: T:\spatial\projects\6400\64466_IllawarraEscMTB_ACHAR_NSW\Maps\report\SOHI\64466_Figure_5_a_HistoricalAerials\2020.mxd Last updated: 14-Feb-22 11:03:58 AM



Historical aerial photographs - 2020
Illawarra Escarpment Mountain Bike Concept Plan SoHI

Niche PM: John Gillen
 Niche Proj. #: 6486
 Client: National Parks and Wildlife Service – South Coast Branch

Figure 5a

3.4 Overview of Cultural Landscapes

The heritage value of a Subject Area does not exist solely with tangible items and material traces. An assessment of a cultural landscape integrates natural and cultural traces of historical phases or events and examples the connectivity between people, places and heritage items (DECC 2008).

An understanding of the historical character of the landscape in which a Subject Area is situated is a contributing factor to the heritage significance of a site. A cultural landscape can be of value through aesthetic, archaeological, historical, scientific, social or architectural values.

The framework for the assessment of cultural landscapes in NSW includes:

- Recording histories and larger patterns of land use.
- Documenting the histories of communities that have historical and contemporary connections with cultural landscapes.
- Emphasising the spatial aspects of cultural landscapes including spatial patterns and connectivity that can be mapped (DECC 2008).

3.4.1 The Cultural Landscape of the Subject Area

The Subject Area is a small portion of the Illawarra Escarpment Conservation Area. The escarpment forms a backdrop to the heavily developed industrial (both historically and recently) and newly emerging residential areas of the Illawarra region. The area has a number of historic features from pioneer cedar cutting activities and associated settlements, mining sites and early isolated homes.

The heritage values of the Subject Area encompass scenic, ecological, historic (and indigenous) cultural heritage, social (including tourist and recreational) and visual. The Subject Area constitutes part of the local and state history of the cedar getting industries along the slopes of the escarpment as well as arguably the more significant coal industry. The Subject Area contributes to this significant history greatly due to historical events such as the Mount Kembla mining disaster as well as cedar getting trails such as O'Brien's Pass.

3.5 Consideration of Views and Vistas of the Subject Area

A consideration of the views and vistas to and from a cultural landscape is important for understanding the nature of an evolving landscape. The significant views of the Subject Area are shown below.

The views and vistas of the Subject Area are of an outstanding cultural heritage value. The escarpment itself is a dramatic setting for those in the Illawarra region however for visitors and tourists to the escarpment, the area provides views looking down to a historically significant region. Many views down to the Illawarra coastal areas can be found throughout the Subject Area.

4. Archaeological Potential

This section provides an assessment of the archaeological potential of the Subject Area. This assessment is based on the evidence derived from the archival analysis (Historical Context) and physical inspection. This profile contributes to the assessment of cultural significance of the Subject Area.

4.1 Definition of Archaeological Potential

Archaeological potential is defined as the likelihood that an area may contain physical evidence related to earlier phases of occupation, activity and/or development. Physical evidence can encompass structural remains and footings, occupational resources, artefacts and/or features. These archaeological remains have the potential to contribute to our knowledge and understanding of the development of this area and the region and its association with the community using information otherwise unavailable. The potential for preserved archaeological evidence can range from very low to high (Table 7).

Table 7: Grading of archaeological potential

Grade	Definition
Very Low	The degree of ground disturbance suggests minimal or no potential for any archaeological evidence to survive.
Low	It is unlikely that any archaeological evidence survives.
Moderate	Some archaeological evidence associated with a particular historical phase or feature survives. It may be subject to some disturbance.
High	It is likely that archaeological evidence associated with this historical phase or feature survives intact.

4.1.1 Analysis of potential archaeological evidence for the Historical Phases

Table 8 below presents an analysis of the archaeological potential of the identified historical phases, using the historical assessment and the known integrity of the Subject Area.

Table 8: Archaeological potential of Historic phases

Historical Phase	Analysis of Archaeological Potential Associated with Historical Phase
Phase 1: Exclusive Aboriginal Australian use. Prior to late 18 th century.	This report does not assess the potential for Aboriginal cultural heritage within the Subject Area.
Phase 2: Cedar-getting – Prior to 1802 – 1850. Height of activity 1840s.	Moderate: Overall, the potential of archaeological resources relating to cedar getting industry is moderate due to archaeological material objects that were observed during the physical inspection which were the Homestead (see Plate 87 to Plate 97) and the possible cedar pits (see Plate 82 to Plate 84).
Phase 3: Mining in Mt Kembla. 1877 - 1970	Moderate: The potential for archaeological resources would likely be limited to the surrounds of Kembla Heights. These resources would likely be highly disturbed mining houses/shacks or small buildings and relate to the previously identified and listed heritage items such as the Mount Kembla Colliery, Pit Pony and Airshaft sites (#7105).
Phase 4: Illawarra Escarpment Conservation Area. 2013 – present.	Nil: No potential for archaeological resources.

Historical Phase	Analysis of Archaeological Potential Associated with Historical Phase
Phase 5: Unsanctioned Mountain Biking. Unknown date, likely 21 st century.	Nil: No potential for archaeological resources.

4.1.2 Integrity of Archaeological Evidence

Archaeological studies by AMBS (2010) and AHMS (2012) were undertaken for the Mt Kembla Mine Site. This section outlines some of factors that contributed to the survival of archaeological resources relating to buildings and associated works and which demonstrates the type of archaeological resources that have the potential to occur there.

AMBS (2010) prepared a report on surface artefacts (moveable heritage) located on the top three terraces of the Mt Kembla Mine Site; the Timber Yard, Bathhouse and Pit Pony Stables terraces and a preliminary assessment of heritage significance based on the archaeological evidence. The timberyard is approximately 30 metres north-east of a portion of the Subject Area. The bathhouse and pit pony stables are *approximately 20 metres respectively from the Subject Area*.

The report's statement of significance for the Mount Kembla Mine site included an assessment against criterion e, research potential, of the mine site, which is identified as having local significance (*OCP 2009:77, 80, In: 2010:24*):

The Mount Kembla Mine Site has research potential that would further enhance an understanding of the history of the site and how it operated. This potential lies in buried and otherwise hidden remains and artefacts at the place, documentary records and oral history.

AHMS (2012) stated the pit pony stables retained finite evidence of use of pit ponies in mining.

The report (2012:57) advised that a Section 140 Excavation Permit may be required to remove soil and leaf litter around and inside some examples [removable archaeology] to firstly assess their condition and then enable the lifting to proceed. This should also be a consideration for the current proposal (2022) in the event that impact, ie removal of remnant archaeological resources, could not be avoided.

4.1.3 Summary of Archaeological Potential

Historical disturbance is evident in the remains of the observed archaeological resources within the Subject Area. The continual use and upkeep and maintenance of the resources as well as their subsequent abandonment can result in the loss of information and reduced archaeological integrity. The remaining archaeological resources have been assessed as having moderate significance.

This assessment has found that there is a low chance of historical archaeological resources across the majority of the Subject Area. The area comprising additional site items to the south-west of the timberyard and mine outbuildings (Figure 4; Figure 8) have been assessed as having a moderate to high archaeological potential.

The archaeological resources identified will likely be related to Phase 2 (see Table 6) of the Subject Area and have local significance. Any proposed works that will impact these resources will need mitigation strategies and potentially a test or salvage excavation to ascertain archaeological information.

4.2 Summary of Physical Evidence

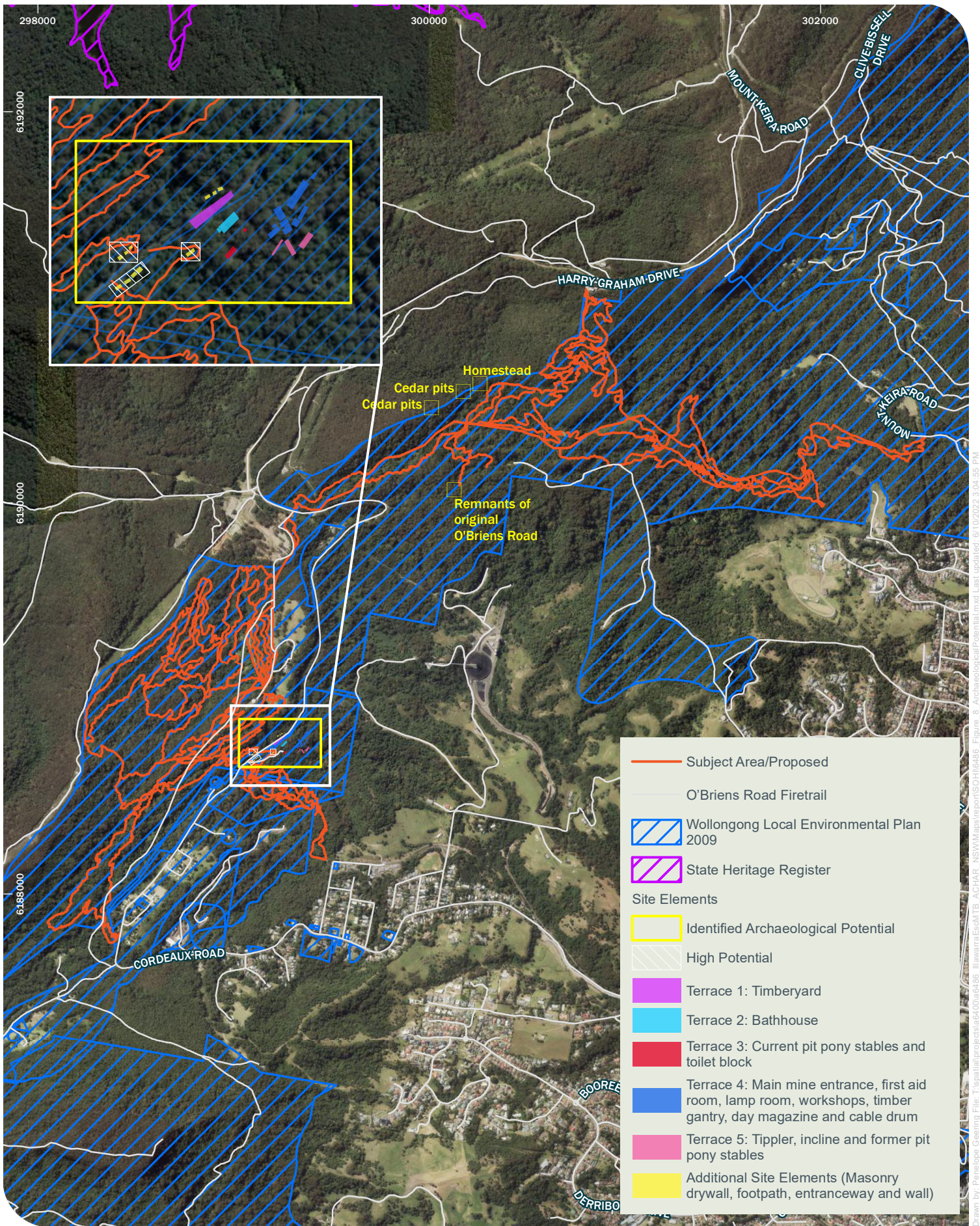
An inspection of the modern Subject Area in combination with historic aerials reveals the following conclusions:

- Much of the Subject Area remains within undisturbed native bushland
- The Subject Area remains largely undeveloped excluding the unsanctioned mountain bike trails
- The topography of the Subject Area varies but generally sloped steeply from North to South
- Many views and vistas to the Illawarra region are present within the Subject Area
- The Subject Area remains a Cultural Landscape with many areas showing evidence of the identified historical phases but also continuing to be a place visited by tourists and locals
- The condition of Kembla Heights remains to a high standard
- The Mount Kembla Colliery site, specifically the pit pony stable is in a relatively good condition
- Additional heritage items were discovered within the Subject Area. They are in a moderate condition but may have local heritage significance and require mitigation strategies
- The current trails have been made through deliberate construction or exploiting natural topography therefore disturbance of archaeological resources is moderate to low.
- Some areas of the proposed works are in close proximity to heritage items (LEP #6301 and s170 6228) and therefore will need to ensure the heritage values of these items are protected.

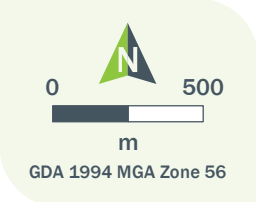
4.3 Summary of Potential Archaeological Resource

In relevance to archaeological resources, this HHA considers the following items are within the Subject Area and are considered to be potential archaeological resources (Figure 8);

- Additional Site Elements to the south-west of the former timberyard and former mine bathhouse (Figure 8).
- Remnants of Original O'Briens Road (Plate 4; Figure 8)



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Identified Archaeological Potential within the Subject Area
 Illawarra Escarpment Mountain Bike Concept Plan

Niche PM: Jo Nelson
 Niche Proj. #: 6486
 Client: Illawarra Escarpment Mountain Bike Concept Plan

Figure 8

5. Assessment of Cultural Significance

5.1 Methodology for Assessing Significance

The Heritage NSW Manual guideline, 'Assessing Heritage Significance' (NSW Heritage Office 2002) provides the framework for the following significance assessment and Statement of Significance. These guidelines incorporate the seven aspects of cultural heritage value identified in The Burra Charter into a framework currently accepted by the NSW Heritage Council.

5.1.1 Criteria for Assessing Significance

The SHR criteria are outlined in *Assessing Heritage Significance* (Heritage Office 2001) and are summarised in Table 9. Using these criteria, a place can be assessed to be of local, state or no heritage significance.

Table 9: Heritage Assessment Criteria.

Criteria	Value	Description
Criterion A)	Historical Significance	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).
Criterion B)	Associative significance	An item has strong or special association with the life or works of a person or group of persons, of important in NSW's cultural or natural history (or the cultural or natural history of the local area).
Criterion C)	Aesthetic significance	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).
Criterion D)	Social significance	An item has strong or special association with a particular community or cultural group in NSW (or the local area). for social, cultural or spiritual reasons.
Criterion E)	Research potential	An item has the potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)
Criterion F)	Rarity	An item possesses uncommon, rare or endangered aspects of the area's cultural or natural history (or the cultural or natural history of the local area).
Criterion G)	Representativeness	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places, or cultural or natural environments (or a class of the local area's cultural or natural places, or cultural or natural environments.)

5.1.2 Grading of significance

A five-tier system detailing levels of significance is outlined in *Assessing Heritage Significance* (Heritage Office 2000). The grading system is used to identify the overall significance of items or sites being assessed. The levels of significance and their justification to be applied to items is listed in Table 10 below.

Table 10: Grading of significance.

Grading	Justification	Status
Exceptional	Rare or outstanding element directly contributing to an item's local or State listing.	Fulfils criteria for local and/or State significance.
High	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance.	Fulfils criteria for local and/or State significance.
Moderate	Altered or modified elements. Elements with little heritage value, but which contribute to the overall significance of the item.	Fulfils criteria for local and/or State significance.
Little	Alterations detract from significance. Difficult to interpret.	Does not fulfil criteria for local or State listing.
Damaging	Damaging to the item's heritage significance.	Does not fulfil criteria for local or State listing.

5.2 Assessment of Heritage Significance for the Subject Area

Table 11: Assessment of Significance for heritage item within/near the Subject Area

Item Name/#	Statute	Level of Significance	Location	Listed Description (Source: Heritage NSW Heritage Management System)
Cottage (#6301)	Wollongong City LEP 2009	Local	2 Kirkwood Place, Mount Kembla, NSW 2526	Adjacent to proposed works. Single storey cottage of weatherboard with hipped corrugated iron roof and verandah returning to both sides, built on elevated grounds. The verandah has skillion corrugated iron roof with hip corners, timber floor and square timber columns with timber railing infilling the lower portion of the side verandah. There is a single tall brick chimney with steps. Windows have timber sills and louvered shutters, and aluminium replacement frames. Front door has no transom light. Fence is metal replacement. Various additions are present at the rear.
Pit Pony Stables, Mount Kembla (#6228)	S170 of Heritage Act 1977	Local	56 299278 E 618874 N	Adjacent to proposed works. See item #7105.
Illawarra Escarpment Landscape Conservation Area (#6480)	Wollongong City LEP 2009	Local	Macquarie Pass, NSW 2577	Area approximately 3900 ha between 3 LGAs at the eastern extremity of the Illawarra Range. It includes the edge of the Woronoria Plateau and those upper foothill slopes which possesses attributes whose preservation needs to be assured i.e. the natural rock exposures, forests and pasture lands, threatened and protected species.

Item Name/#	Statute	Level of Significance	Location	Listed Description (Source: Heritage NSW Heritage Management System)
				<p>The adjacent narrow coastal plain exaggerates the vertical scale of the escarpment. In the horizontal plane the escarpment forms a magnificent backdrop to the heavily developed industrial and newly emerging residential areas. The escarpment extends for an extraordinary length of relatively unbroken cliff lines. Cliffs of the escarpment are generally sheer and spectacular. The varying colours of their sandstone exposures contrast with both the mixed heath vegetation and low forest at the plateau edge and the mature eucalypt forest and pockets of lush remnant rainforest near the cliff base and on deeper soils on the slopes.</p> <p>Red cedars ('Toona Australis), once common are becoming rarer. Many other species rapidly disappearing species are still to be seen in this landscape (NT). The cliffs are generally sheer and spectacular, extending in relatively unbroken lines for a remarkable distance. The area has a number of historic features from pioneer cedar cutting activities and associated settlements, mining sites and early isolated homes (RNE approx. 175,000ha)</p>
Kembla Heights Mining Village Heritage Conservation Area (#6409)	Wollongong City LEP 2009	Local	Kembla Heights, NSW 2526	None provided.
Mount Kembla Colliery Including Site of Mine workings, Portal, Mine Air Shaft and Pit Pony Stables (#7105)	Wollongong City LEP 2009	Local	Kembla Heights, NSW 2526	<p>The site has been substantially cleared with some incomplete sandstone retaining walls remaining. The stables erected in about 1954 are constructed of a steel frame and are clad in corrugated steel sheeting with an unusual construction using railway tracks. The floor slab of the bath house can be identified nearby, although it is partially obscured by overgrown vegetation. The area originally used as the mines pit timber storage yard and located next to Harry Graham Drive was reworked to create a picnic area by the Rotary Club of Unanderra in the mid-1980s and includes a marker with details of the mine and the 1902 explosion. Mine air shaft: approximately 500 metres north of the site and beside the Harry Graham Drive (Plate 4) is</p>

Item Name/#	Statute	Level of Significance	Location	Listed Description (Source: Heritage NSW Heritage Management System)
				a circular brick chimney - a furnace shaft dating from the 1890s. A coal fire set in a grate at the base of the shaft helped to draw air through the mine. The mine managers cottage (manager of old Pioneer Kerosene works) still stands below the old mine and is situated at Slow's Corner (A Profile History of Mount Kembla, K.C. Stone). The path of the incline can still be seen as part of the landscape from Mt Kembla village.
House remains (#11950)	S170 of Heritage Act 1977	Local	56 299142 E 618875 N	None provided.
Remnants Of Original O'Brien's Road (#2147)	Potential s170 of Heritage Act 1977	Local	56 300124 E 619007 N	None provided.
Homestead	Not Listed	Local	See Error! Reference source not found.	Not listed
Possible Cedar Pits	Not Listed	Local	See Error! Reference source not found.	Not Listed

3.4 Statement of Cultural Significance

Four heritage items were identified that were either within or in the near vicinity to the Subject Area that were listed on the Wollongong City LEP 2009, three sites were listed in the s170 asset register of Heritage Act 1977 and two sites were unlisted but identified as having heritage values. These sites were assessed using the criteria outlined in *Assessing Heritage Significance* (Heritage Office 2001).

On the basis of this assessment, the Subject Area can be said to have locally significant heritage items at various locations throughout. The Subject Area continues to hold significance for its historical context relating to the mining history especially the Mount Kembla Mining disaster to the local, state and national communities. The Mount Kembla mining disaster has been described as 'Australia's worst industrial disaster' which continues to be significant to this day.

Societies such as the Mt Kembla Heritage Centre, Illawarra Heritage Trail and “Looking Back” have all been established with a focus on the mining history of the Subject Area and have dedicated personnel ensuring that the history of the Subject Area is protected and retold. The cedar getting history also appears to have dedicated local historians and societies focusing on this history, such as “eKiama” although to a lesser extent.

Although sandstone homesteads and cedar pitting are not unique to the Subject Area or the broader region, additional heritage items identified in this HHA; the homestead, associated outbuildings and other structures, have been assessed as having local significance as they hold heritage values and significance to the local communities. The limit of this HHA provides only surface observation of heritage significance.

4. Conclusions and Recommendations

4.1 Conclusions

The scope of this HHA is limited to the proposed works located within the Subject Area. It aims to identify all heritage items within or in the near vicinity to the Subject Area and to assess their significances. This HHA does not assess the potential for Aboriginal cultural heritage or Aboriginal cultural heritage archaeological resources.

The proposed works are within a locally significant area with heritage values which may have the potential to be impacted. On the basis of historical research, review of previous assessments and investigations and, physical site inspection undertaken for this report, the Subject Area has been assessed to contain local heritage significance. This heritage significance has been assessed against the NSW significance assessment criteria listed in NSW Heritage Assessing Heritage Significance (*NSW Heritage Act 1977*) and the Burra Charter.

The proposed works should proceed with caution and follow the recommendations below

4.2 Recommendations

Recommendation 1 – Statement of Heritage Impact

The Statement of Heritage Impact (SoHI) should be reviewed and consulted prior to any works proceeding to navigate around potential impact and provide mitigations to impact. The SoHI is the document that assesses impact and the potential for impact, to any identified heritage items including the unlisted items. This report includes a history of the heritage items and Subject Area, an assessment of the identified items heritage significances and an assessment of the proposed impacts following the guidelines *Statement of Heritage Impact* (Heritage Office 2002).

Recommendation 2 – Homestead and Cedar Pit sites

The homestead and possible cedar pit sites are to be avoided. Conservation Management Plans should be drafted for these items which should outline the frequency of the inspections and nature of their protection in the event that future proposed works are undertaken in these areas.

Recommendation 3 – Views and Vistas

It is recommended that any identified views to the Illawarra coastline should be maintained in order to protect the Subject Area as a Cultural Landscape. As well as this, any potential new views to the coastline should be created, where appropriate and feasible, in order for local and visiting communities to appreciate the heritage values of the Subject Area.

Recommendation 4 – Adaptive reuse of pit pony site

Due to the proposed works, increased numbers of visitors to the Subject Area are likely. Therefore, it is recommended that the pit pony site be considered for adaptive reuse. By reusing the building, the condition of the site will remain as the building remains in good condition at present. It is recommended that the adaptive reuse of the pit pony stable should be included as part of the interpretation strategy by using the building as a heritage centre, possibly in conjunction with local communities and heritage societies, as well as an area for the visiting mountain bikers. If the building is used as a heritage and visitor centre, this would further protect the important local significance of the area.

Recommendation 5 – Interpretation Strategy

It is recommended that an interpretation strategy be drafted for the Subject Area. This is in order to communicate to the public visitors the importance of the history of the Subject Area especially the Mount Kembla Mining Disaster. The interpretation strategy should target certain locations that are deemed most appropriate and include signage or information boards that explain the historical context of the area. The interpretation strategy may also use progressive techniques in order to engage a larger audience as the proposed works will increase the number of visitors to the Subject Area. The strategy should include all of the identified heritage items histories as well as the wider local history of the Illawarra escarpment conservation area and the First Nations history before European Invasion.

Recommendation 6 – Potential State Heritage Register listing

If the submission for State Heritage is approved prior to any proposed ground disturbance works, then a section 60 works approval permit will be required to comply with Heritage Act 1977 for protection of potential archaeological relics or objects of State heritage significance or relics or objects of local heritage significance. The s60 permit

5. References

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Cornelius O'Brien - Pioneer of Bulli, King, N.S., 1965

Appendix 1

Unexpected Finds Procedure

The following provides a methodology to follow in the event of unexpected finds being encountered during the proposed works. These procedures have been prepared in accordance with best practice and are designed to minimise the heritage impact in the unlikely event that Human remains, or archaeological material is encountered on site.

It is noted that these procedures do not provide a guarantee against impacts caused by unexpected finds. However, they provide mitigation of the risk unexpected finds present. The procedure used in the event of human remains is derived from the NSW government guidelines and in no way supplants the authority of the NSW Police or the NSW Coroner's office over human remains found on site.

It is critical for the construction team to be aware that any suspected archaeological evidence must remain as it was found (*in situ*) until it is assessed by a qualified archaeologist, as per the below steps. These objects, and where they are located and the material around them (referred to as the object's 'context') is critical for understanding their value to the site and determining what may be located near to the area of the find. The object and its context are legally protected under the *Heritage Act 1977*.

Discovery of Suspected Human Remains

The following procedure would be followed in the event of the unexpected find of suspected human remains during the works:

- The location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm.
- The remains must be left in place and protected from harm or damage.
- The NSW Police and Coroners Office must be contacted immediately.
- No further action is to be undertaken until the NSW Police confirm the origin of the remains as non-human and provide a case number for South32's records.
- If the skeletal remains are identified as Aboriginal, South 32 or their agent must contact:
 - the Heritage NSW's Enviroline on 131 555.
- If the skeletal remains are identified as Aboriginal, no works are to continue until the Heritage NSW provides written notification to the Proponent or their Agent.

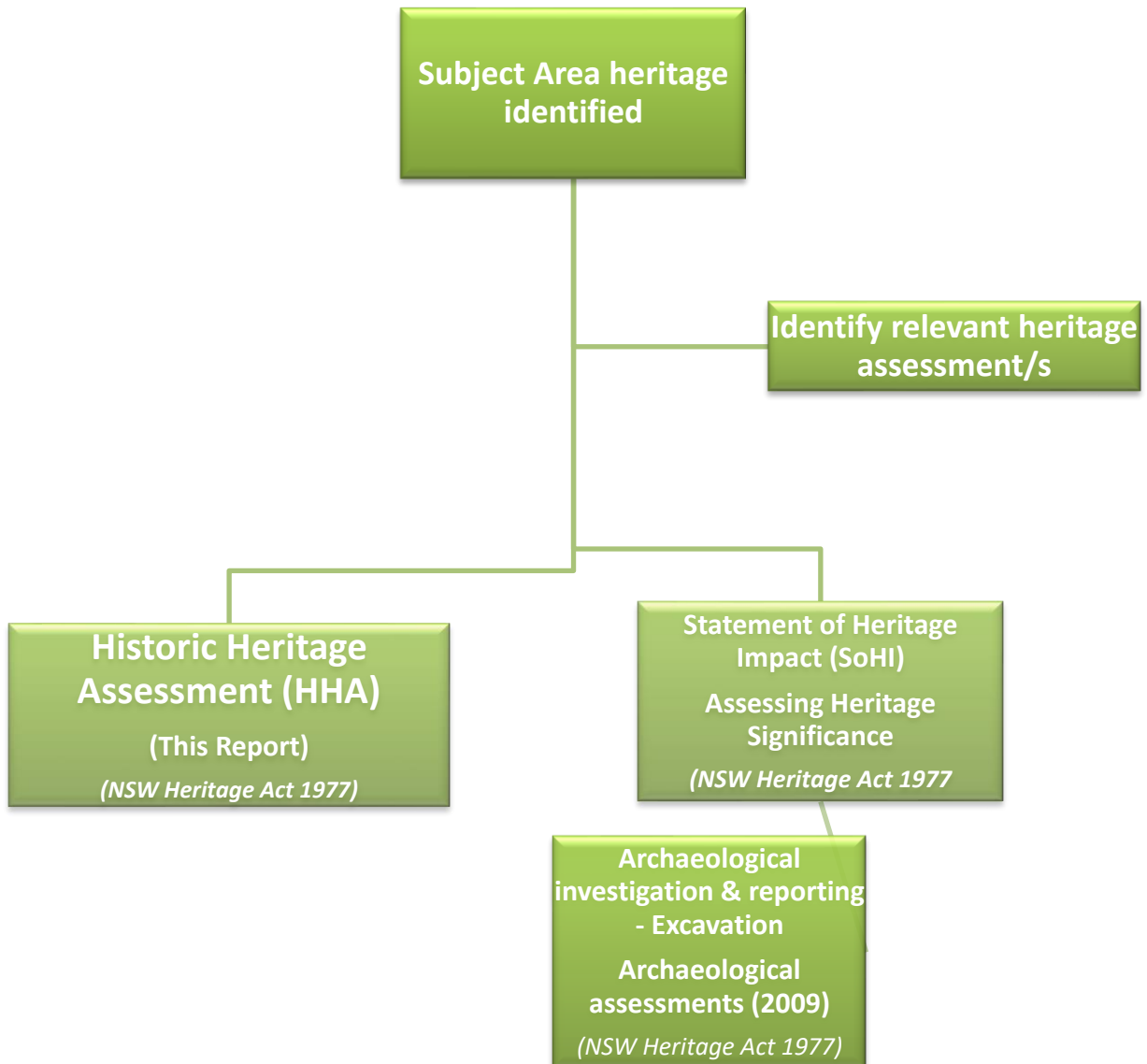
Discovery of Unexpected Suspected Archaeological Material.

The following procedure would be followed in the event of the unexpected find of suspected archaeological material during the works.

- Stop work within a 10m area around the unexpected find and secure this area.
- Notify a qualified archaeologist and engage them to assess the suspected material to determine historical significance of the find.
- If assessed to be not culturally significant, proceed with works with caution.
- If assessed to be of cultural value, works must cease in this portion of the site (within 50m of the find) and the NSW Heritage Council and Local Government Council must be contacted. Any directions or responses from these organisations should be considered. Works of this type could include salvage excavation, testing, further monitoring and archival recording.

Appendix 2

Assessment Framework



Contact Us

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Our services

Ecology and biodiversity

Terrestrial
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