Cultural Heritage Due Diligence Assessment Kentbruck Green Power Hub, Kentbruck, Victoria

Attachment 2

FINAL REPORT

Prepared for Neoen Australia Pty Ltd

17 July 2019

Biosis offices

NEW SOUTH WALES

Newcastle
Phone: (02) 4911 4040
Email: newcastle@biosis.com.au

Sydney
Phone: (02) 9101 8700
Email: sydney@biosis.com.au

Wollongong
Phone: (02) 4201 1090
Email: wollongong@biosis.com.au

Albury
Phone: (02) 6069 9200
Email: albury@biosis.com.au

VICTORIA

Melbourne
Phone: (03) 8686 4800
Email: melbourne@biosis.com.au

Ballarat
Phone: (03) 5304 4250
Email: ballarat@biosis.com.au

Wangaratta
Phone: (03) 5718 6900
Email: wangaratta@biosis.com.au

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Prepared by:	Adam Black Lucy Amorosi Melanie Thomson
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Abbreviations

Abbreviation	Title
ACHRIS	Aboriginal Cultural Heritage Register and Information System
AV	Aboriginal Victoria
Biosis	Biosis Pty Ltd
BP	Before Present
CHDDA	Cultural Heritage Due Diligence Assessment
CHMP	Cultural Heritage Management Plan
CHP	Cultural Heritage Permit
CHS	Cultural Heritage Sensitivity (as defined by Aboriginal Victoria)
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*
GMTOAC	Gunditj Mirring Traditional Owners Aboriginal Corporation
GMU	Geomorphological Unit
HA	Heritage Advisor
Heritage Act	*Heritage Act 2006*
NTA	*Native Title Act 1993* (Cth)
RAP	Registered Aboriginal Party
SGD	Significant Ground Disturbance
The Act	*Aboriginal Heritage Act 2006* (Vic)
The Regulations	*Aboriginal Heritage Regulations 2018* (Vic)
The study area	Proposed Kentbruck Wind Farm Facility
VAHR	Victorian Aboriginal Heritage Register

Summary

This Cultural Heritage Due Diligence Assessment (CHDDA) report has been commissioned in response to a request by Mr David Knight, Principal Environmental Planner, AECOM on behalf of Mr Matthew Parton, State Leader Victoria, Neoen for further information relating to potential cultural heritage legislative requirements for the proposed Kentbruck Green Power Hub. The Kentbruck Green Power Hub would comprise a 7,500 hectare area project consisting of a wind farm, battery storage facility and ancillary infrastructure, including a connecting underground power cable through the Cobboboonee National Park. The Kentbruck Green Power Hub is located roughly 30 kilometres north west of Portland and about 5 kilometres east of Nelson, at Kentbruck, south-west Victoria (the study area) (Map 1).

Assessment scope

This CHDDA report provides cultural heritage advice on the proposed development and study area. The CHDDA report examines legislative requirements pursuant to:

- The *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).
- The *Aboriginal Heritage Act 2006* (the Act) and the *Aboriginal Heritage Regulations 2018* (the Regulations).
- The *Native Title Act 1993* (NTA).
- The *Heritage Act 2017*.

This CHDDA is based on detailed background research and a targeted field survey of the study area. The primary intent of the assessment is to inform on Aboriginal and historic legislative obligations with respect to future development, identify potential archaeological potential within different landforms, and provide a predictive model of the study area with respect to potential cultural heritage values. This CHDDA does not form a comprehensive archaeological investigation of the study area due to the limited scope of the assessment and the preliminary nature of the proposed activity.

Assessment findings

There have been no previous Archaeological investigations within the study area. No Aboriginal places have been previously registered within the study area, however there are six Aboriginal places recorded within 100 metres of the study area and previously unidentified Aboriginal cultural material was located during the site inspection. The study area exhibits several sensitive landforms that are likely to contain Aboriginal cultural heritage, including dunes, ridge lines, hill tops and water sources. Based on a wider regional review and the results of the site inspections, identified landform-systems and landform features are highly likely to contain moderate to high archaeological potential (see section 3). The sensitive nature of these landforms and systems is reflected in the extent of the designated cultural heritage sensitivity (CHS) that covers much of the current study area.

While the site inspection revealed the extent of previous significant ground disturbance (SGD) associated with the existing Forestry blocks within large parts of the study area, a number of properties in the east remain largely undisturbed, consisting of primarily open cleared farmland. Other disturbances within the study area included road/track construction, pastoral dams, and homestead and farm infrastructure.

During the site inspection, a number of Aboriginal stone artefact scatters and shell middens were identified along existing Forestry access tracks where ground surface visibility was good. No Aboriginal cultural material was identified within the Forestry plantations due to poor ground surface visibility, i.e. pine needles.

This CHDDA was completed by Adam Black, Lucy Amorosi and Melanie Thomson of Biosis Pty Ltd (Biosis), all of whom are listed Heritage Advisors (HAs) as specified in the requirements of the *Aboriginal Heritage Act 200*6 (the Act).

Recommendations and Requirements

Recommendation 1: Minimisation of Impacts

To remove the requirement for a mandatory CHMP, the proposed Kentbruck Wind Farm Facility design must attempt to avoid all areas of designated CHS (Map 9). The components of the wind farm that this includes, but is not limited to, all new power line poles and access, turbine footprints, met masts, laydown areas or all structural components and site offices, connecting overhead and underground power cables, and all access tracks between turbines, pads for construction machinery adjacent to turbine locations and soil stockpiling locations.

Recommendation 2: Requirement for a mandatory CHMP

A mandatory CHMP **is** required if any component of the Kentbruck Wind Farm Facility design cannot avoid areas of CHS that have not been subject to SGD. This is required before statutory approval can be issued for the proposed project.

To reduce the quantum of cultural heritage work required, if a mandatory CHMP is triggered, all wind farm infrastructure components should be situated away from landforms of high archaeological potential and preferably located within areas where SGD has previously occurred.

Recommendation 3: Recommendation for a voluntary CHMP

It is strongly recommendation that a voluntary CHMP be considered for the proposed wind farm to manage risk of harm to Aboriginal cultural heritage under Section 27 and 28 of the *Aboriginal Heritage Act 2006*.

While Aboriginal cultural material may have been subject to previous disturbance within the pine plantation blocks, the site inspection revealed the presence of stone artefact scatters and midden material throughout these areas.

Therefore there is still Aboriginal archaeological potential throughout the study area and the risk of harming Aboriginal cultural heritage.

Recommendation 4: Gunditj Mirring Traditional Owner Aboriginal Corporation Consultation

It is recommended that the current assessment findings be provided to Gunditj Mirring Traditional Owner Aboriginal Corporation, by Neoen, in an attempt to gather cultural knowledge, oral histories and cultural values for the study during the completion of a CHMP.

This consultation should be undertaken in the form of strategic and targeted on-site consultation with Traditional Owners in regard to identifying likely locations for major infrastructure and corridors. This would potentially allow for some agreement in principle as to where impacts within the landscape would be appropriate.

Recommendation 5: Native Title

Appropriate consultation must be undertaken with the Gunditj Mirring Traditional Owners Aboriginal Corporation Registered Native Title Body Corporate prior to the commencement of the project.

The consultation will determine if an Indigenous Land Use Agreement (ILUA) is required. It will also identify if the completion of a Cultural Heritage Management Plan will satisfy the Gunditj Mirring Traditional Owners Aboriginal Corporation RNTBC in place of a formal ILUA.

The areas is question are limited to the proposed connecting underground or overhead power that run through the Cobboboonee National Park and discrete locations near the Mount Richmond National Park.

Recommendation 6: Historic heritage

It is recommended that monitoring and further consultation with a Heritage Advisor to survey and record as the project continues given the known location of historic sites. This can be undertaken concurrently with the assessment component of a CHMP.

There is some potential for unrecorded historic sites within the study area and a historic survey is therefore advised.

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1 Introduction

1.1 Project Background

The proposed Kentbruck Green Power Hub (the study area) site is around 7,500 hectares and located between Portland and Nelson, in south-west Victoria (Map 1). The project is in the early stages of development. Indicative key attributes of the project comprise a wind energy facility consisting of up to 157 turbines, a battery storage facility and associated infrastructure including a connection to the electricity grid via the Cobboboonee National Park.

This report documents the findings of a CHDDA for the study area. The purpose of the CHDDA is to provide information on the Aboriginal and historical archaeological and cultural heritage values of the study area and provide advice with regards to various legislative requirements, specifically the statutory and non-statutory obligations pursuant to the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), the *Aboriginal Heritage Act 2006* (the Act), the *Aboriginal Heritage Regulations 2018* (the Regulations), *Native Title Act 1993* (NTA) and the *Heritage Act 2017*.

This CHDDA report is a preliminary assessment of the study area. The primary intent of the assessment is to inform on legislative obligations with respect to future development, the potential risk associated with different landforms, and provide a predictive model of the study area with respect to potential cultural heritage values.

This CHDDA does not form a comprehensive archaeological investigation of the study area due to the limited scope of the assessment.

1.2 Assessment objectives

The following is a summary of the major objectives for the CHDDA:

- Undertake relevant database searches and background research to identify known Aboriginal places, and landforms and environmental data that may influence Aboriginal archaeological locations.
- Review previous archaeological studies and CHMPs (if any) to develop a site prediction model relating to an appropriate geographic region surrounding the proposed Kentbruck Green Power Hub.
- Targeted inspection of selected areas within the study area to identify and describe Aboriginal cultural heritage values.
- Provide details of identified Aboriginal places, areas of archaeological potential and cultural values.
- Evaluate the archaeological and cultural significance of Aboriginal and historic heritage places and their values.
- Develop detailed recommendations to address Aboriginal cultural heritage matters.

1.3 Location of the study area

For the purposes of planning and design flexibility, the proposed Kentbruck Green Power Hub (the study area) site is approximately 7,500 hectares and is located about 27 kilometres north west of Portland and about 5 kilometres east of Nelson, in south west Victoria (Map 1). The study area is entirely within Glenelg Shire. The Portland – Nelson Road bisects the project site in a generally east – west direction. The project site

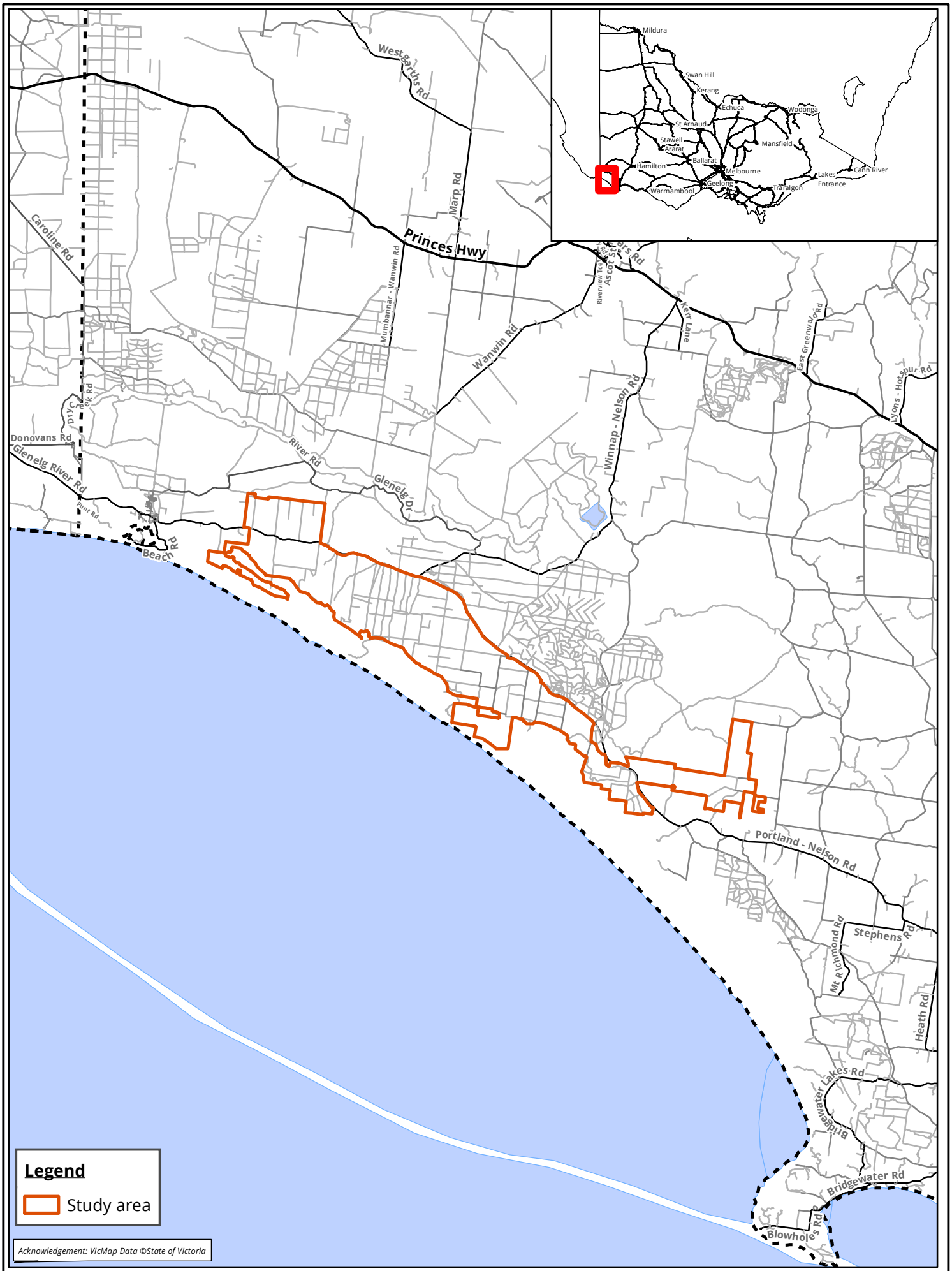
is bound by plantation pine forest to the north, highly-modified land used for grazing purposes, Discovery Bay Coastal Park to the south and the Lower Glenelg National Park and Cobboboonee National Park to the north and east respectively. The closest townships are Mt Richmond to the east of the study area and Nelson to the west of the study area.

The boundaries of the study area have been set such that the site avoids a number of notable features including Waterways, Ramsar Wetlands and Coastal Crown Land. The connecting underground power cable will dissect the Cobboboonee National Park, however, it confined to the existing Park fire tracks.

The locations of the activity (such as turbines) within the larger study area have not yet been determined.

1.4 Description of the study area

The study area is located primarily within an actively managed and harvested pine plantation. At the eastern and western extents of the study area there are areas of land used for agricultural purposes (primarily grazing). The study area along with known infrastructure can be seen in Map 2. Small sections of native vegetation exist, primarily relating to areas associated with water and along road verges.



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Map 1 Location of the study area

Matter: 29581,
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0 2.5 5 7.5 10
Kilometers
Scale 1:250,000 @ A4, GDA 1994 MGA Zone 54

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Legend

- Study area
- House
- House - Abandonded
- Shed
- Wind Turbine

Waterbodies Class

- Flat - Subject to Inundation
- Watercourse Area River
- WB Lake
- Wetland\Swamp
- RAMSAR Gleneg Estuary and Discovery Bay

Map 2 Location of known infrastructure components – indicative only

0 1 2 3 4 5

Kilometers

Scale: 1:90,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

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1.5 The proposed activity

The proposed Kentbruck Green Power Hub (the study area) site is located between Portland and Nelson, in south-west Victoria (Map 1).

The project is in the early stages of development. Indicative key attributes of the project comprise a wind energy facility consisting of up to 157 turbines and associated infrastructure, a battery storage facility and a transmission line to connect the project to the electricity network, and includes (but is not limited to):

- Internal site access tracks and upgrades to existing access points from the public road network.
- Hardstand and lay down areas.
- Underground electricity cabling.
- Overhead power lines (up to 275 kV).
- Underground cables (up to 275kV).
- Electricity collector stations.
- Overhead and/or underground electricity cabling and a terminal substation to provide connection to the 500kV Heywood to Portland transmission line, via the Cobboboonee National Park.
- Permanent meteorological monitoring masts (met masts).
- An operations and maintenance building.
- Temporary infrastructure including construction compounds, concrete batching plants, car parking, site buildings and amenities.

The proposed development would consist of up to 157 wind turbines. Specific turbine details will be developed following a tendering process which will take place once planning approvals have been granted. At this stage, the turbines are proposed to meet the following metrics:

- 4 MW to 8 MW peak power output.
- Tip height of up to 270 metres above ground level.
- Rotor diameter of up to 190 metres.
- Lower blade sweep height of 45 metres or higher (the distance between the ground and the bottom of the blade at its lowest point).

Subject to geotechnical assessments, the turbine foundations will consist of concrete gravity or rock anchor foundations. Foundations will be approximately four metres deep with an approximate maximum diameter of 25 metres.

1.6 Aboriginal stakeholder consultation

The study area is within the traditional Country of Gunditjmara (Dhauward Wurrung language).

Registered Aboriginal Party

The study area coincides with the Gunditj Mirring Traditional Owners Aboriginal Corporation (GMTOAC) Registered Aboriginal Party (RAP) area. The GMTOAC is recognised as a RAP pursuant to the Act and Regulations. Consequently, the GMTOAC are recognised as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage of the study area.

The GMTOAC are responsible for evaluating any future CHMP assessment, providing advice on applications for Cultural Heritage Permits, decisions about Cultural Heritage Agreements and advice or application for interim or ongoing Protection Declarations.

Native Title

Pursuant to the NTA, on 30 March 2007 a Native Title consent determination recognised the Gunditjmara People's non-exclusive Native Title rights and interests over almost 132,000 hectares of vacant Crown land, national parks, reserves, rivers, creeks and sea north-west of Warrnambool, bounded on the west by the Glenelg River and to the north by the Wannon River. The area covers the entire study area and includes the Lower Glenelg National Park, Cobboboonee National Park, Cobboboonee Forest Park and state forest, Mount Richmond National Park and Budj Bim National Park and is now primarily managed by way of an Indigenous Land Use Agreement with the Gunditjmara People that recognises their Gunditjmara rights and interests in that area.

It is not within the remit of this report to undertake consultation with the RAP or Native Title holders.

1.7 Aboriginal and historical heritage

This assessment provides information on the archaeological and cultural heritage values of the study area to provide advice with regards to the Act and Regulations, and the Heritage Act, specifically the statutory and non-statutory obligations under these Acts.

It must be emphasised, however, that the report is not intended to meet the requirements of a formal assessment under the Aboriginal Victoria's (AV) guidelines.

1.8 Legislative framework

This report has been prepared in accordance with the followiing legislative requirements:

Environmental Protection and Biodiversity Conservation Act 1999

The *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the national legislation protecting the natural and cultural environment. The EPBC Act is administered by the Department of Environment and Energy (DEE). The EPBC Act establishes two heritage lists for the management of the natural and cultural environment:

- The National Heritage List (NHL) contains items listed on the NHL have been assessed to be of outstanding significance and define "critical moments in our development as a nation".
- The Commonwealth Heritage List (CHL) contains items listed on the CHL are natural and cultural heritage places that are on Commonwealth land, in Commonwealth waters or are owned or managed by the Commonwealth. A place or item on the CHL has been assessed as possessing "significant" heritage value.

A search of the NHL and CHL did not yield any results associated with the study area.

Aboriginal Heritage Act 2006 and the Aboriginal Heritage Regulations 2018

The Aboriginal Heritage Act 2006 (the Act) and the *Aboriginal Heritage Regulations 2018* (the Regulations) is the state legislation protecting Aboriginal cultural heriatge. In this instance it specifically relates to the following:

Cultural Heritage Management Plan (CHMP) (mandatory and/or voluntary) – is required for an activity if –

a) All or part of the activity area for the activity is an area of cultural heritage sensitivity (CHS); and

b) All of part of the activity area is a high impact activity.

In relation to the proposed Wind farm Facility (the study area), the presence of areas of CHS (registered Aboriginal places and designated landforms) within the currently defined study area that are covered by a high impact activity (land used to generate electricity including a wind energy facility) will trigger the requirement for a **mandatory CHMP**. An approved CHMP must be undertaken prior to the commencement of these activities.

Note however, that areas designated as CHS that have been subject to SGD are no longer areas of CHS. In addition, a mandatory CHMP would not be required if all areas of CHS can be avoided by all components of the proposed activity. The definition of SGD is provided in section 4.1.3 and would need to be verified through detailed on-site observations.

Cultural Heritage Permit (CHP) is required when a registered Aboriginal place is to be harmed by an existing or proposed activity. The CHP will involve consultation with the appointed Registered Aboriginal Party (RAP) as they are responsible for issuing the CHP. If issued, the CHP may contain a list of conditions relating to the approved harm of the Aboriginal place(s), including further archaeological investigation and consultation.

Risk Management

Regardless of the prescribed regulatory triggers outlined above, it is still an offence to harm Aboriginal heritage. Therefore, a risk assessment of a study area is typically completed to determine the likelihood of harm to Aboriginal places irrespective of previous ground disturbing activities, areas of cultural heritage sensitivity or the known presence of Aboriginal places. This is described in s.27 and s.28 of the Act.

If the risk of harm to Aboriginal heritage is likely, a **voluntary CHMP** would then be recommended.

Native Title Act 1993

The *Native Title Act 1993* provides for the recognition and protection of native title, as "It establishes ways in which future dealings affecting native title may proceed and to set standards for those dealings". It provides for, or permits, the validation of past acts, and intermediate period acts, invalidated because of the existence of native title.

On 30 March 2007 a Native Title consent determination recognised the Gunditjmara People's non-exclusive Native Title rights and interests over almost 132,000 hectares of vacant Crown land, national parks, reserves, rivers, creeks and sea north-west of Warrnambool, bounded on the west by the Glenelg River and to the north by the Wannon River (see section 1.6). The entire study area is surrounded by these areas and the proposed connecting underground power cable dissects the Cobboboonee National Park. It was not within the remit of this report to undertake consultation with the current Native Title holders, however this will need to occur in the future if the proposed activity is to proceed.

Heritage Act 2017

The *Heritage Act 2017* (Heritage Act) is administered by Heritage Victoria and the Heritage Council of Victoria. It is the Victorian Government's key cultural heritage legislation. This legislation identifies and protects heritage places and objects that are of significance to Victoria, including:

- Historic archaeological sites and artefacts.
- Historic buildings, structures and precincts.
- Gardens, trees and cemeteries.
- Cultural landscapes.
- Shipwrecks and artefacts.
- Significant objects.
- Objects associated with a place.

1.9 Limitations

The CHDDA report is broad scale in its scope and does not form a comprehensive archaeological survey of the study area. The site inspection was carried out over three days and the primary intent was to identify and inspect landforms within the wider study area. The site inspection did not actively seek to identify new Aboriginal or historic places or inspect previously registered Aboriginal or historic places based on the limited time and scope of the assessment. However, given the nature of the area, a number of new Aboriginal and historic heritage sites were identified across the study area. Preliminary reports for these sites were created and will need to be lodged with the appropriate authorities.

Not all individual properties within the study area were accessed during the site inspection. This was due either to no consent for access being received, or the property containing similar landform values to other accessed areas.

2 Background

A search of the Aboriginal Cultural Heritage Register and Information System (ACHRIS) which holds information on Aboriginal cultural heritage places registered on the Victorian Aboriginal Heritage Register (VAHR) was conducted by Lucy Amorosi on 21 March 2019.

Access to ACHRIS was granted on 21 March 2019 under Access number 6797.

2.1 Environmental background

2.1.1 Geology and Geomorphology of the Study Area

The surface geology of most of the study area south of the Portland-Nelson Road is comprised of Qxr Bridgewater Formation. To the south of this, between the Baxter Formation and the coast is Qdl1 Unnamed coastal dune deposit (Birch, 2003). This geological unit is formed by accumulated layers of Aeolian and littoral coastal sands located on the east coastline of Bridgewater Bay (Birch, 2003). To the south of the Kentbruck Plantation and east of Portland-Nelson Road are Qm1 Swamp and lake deposits surrounded by Qxm Molineaux Sand, and to the west at Mount Kincaid are Neo Newer volcanic Group – basalt flows (Figure 1, Map 3) (Welch, Higgins, Callaway, & (eds), 2011).

The Nelson Land-System

The geomorphology of the study area is broadly within the Western Plains unit and Coastal unit, known as the Nelson Land-System, which consists of limestone dunes and coastal plains (Map 4). The Nelson Land-System is formed as a thin strip next to the coastal dunes, namely the Discovery Bay and Long Swamp Land-Systems, north- west towards Nelson (Follett Land System) and eastwards as far as Kentbruck and Mt Kincaid (Kanawinka Land-System) where it then expands inland over the coastal plains (see section 4.1.3 – The Nelson Land-System and archaeological potential).

The geomorphology reflects the geological formations of the study area outlined above, with geomorphological unit (GMU) 6.2.3 Karst plains with depressions (Warrnambool) an undulating landscape situated between 10 and 70 metres above sea level over the Baxter Formation, GMU 8.5.2 sea level (Discovery Bay and Long Swamp Land-Systems) at the coastal dune deposit, GMU 6.2.1 Plains with Ridges (Follett Land-System) where the Moulineaux Sand and swamp deposits are located, where the land rises up to 140 metres above sea level towards Mount Kincaid, which is on GMU 6.1.4 Plains with well-developed drainage and deep regolith (Cressy) (Map 4).

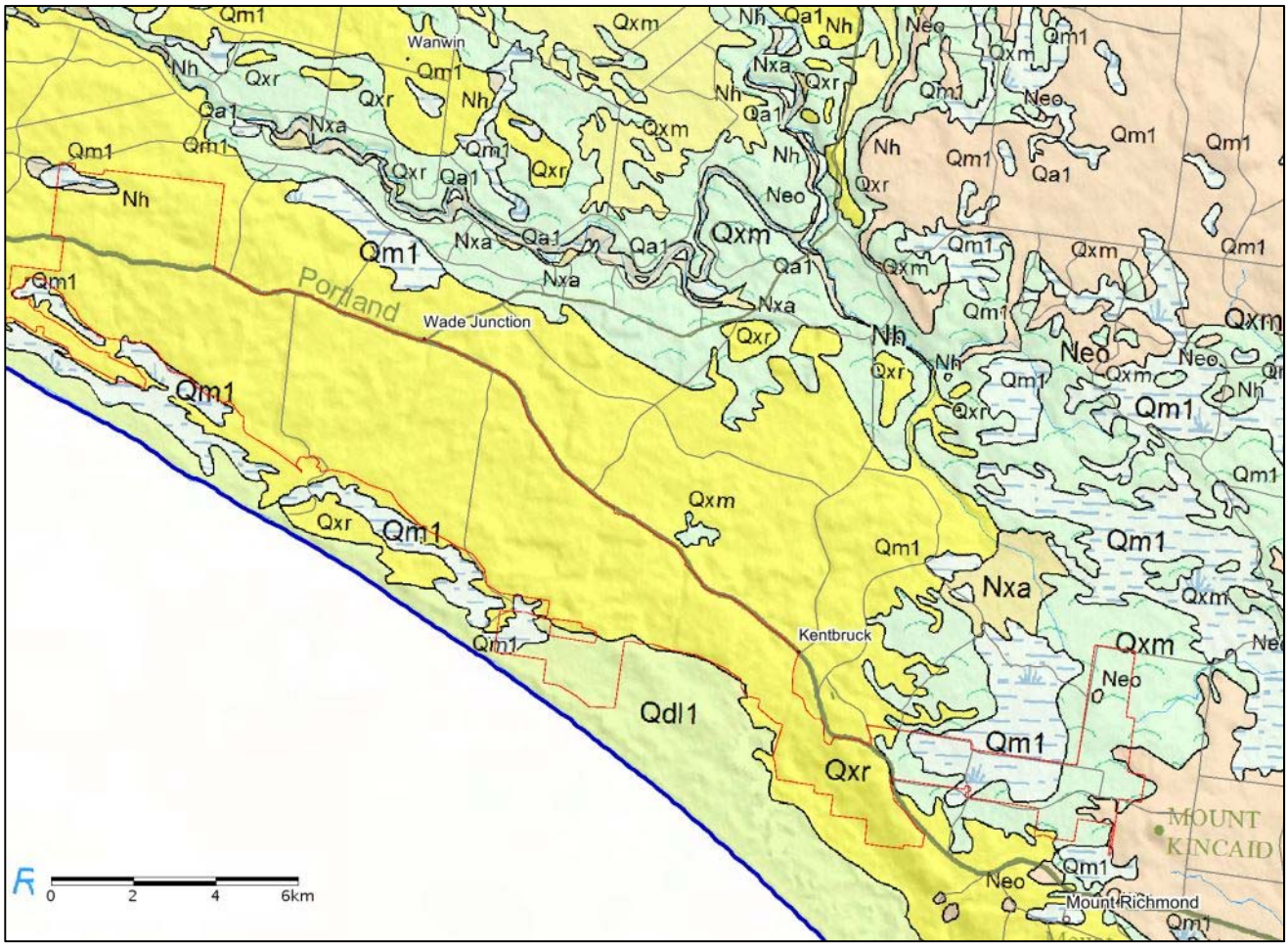
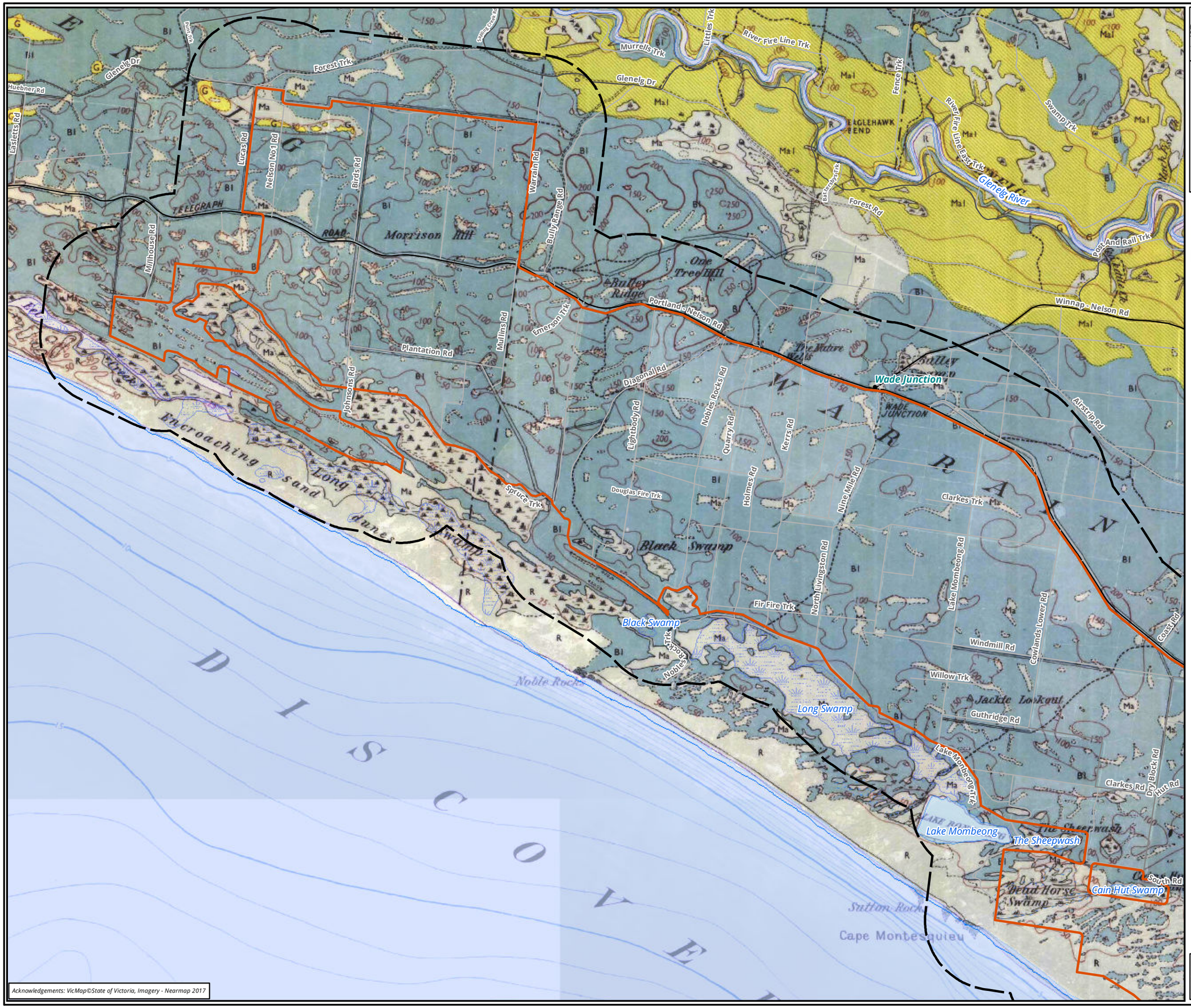


Figure 1 Geology of the study area



Legend

- Study area
- Activity Area 1 km buffer

Map 3.1 1:63K Geological map sheet

0 0.4 0.8 1.2 1.6 2

Kilometers
Scale: 1:50,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

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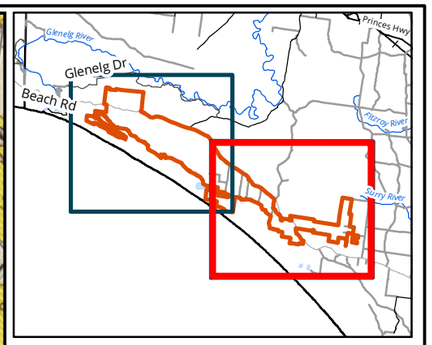

Legend

- Study area
- Activity Area 1 km buffer

Map 3.2 1:63K Geological map sheet

0 0.4 0.8 1.2 1.6 2

Kilometers
Scale: 1:50,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

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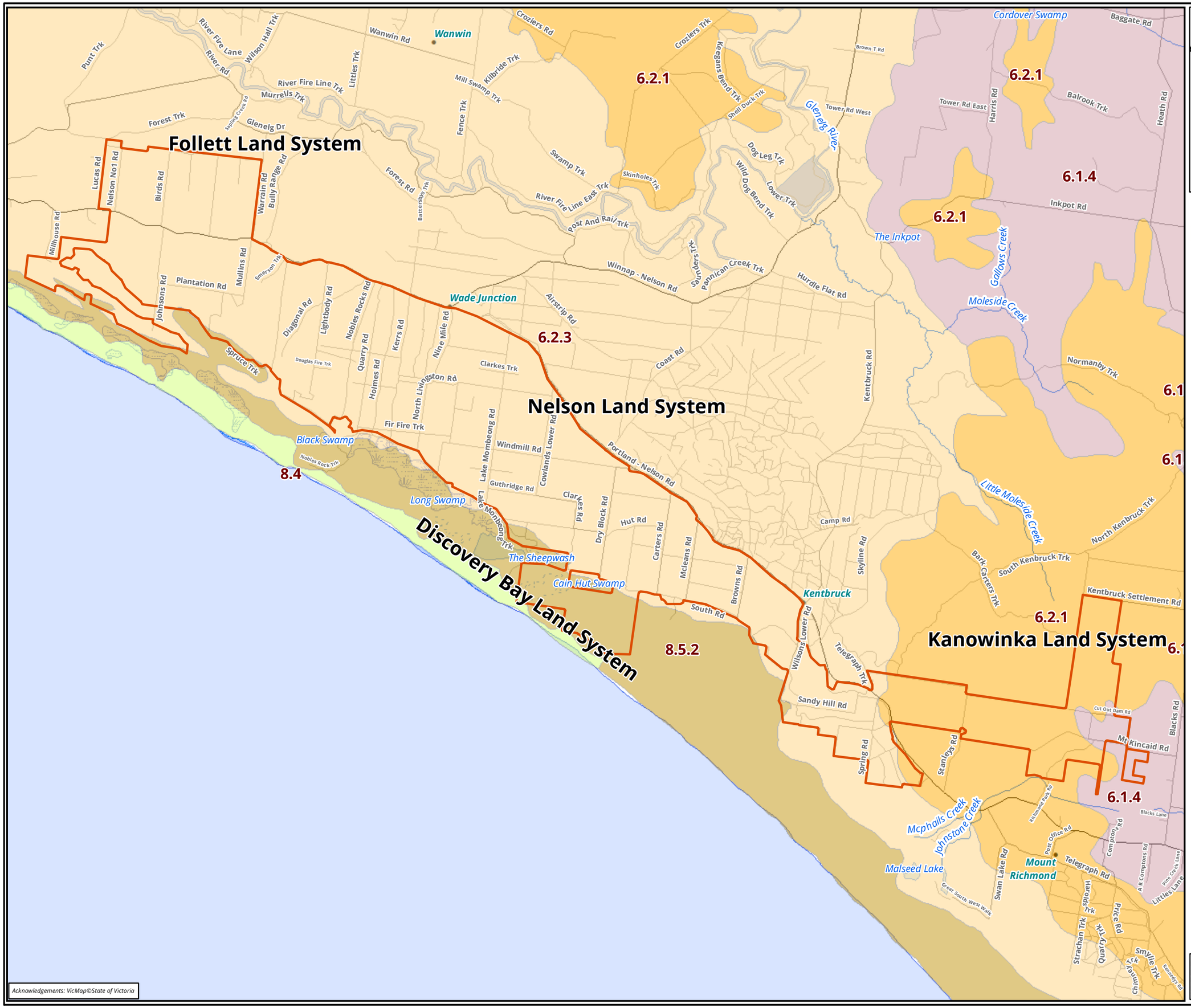

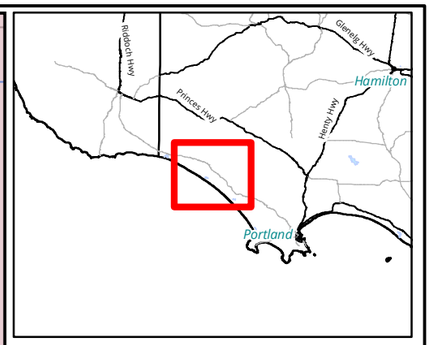

Legend

Study area

Geomorphological units

- 6.1.4 Plains with well developed drainage and deep regolith
- 6.2.1 Sedimentary derived plains with ridges
- 6.2.3 Karst plains with depressions
- 8.4 Coastal barriers
- 8.5.2 Transgressive dunes: Sea level

Map 4 Geomorphology and Land-Systems of the study area

0 1 2 3 4 5

Kilometers
Scale: 1:90,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

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2.2 Aboriginal heritage

2.2.1 Aboriginal places near the study area

A review of Aboriginal places recorded within and around the study area shows that within five kilometres of the study area there are 220 registered Aboriginal places, comprised of 317 components. These include:

- Shell middens (n=206, 65%).
- Artefact scatters (n=95, 30%).
- Earth features (n=12, 4%).
- Scarred trees (n=2, 1%).
- Aboriginal historic place and Aboriginal Ancestral Remains (burial (n=1, less than 1%)). The Aboriginal Ancestral Remains and Aboriginal historic place refer to Nelson Burial Ground (VAHR 7121-0361 & historical reference 9.2-14), an Aboriginal burial ground on a sand dune at Nelson adjacent to and including Nelson Cemetery Reserve, which was initially referred to on the 1851 Nelson town plan and an Argus article from 1924 where the discovery of Aboriginal skeletal remains was noted in the area (ACHRIS, 2019).

The broader region looked at above includes many Aboriginal places, specifically middens, within the GMU 8.4 Coastal barriers along the coast.

Aboriginal places within 1 kilometre of the study area were reviewed to more accurately assess the potential Aboriginal cultural heritage that may be located within the study area, which is primarily on the GMU's 6.2.3 Karst plains with depressions (Warrnambool) (in the east and centre), 6.2.1 Plains with ridges (to the west), and 8.5.2 Sea level (Discovery Bay) (south).

Within 1 kilometre of the study area there are 54 registered Aboriginal places, comprised of 90 components. As with the broader (within five kilometres of the study area) review above, these are primarily shell middens on the coastal barrier landform, followed by artefact scatters and earth features (Table 1). Earth features refer to hearths or burnt stone as evidence of a fireplace and are often located in blowouts in the coastal dunes and sea level landforms associated with shell midden and stone artefact material.

Table 1 Summary of Aboriginal places within 1 kilometre of the study area

Component Type*	Number[1]	Percentage[2]
Shell Midden	49	54
Artefact Scatter	32	36
Earth Feature	9	10
Total Components	90	
Total Registered Places	54	

* Registered Places may include more than one component. As a result the Total Components may be greater than the Total Registered Places.

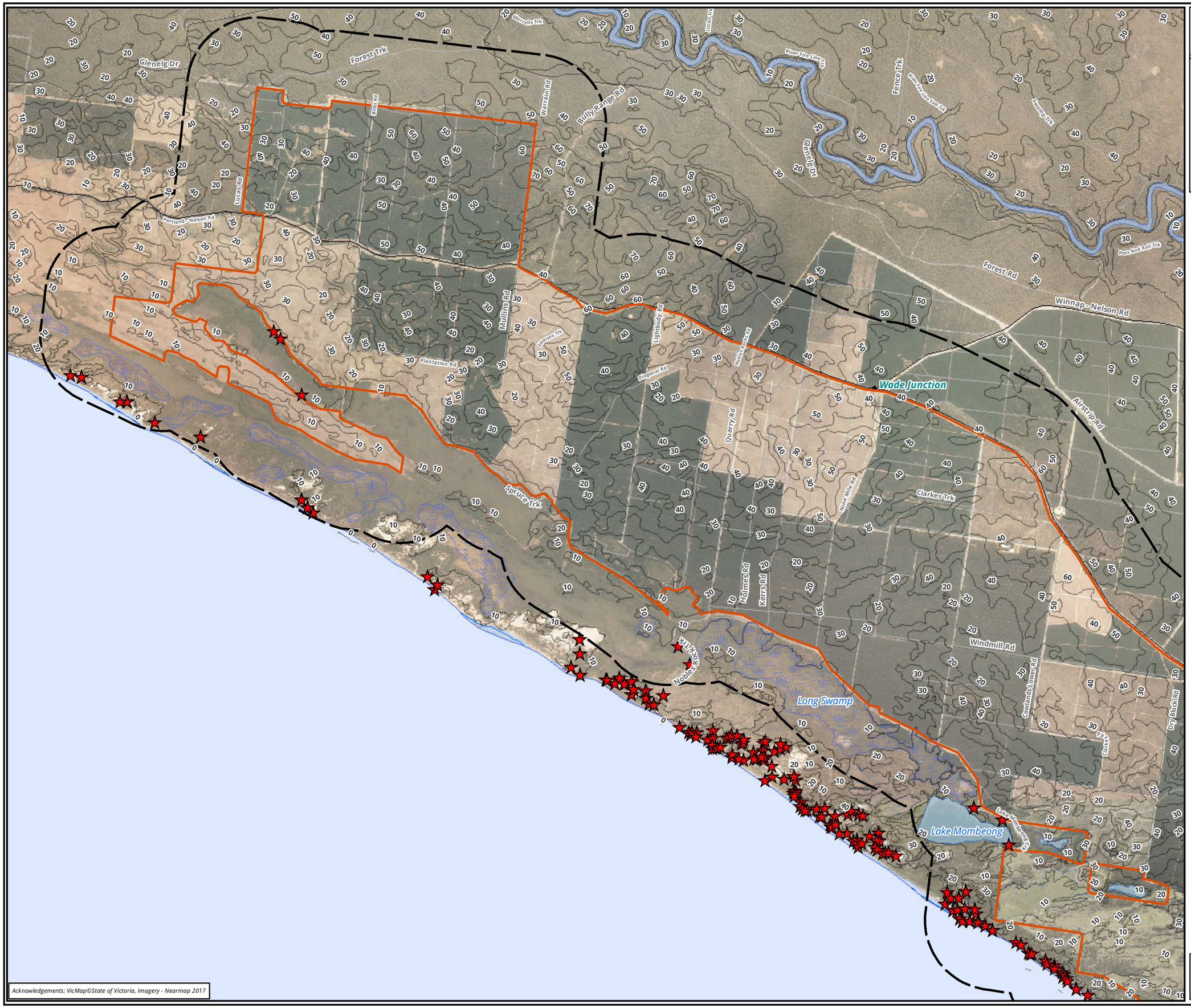
[1] Number of component types for the nominated area of land.

[2] Percentage of component types for the nominated area of land.

There are no Aboriginal places within the study area, however, there are six Aboriginal places recorded adjacent to the study area (Site 2 Sutton Rocks Survey Area, VAHR 7121-0022, Site 1 Sutton Rocks Survey Area, VAHR 7121-0060, Site 3 Sutton Rocks Survey Area, VAHR 7121-0061, Macfarlane's Swamp 1, VAHR 7121-0295, Macfarlane's Swamp 2, VAHR 7121-0296, & Macfarlane's Swamp 3, VAHR 7121-0297) within the same geomorphological units (see Table 2 and Map 5). It is possible, given that these Aboriginal places are between one metre and 100 metres from the study area boundary that on further investigation by subsurface testing, the boundaries of these Aboriginal places may extend into the study area.

Table 2 Aboriginal Places adjacent to the study area by geomorphological unit

Place Name & Number	Place Type	Description	Distance to Study Area
GMU 8.5.2 Sea level (Discovery Bay)			
Site 2 Sutton Rocks Survey Area VAHR 7121-0022	Artefact Scatter Shell Midden	A 120 x 2 metre artefact scatter and shell midden exposed in a road cutting on the top and side of a rise within a radiata pine plantation. Included worked flakes, decertification flakes and cores and rocky platform and sandy shore shell species. 90 m from Lake Momboeng.	20 m
Site 1 Sutton Rocks Survey Area VAHR 7121-0060	Artefact Scatter Shell Midden	A 30 x 2 metre shell midden with rocky platform and sandy shore species and one flint flake located on the side of a dune. Located at campsite 95 m from Lake Momboeng.	100 m
Site 3 Sutton Rocks Survey Area VAHR 7121-0061	Shell Midden	Possible midden (although noted it may just be collected shells by someone on holiday at the campsite) 8 x 7 m in low lying ground/depression 30 m from Lake Momboeng.	80 m
GMU 6.2.3 Karst plains with depressions (Warrnambool)			
Macfarlane's Swamp 1 VAHR 7121-0295,	Shell Midden	A 30 x 3 metre midden (rocky platform and sandy shore shell species) and flint artefact on dune exposed on a track adjacent to Macfarlane's Swamp.	1 m
Macfarlane's Swamp 2 VAHR 7121-0296	Artefact Scatter	One flint flake located on track adjacent to Macfarlane's Swamp.	3 m
Macfarlane's Swamp 3 VAHR 7121-0297	Artefact Scatter	One flint flake located on perimeter fence adjacent to Macfarlane's Swamp.	40 m



Legend

- Study area
- Activity Area 1 km buffer
- VAHR place

Map 5.1 Aboriginal places within close proximity to the study area

0 0.5 1 1.5 2 2.5

Kilometers
Scale: 1:50,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

N

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Matter: 29581,
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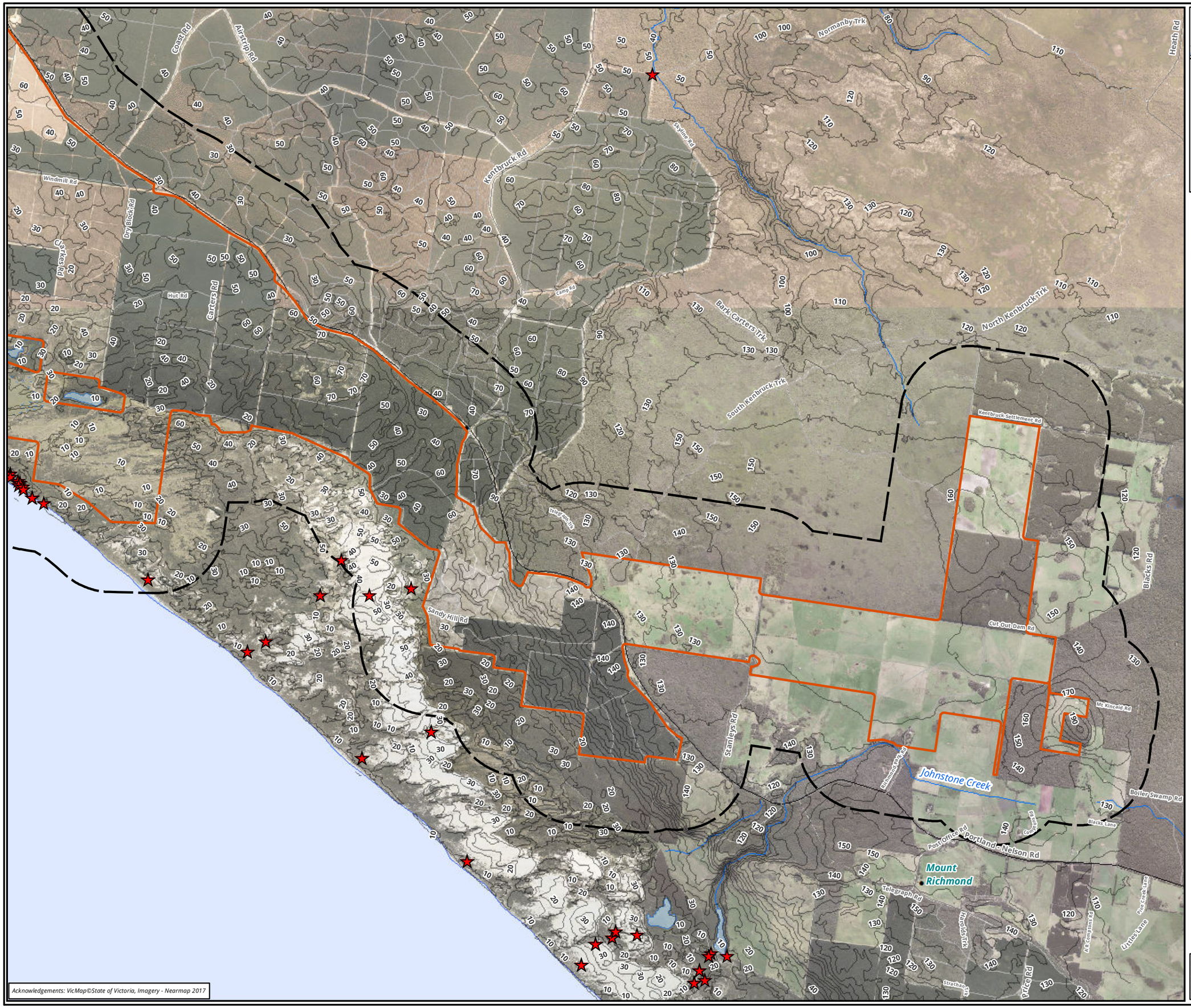
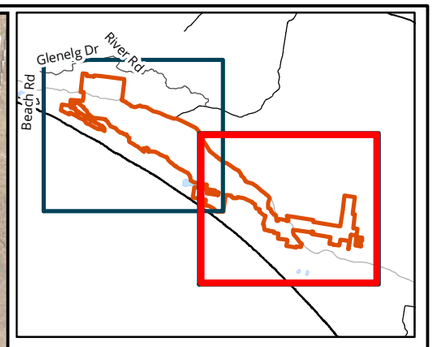
Acknowledgements: VicMap©State of Victoria, Imagery - Nearmap 2017





Legend

- Study area
- Activity Area 1 km buffer
- VAHR place

Map 5.2 Aboriginal places within close proximity to the study area

0 0.5 1 1.5 2 2.5

Kilometers
Scale: 1:50,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54

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2.2.2 Previous Archaeological Assessments

Several regional archaeological investigations have been completed around Discovery Bay, however, only two investigations within or adjacent to the study area have been completed since 2000. No archaeological studies have been completed in the area since the introduction of the Act. No CHMPs have been completed within 5 kilometres of the study area, although this is not representative of a lack of subsurface material.

- **Godfrey** (1980) conducted large scale systematic archaeological surveys of the dune systems along the south- western Victorian coastline at Discovery Bay. The survey transects were focused on areas where there was little ground vegetation and significant erosion had occurred. The large-scale survey identified a number of shell middens and shell scatters, probably from deflation events, across the entire area. A small number of stone tools were also identified, particularly along the south-west margins of barren dunes. A number of the Aboriginal places have been radiocarbon dated within the wider region, providing a timeframe for Gunditjmara occupation of the area. Ten middens along the wider Discovery Bay area have been dated by **Godfrey** (2000, pp. 40-41) to between 360 BP and 8,490 BP. To the southeast in the Bridgwater Bay area **Lourandos** (1983, p. 83) obtained dates as far back as 11,400 BP near the base and 450 BP at the top.
- **Head** (1987) assessed the formation of the coastal wetland system at Discovery Bay and how the ecosystems would have changed over the Holocene period. Head noted that Discovery Bay is a long sandy beach on a high energy coastline backed by extensive dunes. Along the beach are outcrops of Pleistocene calcarenite. The sea levels along the coastline stabilised by 6000 BP, with erosion beginning at 4000 BP. Prior to 6000 BP the post glacial sea levels rose and formed the swamps around Long Swamp, Bridgewater and Boomer Swamps. Between 6000 and 4000 BP, with the sea level stabilising, Pleistocene calcareous sediments built up sandy dunes on the coast line. During this period Long Swamp was still connected to the Glenelg River estuary, and by 5900 BP Casuarina woodland became the dominant vegetation at Long Swamp.

  From 4000 BP to the Present dune building stopped and erosion would have begun; advancing dunes would have overridden seaward swamps by 3800 BP near Shipwreck Rock. The implications for these changes in the coastal wetland system for Aboriginal people in the area were discussed by Head (1987, pp. 446-452), the most relevant aspects are discussed here.

  The high energy coastline of Discovery Bay would have provided sandy beach molluscs (Donax deltoids & Donicilla nitidia), but fish would not have been as accessible due to higher labour input and risk factors. The most important resource aside from food at Discovery Bay would have been flint nodules, a valuable raw material in the area. The productivity of estuaries, swamps and marshes are high, and when Long Swamp changed to an extensive freshwater swamp around 4000 BP this productivity would have increased to provide an abundance of resources and fresh water. Given the sheer size of Long Swamp, Head (1987, p. 451) believed the change in productivity at the swamp would have meant an increase in productivity for the entire Discovery Bay region. The proximity of Long Swamp and surrounding swamps would therefore likely have impacted the availability of resources available to Aboriginal people occupying the study area.
- **Leubbers** (2001) prepared an archaeological assessment of a 120 square kilometre Petroleum Exploration Tenement (PEP 151) west of Portland, which included the eastern part of the current study area. During the survey, two large artefact scatters were recorded close to permanent water, Little Moleside 1 (VAHR 7121-0288) and Wright Swamp 1 (VAHR 7121-0289). Large nodules of marine flint were recorded at both places indicating that the flint was transported to these places from either Discovery Bay beaches or from karst formations in the west (Leubbers, 2001). If this is the case people would have had to travel through, or close to, the current study area to access the marine flint utilised at these places.

- **Godfrey** (2002) conducted a survey of Crown land at McFarlane's Swamp and nearby dunes between Long Swamp and Discovery Bay beach. Godfrey's study area was immediately adjacent to the current study area. Three of the Aboriginal places were recorded on the perimeter of McFarlane's Swamp (Macfarlane's Swamp 1 to 3, VAHR 7121-0295 to 7121-0297) between 1 metre and 40 metres from the current study area. In addition to these Aboriginal places, Godfrey recorded five places (Shipwreck Rock, sites 1 to 3, VAHR 7121-0298 to 7121-0300, White Sands Outlet West, Sites 1A and 1B, VAHR 7121-0301 & 7121-0302) on the coastal dunes between Long Swamp and the coast of Discovery Bay.

  The places recorded around McFarlane's Swamp are isolated finds of flint artefacts with cortex, with VAHR 7121-0295 also containing fragmented Donax and Turbo shell. In contrast, the places recorded along the coast of Discovery Bay, all behind the foredunes, comprised long middens. Shipwreck Rock, sites 1 to 3 (VAHR 7121-0298 to 7121-0300) were between 57 metres and 150 metres, with thousands of shell species, primarily Turbo and Austromytilus, and 100 or more stone artefacts, primarily flint decortification flakes. Two or three flint knapping areas were identified at Shipwreck Rock places, as was a hearth. At the White Sands Outlet West sites 1A and 1B (VAHR 7121-0301 & 7121-0302) archaeological material extended parallel to the coast behind the foredune for 250 metres. Within these two places (which were recorded separately for convenience) there were hundreds of flint artefacts (again, mainly decortification flakes), thousands of shells (primarily Donax at VAHR 7121-0301, and Austromytilus at VAHR 7121-0302, but also Cellana, Turbo, Thais and Chiton) and 17 ovens.

  Godfrey (2002, pp. 11-12) radiocarbon dated shell from three of these places:

  - VAHR 7121-0298, Midden 1, Austromytilus eroding from lends of grey sand soil horizon: 2924+59 BP
  - VAHR 7121-0300, Midden 1, Turbo in unconsolidated sand: 481+48 BP
  - VAHR 7121-0301, Midden 3B (Cellana) 2288+53 BP, Midden 3A (Turbo) 1985+48 BP, Oven 1 (charcoal) 1484+61 BP, Midden 2 (Austromytilus) 1428+50 BP, and Midden 1 (Donax) 1251+46 BP

The findings from Godfrey's (2002, p. 14) assessment supplemented earlier studies of Discovery Bay and showed that middens in unconsolidated calcareous dunes would be younger than 3,000 years, and that most shell middens at Discovery Bay would be behind the beach. The findings also showed that freshwater swamps, such as McFarlane's Swamp, were important for food and material resources as evidenced by shell being carried inland from the beach to these areas.

The above summaries indicate that the area surrounding the study area is of moderate archaeological sensitivity for surface Aboriginal places to be identified. However, the lack of subsurface material is not a result of the material being absent in the area, but rather a complete lack of subsurface investigation in the area. This is also reflected by the lack of archaeological investigation that has been carried out since the introduction of the Act.

2.2.3 Ethno-history and post contact history

The study area and much of south western Victoria lies in the traditional country of the *Dhauwurd wurrung*, also called the Gunditjmara. Ethnographic sources suggest that this group was composed of 56 separate clans (or named groups) based on local language dialects (Barwick, 1984; Clark I. , 1990; Muhlen-Schulte, Watt, & Brown, 1995). Three named groups occupied the lands within and near the study area, these are: *Narcurrer gundidj*, located southwest of Crawford River, *Tarrerwung gundidj* at the mouth of the Glenelg River near present day Nelson, and *Tarngonene wurrer gundidj* at Surrey River (Clark I. , 1990, pp. 55, Fig 3).

Coastal *Dhauwurd wurrung* clans probably began encountering European whalers and sealers as early as 1810 (Debney & Cekalovic, 2001; Wood, 1999). The consensus of most commentators of this early contact period is

that encounters were seasonal (as the whalers and sealers were present only during the winter whaling season) and often violent (Debney & Cekalovic, 2001; Schell, 2000). This initial interaction also brought smallpox to the *Dhauwurd wurrung*.

In 1834 permanent whaling operations and concerted efforts at pastoralism by the Henty family began in the Portland area. The result of increased contact was sustained violence against the *Dhauwurd wurrung* clans, including the 'Convincing Ground' massacre of the mid-1830s perpetrated by whalers against a local gundij clan (Clark N. , 1994). In response to the violence and systematic pastoral dispossession of their traditional lands, the Dhauwurd wurrung mounted a guerrilla war against the Europeans. The Dhauwurd wurrung apparently used the stony rises as a refuge and base as they organised raiding parties and assaults against European interests. These activities took a heavy toll on pastoral stock through 'theft' and spearing, and resulted in many deaths on both sides during a period that has come to be known as the 'Eumeralla War' (Debney & Cekalovic, 2001; Clark I. , 1990; Schell, 2000). In 1839 an Aboriginal Protectorate Scheme was established in Victoria; the Protectorates provided religious instruction, rations, homes and medical care to Aboriginal people whilst recording population information (Broome, 2005). Official inquiries into the welfare of Aboriginal people were held in 1849 and again in 1858. Although informants at the inquiries remarked on the rapid fall in the Aboriginal population, it was several years before any action was taken. The latter inquiry led to the formation of the Aboriginal Protection Board in 1860 which encouraged Aboriginal people to move onto reserves (Edwards, 1988). In 1869, the Aborigines Act was passed to give the Governor of Victoria power to dictate where Aboriginal people could reside, what activities they could undertake on and off reserves and the authority to take charge of Aboriginal children (Edwards, 1988).

By the 1850s, however, the Gunditjmara resistance had been crushed and the remaining Aboriginal population was relocated to missions, reserves and protectorate stations. Today many *Dhauwurd wurrung* / Gunditjmara continue to live in Portland, Heywood and surrounding areas in the post-European colonial version of their traditional lands.

2.3 Historical heritage

2.3.1 Historical places and reports

A search was undertaken on 29 March 2019 of recorded historical (non-Aboriginal) cultural heritage records near the study area. The search was undertaken via the Heritage Victoria HERMES online database (HERMES, 2015) which includes the following sources:

- Victorian Heritage Register and Inventory.
- National Heritage List and Commonwealth Heritage List (Australian Government Department of Environment and Water Resources).
- Local Council Heritage Overlays and/or Planning Schemes.
- Register of the National Estate (Australian Heritage Council).
- National Trust Register (National Trust Victoria).

The above sources did not identify any previously recorded historical places or features within the study area.

2.3.2 Land Use History

Europeans began noting the Discovery Bay and Portland area during the first few years of the 19th century. Francois Peron and Matthew Flinders both sailed past Bridgewater Bay in April 1802, reporting 'barren or partially vegetated dunes' (Godfrey M. , 2000, p. 6).

The first intensive European occupation of the area is attributed to the Henty family during 1835. The Henty family quickly established a sheep station with associated agriculture on Cape Bridgewater before pressing their pastoral interests further inland. The twin impetus of the whaling/sealing and pastoral industries brought an influx of population and further pastoral and agricultural expansion followed with wool, mutton, tallow, beef, dairy produce and potatoes being the major exports from the region in the early 1840s (Debney & Cekalovic, 2001).

The study area is situated within an area known as Kentbruck, which takes its name from the Old English word 'kant' meaning headland or corner and 'bruch' meaning swamp (Bennett, 1997, p. 36). The study area is on the boundary of the Settled Districts. In April 1842, Gideon, Thomas and William Lang arrived upon the shores of Discovery Bay and took up a licence for 151,000 acres between the Glenelg River and Kentbruck. They named the western section Lake Moniboeng (after the Indigenous name for beautiful sheet of water) (Learmonth, 1970, p. 107) and eastern section Kentbrush (No. 160). Both runs were licensed 18 months before the 1847 NSW OIC (Spreadborough & Anderson, 1983). The Lake Moniboeng licence changed hands several times, to well-known south- west Victorian families (McLeans, Egans and Mathesons), before it was cancelled in 1876 (Learmonth, 1970, p. 108).

The study area is situated in the south- west of Victoria in the parishes of Glenelg, Warrain and Kentbruck in the County of Normanby (see Figure 2, Figure 3, Figure 4, Figure 5 and Map 4). The Portland-Mt Gambier (Portland-Nelson) road was surveyed by Tyers in 1842. At that time the road went from Bridgewater Lakes, close to the coast following the low country behind the sand hills, then between Lake Moinboeng, Long Swamp and the primary dunes to the Glenelg River ford at Nelson (Learmonth, 1970, p. 108). With the advent of the overland telegraph line in the 1850s, this road was disused in favour of a track made by the telegraph linesmen for transportation of materials and equipment. The area was extremely isolated with few facilities or conveniences (Bennett, 1997, p. 36). Land in the study area within the Glenelg parish was purchased from 1885 through to 1950, with all purchases between 1940 and 1950 being Allotments 55, 56, 57 and 59 to the north of Portland-Nelson Road to the west and east of Bird Road (Department of Crown Lands Survey, 1966) (Figure 3). While some parcels of land sold earlier, much of the allotments in Warrain parish sold during the late 1930s to the mid-1940s (Figure 5).

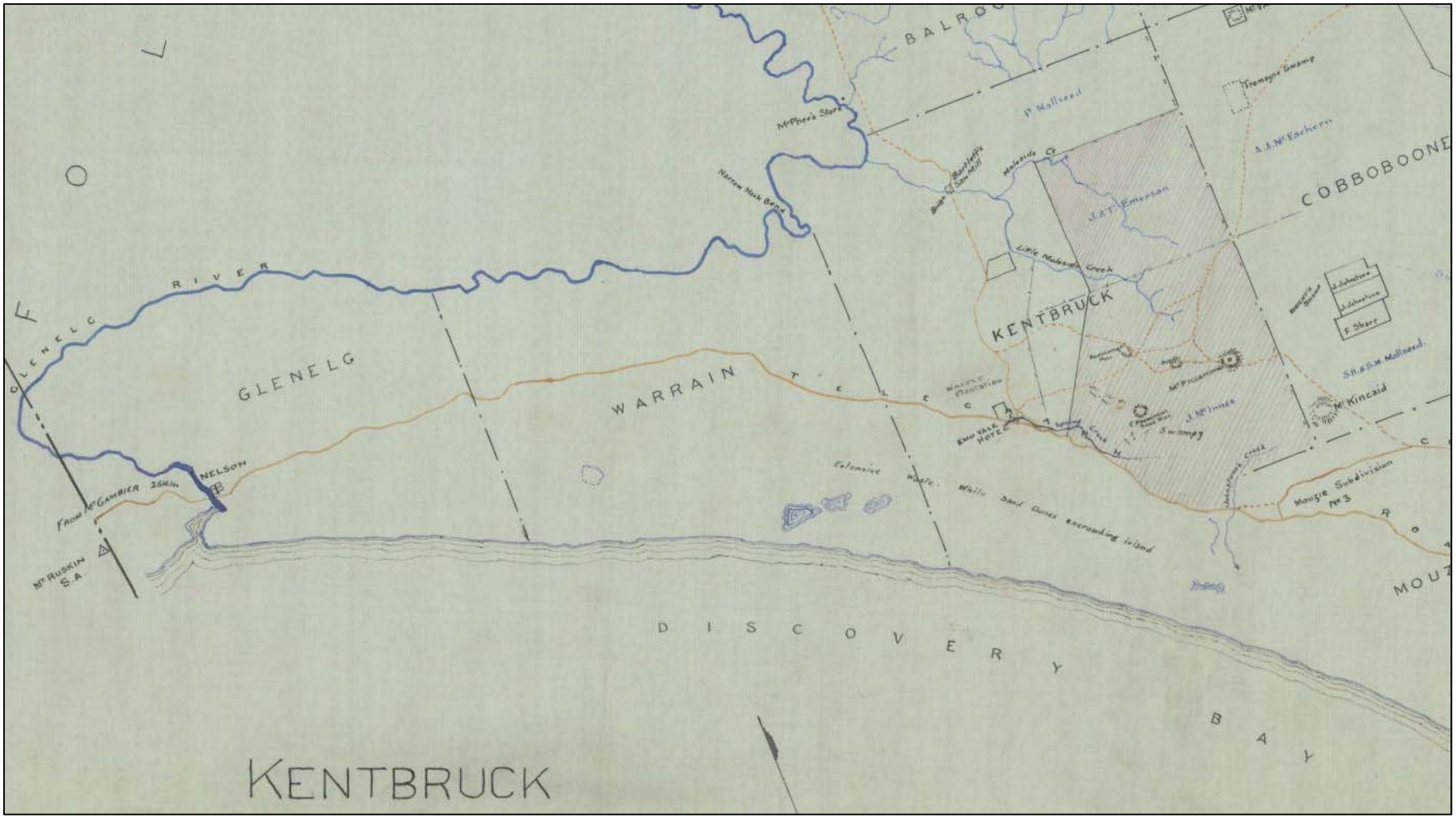


Figure 2 1937 Plan of Kentbruck Locality showing parishes and historic places of interest (Public Record Office of Victoria, 1937a)

Figure 3 Parish of Glenelg, Counties of Follett and Normanby (Department of Crown Lands Survey, 1966)

Figure 4 Warrain Parish Plan 1913 showing Long Swamp and Black Swamp (Department of Crown Lands Survey, 1913)

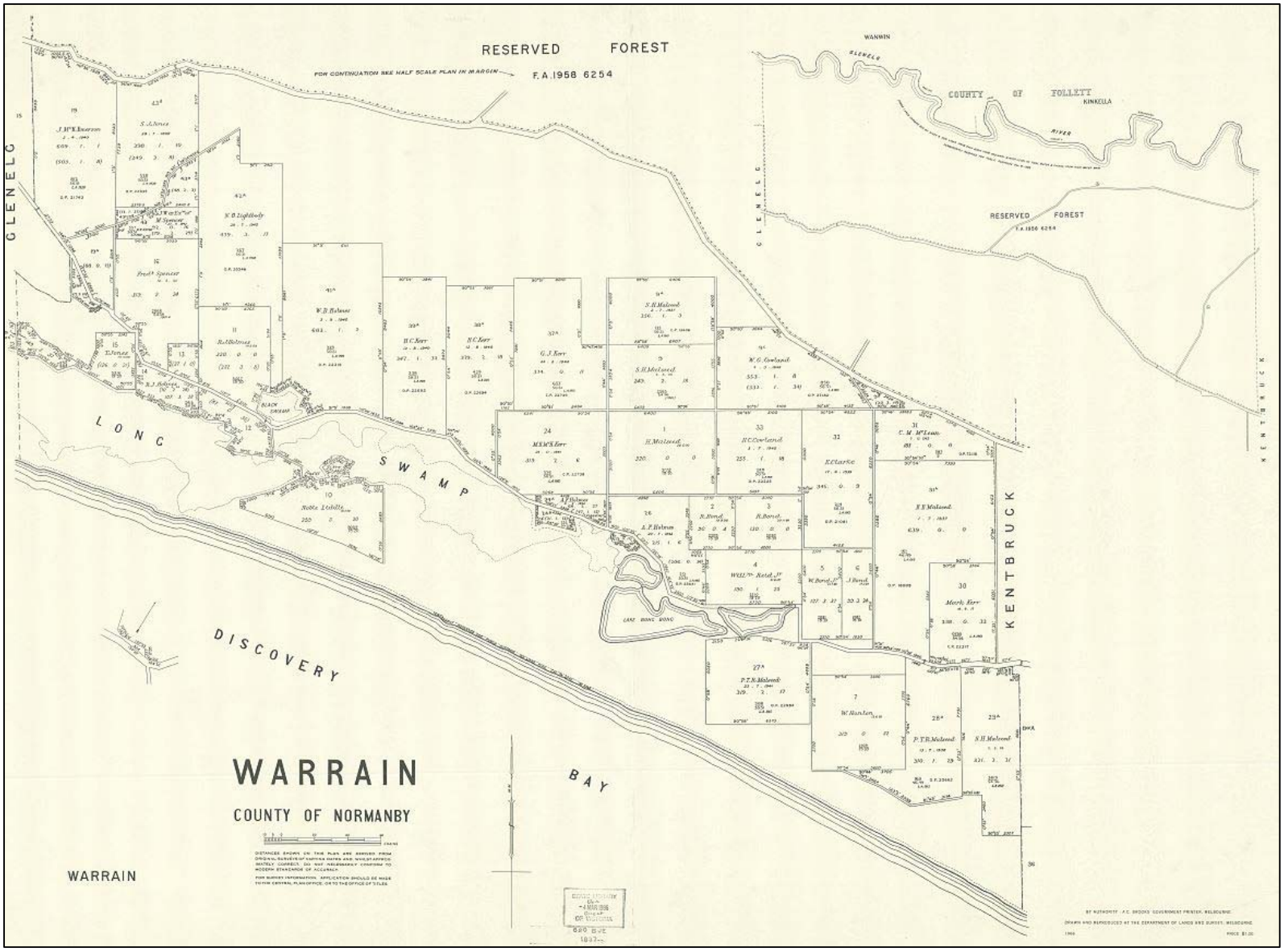
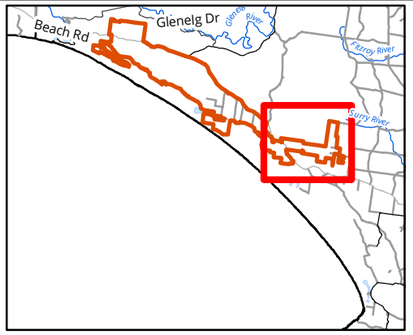


Figure 5 Warrain Parish Plan 1966 showing mid 1940s Land Purchases (Department of Crown Lands Survey, 1966)



Legend

- Study area
- Activity Area 1 km buffer

Map 6 Historical Plan of Kentbruck

0 0.3 0.6 0.9 1.2 1.5

Kilometers

Scale: 1:30,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

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Apart from the small areas of acid white sand, the agricultural and pastoral potential of the Nelson Land-System was considered to be high in the early days of settlement. Some of the oldest farming areas were on the long strip of limestone mapped as the Bridgewater sub-system (see further detail in section 3.4), together with some of the orange sands. The ruins of old sandstone cottages can still be seen within the area and study area (see Figure 6) (Map 7).

Figure 6 One example of a ruined sandstone cottage within the study area – photograph taken from Plantation Road at the western end of the study area

The decline of some of these areas from prosperous mixed farming to virtual abandonment is probably the result of exhaustion of the meagre supplies of available nutrients, including trace-elements, the prevalence of "coastiness" in sheep and cattle, (a disease brought on by deficiency of cobalt) and infestation by rabbits.

As early as 1878 James Johnstone attempted to obtain a licence to sell alcohol from his home in the area, which was unsuccessful at that time but was later issued in 1882. The establishment became known as the Kentbruck/Emu Flat Hotel (see Figure 7, Figure 8 and Map 7). In 1911, the Lieutenant Governor of Victoria, Sir James Thomas Gibson-Carmichael and his party lunched at the hotel during a visit to the area. It was reported then to have been constructed from palings and slab walls and bare hardwood floors. The licence was revoked in 1925 (Bennett, 1997, pp. 38-39). Local cattle sales occurred out front of the hotel adding to the importance of this site to the local community. The Kentbruck School was erected about 2.3 kilometres to the east of the Kentbruck/Emu Flat Hotel and was operated by Miss Sarah Wadmore of Portland for a few years (Map 7). This building comprised of a school room and two living rooms attached (Bennett, 1997, p. 36).

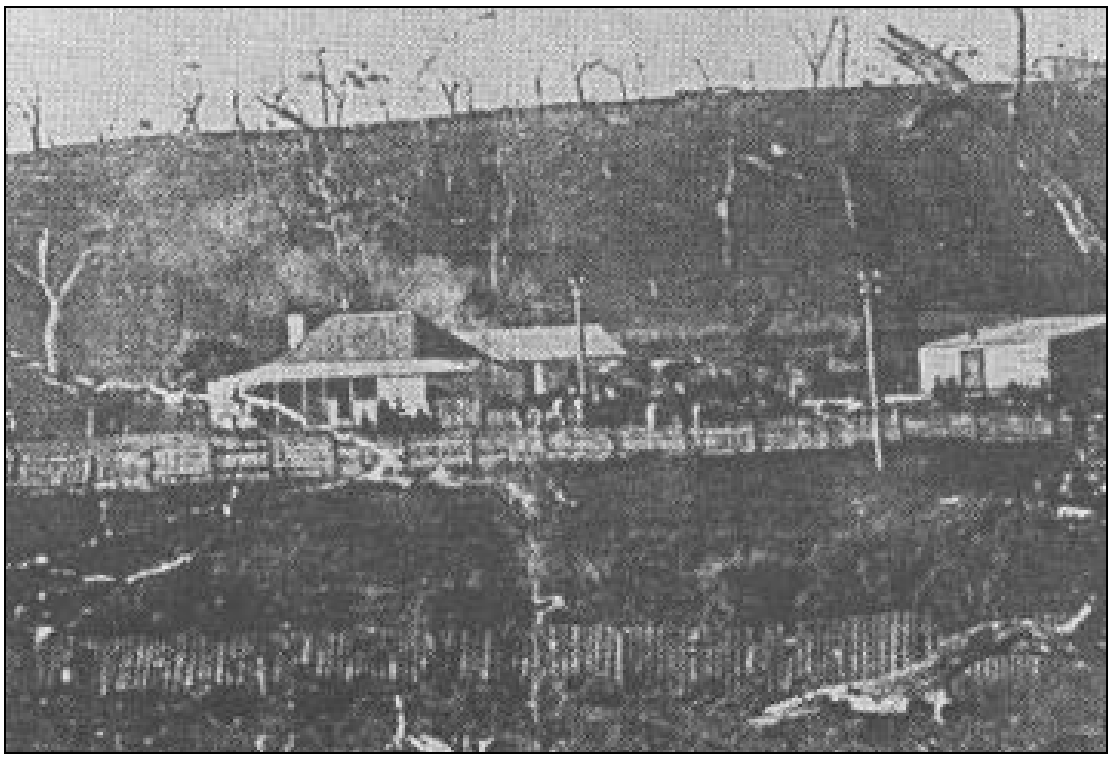

Figure 7 Emu Flat Hotel (Photo courtesy of Mrs D. Brown) (Bennett, 1997, p. 38)

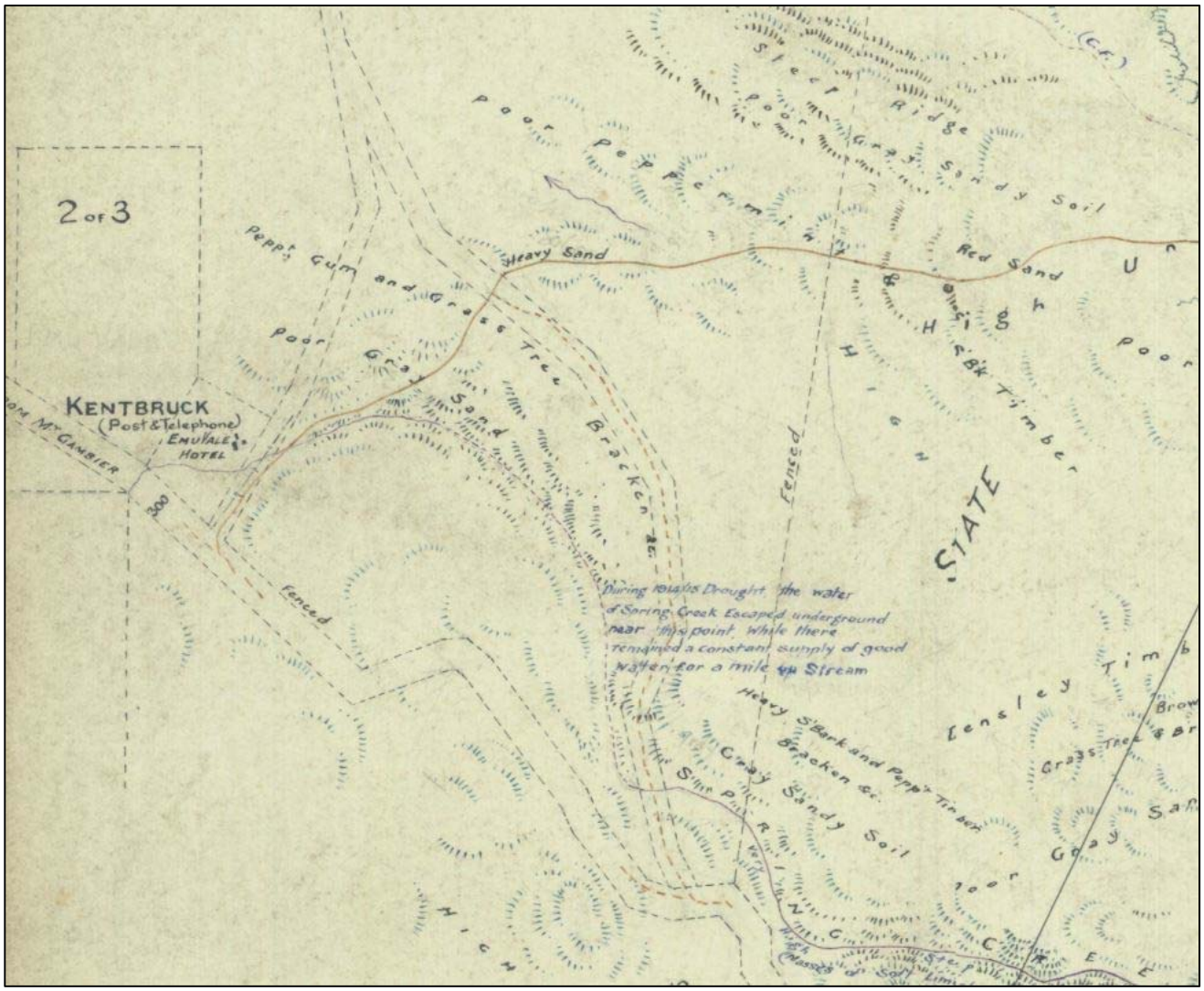

Figure 8 Detail of Historic Places and Land at Kentbruck from 1937 Detailed Historic Plan of Kentbruck (Public Record Office of Victoria, 1937b)

The main industry within the study area was agriculture which then turned to forestry, with the stripping of wattle bark beginning in the 19th century. The sealers at Portland Bay harvested black Wattle which became the first export of the area being shipped from Portland and Port Fairy in the 1830s and 1840s. At least one government financed plantation in Kentbruck was established as early as the 1870s, however it was burnt out before it could be harvested. In the 1920s the Forests Commission established exotic softwood species plantations in the region. Unemployed men were brought to the area in the 1930s to expand the plantations and many camps were established in the deep bush for these men. In the 1950s after the Second World War more planting of radiata pine took place at Kentbruck.


Glenelg Dr
River Rd
Punt Trk
River Fire Lane
Wilson Hall Trk
River Fire Line Trk
Murrells Trk
Littles Trk
Wanwin Rd
Kilbride Trk
Croziers Trk
Mill Swamp Trk
Brown T Rd
Harris Rd
Balrook Trk
Keegans Bend Trk
Shell Duck Trk
Tower Rd West
Tower Rd East
Forest Trk
Sapling Creek Rd
Glenelg River
Fence Trk
Swamp Trk
Dog Leg Trk
Wild Dog Bend Trk
Lower Trk
Heath Rd
Lucas Rd
Nelson No1 Rd
Birds Rd
Warrain Rd
Bully Range Rd
River Fire Line East Trk
Batterstop Trk
Skinholes Trk
Inkpot Rd
Millhouse Rd
Forest Rd
Post And Rail Trk
Saunders Trk
Pannican Creek Trk
The Inkpot
Gallows Creek
Winnap - Nelson Rd
Emerson Trk
Plantation Rd
Mullins Rd
Johnsons Rd
Spruce Trk
Diagonal Rd
Lightbody Rd
Nobles Rocks Rd
Wade Junction
Hurdle Flat Rd
Moleside Creek
Kentbruck Rd
Douglas Fire Trk
Quarry Rd
Holmes Rd
Kerrs Rd
Nine Mile Rd
Clarkes Trk
North Livingston Rd
Coast Rd
Normanby Trk
Portland - Nelson Rd
GLENELG SHIRE
Airstrip Rd
Black Swamp
Fir Fire Trk
Lake Mombeong Rd
Cowlands Lower Rd
Windmill Rd
Little Moleside Creek
Nobles Rock Trk
Willow Trk
Guthridge Rd
Clarkes Rd
Long Swamp
Dry Block Rd
Hut Rd
Carters Rd
Mcleans Rd
Browns Rd
Camp Rd
Skyline Rd
Bark Carters Trk
North Kenbruck Trk
Lake Monbeong Trk
The Sheepwash
Cain Hut Swamp
South Rd
Kentbruck
Wilsons Lower Rd
Telegraph Trk
South Kenbruck Trk
Kentbruck Settlement Rd
Sandy Hill Rd
Cut Out Dam Rd
Mt Kincaid Rd
Spring Rd
Stanleys Rd
Blacks Rd
Johnstone Creek
Richmond Park Rd
Blacks Lane
Mcphails Creek
Post Office Rd
Comptons Rd
A R Compton Rd
Mount Richmond
Malseed Lake
Swan Lake
Swan Lake Rd
Great South West Walk
Telegraph Rd
Littles Lane
Harolds Trk
Strachan Trk
Price Rd
Quarry Trk
Smylie Trk
Chimney Trk
Kennedys Rd
Fenton Trk
Acknowledgements: VicMap©State of Victoria
Legend
Study area
Historical Places
Former Emu Flat Hotel site
Former Kentbruck School site
Native Wells
Piccanninny Hill
Sandstone Cottage
Radnor Hwy
Glenelg Hwy
Princes Hwy
Henty Hwy
Hamilton
Portland
Map 7 Historical places within the study area – and for 500 metres surrounding
0 1 2 3 4 5
Kilometers
Scale: 1:90,000 @ A3
Coordinate System: GDA 1994 MGA Zone 54
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Newcastle, Sydney, Wangaratta & Wollongong
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2.4 Spatial Prediction Model

Further to the Aboriginal place prediction modelling, spatial modelling for Aboriginal heritage in the study area has been developed (see Map 8). To assess the potential of environmental features and landforms for Aboriginal cultural material, this spatial predictive modelling was undertaken in ArcGIS using Spatial Analyst tools to compare, analyse and overlay numerous environmental and topographic datasets. Four main datasets were considered during the modelling process. These are listed below and described in more detail in the following sections:

1. Proximity to natural water sources.
2. Existence of remnant vegetation.
3. Local high points in the topography.
4. Slope classes.

These layers are weighted and ranked according to an equivalent but arbitrary scale of 0-3, with '3' being areas most likely to support Aboriginal places and '0' being very unlikely to support Aboriginal places. Once the four component layers are added together into a single layer, zones of high, moderate and low archaeological potential were developed, comprising:

- Areas of high potential scored between 6-10 (shown as red),
- Areas of moderate potential scored between 3- and 5 (shown as yellow)
- Areas of low potential scored between 0-2 (shown as blue).

The results of the predictive modelling are shown on Map 8.

Areas with a low cumulative score have a lower likelihood of containing Aboriginal places, with blue being the lowest and red being the highest level of sensitivity.

It is important to note that the purpose of this model is to make some broad predictions about the study area based on generalisations to inform more detailed and targeted investigations. It cannot account for more specific phenomena which might actively contribute or detract from the area's suitability for Aboriginal places, such as areas which had ceremonial significance.

1. **Natural Water Sources**

The model uses the VicMap Hydro 1:25,000 vector watercourse lines and waterbody polygons datasets and applied the following processes:

- The watercourses and waterbodies are filtered to remove any man-made waterways as designated by the 'Origin' field of the VicMap data.
- The watercourses and waterbodies are buffered by 200 metres.
- The watercourses and waterbodies are merged into a single dataset.
- The water dataset is converted to a raster of grid size 25x25 metres.
- The raster cells are reclassified to an overall 'hydro score' by assigning a score of 5 to rivers, swamps, lakes and sections of streams mapped as an area rather than a centre line; a score of 4 to streams, 3 to pondages and 0 to all other areas.

2. **Modelled remnant vegetation**

The model uses the previous Victorian Department of Environment and Primary Industries (DEPI) modelled EVCs polygon dataset from 2005 as displayed on the Biodiversity interactive mapper. The following processes are applied:

- The polygons are converted to a raster of 25x25 metre cell size.
- The raster cells are reclassified to a 'Veg score' value by assigning a score of 3 to all areas containing remnant vegetation and 0 to all other areas.

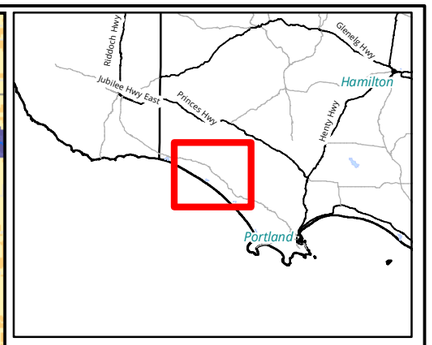
3. **Local high points in the topography**

- The DEM described above is converted into a flow accumulation model, showing the total catchment area for water flow at each point in the landscape.
- Areas of 0 flow are extracted into a separate layer. As they have no other land flowing into them, this means they stand above all other land in the immediate area.
- The 0 flow areas model is filtered so only a significant amount of connected land is considered to represent hills and ridgelines.

4. **Unsuitable slopes**

- A slope model was created using a 1 arc second (~30x30 metre cell size) Digital Elevation Model (DEM) acquired from Geoscience Australia.
- The slope model is reclassified into slope categories according to Speight's slope classes.
- Any slopes classified as being very steep or greater are assigned a negative value as these slopes are likely to be too steep to support Aboriginal places.

This predictive modelling acts as an initial guideline for designing further research strategies and identifies key points for consideration during the targeted inspection (see Map 8). The results of the Desktop Assessment including the predictive modelling presented in Map 8 indicate the potential for unidentified Aboriginal cultural heritage material to be present within the study area.



Legend

Study area

Cultural Heritage Sensitivity Model

High : 16

Low : -2

Map 8 Aboriginal Cultural Heritage Predictive Modelling within the study area

0 1 2 3 4 5

Kilometers

Scale: 1:90,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

N

Biosis Pty Ltd
Albury, Ballarat, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Matter: 29581,
Date: 13 May 2019,
Checked by: MT , Drawn by: DK, Last edited by: dkazemi
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Acknowledgements: VicMap©State of Victoria, Imagery - Nearmap 2017

3 Site Inspection

A targeted site inspection was undertaken on Monday 1, Tuesday 2 and Wednesday 3 April 2019 by Adam Black and Melanie Thomson, HAs, Biosis Pty Ltd. The inspection informs the results of the background research and identifies landforms and their archaeological potential based on the ground conditions and the predictive model.

During the targeted inspection, a targeted pedestrian survey across the study area was carried out. Field notes were taken recording the general condition and character of the study area, vegetation type, topography and areas of archaeological potential. Landforms and views of the study area were also recorded using digital photography.

It was not the aim of the site inspection to inspect or identify Aboriginal archaeological places. If places were encountered, these were recorded appropriately, as prescribed by Aboriginal Victoria (AV) (Department of Premier and Cabinet, 2016).

Rather than discussing each individual parcel of land, the inspection results presented in the following sections are discussed by landform, which is a much more informed approach considering that archaeological potential is often directly linked to these features.

3.1 Results

3.1.1 Ground surface visibility and ground surface exposure

Ground surface visibility was extremely low for about 90% of the study area due to vegetation litter from radiata pine plantations and dense grass on pastoral lands (see Figure 9 for examples of these two landforms).

Figure 9 Extremely low surface visibility in the radiata pine plantation and on pastoral land

However, on the extremity of the radiata pine plantation, along service roads and tracks and at paddock blow-outs within the study area, it was possible to evaluate the geology and geomorphology of the study area. This provided further insight into Indigenous archaeological potential. Examples of these landforms are shown in Figure 10.

Figure 10 Road/track side exposure on the extremity of the radiata pine plantation and a typical blow out within pasture

3.1.2 Disturbance

The study area has undergone some SGD through mechanical excavation. Areas that can be considered disturbed include the radiata pine plantation blocks, roads and/or tracks throughout the study area and various dams created within the paddocks for livestock use. These areas would have undergone ground disturbance during their construction, which may have either destroyed or removed, from context, any Aboriginal archaeological deposits.

Apart from these major disturbances, soil disturbance is gauged to have been relatively mild through areas of the study area, particularly road and/or track reserves, areas that remain pastured (livestock activity, ploughing and landscaping predominantly in the western and eastern ends of the study area) and areas left undisturbed due to swamps and water holes (across various locations within the study area). The areas between the plantation rows have not been subject to SGD. While it is considered that some areas of the study area are affected by SGD, most of the study area remains undisturbed.

3.1.3 Landscape systems and archaeological potential

As described in Section 2.1, the study area broadly sits within four main land-systems (Agriculture Victoria, 2019) (Map 4):

- Nelson Land-System.
- Discovery Bay Land-System.
- Follett Land-System.
- Kanawinka Land-System.

These land-systems are shown in Figure 11. A discussion of the results of the site inspection relevant to each land-system is provided in the following sections.

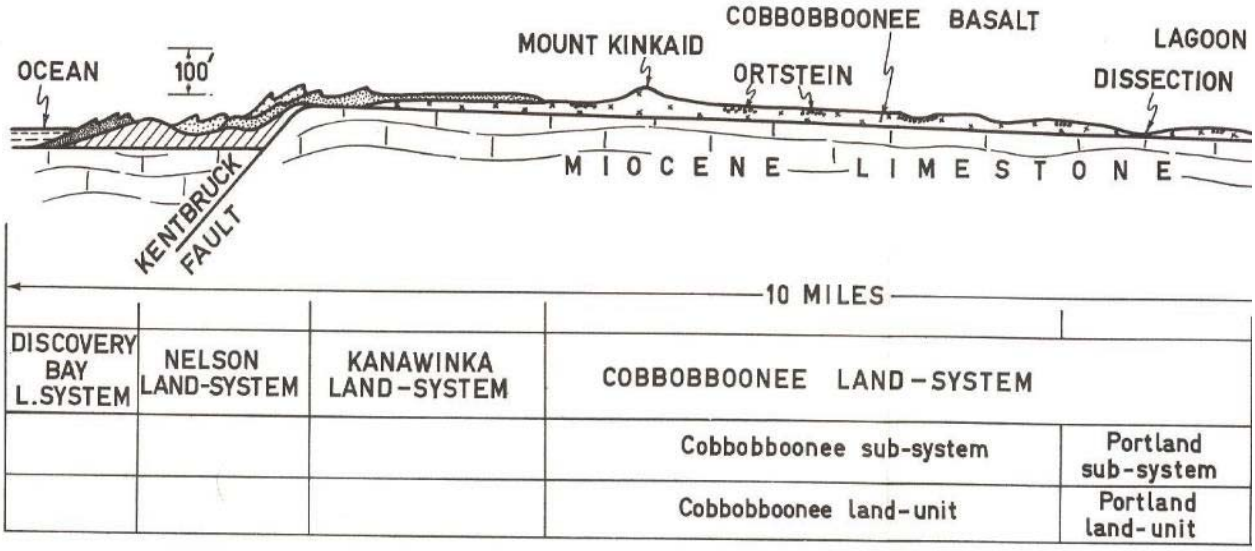


Figure 11 Landscape diagram showing the Discovery Bay, Nelson, Kanawinka and Cobbobboonee Land-Systems (note the Follett Land-System is not identified here, but can be seen as a transition between Nelson and Kanawinka (Agriculture Victoria, 2019)

The Nelson Land-System

The Nelson Land-System comprises of hardened dunes, limestone calcareous dunes, both orange and white sands and coastal plains (see Figure 12) (Map 4). Generally, the indurated calcareous dunes are adjacent to the present coastline except to the west of the Kanawinka-Kentbruck fault lines. Consequently, the Nelson Land-System is formed as a thin strip next to the coastal dunes, between Discovery Bay and Long Swamp Land-Systems and north- westerly towards the Glenelg River (and the Follett Land-System), and westward as far as Kentbruck, bordered by Mt Kincaid, where it then expands inland over the coastal plains. It can be broken down further into two sub-systems; Bridgewater (see Figure 13 and Figure 14) and Kentbruck (see Figure 15).

The Biosis field survey concluded that within most areas where orange soils have been exposed that are close to and/or within proximity to a water source, there is a high likelihood that Aboriginal cultural heritage material will be located within the Nelson Land-System. Furthermore, the field survey concluded that there is high archaeological potential throughout the entire Nelson Land-System.

The entire study area within the Nelson Land-System requires further archaeological and geological testing and consultation with Indigenous stakeholders.

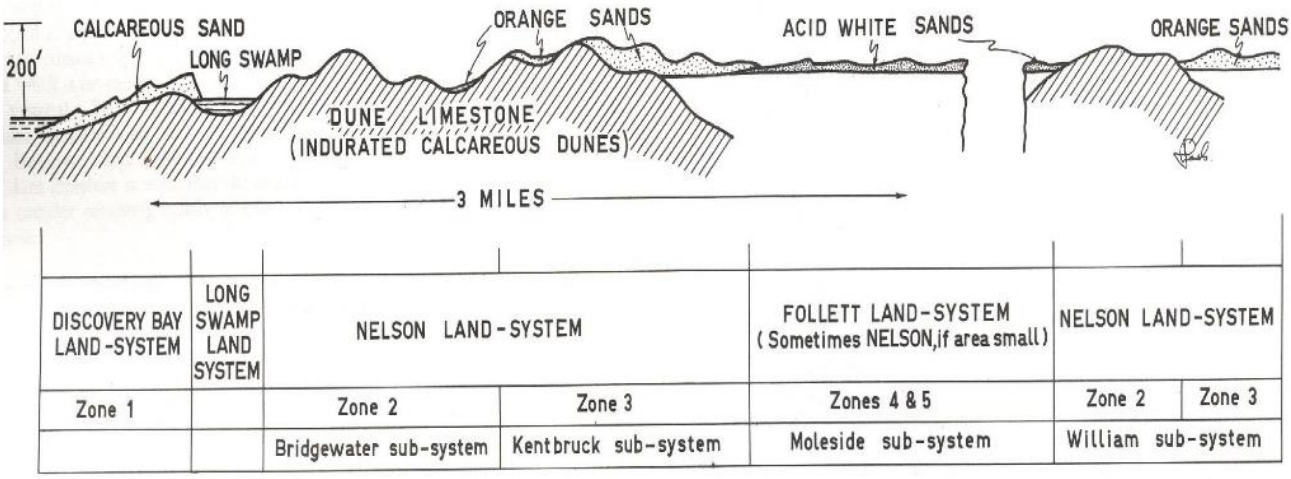


Figure 12 Nelson Land-System (Bridgewater and Kentbruck sub-systems) diagram showing Discovery Bay, Long Swamp and Follett Land-Systems (Agriculture Victoria, 2019)

Figure 13 The Nelson Land-System (transition Bridgewater and Kentbruck sub-system) and dunes that are not shifting, shown here planted with radiata pine plantations – view from central study area looking north-west

Figure 14 The Nelson Land-System (Bridgwater sub-system) with steep but smoothly rounded sand-dunes. This view highlights pastoral land and remnant she-oak vegetation – view north-west from Johnsons Road

Figure 15 The Nelson Land-System with steep but smoothly rounded sand-dunes. This view highlights the Kentbruck sub-system (orange soil) transitioning into the Follett Land-System (acid white sand) – view north-east on the northern side of the study area

The Discovery Bay Land-System

The Discovery Bay Land System is a distinct landscape, being covered in dunes made up very largely from finely-broken sea-shells, and a small proportion of quartz grains. The range of vegetation which grows in dunes is greatly restricted, due to the high pH values attributed to the materials and soils of this landscape.

The Discovery Bay Land-System contains three land-units as seen in Figure 16 (Map 4):

- Discovery Bay.
- Baudin.
- Tarragal.

Each of these units is differentiated primarily by the period during which they have been stable. The Tarragal land-unit is considered the most stable of the three, where stability may be destroyed in small patches in areas with thin topsoil. The Baudin land-unit is attributed with a more precarious stability, where any disturbance can create widespread destruction. The Discovery Bay land-unit has been noted as being in a complete state of flux, however parts of the shifting sand dunes within this land-unit are being stabilised by scattered areas of marram grass and shrub acacias (Department of Jobs, Precincts and Regions, 2019).

The Biosis field survey concluded that within most areas where orange soils have been exposed that are close to and/or within proximity to a water source, there is a high likely hood that Aboriginal cultural heritage will be located within the Discovery Bay Land-System.

Furthermore, the field survey concluded that there is a high likelihood of archaeological potential throughout the Discovery Bay Land-System, especially on:

- The eastern side of the dunes systems within the Discovery Bay land-unit adjacent to the Long Swamp Land-Systems (east of the study area) and where it meets the Nelson Land-System in the eastern end of the study area, especially in orange soils (see Figure 17). There is a high likelihood of locating shell middens (Figure 18), isolated artefacts and artefact scatters.
- The eastern side of dunes systems within the Baudin land-unit, adjacent to the Long Swamp Land-Systems (south-east of the study area) and where it meets the Nelson Land-Unit in the eastern end of the study area, especially in orange soils. There is a high likelihood of locating shell middens, isolated artefacts and artefact scatters (see Figure 19).
- The eastern side of dunes systems within the Tarragal land-unit, adjacent to the Long Swamp Land-Systems (south-east of the study area) (see Figure 20) and where it meets the Nelson Land-Unit (far eastern end of the study area) especially in orange soils. There is a high likelihood of locating shell middens, isolated artefacts and artefact scatters.

The entire study area within the Discovery Bay Land-System requires further archaeological and geological testing and consultation with Indigenous stakeholders to be more conclusive currently regarding archaeological potential.

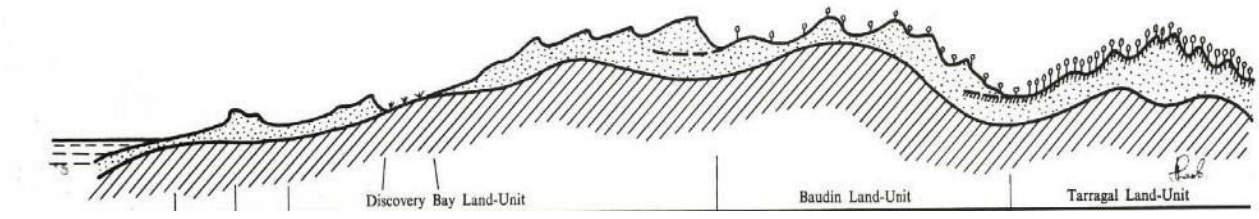


Figure 16 Discovery Bay Land-System diagram showing Discovery Bay, Baudin and Tarragal land-units (Agriculture Victoria, 2019)

Figure 17 Discovery Bay land-unit and drifting sands along with coastal scrub and radiata pine plantations from the southern end of the study area – view looking south-east from South Road

Figure 18 Discovery Bay land-unit and exposed road side blow out containing Aboriginal heritage, including a shell midden, stone tool scatter and charcoal

Figure 19 Baudin land-unit and dunes that are not shifting and typically covered by coastal scrub - view from central south side of the study area, Lake Monbeong Track looking south

Figure 20 Tarragal land-unit and typical blow-out exposing older orange soils – view south-west from northern end of the study area near Johnsons Road

The Follett Land-System and Kanawinka Land-System

The Follett (see Figure 21) and Kanawinka (see Figure 22) land-systems are comprised predominantly of acid white sands (Map 4). These two land-systems form a large area stretching from the study area near the coast at Kentbruck to the north and then north-west towards the border between Victoria and South Australia. Both are separated by fault lines, which separates the coastal plains from the higher platforms to the east (Agriculture Victoria, 2019).

The field survey and personal communication with a land owner in the eastern portion of the study area, concluded that there is a moderate to high likelihood of archaeological potential throughout the Follett and Kanawinka Land-System, especially on:

- The Follett Land-System, within orange soils in the transitional point between the Kentbruck land-unit, on rises and close to water sources. There is a high likelihood of locating isolated artefacts and artefact scatters (see Figure 23).
- The Kanawinka Land-System rises (including, but not limited to Piccanninny Hill (Map 7)) and close to water sources (including, but not limited to Johnstones Creek). There is a moderate to high likelihood of locating isolated artefacts and artefact scatters (see Figure 24).

The entire study area within the Follett and Kanawinka Land-System requires further archaeological and geological testing and consultation with Aboriginal stakeholders to be more conclusive currently regarding archaeological potential.

The Follett Land-System

The Follett Land-System is shown in Figure 23 and comprises an area located on the north-western end of the study area where dunes and sheets of acid white sands predominantly cover the Pleistocene and Holocene deposits of the coastal plain (see Figure 24) (Agriculture Victoria, 2019).

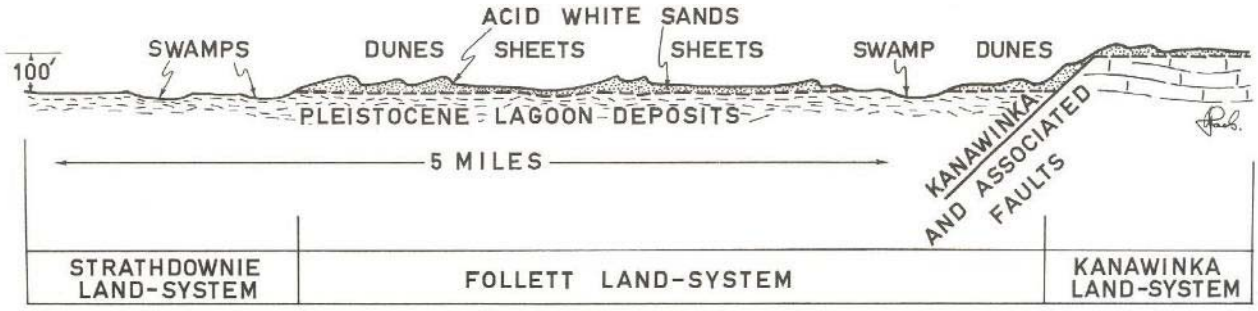


Figure 21 Follett Land-System diagram showing transition into the Kanawinka Land-System (Agriculture Victoria, 2019)

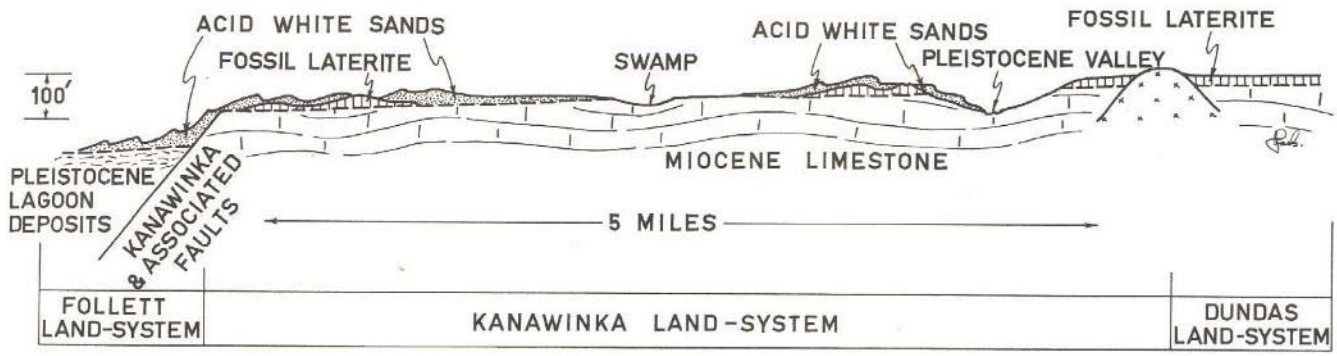


Figure 22 Kanawinka Land-System diagram showing the transition from the Follett Land-System (Agriculture Victoria, 2019)

Figure 23 Follett Land-System, and dunes with sheets of acid white sands covering the Pleistocene and Holocene deposits of the coastal plain, note the older orange sands exposed by blow-outs – view looking east in the north-western corner of the study area

Figure 24 Kanawinka Land-System (Kentbruck heath in the distance), highlighting some areas of acid white sand covering a relatively flat platform – view north from Piccanninny Hill in the far north-eastern corner of the study area

3.1.4 Aboriginal cultural heritage material

During the site inspection, a number of Aboriginal cultural heritage places were located including isolated stone artefacts (including flint scrapers, flakes and a bifacial hand axe, see Figure 25), shell middens (Figure 26) and low, medium and high density artefact scatters (see Figure 27). Potential impacts on these areas should involve subsurface testing to substantiate the presence of further archaeological material.

Across the entirety of the study area there is some level of archaeological potential. The geomorphology of the study area, its proximity to the ocean and open fresh water, plus the availability of flint stone along Discovery Bay for knapping would have made this area ideal for past inhabitants.

The predictive modelling findings were confirmed during the field survey as Aboriginal cultural material was identified in all Land-Systems across the study area. The field survey identified Aboriginal cultural material across the Discovery Bay Land System (Baudin land-unit), Nelson Land-System (Bridgewater and Kentbruck sub-systems), and the Follett and Kanawinka Land Systems.

The areas of archaeological potential identified in the modelling generally correspond to the landforms of greater archaeological sensitivity, such as proximity to water, remnant vegetation, local high points and slope classes and soil types.

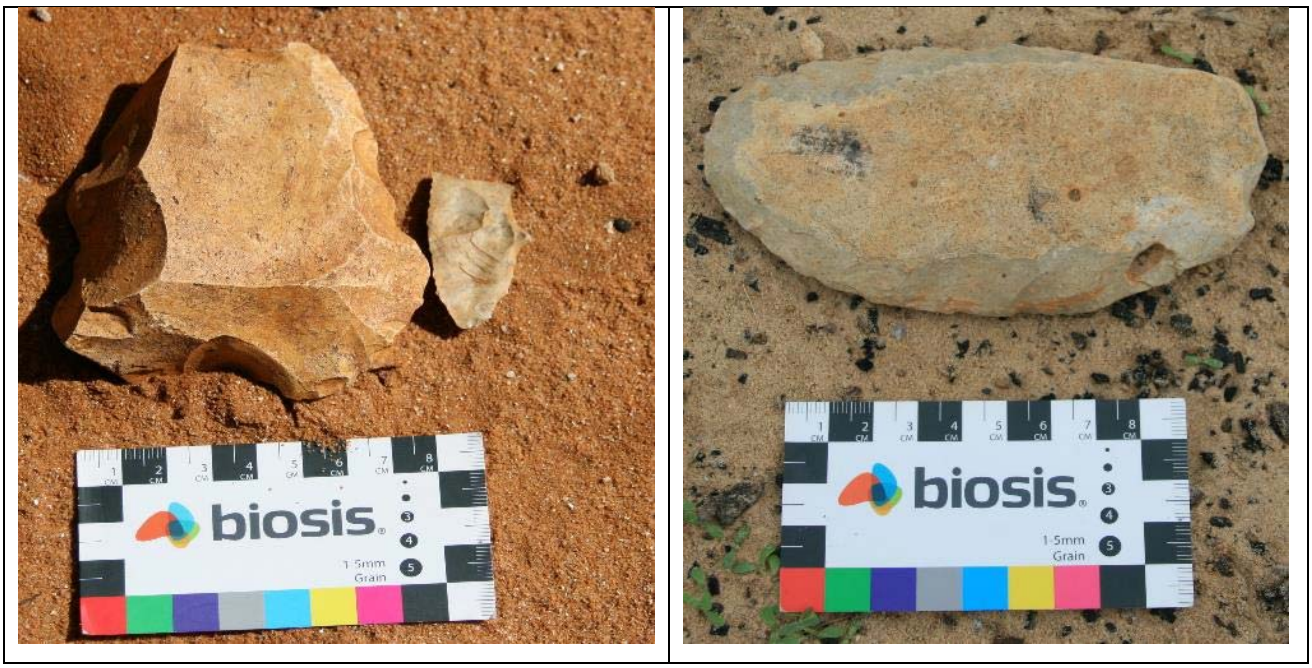


Figure 25 Examples of flint stone artefacts located within the study area. The artefacts on the left consist of a flint scraper and typical flaked blade and the artefact on the right is a bifacial flint hand axe – note the heavy orange patina

Figure 26 Shell midden, stone tool scatter and charcoal identified during the site visit

Figure 27 Medium to low density artefact scatters. Shown here on orange sands located within the Nelson Land-System (Kentbruck sub-system)

4 Legislative requirements

4.1 Aboriginal cultural heritage – requirements pursuant to the Aboriginal Heritage Act and Regulations

4.1.1 Is a mandatory cultural heritage management plan required?

Pursuant to Section 46 of the *Aboriginal Heritage Act 2006*, a **mandatory** CHMP is required if the regulations require the preparation of the plan for the activity. Pursuant to Regulation 7 of the *Aboriginal Heritage Regulations 2018*, a cultural heritage management plan is required for an activity if all or part of the activity area for the activity is an area of CHS AND all or part of the activity is a high impact activity.

A review of the *Aboriginal Heritage Regulations 2018* identified the following regulations relevant to the Activity Area.

Parts of the wider study area currently lie within areas of CHS pursuant to Division 3 – Areas of cultural heritage sensitivity, Regulation 25, 26, 29, 30 and 32 of the *Aboriginal Heritage Regulations 2018* (Map 9).

Areas of CHS consist of 200 metre designated buffer on landform features and 50 metre buffers on Aboriginal place registrations. Areas of CHS within the study area are associated with **buffer zones**, such as 50 metre buffer zones associated with Registered cultural heritage places and land within 200 metres of a Declared Ramsar wetland.

25 Registered cultural heritage places

(1) A registered cultural heritage place is an area of cultural heritage sensitivity.

(2) Subject to subregulation (3), land **within 50 metres of a registered cultural heritage place** is an area of cultural heritage sensitivity.

(3) If part of the land within 50 metres of a registered cultural heritage place has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

26 Waterways

(1) Subject to subregulation (2), a waterway or land **within 200 meters of a waterway** is an area of cultural heritage sensitivity.

(2) If part of a waterway or part or the land within 200 meters of a waterway have been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

29 Declared Ramsar wetlands

(1) Subject to subregulation (2), a declared Ramsar wetland or land within 200 metres of a declared Ramsar wetland is an area of cultural heritage sensitivity.

(2) If part of a declared Ramsar wetland or part of the land within 200 metres of a declared Ramsar wetland has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

(3) In this regulation, declared Ramsar wetland has the same meaning as in the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth.

30 Coastal Crown land

(1) Subject to subregulation (2), coastal Crown land is an area of cultural heritage sensitivity.

(2) If part of an area of coastal Crown land has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

32 Parks

(1) Subject to subregulation (2), a park is an area of cultural heritage sensitivity.

(2) If part of a park has been subject to significant ground disturbance, that part is not an area of cultural heritage sensitivity.

In summary, the current study area does overlap with some areas of CHS associated with Aboriginal place buffers (50m) and Landform feature buffers (200m)(Map 9).

4.1.2 Are the proposed works a high impact activity?

The proposed works for the proposed development are a high impact activity as defined in Division 5 – High impact activities, Regulation 46 and 58 of the Regulations:

46 Buildings and works for specified uses

1) The construction of a building or the construction or carrying out of works on land is a high impact activity if the construction of the building or the construction or carrying out of the works—

a. would result in significant ground disturbance; and

b. is for or associated with the use of the land for any one or more of the following purposes—

xxx. land used to generate electricity, including a wind energy facility.

4.1.3 Has there been significant ground disturbance to the study area?

Yes, large sections of the current wider study area has been subject to SGD.

These areas are associated with radiata pine plantations within existing Forestry blocks. Other areas of SGD are associated with the mechanical construction of roads and/or tracks, farm infrastructure (ie. sheds and stock yards) and dams for livestock use.

Pursuant to Division 3, clause (3) of Regulation 23 stipulates that an area of CHS where SGD has taken place is no longer an area of cultural heritage sensitivity and is therefore exempt from a mandatory CHMP. In the Regulations, SGD is defined as:

5 Definitions

In these Regulations—

significant ground disturbance *means disturbance of—*

- *the topsoil or surface rock layer of the ground; or*
- *a waterway—*

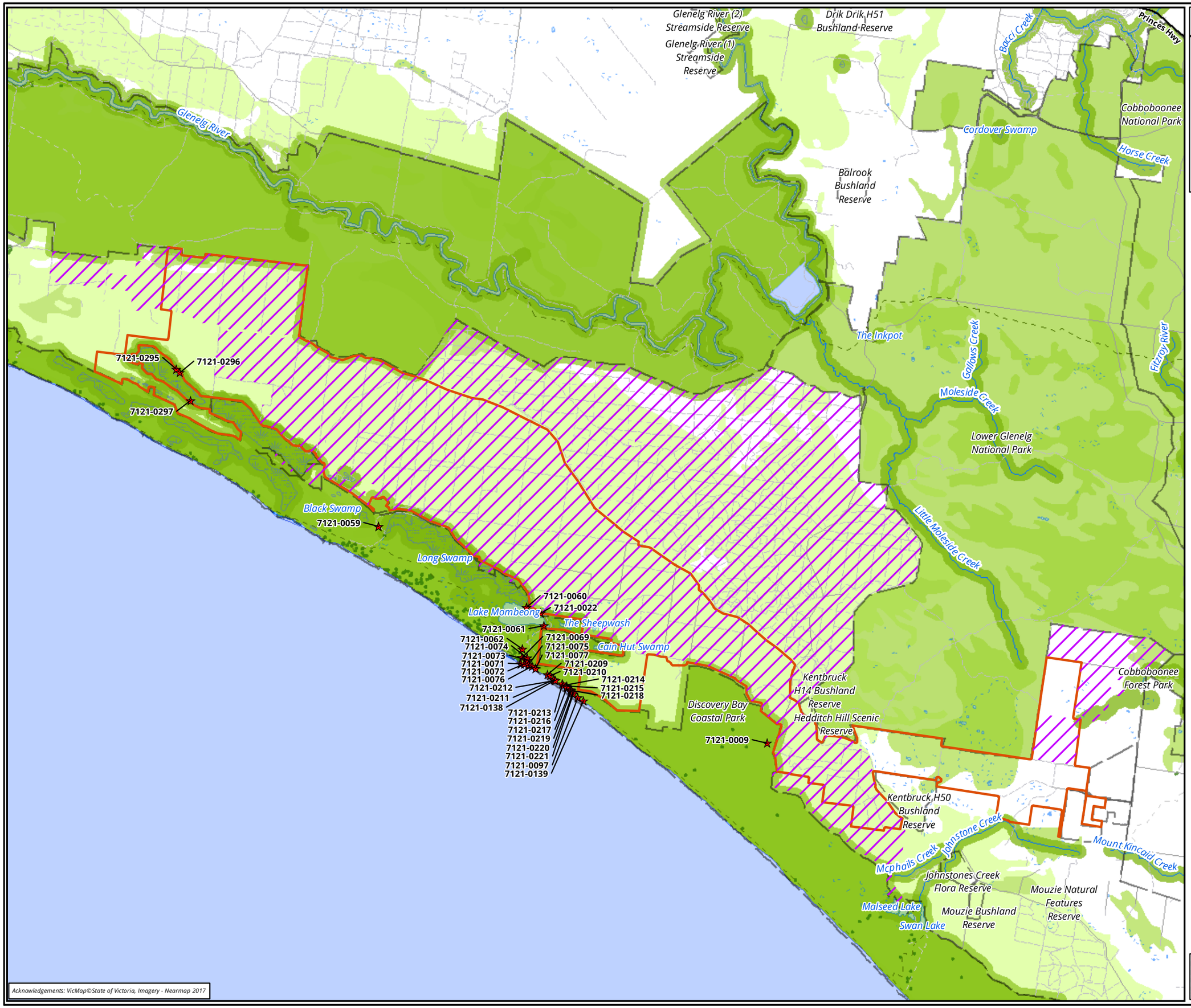
by machinery in the course of grading, excavating, digging, dredging or deep ripping, but does not include ploughing other than deep ripping.

It is important to note that SGD is not chiefly defined by the extent or depth of any disturbance, but rather by the mechanical means through which it has been caused. The application of the significant ground disturbance exemption is also unaffected by the relative likelihood of Aboriginal cultural heritage being present.

It is possible that there are Aboriginal cultural heritage places, objects or human remains within areas determined to no longer be areas of CHS due to SGD. The presence of Aboriginal cultural heritage material located during the site visit also illustrates that the disturbance in the study area has not negated the presence of Aboriginal cultural heritage. These Aboriginal places are still protected under the Act. In particular, it is an offence under sections 27 and 28 of the Act to harm Aboriginal cultural heritage unless acting in accordance with a CHP or approved CHMP (regardless of whether a CHMP is triggered) (Aboriginal Victoria, n.d).

Based on the definition of SGD, areas of CHS that correspond to the existing Forestry blocks are no longer areas of SGD. Deep ripping of plantation rows multiple times, excavation and grading of tracks and subsequent harvesting with machinery throughout these areas qualifies as SGD. These areas within study area have been subject to SGD at a level of certainty better than the balance of probabilities (**Error! Reference source not found.** and Map 9).

However, areas of CHS within the eastern portions of the current study area do not meet the criteria for SGD. Clearing and ploughing for agricultural purposes does not meet the criteria for SGD and therefore these remain areas of designated CHS and a trigger for a mandatory CHMP; should these areas of CHS be affected by any component of the Wind farm Facility.



Legend

- Study area
- VAHR place
- Previous disturbance associated with forestry practices
- National Parks and Conservation Reserves

Areas of Cultural Heritage Sensitivity

- Registered cultural heritage place
- Waterway
- Declared Ramsar wetland
- Coastal Crown land
- Coastal land
- Park
- Koo Wee Rup Plain
- Volcanic cone
- Cave
- Dune
- Sand sheet

Map 9 Areas of Cultural Heritage Sensitivity within the study area (ACHRIS, 2019)

0 1 2 3 4 5

Kilometers

Scale: 1:100,000 @ A3

Coordinate System: GDA 1994 MGA Zone 54

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Biosis Pty Ltd
Albury, Ballarat, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Matter: 29581,
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Acknowledgements: VicMap©State of Victoria, Imagery - Nearmap 2017

4.2 Historical heritage - Requirements

Are historic permits or consents required?

Under Section 93 of the *Heritage Act 2017* the Executive Director may issue a permit authorising works in relation to a Victorian Heritage Register place, and under Section 124 issue a consent authorising works in relation to a Victorian Heritage Inventory archaeological site. While under Glenelg Shire Heritage Overlay a permit under the *Planning and Environment Act 1987* is required for heritage places specified on their schedule to the overlay.

A review of the registry, inventory and overlay did not identify any historic places within the study area.

Therefore, there is not a requirement for statutory approvals.

Is a historic survey advised?

All historical archaeological sites in Victoria older than 75 years are protected under the *Heritage Act 2017*, regardless if they are recorded or not. If an archaeological site is uncovered during the proposed works, under Section 127 of the *Heritage Act 2017* it is an offence to knowingly disturb, damage or excavate without obtaining the relevant approval. Therefore, regardless of the requirements for permits or consents, an assessment of the study area must be made to determine the likelihood that historic sites may be present.

A review of early parish maps and documentation and the field survey conclude that there is evidence of historic buildings across the study area which have yet to be recorded (Map 7). It is likely that there are unrecorded historic sites within the study area and a historic survey is advised.

5 Conclusions

5.1 Aboriginal Heritage Act 2006

5.1.1 Requirements

A mandatory CHMP **is** required if any component of the Kentbruck Wind Farm Facility design cannot avoid areas of CHS that have not been subject to SGD. An approved CHMP is required before statutory approval can be issued for the proposed project.

To reduce the quantum of cultural heritage work required, if a mandatory CHMP is triggered, all wind farm infrastructure components should be situated away from landforms of high archaeological potential and preferably located within areas where SGD has previously occurred.

5.1.2 Recommendations

Minimisation of Impacts

To remove the requirement for a mandatory CHMP, the proposed Kentbruck Wind Farm Facility design must attempt to avoid all areas of designated CHS (Map 9). The components of the wind farm that this includes, but is not limited to, all new power line poles and access, turbine footprints, met masts, laydown areas or all structural components and site offices, connecting overhead and underground power cables, and all access tracks between turbines, pads for construction machinery adjacent to turbine locations and soil stockpiling locations.

Recommendation for a voluntary CHMP

It is strongly recommendation that a voluntary CHMP be considered for the proposed wind farm to manage risk of harm to Aboriginal cultural heritage under Section 27 and 28 of the *Aboriginal Heritage Act 2006*.

While Aboriginal cultural material may have been subject to previous disturbance within the pine plantation blocks, the site inspection revealed the presence of stone artefact scatters and midden material throughout these areas.

Therefore there is still Aboriginal archaeological potential throughout the study area and the risk of harming Aboriginal cultural heritage.

Gunditj Mirring Traditional Owner Aboriginal Corporation Consultation

It is recommended that the current assessment findings be provided to Gunditj Mirring Traditional Owner Aboriginal Corporation, by Neoen, to gather cultural knowledge, oral histories and cultural values for the study during the completion of a CHMP.

This consultation should be undertaken in the form of strategic and targeted on-site consultation with Traditional Owners in regard to identifying likely locations for major infrastructure and corridors. This would potentially allow for some agreement in principle as to where impacts within the landscape would be appropriate.

Native Title - Gunditj Mirring Traditional Owners Aboriginal Corporation Registered Native Title Body Corporate

Appropriate consultation must be undertaken with the Gunditj Mirring Traditional Owners Aboriginal Corporation Registered Native Title Body Corporate prior to the commencement of the project.

The consultation will determine if an Indigenous Land Use Agreement (ILUA) is required. It will also identify if the completion of a Cultural Heritage Management Plan will satisfy the Gunditj Mirring Traditional Owners Aboriginal Corporation RNTBC in place of a formal ILUA.

The areas is question are limited to the proposed connecting underground or overhead power that run through the Cobboboonee National Park and discrete locations near the Mount Richmond National Park.

5.2 Heritage Act 2017

5.2.1 Requirements

There are no requirements under the *Heritage Act 2017*.

5.2.2 Recommendation

It is recommended that monitoring and further consultation with a Heritage Advisor to survey and record as the project continues given the known location of historic sites. This can be undertaken concurrently with the assessment component of a CHMP.

There is some potential for unrecorded historic sites within the study area and a historic survey is therefore advised.

Disclaimer

This report provides expert opinion on the requirements for heritage management in the study area. It is authored by qualified heritage professionals with considerable experience working with heritage legislation, but who are not legal practitioners. The client is advised to seek qualified legal advice prior to acting on the recommendations contained in this report.

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