

Draft Report

# Willatook Wind Farm Aboriginal Cultural Heritage Impact Assessment: Environment Effects Statement

Willatook Wind Farm Propriety Limited

04 March 2022



Ecology and Heritage Partners Pty Ltd

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- Gunditj Mirring Traditional Owners Aboriginal Corporation.
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**Cover Photo: Cover Photo:** General view of site facing north

(Photo by Ecology and Heritage Partners Pty Ltd)

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## ABBREVIATIONS

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See Glossary (Appendix 1) for explanation of some of these terms.

Acronym	Description
Act, the	<i>Aboriginal Heritage Act 2006</i>
ACHRIS	Aboriginal Cultural Heritage Register and Information System
ACHIA	Aboriginal Cultural Heritage Impact Assessment
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority
DAWE	Department of Agriculture, Water and the Environment
DEDJTR	Department of Economic Development, Jobs, Transport and Resources. Superseded in 2019 by Department of Jobs, Precincts and Regions.
DELWP	Department of Environment, Land, Water and Planning (Victoria)
DPC	Department of the Premier and Cabinet (Victoria)
DPCD	Department of Public and Community Development (Victoria)
DJCS	Department of Justice, Community Safety
Eastern Maar	Eastern Maar Aboriginal Corporation
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EVC	Ecological Vegetation Class
EES	Environment Effects Statement
FP-SR	First Peoples – State Relations, formerly Aboriginal Victoria
Framlingham	Framlingham Aboriginal Trust
GMU	Geomorphological units
GSV	Ground Surface Visibility
Gunditj Mirring	Gunditj Mirring Traditional Owners Aboriginal Corporation
HA	Heritage Advisor
HO	Heritage Overlay
HV	Heritage Victoria
LDAD	Low Density Artefact Distribution
MRPV	Major Road Project Victoria
NLA	National Library of Victoria
NTA Act	<i>Native Title Act 1993</i>
NNTT	The National Native Title Tribunal
NTR	National Trust Register
PCHA	Preliminary Cultural Heritage Appraisal
PIF	Place Inspection Form



Acronym	Description
PROV	Public Records Office Victoria
RAP	Registered Aboriginal Party
Regulations, the	<i>Aboriginal Heritage Regulations 2018</i>
RTP	Random Test Pit
SGD	Significant Ground Disturbance
SLV	State Library of Victoria
STP	Shovel Test Pit
TP	Test Pit
VAHR	Victorian Aboriginal Heritage Register
VHI	Victorian Heritage Inventory
VHR	Victorian Heritage Register

## EXECUTIVE SUMMARY

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### Introduction

Ecology and Heritage Partners Pty Ltd was commissioned by Willatook Wind Farm Pty Ltd to prepare this Aboriginal Cultural Heritage Impact Assessment (ACHIA) for the proposed Willatook Wind Farm, located approximately 7 km southwest of Hawkesdale in western Victoria.

#### The Project Area and Project

The Project Area is currently used for residential, agricultural, pastoral and utility purposes. The Project Area is located west of Willatook, southwest of Hawkesdale, east of Orford and Broadwater and southeast of Macarthur in southwest Victoria (Moyné Shire Council) (see Map 1). The Project Area is approximately 4,154 ha in size and is situated to the south of Woolsthorpe-Heywood Road, between Penshurst-Warrnambool Road and Hamilton-Port Fairy Road (see Map 2).

The Sponsor proposes to install up to 59 wind turbines and a battery storage facility within the Project Area. Each wind turbine will comprise a tower, nacelle and blades. The turbines will have a maximum blade tip height of 250 m. The towers will be mounted onto a concrete pad footing and there will be an adjacent hardstand area of up to approximately 50 m x 60 m. Turbines will be positioned with a high regard for existing land use, ecological conservation and cultural heritage values and in accordance with relevant legislation. The internal electrical network between the wind turbines and the substation would be an underground transmission network (i.e., buried cables). It is estimated that this would entail 62 km of trenches (1 m deep) with insulated electrical cables installed. The cable trenches would have a width of up to one metre within a work area of about 7 metres for the excavator to operate and for stockpiling of soil. Access tracks that are approximately six metres wide would be constructed within a 12 m construction footprint and would have a total length of 60 km. The Project would also consist of ancillary structures and equipment, which would be positioned in accordance with site constraints.

These activities have the potential to impact any Aboriginal cultural heritage that is present in the activity area; however, the preparation of a Cultural Heritage Management Plan will seek to minimise or avoid any potential risk to Aboriginal Places in the Project Area.

### Assessment and Results

The assessments undertaken as part of this ACHIA (and for the purposes of the relevant Cultural Heritage Management Plan (CHMP) #11090 (Nicolson et al: In Prep)) were a background review (desktop assessment), a field survey (standard assessment) and a subsurface excavation (complex assessment) in conjunction with consultation with the relevant Aboriginal Traditional Owner groups. The assessments took place over many years, commencing in 2009 and continuing until 2021. The initial assessment involved a standard assessment of the proposed windfarm area and mapping of all the areas of land thought to have potential for Aboriginal cultural heritage. These areas and all the initial proposed turbine locations were discussed with the Sponsor. Alterations were made on a number of occasions over the years to the turbine locations which resulted in the locations of all of them being discussed. If any turbines were proposed to be situated in areas of potential then

they were subject to additional survey and subsurface testing. The proposed quarry locations, access tracks and cable trenches were also surveyed and complex assessment took place when located in areas of Aboriginal archaeological potential.

The assessments resulted in the identification of seven Aboriginal Places recorded on the Victorian Aboriginal Heritage Register (VAHR); however, due to the changing size of the Project Area, only two Aboriginal Places are located within the current Project Area: one identified during the desktop assessment, and one located during the complex assessment. Both of the Places are archaeological sites.

The two Aboriginal Places identified as being within the Project Area are summarised below in Table ES 1.

**Table ES 1** Aboriginal Places within the Project Area

Place Name	Place Type	Place Identified During
VAHR Registered 1	Earth Feature (mound)	Desktop Assessment – previously registered by the Victorian Archaeological Survey (VAS)
VAHR Registered 2	Stone Artefact Scatter	Cultural Heritage Management Plan #11090 (Nicolson et al. in prep)

## Impact Assessment and Risk Assessment Conclusion

Two Aboriginal Places are located within the Project Area (Map 11). These places will not be impacted by the Project. The Management Conditions risk assessment (Section 8) has addressed the impacts. As required in accordance with Part 4 of the Victorian *Aboriginal Heritage Act 2006* and the Victorian *Aboriginal Heritage Regulations 2018* (s.47) a CHMP is in progress to address these specific Management Conditions (Nicolson et al: In Prep).

The specific Regulations which trigger the requirement for the CHMP are:

- Under r.25(1) a registered cultural heritage place is an area of cultural heritage sensitivity.
- Under r.26, the Project Area is within an area of cultural heritage sensitivity as it is located within 200 m of a waterway (see Map 2) namely:
  - Cockatoo Swamp;
  - Shaw River;
  - Back Creek;
- Under r. 34(3), the Project Area is within an area of cultural heritage sensitivity as it is located in an area identified as “Qm1” in the Surface Geology of Victoria 1:250 000 map book;
- Under r.36, the Project Area is within an area of cultural heritage sensitivity as it is located within a stony rise;
- Under r.46, the proposed activity is a high impact activity as it involves the construction of a building or the construction or carrying out of works for a specified use, land used to generate electricity, including wind energy facility (r.46 [1][b][xxvi]); and

- Part or all of the Project Area has not been subject to previous significant ground disturbance as defined by the *Aboriginal Heritage Regulations 2018* (r.5).

No harm is predicted to result to VAHR Registered 1 or VAHR Registered 2 as a result of the activity. Each registered Place must be protected by the creation of clearly marked no-go zone prior to the project commencing; these no-go zones must be maintained during the construction phase of the project. The places have low Archaeological/Scientific significance, and the risk rating is low.

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# 1 INTRODUCTION

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## 1.1 Background

Ecology and Heritage Partners was commissioned by Willatook Wind Farm Pty Ltd to prepare a Aboriginal Cultural Heritage Impact Assessment (ACHIA) for the Willatook Wind Farm (Map 1).

## 1.2 Project Description

Willatook Wind Farm Pty Ltd (the proponent) is developing the proposed Willatook Wind Farm (the project) in Moyne Shire, Victoria. The project will harness strong and reliable winds to generate renewable energy through the construction and operation of up to 59 wind turbines generators and would operate for a period of at least 25 years following a two-year construction period. The wind farm would generate more than 1,300 gigawatt hours (GWh) of renewable electricity to the National Electricity Market (NEM) each year.

The project is located approximately 22 km to the north of Port Fairy, 32 km to the northwest of Warrnambool and to the south of the Woolsthorpe–Heywood Road. The project is located within an area of private and public land that is largely used for agriculture, predominantly sheep and cattle grazing.

Approximately 60 km of access tracks (both new and existing) would be required to provide access from the public road network to each wind turbine and supporting infrastructure. These access tracks provide access for project construction and maintenance vehicles and can be used by emergency vehicles and by landowners for their farming operations.

Electricity produced by the project will be fed through underground cables to the on-site substation, from where it will be exported to the NEM via the Tarrone Terminal Station and the existing Moorabool to Heywood 500 kilovolt (kV) transmission line.

Other project infrastructure would include:

- an on-site quarry for basalt rock that will be used to provide aggregate for access tracks and hardstand areas
- a battery energy storage system (BESS) located immediately to the west of the substation
- an operations and maintenance (O&M) facility consisting of site offices and amenities.

### Operational Activities

Key operational activities will focus on the effective operation of the wind farm. This will include monitoring (on-site or remotely), maintenance and repairs. This would include routine inspections, servicing and repair of wind turbines, maintenance of access tracks and of the electrical system and buildings and plant, including control systems. The project area is currently used as rural farmland, and this would continue after construction. The proposed development footprint consists of 222.3 ha, which is 5.4% of the study area. The operational footprint is estimated to be 99.5 ha, which represents 2.4% of the project site. Construction of the wind farm is expected to take approximately two years to complete, followed by an operational phase of at least 25 years.

## Decommissioning

Within 12 months of wind turbines permanently ceasing to generate electricity, the wind farm would be decommissioned. This would include removing all above ground equipment; restoration of all areas associated with the wind farm, unless otherwise useful to the ongoing management of the land; and post decommissioning revegetation.

## 1.3 Reasons for Preparing this Aboriginal Cultural Heritage Impact Assessment

This ACHIA has been prepared in accordance with 'Pathway 2' of the Aboriginal cultural heritage and the Environment Effects process, Environment Effects Advisory Note August 2007 (Department of Planning and Community Development (DPCD) 2007). This option is utilised when a Project has a higher degree of uncertainty or complexity, or where a range of Project options are being considered and enables the details of a CHMP to be resolved as part of the Environment Effects Statement (EES) process (DPCD 2007: 4). Following this process, the CHMP can be finalised and evaluated as per the *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2018*. The preparation of an EES has commonly involved an assessment of the potential effects of a Project on Aboriginal cultural heritage (DPCD 2007).

This ACHIA contains detailed information regarding Aboriginal cultural heritage issues relating to the Project Area.

## 1.4 Scoping Requirements

The Minister's EES scoping requirements (August 2019) set out the specific environmental matters to be investigated and documented in the project's EES, which informs the scope of the EES technical studies. The following are relevant to this Aboriginal cultural heritage impact assessment:

### Draft Evaluation Objective

To avoid or minimise the adverse effects on social and cultural values, including Aboriginal cultural heritage values, and to maximise the enhancement of these values where opportunities exist.

### Key issues

- Potential adverse effects on Aboriginal cultural heritage places and values;

### Existing environment

- Review land use history, Aboriginal traditional knowledge, previous studies and relevant registers to identify areas with the potential for Aboriginal and historical cultural heritage values; and
- Identify areas of Aboriginal cultural heritage sensitivity relevant to the project.

### Likely effects

- Assess residual effects of the project on identified or potential sites or places of Aboriginal cultural heritage, considering possible impact pathways and significance of any effects.

#### **Design and mitigation**

- Describe design, management (harm avoidance and/or minimisation strategies) circumvent or mitigate potential adverse effects on known or potential Aboriginal cultural heritage values.

#### **Performance objectives**

- Describe the Aboriginal cultural heritage outcomes that the project must achieve including ensuring implementation of the Conditions outlined in the cultural heritage management plan.

#### **Environmental Management Framework**

Management measures proposed in the EES to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes should be clearly described in the Environmental Management Framework (EMF). The EMF should describe proposed objectives, indicators and monitoring requirements, including for (but not limited to) managing or addressing:

- Aboriginal and historic cultural heritage values.

### **1.5 Project Area**

The Project Area is located west of Willatook, southwest of Hawkesdale, east of Broadwater and north of Orford and Tarrone in southwest Victoria (Moyne Shire Council) (see Map 1). The Project Area is approximately 4,154 ha in size and is situated to the south of Woolsthorpe-Heywood Road, between Penshurst-Warrnambool Road and Hamilton-Port Fairy Road (see Map 2). The Project Area is currently used for residential, agricultural, pastoral and utility purposes.

The salient features within the Project Area include stony rises, undulating plains, ephemeral wetlands and a number of waterways ranging in size from minor ephemeral drainage lines to rivers such as the Moyne River and the Shaw River.

## 2 LEGISLATION AND POLICY

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### 2.1 Commonwealth Government

#### ***Environment Protection and Biodiversity Conservation Act 1999***

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a national framework for the protection of heritage, environment and the conservation of biodiversity. The EPBC Act is administered by the Australian Government Department of Agriculture, Water and the Environment. The EPBC Act is responsible for the establishment of the National Heritage List, which includes natural, Indigenous and historic places that are of outstanding heritage value to the nation. The EPBC Act also establishes the Commonwealth Heritage List, which comprises natural, Indigenous and historic places on Commonwealth lands and waters or under Australian Government control and identified by the Minister for the Environment (the Minister) as having Commonwealth Heritage values (Department of Environment and Energy 2019).

Currently there are no Aboriginal or historic places listed within the Project Area on the National Heritage List or the Commonwealth Heritage List. The nearest Aboriginal Place included on the National Heritage List is the Budj Bim Cultural Landscape, which is included in the World Heritage List, and the Budj Bim National Heritage Landscape – Mt Eccles and Lake Condah Area, which is included in the National Heritage List. Both of these places are located at a distance of more than 10 km from the Project Area

#### ***Native Title Act 1993***

Under the *Native Title Act 1993* (NTA Act) Indigenous people can apply to have their native title rights recognised by Australian law by filing a native title application (native title claim) with the Federal Court. Applications are required to pass a test to gain certain rights over the area covered in the application. The National Native Title Tribunal (NNTT) was established to administer application processes. Once applications are registered, the NNTT will notify other people about the application and will invite them to become involved so all parties can try to reach an agreement that respects everyone's rights and interests. If the parties cannot agree, the NNTT refers the application to the Federal Court and the parties argue their cases before the Court.

Native Title describes the rights and interests of Aboriginal and Torres Strait Islander people in land and waters, according to their traditional laws and customs. In Australia, Aboriginal and Torres Strait Islander people's rights and interests in land were recognised in 1992 when the High Court delivered its historic judgment in the case of *Mabo v the State of Queensland*. This decision overturned the legal fiction that Australia upon colonisation was *terra nullius* (land belonging to no-one). It recognised for the first time that Indigenous Australians may continue to hold native title.

Native Title rights may include the possession, use and occupation of traditional country. In some areas, native title may be a right of access to the area. It can also be the right for native title holders to participate in decisions about how others use their traditional land and waters. Although the content



of native title is to be determined according to the traditional laws and customs of the title holders, there are some common characteristics. It may be possessed by a community, group, or individual depending on the content of the traditional laws and customs. It is inalienable (that is, it cannot be sold or transferred) other than by surrender to the Crown or pursuant to traditional laws and customs. Native Title is a legal right that can be protected, where appropriate, by legal action.

Native Title cannot take away anyone else's valid rights, including owning a home, holding a pastoral lease or having a mining lease. Where native title rights and the rights of another person conflict the rights of the other person always prevail. When the public has the right to access places such as parks, recreation reserves and beaches, this right cannot be taken away by Native Title. Native Title does not give Indigenous Australians the right to veto any Project. It does mean, however, that everyone's rights and interests in land and waters must be considered.

Native Title may exist in areas where it has not been extinguished (removed) by an act of government. It will apply to Crown land but not to freehold land. It may exist in areas such as:

- Vacant (or unallocated) Crown land;
- Forests and beaches;
- National parks and public reserves;
- Some types of pastoral leases;
- Land held by government agencies;
- Land held for Aboriginal communities;
- Any other public or Crown lands; and/or
- Oceans, seas, reefs, lakes, rivers, creeks, swamps and other waters that are not privately owned.

As a common law right, Native Title may exist over areas of Crown land (which includes buildings and other structural fixtures, roads, railways, bridges, wells and bores and any major earthworks that are constructed by or on behalf of the Crown, local government authority or other statutory authority of the Crown) or waters, irrespective of whether there are any native title claims or determinations in the area. Native Title will therefore be a necessary consideration when Government is proposing or permitting any Project on or relating to Crown land that may affect native title.

The Project Area comprises of privately-owned land, Crown Land, active road, and road reserves. The Project Area is crossed by a number of public roads; these are excluded from the proposed works. Authorised construction within the Project Area of works on Crown land prior to 1 January 1994 will have completely extinguished Native Title over the relevant land. Furthermore, Native Title over any adjacent land or waters necessary for, or incidental to, the construction or establishment or operation of the works will have also extinguished Native Title. The date on which a road reservation was created affects the Native Title determination (VicRoads 2007). Native Title will generally be extinguished in relation to all road reservations created before 31 October 1975, regardless of having a road constructed within them. For road reservations created between 31 October 1975 and 23 December 1996, Native Title determination is dependent on whether the reservation is vacant or constructed (has a road built within it). If vacant, Native Title is not extinguished. If constructed, and the reservation area

is or was necessary for or incidental to the construction, establishment or operation of the road, Native Title will be extinguished. Native Title will generally not be extinguished in relation to road reservations created after 23 December 1996.

A Native Title Claim was lodged by the Eastern Maar Aboriginal Corporation over the land within which the Project Area is located. This claim, registered as VID21/2019 incorporates the eastern two-thirds of the Project Area; however, it does not extend to those portions of the Project Area which are private property.

### ***Aboriginal and Torres Strait Islander Heritage Protection Act 1984***

The Commonwealth *Aboriginal Torres Strait Islander Heritage Protection Act 1984* can provide protection for areas and objects that are of significance to Aboriginal People. The act allows the Environment Minister, on the application of an Aboriginal person or group of persons, to make a declaration to protect an area, object or class of objects from a threat of injury or desecration (Department of Environment and Energy 2019). Please note that the Victorian State Act, the *Aboriginal Heritage Act 2006* provides protection for Aboriginal cultural heritage in Victoria.

## **2.2 State Government**

### ***Planning and Environment Act 1987***

All municipalities in Victoria are covered by land use planning controls which are prepared and administered by State and local government authorities. The legislation governing such controls is the *Planning and Environment Act 1987*. Places of significance to a locality can be listed on a local planning scheme and protected by a Heritage Overlay (or another overlay where appropriate). Places of Aboriginal cultural heritage significance can often not be included on local government planning schemes.

The purpose of the Heritage Overlay is:

- To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies;
- To conserve and enhance heritage places of natural or cultural significance;
- To conserve and enhance those elements which contribute to the significance of heritage places;
- To ensure that development does not adversely affect the significance of heritage places; and
- To conserve specifically identified heritage places by allowing a use that would otherwise be prohibited if this will demonstrably assist with the conservation of the significance of the heritage place.

### ***Aboriginal Heritage Act 2006 and Aboriginal Heritage Regulations 2018***

The *Aboriginal Heritage Act 2006* provides protection for Aboriginal cultural heritage in Victoria.

The objectives of this Act are:

- (a) to recognise, protect and conserve Aboriginal cultural heritage in Victoria in ways that are based on respect for Aboriginal knowledge and cultural and traditional practices;
- (b) to recognise Aboriginal people as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage;
- (c) to accord appropriate status to Aboriginal people with traditional or familial links with Aboriginal cultural heritage in protecting that heritage;
- (d) to promote the management of Aboriginal cultural heritage as an integral part of land and natural resource management;
- (e) to promote public awareness and understanding of Aboriginal cultural heritage in Victoria;
- (f) to establish an Aboriginal cultural heritage register to record Aboriginal cultural heritage;
- (g) to establish processes for the timely and efficient assessment of activities that have the potential to harm Aboriginal cultural heritage;
- (h) to promote the use of agreements that provide for the management and protection of Aboriginal cultural heritage;
- (i) to establish mechanisms that enable the resolution of disputes relating to the protection of Aboriginal cultural heritage;
- (j) to provide appropriate sanctions and penalties to prevent harm to Aboriginal cultural heritage;
- (k) to recognise, protect and conserve Aboriginal intangible heritage by recording it on the Victorian Aboriginal Heritage Register.

*The Aboriginal Heritage Regulations 2018* are made under section 194 of the *Aboriginal Heritage Act 2006*.

The objectives of these Regulations are:

- (a) to specify the circumstances in which a CHMP is required for a Project or class of Project;
- (b) to prescribe standards for the preparation of a CHMP including the carrying out of assessments;
- (c) to prescribe the form for the preparation of preliminary Aboriginal heritage tests including the carrying out of assessments;
- (d) to prescribe standards for the preparation of a map included in a cultural heritage agreement;
- (e) to prescribe fees for evaluating, approving and amending a CHMP;
- (f) to prescribe fees for an application for a cultural heritage permit;
- (g) to prescribe fees for an application to the Secretary for advice as to whether a record exists on the Register in relation to a nominated area of land;
- (h) to prescribe fees for an application for certification of a preliminary Aboriginal heritage test;

- (i) to prescribe fees for giving notice of intention to prepare a CHMP;
- (j) to prescribe fees for access to the Victorian Aboriginal Heritage Register (VAHR); and
- (k) to generally give effect to the *Aboriginal Heritage Act 2006*.

Within the Project Area four Aboriginal Places have been identified (recorded on the VAHR) (Map 11). The Eastern Maar Aboriginal Corporation and the Gunditj Mirring Traditional Owners Aboriginal Corporation exercise joint responsibility as Registered Aboriginal Parties under the *Aboriginal Heritage Act 2006*.

### ***Traditional Owner Settlement Act 2010***

The *Traditional Owner Settlement Act 2010* provides for the out of court settlement of Native Title rights and interests in Victoria. To enter into a settlement agreement under this *Act* the relevant Traditional Owner group must withdraw any current Native Title claim over the settlement area and must commit to make no further claims in relation to that area (Department of Justice and Community Safety (DJCS) 2019).

Under the *Act*, a settlement package can include:

- (a) Recognition and Settlement Agreement to recognise a traditional owner group and certain traditional owner rights over Crown land;
- (b) Land Agreement which provides for grants of land in freehold title for cultural or economic purposes, or as Aboriginal title to be jointly managed in partnership with the state;
- (c) Land Use Project Agreement which allows traditional owners to comment on or consent to certain activities on public land;
- (d) Funding Agreement to enable traditional owner corporations to manage their obligations and undertake economic development activities; and
- (e) Natural Resource Agreement to recognise traditional owners' rights to take and use specific natural resources and provide input into the management of land and natural resources.

In 2019 a Native Title claim (VID21/2019) was settled in favour of the Eastern Maar Aboriginal Corporation for all parts of the Project Area except for that part in which both Eastern Maar and the Gunditj Mirring Traditional Owners Aboriginal Corporation exercise joint responsibility as Registered Aboriginal Parties.

### ***The Environment Effects Act 1978***

The *Environment Effects Act 1978* provides for assessment of proposed projects that can have a significant effect on the environment. One or a combination of several criteria may trigger a requirement for a Referral to the Victorian Minister for Planning, who will determine if an Environmental Effects Statement (EES) is required according to the Ministerial Guidelines for Assessment of Environmental Effects under the *Environment Effects Act 1978* (DSE 2006). An EES describes a project and its potential environmental effects, enabling stakeholders and decision-makers to understand how the project is proposed to be implemented and the likely environmental effects of doing so.

The proposed WWF was Referred to the Victorian Minister for Planning on 05 October 2018. On the 27 December 2018, the Minister for Planning decided that an Environment Effects Statement (EES) was required for WWF. The procedures and requirements for the EES assessment process are set out in the Minister's Statement of Decision, the Ministerial Guidelines and are further detailed in the scoping requirements.

This report addresses Section 4.6 (Cultural heritage) of the EES scoping requirements (see Section 1.4).

## 3 EXISTING CONDITIONS

### 3.1 Stakeholder Consultation

#### 3.1.1 Owners and Occupiers of the Project Area

The Project Area primarily consists of agricultural land comprised of stony rises, gentle undulating slopes and low-lying areas subject to flooding. The Project Area is crossed by a number of public roads, some of which will be upgraded during the works. A full list of properties within the Project Area is shown in Table 1.

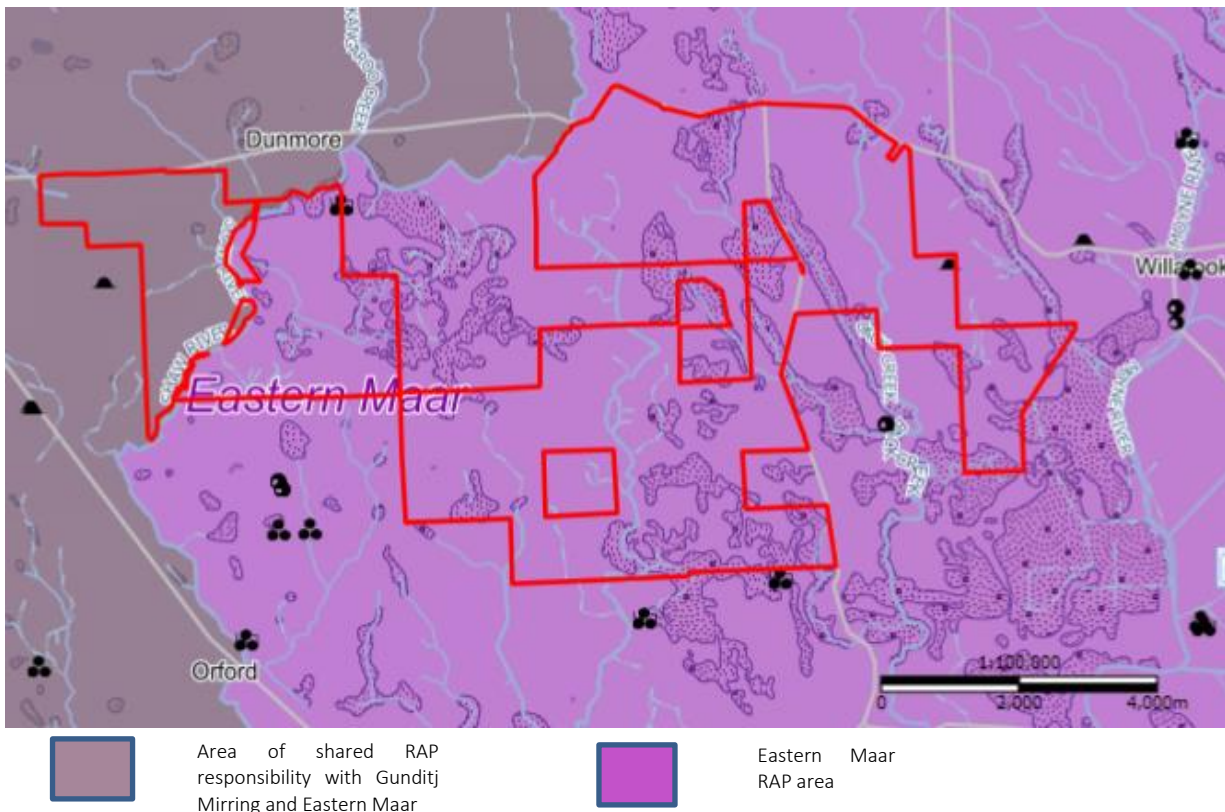
**Table 1:** Cadastral Details of the Project Area

PARCEL_SPI	PARCEL_SPI	PARCEL_SPI	PARCEL_SPI	PARCEL_SPI	PARCEL_SPI
2043\PP2237	6\TP403368	2B~21\PP2835	1A~16\PP2835	1\TP843774	2\PS513764
2044\PP2237	7\TP403368	3~A\PP2835	2~16\PP2835	4\TP843774	1\PS519322
2041\PP2237	4\TP403368	1\TP119974	3B~16\PP2835	5\TP843774	2\PS519322
2040\PP2237	5\TP403368	8~A\PP2835	3A~16\PP2835	4B~8\PP2835	2B~4\PP2835
2039\PP2237	1A1~8\PP2835	5\TP242579	4A~16\PP2835	2\TP396974	1B~4\PP2835
2038\PP2237	1~8\PP2835	1\TP843794	1~15\PP2835	1\TP396974	3\TP843794
2009\PP2835	2~8\PP2835	2\LP98389	1\TP123936	4~10\PP2835	2A~4\PP2835
2049\PP2237	2A~8\PP2835	36A\PP2237	2\TP529477	1\TP242579	1A~4\PP2835
2050\PP2237	3A~8\PP2835	36B\PP2237	3A~15\PP2835	3A~5\PP2835	5A~4\PP2835
2051\PP2237	3B~8\PP2835	35A\PP2237	1\TP529477	3B~5\PP2835	2\TP242579
2015\PP2835	4A~8\PP2835	35B\PP2237	2B~20\PP2835	4B~5\PP2835	3\TP242579
2048\PP2237	9\TP403368	15D\PP2237	1A~21\PP2835	5A~5\PP2835	4B~16\PP2835
2026\PP2835	2\TP826990	15E\PP2237	1B~21\PP2835	5B~5\PP2835	1B~16\PP2835
2025\PP2835	1\LP218923	15A\PP2237	1B1~21\PP2835	3A~4\PP2835	2\PS601753
2\TP843794	2\LP218923	1\TP403368	1B2~21\PP2835	3B~4\PP2835	
4B1~4\PP2835	2045\PP2237	3\TP403368	1B3~21\PP2835	2\TP843774	
4B2~4\PP2835	2010\PP2835	2\TP403368	2C~21\PP2835	3\TP843774	
1~11\PP2835	2043\PP2237	8\TP403368	2A~21\PP2835	4\TP242579	

### 3.1.2 Registered Aboriginal Parties

At the time of the commencement of the CHMP, no Registered Aboriginal Party had been appointed for the Project Area; therefore, a notice to Intent to Prepare a CHMP was submitted to the Secretary of the Department of Premier and Cabinet (DPC), who will have the responsibility of evaluating the CHMP.

The westernmost extent of the Project Area is located within an area for which the Gunditj Mirring and Eastern Maar have been jointly appointed as Registered Aboriginal Parties (Figure 1). The remainder of the Project Area is within an area over which the Eastern Maar exercise exclusive RAP status in line with a decision of the Victorian Aboriginal Heritage Council on 06 February 2020.



**Figure 1:** Project Area showing the area under joint Gunditj Mirring and Eastern Maar RAP responsibility (dark purple area to the west). The remainder of the project area is overseen exclusively by the Eastern Maar following the decision of the Victorian Aboriginal Heritage Council on 06 February 2020 (Source: ACHRIS)

Prior to the appointment of Gunditj Mirring and Eastern Maar as RAPs for the Project area Willatook Wind Farm Pty Ltd previously also consulted with Framlingham Aboriginal Trust as part of the CHMP preparation.

First Peoples - State Relations will consult with the appointed RAPs during the evaluation period to ensure that their views on the Project are taken into consideration.



## 4 METHODOLOGY

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### 4.1 Desktop Assessment

#### 4.1.1 Aboriginal Context

During the preparation of the CHMP #11090 (Nicolson et al In Prep), the desktop assessment conducted included research into information relating to Aboriginal cultural heritage in or associated with the Project Area. During the desktop assessment the environmental context of the Project Area, database searches of the Victorian Aboriginal Heritage Register (VAHR) were undertaken and a review of previous archaeological investigations conducted within or in close proximity to the Project Area were researched to form an Aboriginal Archaeological Site Prediction Statement. One previously recorded Aboriginal Place was identified within the Project Area.

### 4.2 Aboriginal Cultural Heritage Standard Assessment (Ground Surface Survey)

The Project Area was initially surveyed from 14 to 18 December 2009 and from 18 to 19 January 2010 by Oona Nicolson and Jen Burch (Archaeologists/Heritage Advisors), with Jimmy Onus, Bernie King, Darren Bell, Simone Saylor-Smith and Eileen Alberts representing the Gunditj Mirring Traditional Owners Aboriginal Corporation and Travis Harradine representing the Framlingham Aboriginal Trust. Further surveys took place as the footprint of the Project Area changed and during the various phases of complex assessment continuing through to 2021, particularly as any locations of turbines were altered and areas such as the quarry site, access tracks, and bridge crossings were proposed.

The survey took the form of a targeted systematic pedestrian and vehicle survey. A targeted method was employed whereby every proposed turbine location (being 150 locations at the commencement of the CHMP but since reduced to 59) was accessed by foot or by vehicle and then the entire impact area at each proposed turbine location was subject to pedestrian survey within a 50 metre radius of the centre of each proposed turbine location. Although the number of participants in the survey varied, the methodology of the survey remained the same: four to five participants walked two metres apart across each turbine impact area. Therefore, the entire impact area at each proposed turbine location was subject to systematic surface survey. As nearly all of the Project Area is marked as potential infrastructure areas, the remainder of the Project Area (being the areas excluding the marked turbine locations) was surveyed slowly from a vehicle and assessed for Aboriginal archaeological potential (or sensitivity) on the basis of landform. The surveyors alighted from the vehicle if there were any exposed areas of ground surface to inspect them. This allowed for the entire 4,154 ha of Project Area to be assessed for areas of Aboriginal archaeological potential.

### 4.3 Aboriginal Cultural Heritage Complex Assessment (Subsurface Excavation)

Following completion of the standard assessment, a programme of subsurface testing was completed as part of CHMP #11090 (Nicolson et al in prep). The subsurface testing was conducted in three phases with the most intensive phase being conducted in 2010; additional subsurface testing was conducted in August and November 2017, September 2020 and June 2021. The subsurface testing determined the presence or absence of subsurface Aboriginal cultural deposits within the Project Area in identified areas of archaeological potential, and assessed the nature, extent and significance of any such deposits. The complex assessment further provided the opportunity to avoid harm to any Aboriginal cultural heritage that might be present, and for conditions to be developed for its management.

The subsurface testing program was conducted over a total of 39 days (non-consecutive) on the following dates:

- 8 June to 11 June 2010 by four Archaeologists/Heritage Advisors, four representatives from Gunditj Mirring and one representative from Framlingham;
- 14 June to 18 June 2010 by two Archaeologists/Heritage Advisors, with five representatives from Gunditj Mirring and one representative from Framlingham;
- 21 June to 25 June 2010 by three Archaeologists/Heritage Advisors, with five representatives Gunditj Mirring and one representative from Framlingham;
- 29 June to 02 July 2010 by three Archaeologists/Heritage Advisors, with two representatives from Gunditj Mirring and one representative from Framlingham;
- 05 July to 09 July 2010 by three Archaeologists/Heritage Advisors, with four representatives from Gunditj Mirring;
- 13 July to 16 July 2010 by three Archaeologists/Heritage Advisors, with four representatives from Gunditj Mirring and one representative from Framlingham;
- 20 July to 22 July 2010 by three Archaeologists/Heritage Advisors, with four representatives from Gunditj Mirring;
- 01 August to 04 August 2017 by two Archaeologists/Heritage Advisors, with two representatives from Gunditj Mirring;
- 28 to 30 November 2017 by two Archaeologists/Heritage Advisors, with two representatives from Gunditj Mirring; and
- 20 December 2017 by two Archaeologists/Heritage Advisors, with two representatives from Gunditj Mirring;
- 22 September to 24 September 2020 by two Archaeologists/Heritage Advisors with two representatives from Eastern Maar; and
- 22 June 2021 - 25 June 2021 by three Archaeologists/Heritage Advisors, with two representatives from Gunditj Mirring and two from Eastern Maar;

The Sponsor had specified that a range of wind turbine models were available for use in the Project Area, these ranged in height, size, weight and obviously the impact to the surface and subsurface of the Project Area; therefore, the strategy developed for testing of a proposed turbine location was to test the area for the turbine which posed the greatest impact upon the ground surface with a buffer to allow for micro-siting of turbines.

The team focused on all potential turbine locations within the areas identified as having archaeological potential during the standard assessment (Map 9). Each area was inspected to identify if the location was indeed a sensitive location as identified in the predictive model, i.e. was the turbine located on an elevated rocky rise? If the turbine location was found to be in a low-lying area and did not fit the model of a sensitive landform (e.g., inundated with water, not a rocky rise), the turbine location was ruled out of the program of subsurface testing. This exercise was repeated as the construction footprint changed, with areas retaining archaeological potential being surveyed and subjected to subsurface testing if warranted.

If the turbine location was found to be located on an elevated rocky rise in an area of potential, a program of subsurface testing was carried out. The methodology implemented encompassed a centrally located stratigraphic test pit (STP) measuring 500 mm x 500 mm which was excavated stratigraphically using a hand trowel. Each stratigraphic test pit was excavated in 10–20 mm increments until the base or culturally sterile layer was encountered, i.e. the layer dating to before human occupation. Where able, this base layer was further dug into an additional 100mm in order to demonstrate that the sediments were indeed culturally sterile and prove that this was in fact the base layer in order to meet First Peoples – State Relations (FP-SR) guidelines. Once excavated, 100% of the soil removed was sieved through a 4 mm sieve for artefacts and cultural materials. Soil samples were collected so that pH and Munsell colours could be obtained, the soil profile was drawn in detail at a 1:10 cm scale recording stratigraphic layers, charcoal deposits and the location of any cultural heritage within. The stratigraphic test pit would then be photographed with a scale present in each photo, and all features would be recorded in detail on the standardised recording sheets.

In order to comprehensively test the area of potential ground impact, an additional four 50 m transects would be placed at the location, with the stratigraphic test pit (STP) forming the central location or zero point for each transect. The four transects would radiate outwards in the four cardinal directions from that point (N, E, S, W or NE, SE, SW, NW). Test holes (TH) measuring 400 mm x 400 mm would be excavated at 10 m intervals along each transect. In each case the test pit was excavated using a square ended shovel, which allowed for the controlled excavation of each test hole by allowing soil to be removed in 100–300 mm increments, in accordance with proper archaeological practice (Burke and Smith 2004:125). Each test hole was excavated in this manner until the base or culturally sterile layer was encountered. This method allows for the soil stratigraphy to be established in each hole and for any changes in the soil structure to be identified by the supervising archaeologist; 100% of the excavated soil was sieved through a 4 mm sieve for stone artefacts and other cultural materials. Each test pit was recorded detailing the nature of the stratigraphic layers, any charcoal deposits and artefacts on standardised recording sheets. All test excavations were backfilled with the excavated and sieved soil.

When a stone artefact was located in the stratigraphic test pit or test holes, the depth at which the artefact was found was recorded, and the test pit was flagged with a marker. Additional test holes,

called radial test holes (RTH), were then excavated at 5 m intervals in all directions from the marked test hole, in order to identify the nature and extent of the sub surface deposit. All artefacts were bagged, tagged, and collected for analysis and temporary storage at the Ecology and Heritage Partners offices.

The Sponsor specified that turbines or other proposed infrastructure located within an Aboriginal Place could be relocated in order to avoid harm. In order to facilitate this, the methodology included a micro-siting component. This meant that when an Aboriginal heritage place was identified on or near a proposed turbine location, areas around the Aboriginal Place would be thoroughly tested using radial and strategic random test holes so that the Sponsor, where possible, could relocate or “micro site” the turbine or other proposed infrastructure to a nearby area that had been proven to be culturally sterile in order to avoid harm to heritage.

<<The project design has been iteratively updated following the identification and avoidance of environmental, cultural, and social values. As a result, there are locations where complex assessments have been conducted early in the project design phase that are not situated in proposed infrastructure locations. Where the updated design has moved turbines into areas that were not previously assessed, further complex assessment surveys have been conducted (i.e., Phases 2 & 3 of the complex assessment). As a result of the development process, there is a broad coverage of complex assessments across the project site including infrastructure locations. >>

In addition to representatives from Eastern Maar Aboriginal Corporation and Gunditj Mirring Traditional Owners Aboriginal Corporation participating in standard and complex assessments for the project, the proponent and Ecology and Heritage Partners met with representatives of Eastern Maar Aboriginal Corporation and Gunditj Mirring Traditional Owners Aboriginal Corporation in July 2021 to discuss the project and the intangible Aboriginal cultural heritage that may exist within and surrounding the project site.

## 5 RESULTS

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### 5.1 Desktop Assessment Results

#### 5.1.1 Geology, Geomorphology and Vegetation in the Project Area

The desktop assessment has been undertaken in relation to the defined geographic region for the proposed Willatook Windfarm Project Area, being an arbitrary 5 km radius around the Project Area. This area forms part of the greater Victorian Volcanic Plain as well as a portion of the Warrnambool Plain, and falls under the jurisdiction of the Glenelg Hopkins Catchment Authority (DELWP 2017a). The Project Area forms a part of the Moyne Shire Council municipal area. This geographic region is relevant to any Aboriginal cultural heritage that may be present within the Project Area.

The Victorian Volcanic Plain is dominated by Cainozoic basalt deposits, formed by continuous volcanic activity over the last 6 million years. The region is typified by extensive flats and undulating basaltic plains, stony rises and old lava flows, with volcanic cones and old eruption points dotted across the landscape. Salt and freshwater lakes are also common within the landscape. Soils within the Victorian Volcanic Plain are variable and include fertile reddish-brown to black loams and clays, red friable earths, acidic contrast soils and scoraceous material and support a wide variety of flora. Wetlands within the region include inland salt marshes, subterranean karst wetlands, freshwater and saline/brackish lakes and freshwater ponds and marshes, supported by a relatively evenly distributed annual rainfall of 450–840 mm (Map 4).

The geographic region further allows for an understanding of the specific vegetation history and resource availability around the Project Area and exhibits environmental characteristics that likely influenced Aboriginal occupation. The geographic region addresses the environmental context of Holocene resources available from the Project Area, as well as natural features that would have influenced the movement of groups across the landscape. The geographic region thus relates to the tangible and intangible values of the landscape and is highly relevant to any Aboriginal cultural heritage that may be present within the Project Area.

Regarding the intangible cultural heritage values of the Project Area, consultation was undertaken in 2021 with the two RAPs who currently have responsibility for the land within the Project Area. Both the Eastern Maar and the Gunditj Mirring were consulted in separate meetings, and one joint meeting and asked whether they would like to include any oral history relating to the landscape or to provide comment on any intangible cultural heritage values. The two RAPs will continue to be engaged as part of the consultation required for the Cultural Heritage Management Plan.

#### Geology

The geology of Project Area comprises four geological units (Map 5):

- Qa1: Unnamed alluvium, Fluvial: alluvium, gravel, sand, silt (Quaternary (Holocene) to Quaternary (Holocene) in age);

- Qm1: Unnamed swamp and lake deposits, Paludal: lagoon and swamp deposits: silt, clay (Quaternary (Holocene) to Quaternary (Holocene) in age);
- Qno2: Unnamed stony rises, Extrusive: stony rises (Neogene (Miocene) to Quaternary (Pleistocene) in age); and
- Qn: Newer Volcanic Group, Extrusive: tholeiitic to alkaline basalts (Neogene (Miocene) to Quaternary (Pleistocene) in age).

The geology of the northern part of the Project Area (north of Woolsthorpe-Heywood Road) generally consists of extrusive igneous rocks of the New Volcanic Province. This geology was laid down between the Miocene and Pleistocene periods and comprises tholeiitic to alkaline basalt, minor scoria and ash (Geological Society of Victoria 1997). The geology of the majority of the southern portion of the Project Area (south of Woolsthorpe-Heywood Road) comprises unnamed stony rises of the Newer Volcanic Province laid down between the Miocene and Pleistocene periods (Geological Society of Victoria 1997). This geology is associated with Holocene unnamed alluvial deposits incorporating fluvial alluvium, gravel, sand, and silt and small areas of Holocene unnamed paludal swamp and lake deposits (Qm1) (Geological Society of Victoria 1997). Soils within the Project Area generally consist of ferric brown and yellow chromosols (DPI 2010a) (Map 6).

### Geomorphology

The Project Area lies on three geomorphological units (GMUs). Broadly speaking the central portion of the Project Area is characterised by GMU 6.1.2 ‘Stony Rises (Mt. Eccles, Pomborneit, Mt. Rouse)’, with GMU 6.1.4 ‘Plains with well-developed drainage and deep regolith (Cressy)’ characterising the underlying geology of the eastern and western extents of the Project Area. Throughout the Project Area, pockets of GMU 6.1.5 ‘Terraces, floodplains and lakes, swamps and lunettes and their deposits (Lough Calvert, Lower Woody Yallock, Chain of Ponds, Condah Swamp, Lake Murdeduke & lunette) can be found (Map 6).

### Soils

This geology is associated with Holocene unnamed alluvial deposits incorporating fluvial alluvium, gravel, sand, and silt and small areas of Holocene unnamed paludal swamp and lake deposits (Geological Society of Victoria 1997). Soils within the Project Area generally consist of ferric brown and yellow chromosols (Agriculture Victoria 2021).

### Late Holocene Vegetation

According to the Department of Environment, Land, Water and Planning’s (DELWP 2022b) Ecological Vegetation Classes (EVCs), the soils of the bioregion within the Project Area would have historically supported vegetation classified as:

- EVC 714 Stony Knoll Shrubland/Plains Grassy Woodland/Damp Heathland/Damp Heathy Woodland Mosaic;
- EVC 742 Basalt Shrubby Woodland/Herb-Rich Foothill Forest Mosaic;
- EVC 642 Basalt Shrubby Woodland;
- EVC 744 Stony Knoll Shrubland/Basalt Shrubby Woodland Mosaic;

- EVC 647 Plains Sedgy Wetland;
- EVC 53 Swamp Scrub;
- EVC 83 Swampy Riparian Woodland;
- EVC 125 Plains Grassy Wetland,
- EVC 68 Creekline Grassy Woodland; and
- EVC 732 Damp sands Herb-Rich Woodland/Plains Swampy Woodland/Aquatic Herbland Mosaic.

Full descriptions of these EVCs are contained in the flora and fauna report prepared for the project (Nature Advisory 2022).

The trees, shrubs and grasses present in the Project Area would have provided a rich range of resources that could be used by the Aboriginal people who traversed the landscape. In addition, the range of vegetation would also have provided habitats to support a variety of land-based and aquatic fauna resources which in turn could be used as food by Aboriginal people.

## 5.2 Aboriginal Context

An Aboriginal Cultural Heritage Register and Information System (ACHRIS) search was conducted to provide information regarding previously registered Aboriginal places and previously published reports and works, within or associated with the Project Area. The results of this search are presented below.

### 5.2.1 Registered Aboriginal Places

#### *Victorian Aboriginal Heritage Register*

An initial search of the VAHR was conducted on 05 January 2010 as part of CHMP #11090 (Nicolson et al. In Prep). Additional searches were undertaken on 04 September 2017, 06 September 2019, 01 October 2021 and 11 February 2022, which includes the registered LDAD and two stone artefact scatter sites located during the complex assessment for CHMP #11090 (Nicolson et al. In Prep) that relates to this ACHIA.

The search was conducted to identify Aboriginal Places within a 5 km radius of the Project Area, ensuring that a relevant and representative sample of information was obtained.

The most recent search identified a total of 69 registered Aboriginal Places within a 5 km radius of the Project Area. These places consist of a total of 77 site components comprising four site component types (Table 4). The difference between the number of places and number of site components is because several places contain two or more site component types. There were no Aboriginal Historical References identified within a 5 km radius of the Project Area.

A summary of the Aboriginal archaeological site component types appears in Table 2.



**Table 2:** Previously Identified Aboriginal Site Component Types within 5km of the Project Area

Site Component Type	Quantity	Percentage (%)
Artefact Scatters	28	36
Scarred Trees	1	2
Object Collection	8	10
Earth Features	40	52
<b>Total</b>	<b>77</b>	<b>100</b>

One previously recorded Aboriginal Place was located within the Project Area, VAHR Registered 1, which was recorded by AV staff in 1975. VAHR Registered 1 is a mound which, at the time of its recording, was elliptical in shape and measured approximately 3.2 m x 2.2 m.

VAHR Registered 2, were identified as a result of the complex assessment which was undertaken for CHMP #11090 (Nicolson et al. in prep), which relates to this ACHIA.

### *Local Council*

The Project Area is located within and is governed by the Moyne Planning Scheme. Planning schemes set out policies and provisions for the use, development and protection of land. The Heritage Overlay (HO) of the Moyne Planning Scheme was examined on 17 January 2010. Additional search of the Moyne Planning Scheme was made on 07 October 2019; an updated search was undertaken on 01 October 2021. No Aboriginal heritage places listed on the HO are present within the Project Area.

## 5.3 Reports and Published Works

### *Previous studies of the Project Area*

Regional and localised archaeological investigations have established the general character of Aboriginal Places located within the same geographic region as the Project Area. These reports generally reach the conclusion that watercourses and stony rises are landforms that are sensitive for Aboriginal cultural heritage. They also show that Aboriginal cultural heritage in the form of stone artefact scatters or LDADs are sparsely distributed across the landscape and that soil deposits tend to be quite shallow with maximum depths being approximately 400 mm.

**Schell et al. 2009** undertook a Cultural Heritage Assessment for the proposed Shaw River Power Station Project, which involved the construction of a power station and gas pipeline. The Project Area for this assessment is located within the extent of the present Project Area. The assessment was undertaken as part of an EES for the Project and aimed to establish the presence, nature and significance of Aboriginal and historical cultural heritage sites within the Project Area; determine any potential impacts of the gas station project on Aboriginal and historical cultural heritage values; formulate mitigation measures that may be required and suggest the scope of any further investigations that may be required. A field survey was undertaken as part of the cultural heritage assessment. The study area stretched over a wide range of landforms, including stony rises, which would have been sensitive for the Aboriginal occupation of the area; however, it was found that past land use had resulted in disturbance which would have affected the integrity of any surface Aboriginal and historical cultural heritage Places. Potential for subsurface archaeological deposits was considered to remain within the

power station's Project Area. The ground surface survey encountered low visibility which hindered the overall effectiveness of the survey. A model for predicting the sensitivity of zones within the Project Area identified the Moyne River specifically as an area of high sensitivity, while other creeks and waterways were assigned a rating of 'moderate', as were rises adjacent to swamps, regardless of whether they were classified as stony rises or otherwise.

**Murphy, Rymer and Thomson (2010)** prepared complex CHMP #11187 for a proposed gas-fired power station located within the present Project Area, near the intersection of Riordans Road and Landers Lane. A previous archaeological survey of the proposed gas-fired power station and gas pipeline was undertaken by Meara and Slavin (2009). A number of areas of Aboriginal archaeological sensitivity, including stony rises and areas close to creeks, were identified during that survey. Murphy et al conducted an additional survey for the preparation of the CHMP to confirm the results of Meara and Slavin's survey. No archaeological places were identified during the standard assessment. A complex assessment was undertaken; it comprised one 1 x 1 m test pit and 42 shovel test pits measuring 500 mm x 500 mm. The shovel test pits ranged between 100 mm to 400 mm in depth and encountered silty clay soil overlying waterlogged clumpy clay on the floodplain or areas of lower elevation and basalt rock bases on the stony rise landforms. No new Aboriginal cultural heritage was identified as a result of the assessment.

**Weaver (2011)** prepared complex CHMP #11486 for a proposed quarry extension at Tarrone, located approximately 3.6 km southeast of the present Project Area. The Project Area was located amongst stony rises; however, the desktop assessment stated that these landforms were most likely used as transit points on the way to other places, such as waterways, which were richer in resources. A standard assessment of the Project Area was undertaken; however, due to poor ground surface visibility at the time of the survey no Aboriginal cultural heritage was identified. The complex assessment was comprised of one hand excavated test pit, which reached a depth of 150 mm before basalt rocks were encountered across the base. One flint artefact was located in this trench. Twelve radial shovel test pits were excavated, all of which displayed a soil profile consistent with the test pit. No further Aboriginal cultural heritage was located in these radial test holes. Further complex assessment was restricted by the prior land use: overburden had previously been stockpiled in the Project Area and then removed, during which process the topsoil had also been removed. Only two shovel test probes were excavated in this area. The single artefact that was identified during the complex assessment was registered as VAHR Registered 5.

**Kirkwood (2009)** prepared complex CHMP #10229 for the Hawkesdale Wind Farm, located approximately 2.8 km east of the present Project Area. The standard assessment drew on an earlier survey which had previously identified two areas of archaeological sensitivity which were likely to be impacted by the proposed development: the first was an area of land that gently slopes downwards towards a natural drainage line, which was to be the location of a substation; the second area to be re-surveyed was the proposed location of a wind turbine. No Aboriginal cultural heritage was identified during the survey. Subsurface testing was conducted at the proposed location of the turbine. A 1 x 1 m test pit was excavated to a depth of 300 mm. This test pit was excavated in a field that was being used for the growing of turnips; consequently, the upper stratum (to a depth of 160 mm) was comprised of loose, light brown topsoil which had been recently ploughed. Beneath this context was an orange-

yellow rock hard indurated clay base. A series of shovel probes was excavated in all four cardinal directions. No new Aboriginal cultural heritage was located as a result of this assessment.

**Amorosi and Murphy (2005)** undertook a cultural heritage investigation for the Macarthur Wind Farm, located approximately 3 km directly north of the present Project Area (AV report #3114). There were four previously recorded scarred trees in the Project Area. These could not be re-located; however, a number of dead and decaying trees affected by insect activity were identified at the recorded location of the trees and it was thought that perhaps the trees had fallen as a result of these taphonomic processes. No additional Aboriginal Places were identified as a result of the survey; however, 17 historical heritage sites were identified, all of which could be avoided by moving the location of the proposed turbine to another place. The authors stated that the assessment compared favourably with other assessments of windfarms that they had conducted, especially in the extent of impacts to cultural heritage and the ability of windfarms to modify their designs to avoid impacting cultural heritage.

### Previous relevant studies within the geographical region of the Project Area

A summary of archaeological reports relevant to the Project Area are summarised below in Table 5.

**Table 3: Archaeological Reports Relevant to the Geographic region**

Author, Date, Report #	Description and Location	Results
du Cros and Associates 1993	An archaeological survey of the proposed Hamilton gas pipeline, commencing southwest of Orford and terminating in Hamilton. The route runs southwest and west of the current Project Area. The pipeline is located immediately adjacent to, but outside, the far eastern boundary of the current Project Area.	No sites were identified during the survey, however areas of potential sensitivity were identified close to creek lines. No sites or areas of sensitivity were identified immediately adjacent to the current Project Area.
I. McNiven and L. Russell 1994a	A desktop study of a proposed optical fibre cable route between Broadwater, Macarthur, and Ripponhurst was undertaken. This section of the cable route is located north and west of the current Project Area. A second cable route option, between Condah, Wallacedale and Breakaway Creek, more than 30 kilometres northwest of the current Project Area, was also investigated.	Swamp margins, cuttings near creeks and stony rise country between Condah and Breakaway Creek were identified as being potentially sensitive for Aboriginal archaeological sites.
I. McNiven and L. Russell 1994b	An archaeological sample survey of a proposed optical fibre cable route between Broadwater and Macarthur and Macarthur and Ripponhurst was undertaken. This section of the cable route is located north and west of the current Project Area. A second cable route option, between Condah, Wallacedale and Breakaway Creek, more than 30 kilometres northwest of the current Project Area, was also investigated.	No sites or areas of sensitivity were identified within the Macarthur cable route system.
I. McNiven and L. Russell 1995	A desktop study of six different proposed optical fibre cable routes in southwest Victoria was undertaken. One of these proposed routes runs between Yambuk, Orford, Willatook and Warrong and bisects the current Project Area, running along road reserves which are located within the current Project Area.	No areas of sensitivity were identified along the Orford to Willatook route as the cable was to be situated within road reserves which had already been severely disturbed.

I. McNiven 1998	An archaeological survey of a proposed optical fibre cable route between Broadwater and Bessiebelle, west of the current Project Area. One section of the cable route is located immediately north of the westernmost section of the current Project Area, along Woolsthorpe-Heywood Road and Dysons Road.	No sites or areas of sensitivity relevant to the current Project Area were identified.
V. Wood 2001	An archaeological survey of a proposed gas pipeline route between Iona in Victoria and Adelaide in South Australia was undertaken. The route included land extending northeast of Willatook, bisecting the current Project Area.	No new sites were identified in or near the current Project Area, however the Moyne River and swampy basins/stony rises between the Moyne River and Shaw River were considered to be sensitive for Aboriginal archaeological sites.

## 5.4 Historical and Ethno-Historical Accounts

Before European arrival, the area was being occupied by Aboriginal people; the area was being occupied by the *Dhauwurd wurrung* (*Gundidjmarra*) people (Clark 1990:20). Their traditional lands extended from approximately the western Victorian border, east along the coast to Warrnambool and north close to Hamilton (Clark 1990:20; LCC 1996:26)

According to historical records, the *Dhauwurd wurrung* were divided into 59 clans. Three of these clans are likely to have resided within the Project Area; *Art gundidj*, and the *Yowen gundidj* in the east, and the *Nartitbeer gundidj* in the west (Clark 1990:54–55). *Art gundidj* translates to “belonging to Art”. The meaning of Art is unknown, however this group occupied the land near Tarrone Station, west of the Moyne River in the eastern part of the Project Area (Clark 1990:53). Tarrone Station was also occupied by the *Yowen gundidj* (Clark 1990:55). In the west of the Project Area, the land surrounding Dunmore Station was occupied by the *Nartitbeer gundidj* (Clark 1990:55).

The *Dhauwurd wurrung* people followed a matrilineal descent system, where descent was traced through the female line and each clan was assigned to either *kappatj* (*gabadj*) (black cockatoo) or *krukij* (*grugidj*) (white cockatoo) moieties (LCC 1996:25). The *Nartitbeer gundidj* were of the *gabadj* moiety (Clark 1990:69), however the moieties of the *Art gundidj* and the *Yowen gundidj* are unknown (Clark 1990:53, 90).

Coastal *Dhauwurd wurrung* clans first came into contact with European people from 1810 when sealers and whalers first began to work in the Portland Bay area; however, these visits were seasonal (Clark 1990:33). In 1834 the Henty brothers arrived in Portland and settled permanently. Over the next five years the relationship between the new arrivals and the *Dhauwurd wurrung* was reportedly generally amenable apart from the killing of at least three Aboriginal people in mid and late 1838 (Clark 1990:33).

Throughout the 1840s the *Dhauwurd wurrung* fought a sustained guerrilla war against the European settlers. Sheep were regularly taken from stations to supplement the diet of Aboriginal people in the face of being denied access to their traditional lands. Conflict ensued with deaths on both sides, however, it is likely that far more Aboriginal people than Europeans were killed. In 1842 at Tarrone Station, 300 Aboriginal people reportedly launched an attack on Dr Kilgour’s workers. Kilgour and his men retaliated, chasing and shooting two or three *Yowen gundidj* as they fled. The station confiscated all the land from the Aboriginal people and there were no further incidents for some time, however in 1844 it was discovered that the overseer of the station, Robertson, was supplying the *Yowen gundidj* with arsenic laced flour (Clark 1990:90).

In 1865 the Church of England set up the first mission in the western district at Framlingham. However many Aboriginal people from Portland and Lake Condah refused to live there. As a result, in 1867 a new mission was set up at Lake Condah (Clark 1990:48). While living on Aboriginal missions, many people experienced forced confinement, the imposition of strict religious observance, separation from and removal of their children, the breakdown of traditional values and the banning of their languages and cultural practices. Despite such hardship, Aboriginal people formed and maintained strong communities and used their confinement as the impetus for political campaigns, human rights movements and the fight for the return of their land (Koorie Heritage Trust 2010a).

In the early days of the Framlingham Mission control moved between the Central Board and the missionaries, and the Board attempted to shut the mission down a number of times. However, the Aboriginal people at Framlingham eventually won ownership of the mission in 1970 and many Aboriginal people continue to live there today (Koorie Heritage Trust 2010b). The Lake Condah Mission was closed in 1919 although many people continued to live there until the 1950s when the land was subdivided for returned soldiers (Koorie Heritage Trust 2010c).

## 5.5 Site Prediction Model

The following site prediction statement<sup>1</sup> for Aboriginal Places has been formulated from the review of previous assessments. The statement presented is based on a site type approach. (For further information on site types see AV 2019).

The review of the previously recorded Aboriginal archaeological Places and previous archaeological investigations within the search area indicates that the archaeological site types most likely<sup>2</sup> to occur in the Project Area are earth features, stone artefact scatters and isolated artefacts. Other likely site types to occur are Low Density Artefact Distributions, scarred trees, shell middens, quarries and stone arrangements. Site types considered unlikely to occur in the Project Area are Aboriginal burials.

**Stone Artefact Scatters** are considered likely to occur in the Project Area. This is a common site type in the geographic region although, by current recording standards, they would be recorded as Low Density Artefact Distributions.

Stone tools were made by hitting one piece of stone, called a core, with another called a 'hammerstone', often a pebble. This would remove a sharp fragment of stone called a flake. Both cores and flakes could be used as tools. New flakes were very sharp, but quickly became blunt during use and had to be sharpened again by further flaking, a process called 'retouch'. A tool that was retouched has a row of small flake scars along one or more edges. Retouch was also used to shape a tool.

Not all types of stone could be used for making tools. The best types of stone are rich in silica, hard and brittle. These include quartzite, chert, flint, silcrete and quartz. Aboriginal people quarried such stone from outcrops of bedrock, or collected it as pebbles from stream beds and beaches. Many flaked stone artefacts found on Aboriginal sites are made from stone types that do not occur naturally in the area. This means they must have been carried over long distances.

Stone tools are the most common evidence of past Aboriginal activities in Australia. They occur in many places and are often found with other remains from Aboriginal occupation, such as shell middens and cooking hearths. They are most common near rivers and creeks. It is easier to find them where there is limited vegetation or where the ground surface has been disturbed, for example by erosion.

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<sup>1</sup> The term 'site prediction statement' is sometimes referred to as 'site prediction model'. Ecology and Heritage Partners Pty Ltd prefers the term 'statement' as it is more accurate; 'statistical modelling' is a rigorous and comprehensive process using empirical data.

<sup>2</sup> **Likely** is an assessment of site types with a 50% or more likelihood of occurring; **Unlikely** is an assessment of site types with less than 50% likelihood of occurring.

Artefact scatters are the material remains of past Aboriginal people's activities. Scatter sites usually contain stone artefacts, but other material such as charcoal, animal bone, shell and ochre may also be present. No two scatters are exactly the same.

Artefact scatters can be found wherever Aboriginal occupation has occurred in the past. Aboriginal campsites were most frequently located near a reliable source of fresh water, so surface scatters are often found near rivers or streams where erosion or disturbance has exposed an older land surface.

**Low Density Artefact Distributions**, or LDADs, are a particular type of stone artefact scatter defined in relation to the density of stone artefacts recorded; it is considered likely that LDADs will occur in the Project Area. There is one LDAD recorded in the Project Area and within 5km there are stone artefact scatters and isolated artefacts which by current recording standards would be recorded as LDADs.

Low density artefact distributions are stone artefact sites that comprise of 10 artefacts or fewer in a 10 x 10 m area and where artefact clusters are all contained within a single 1:100,000 scale mapsheet. LDADs can occur singly and may occur anywhere in the landscape. Surface artefacts may be indicative of further subsurface archaeological deposits. This site type can be found anywhere within the landscape, however, they are more likely to occur within contexts with the same favourable characteristics for stone artefact scatter sites.

**Scarred Trees** are considered likely to occur in the Project Area. There are many waterways and swamps within the Project Area and aerial photographs and the review of pre-1750s vegetation indicate the likelihood of mature trees being present in the Project Area.

Aboriginal people caused scars on trees by removing bark for various purposes.

The scars, which vary in size, expose the sapwood on the trunk or branch of a tree. Scarred trees are found all over Victoria, wherever there are mature native trees, especially box and red gum. They often occur along major rivers, around lakes and on flood plains.

**Shell Middens** are considered likely to occur in the Project Area. Although there have been no shell middens recorded within a 5km radius of the Project Area, the Project Area contains minor waterways and more significant watercourses such as the Shaw River and the Moyne River; there is also a sizeable swampy area in the west of the Project Area.

Shell middens may occur in both freshwater and coastal contexts. Shell middens are accumulations of shell produced by Aboriginal people collecting, cooking and eating shellfish. Shell middens often contain evidence of cooking such as charcoal, ash, fire-stones, burnt earth or burnt clay. Sometimes they also contain animal bones, fish bones, stone tools and Aboriginal burials.

Freshwater shell middens are found along river banks and flood plains, near swamps and lakes, and in sand dunes. They are sometimes found in dry areas, where fresh water was once present. Freshwater shell middens usually occur as fairly thin layers or small patches of shell. The shells usually come from both the freshwater mussel (*Velesunio ambiguus*) and river mussel (*Alathyria jacksoni*). The shells may be the remains of just one meal or hundreds of meals eaten over thousands of years.

Freshwater mussel shells may also be found in Aboriginal oven mounds, but usually only in small quantities. Middens may be visible as scatters of broken mussel shell, exposed along vehicle tracks. If you look closely, you may find mussel shells buried in the surrounding soil. Middens are also commonly



visible as scatters of mussel shell eroding down the slopes of dunes. Again, the scatters can usually be traced up the dune to the buried shell layer. Shell fragments in the upcast from rabbit burrows in dunes may also indicate a midden.

Shell middens are also found in many areas along the Victorian coast. They can be located in sheltered positions in the dunes, coastal scrub and woodlands, within rockshelters, or on exposed cliff tops with good vantage points. They can occur near rocky or sandy shores and also close to coastal wetlands, inlets, estuaries, bays and river mouths. Coastal shell middens are found as layers of shell exposed in the sides of dunes, banks or cliff tops, or as scatters of shell exposed on eroded surfaces. They range in size from a few metres across to many hundreds of metres and can consist of a thin, single layer, or multiple layers forming a thick deposit.

**Mounds** are considered likely to occur in the Project Area. Earth features (which mounds are categorised as) are the dominate archaeological site within this landscape. One mound has already been recorded within the Project Area and 51.95% of the Aboriginal Places within 5 km of the site are registered as earth features.

Aboriginal mounds are places where Aboriginal people lived over long periods of time. Mounds often contain charcoal, burnt clay or stone heat retainers from cooking ovens, animal bones, shells, stone tools and, sometimes, Aboriginal burials.

Mounds usually occur near rivers, lakes or swamps but occasionally some distance from water. They are also found on dunes and sometimes among rock outcrops on higher ground.

**Quarries** are considered likely to occur in the Project Area. Although there are no quarries registered within a 5 km radius of the Project Area, a significant portion of the Project Area is situated on a stony rise geomorphological unit and may contain quarried outcrops.

Aboriginal quarries are the sites where Aboriginal people took stone from rocky outcrops to make chipped or ground stone tools for many different purposes. Not all types of stone were suitable for making tools, so an outcrop of good stone that could be easily quarried was a valuable resource. Aboriginal people quarried different types of stone, each with its own special value and use. Stone tools were made from greenstone, silcrete, quartz, quartzite, basalt and chert. Pigments were made from quarried ochre, and grinding tools were made from sandstone.

Some quarries are small, consisting of just a single protruding boulder. Other quarries incorporate many outcrops and areas of broken stone that can cover thousands of square metres.

**Stone Arrangements** are considered likely to occur in the Project Area. There were no stone arrangements registered within a 5km radius of the Project Area; however, there are numerous stone structures located within 10 km to the west and south of the Project Area.

Aboriginal stone arrangements are places where Aboriginal people have positioned stones deliberately to form shapes or patterns. The purpose of these arrangements is unknown because their traditional use ceased when European settlement disrupted Aboriginal society. They were probably related to ceremonial activities.



Stone arrangements occur where there are plenty of boulders, such as volcanic areas, and where the land could support large bands of people. Surviving stone arrangements are rare in Victoria, and most are in the western part of the State.

**Stony Rises** are considered likely to occur in the Project Area. Sections of the Project Area are within the stony rises geomorphological unit.

Stony Rises are a geological formation that emerges from the smooth lava fields of the western plains of Victoria, a fertile region that for tens of thousands of years supported the lives of its indigenous Aboriginal people. Stony Rises occur in a number of forms but generically comprise loosely consolidated rocks and boulders elevated above the surrounding plain. Ephemeral lakes occur at low points often adjacent to the Stony Rises, and are often interspersed with low-lying, poorly-drained plains (Joyce 2003). Stony rises provided vantage points to local Aboriginal tribes across the tribal territory.

Stony Rises are considered an area of Aboriginal archaeological sensitivity as they are likely to contain stone artefact sites. Stony Rises are known to be the site of Aboriginal stone huts and stone circle arrangements and can also contain hearth sites. Previous studies have shown a tendency for stone artefacts located in surface and/or subsurface contexts on stony rises. Artefact distribution patterns commonly comprise isolated stone artefacts and diffuse low density artefact scatters occurring across the volcanic plains, with moderate to higher densities of stone artefacts occurring on stony rises and that only occasional isolated stone artefacts may occur away from stony rises. The most significant sites are located on the stony sites near watercourses.

**Aboriginal Burials** are considered unlikely but possible to occur in the Project Area. There were no burials registered within a 5km buffer of the Project Area and the stony nature of most of the Project Area is not conducive to burials. Sometimes mounds may contain burials.

Aboriginal burials are normally found as clusters of human bones eroding from the ground or exposed during ground disturbance. Aboriginal customs for honouring and disposing of the dead varied greatly across Victoria, but burial was common. Aboriginal burial sites normally contain the remains of one or two people, although cemeteries that contain the remains of hundreds of people buried over thousands of years have been found. Sometimes the dead person was buried with personal ornaments and artefacts. Charcoal and ochre are also often found in burial sites.

Although Aboriginal burials are quite rare in Victoria, they have been found in almost every kind of landscape, from coastal dunes to mountain valleys. They tend to be near water courses or in dunes surrounding old lake beds. Many burials have been found on high points, such as dune ridges, within surrounding flat plains. They are often near or within Aboriginal occupation sites such as oven mounds, shell middens or artefact scatters.

**Aboriginal mortuary trees** are considered likely to occur in the Project Area. This place type has been ethnographically described in southwestern Victoria; however, although mature trees appear to be present in the Project Area, mortuary trees are relatively rare.

Accounts of Aboriginal mortuary trees are contained in newspaper reports (*Mount Ararat Advertiser* 1858), ethnohistorical accounts (Bride 1983[1898]: 322), oral history (Ron Howlett, pers. comm. 2003), and unpublished diaries (Johns 1877). These accounts describe the following treatment of Aboriginal human remains: the corpse was allowed to decompose. Later, the remains were recovered and

sometimes the bones of limbs were distributed among relatives to be kept as relics. Then, postcranial remains were bundled and placed in a hollow tree, sometimes with the skull. On other occasions, the skull was deposited in a hollow tree while postcranial remains were given to a relative for placement at a later date, possibly also in a hollow tree.

The Chief Protector of Aborigines, George Augustus Robinson, recorded several different forms of treatment of the dead by the northern Djab Wurrung clans in his 1841 journal (Clark 1987: 15, 1998: 335, 368), including placement in trees. The ethnographic record for southwestern Victoria also indicates that while low-ranking individuals were usually placed in simple burials, higher-ranking individuals were subject to more complex rituals that included placement in trees (Dawson 1881: 62–66; Howitt 2001 [1904]: 455–457).

The study of the Moyston Mortuary Tree and references to additional mortuary trees within the region demonstrate a local pattern of mortuary practices in southwestern Victoria. While burials in lunettes, earth mounds, and sand dunes are more common in the region, more complex practices also existed in southwestern Victoria in the late pre-contact to early post-contact periods (Sprague 2005: 70; article: 69-71).

## 5.6 Summary

Previous heritage studies demonstrate the region's rich Aboriginal archaeology and provides insight into the types of places that occur in the region, including their contexts and materials. The Moyne River, Shaw River and other waterways were clear focal points of past Aboriginal occupation. As noted during the desktop assessment the clustering of Aboriginal places could reflect the importance of this resource to the Aboriginal people occupying the region. This may be supported by the frequency of places becoming increasingly sparse the further the archaeological studies are from the river and major creeks systems. Alternatively, it may reflect a higher occurrence of previous archaeological studies being undertaken in this area.

There is one known Aboriginal place located within the Project Area: VAHR Registered 1 (Earth Feature). There are several artefact scatters located in proximity to the Project Area. Considering the number of previously recorded places in the region, there is potential for further Aboriginal places to be located within the Project Area. Any unidentified Aboriginal cultural heritage that may be present in the Project Area is most likely to consist of low-density artefact scatters made from a variety of commonly available raw stone types such as silcrete, quartz and hornfels and located on areas of raised ground close to natural water sources. Mounds may also occur in areas subject to inundation.

While there is potential for Aboriginal places to occur anywhere within the Project Area, the likelihood is considered low based on previous CHMPs conducted around the Project Area.

## 6 STANDARD ASSESSMENT

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### 6.1 Methodology of the Standard Assessment

The Project Area was surveyed from 14 to 18 December 2009 and from 18 to 19 January 2010 by Oona Nicolson and Jen Burch (Archaeologists/Heritage Advisors), with Jimmy Onus, Bernie King, Darren Bell, Simone Saylor-Smith and Eileen Alberts representing the Gunditj Mirring Traditional Owners Aboriginal Corporation and Travis Harradine representing the Framlingham Aboriginal Trust. Subsequent surveys were undertaken in 27 November to 30 November and 19 December to 20 December 2017 by Dave Johnston and Bert Fagan, 22 September to 24 September by Joshua Flynn and Ashton Sinamai with Alieria Harrison and Shane Harrison representing the Eastern Maar on 22 September to 24 September 2020, April 2021 by Oona Nicolson and in June 2021 by Trinity Gurich, Tyler Whitmarsh and Lexie Branda-Pawlacyzk with Jindara Chatfield and Phillip Chatfield representing the Eastern Maar and Dean Lovett and Len Walker representing the Gunditj Mirring.

The survey took the form of a targeted systematic pedestrian and vehicle survey. A targeted method was employed whereby every proposed turbine location (being 150 locations at the commencement of the CHMP) was accessed by foot or by vehicle and then the entire impact area at each proposed turbine location was subject to pedestrian survey within a 50 metre radius of the centre of each proposed turbine location. Although the number of participants in the survey varied, the methodology of the survey remained the same: four to five participants walked two metres apart across each turbine impact area. Therefore, the entire impact area at each proposed turbine location was subject to systematic surface survey. As nearly all of the Project Area is marked as potential infrastructure areas, the remainder of the Project Area was surveyed slowly from a vehicle and assessed for Aboriginal archaeological sensitivity on the basis of landform. The surveyors would get out of the vehicle if there was any exposed areas of ground surface and stony rises and inspect it. This allowed for the entire 7527.402 hectare Project Area to be assessed for areas of Aboriginal archaeological sensitivity or likelihood (Map 9).

All mature native trees within the Project Area were examined for evidence of cultural scarring.

No caves, cave entrances or rock shelters are present within the Project Area. A summary of the archaeological survey attributes appears in Appendix 2.

### 6.2 Visibility, Exposure and Coverage

#### 6.2.1 Ground Surface Visibility

Ground surface visibility (GSV) varied throughout the Project Area with less than 10% GSV being encountered across large portions of the Project Area (Plate 1); stony rises within the Project Area had an average GSV of as much as 60% but more generally ranged between 30-60% (Plate 2). In areas of disturbance, such as vehicle tracks or where cattle trampling had occurred, up to 100% GSV was obtained (Plate 3 and Plate 4).



**Plate 1:** Project Area facing southwest showing typical low GSV of less than 10%



**Plate 2:** Project Area facing west showing typical area of better GSV on stony rise landforms



**Plate 3:** Project Area facing southwest showing area of 100% GSV in eroded patches



**Plate 4:** Project Area facing south showing areas of variable GSV

## 6.2.2 Effective Survey Coverage

Effective survey coverage calculations are based on the percentage of ground surface exposure and, provide a measure for the ‘detectability’ of artefacts and the level of survey sampling effort within each landform in the Project Area. The calculation assesses the level of average GSV across the Project Area in each landform, the extent of isolated exposures with higher or lower GSV than the average and, a calculation of the area within each landform surveyed.

An overview of the effective survey coverage in each landform within the Project Area is provided in Table 5.

**Table 4:** Effective Survey Cover Calculations within the Project Area

Landform	Total Area (Ha)	Average Landform GSV (%)	Area of Project Area Surveyed (ha)	Percentage of Project Area Surveyed (%)	Effective Survey Coverage (%)
Undulating Plains	3476	10	3476	46	10

Stony Rises	3876	50	3876	51	60
Swamps/low-lying areas	176	10	176	3	10
<b>Total</b>	<b>7527</b>	<b>23</b>	<b>7527</b>	<b>100</b>	<b>23</b>

### 6.2.3 Limitations of the Standard Assessment

The conditions during the survey were variable, ranging from heavy rain and overcast conditions to very hot, dry and windy conditions. Ground surface visibility was variable across the Project Area but was generally low (approximately 10%); however, it is not uncommon to encounter poor visibility during standard assessments and was addressed in the progression of the CHMP to complex assessment.

## 6.3 Results of the Standard Assessment

No new Aboriginal Places were identified during the ground survey. Attempts were made to relocate the previously recorded Aboriginal Place, being the mound site VAHR Registered 1 (Earth Feature however, it could not be relocated and there was no evidence of a mound in the area, despite intensive searching across a wide area. It is considered likely to have been destroyed at some point in the past. A Place Inspection Form was completed and lodged on the VAHR.

A number of areas of Aboriginal archaeological sensitivity were identified where it is considered likely that Aboriginal cultural heritage may occur in a sub-surface context. These areas are shown on Map 9a.

The majority of the Project Area consists of low swampy ground and stony rises. This landscape and geology is considered to be sensitive for artefact scatters and mound sites. In addition, land close to swamps, creeks and rivers, particularly high ground and rises close to these topographic features, is considered to be sensitive for artefact scatters.

### 6.3.1 Landforms

The survey confirmed the landforms identified during the desktop assessment with three main landforms present: undulating plains (Plate 5), stony rises (Plate 5 and Plate 6) and swamps and their deposits (Plate 8).





**Plate 5:** Project Area facing southeast showing undulating plains



**Plate 6:** Project Area facing northeast showing a stony rise landform



**Plate 7:** Project Area facing west showing large stony rise landform



**Plate 8:** Project Area facing west showing a low lying swampy area

### 6.3.2 Aboriginal Cultural Heritage Identified during the Standard Assessment

No new Aboriginal Places were identified during the standard assessment.

#### Previously Recorded Sites

An inspection was made of the recorded location of VAHR Registered 1 (an Earth Feature), which is recorded as a mound measuring approximately 3.2 m x 2.3 m, with a pile of rocks and stones on top. The mound was recorded as being located in a ploughed field; however, at the time of its recording the mound itself had not been ploughed or subjected to disturbance. A test pit recorded on the site card shows stratigraphic deposits including ash. An extensive search was made for the place at its recorded location and for an area of approximately 200 m around to allow for error in the recorded co-ordinates. There was no evidence of a mound remaining that was visible. The place as described on the site card could therefore not be relocated during the standard assessment and a place inspection form was completed and lodged with the VAHR.

All mature native trees were examined and no cultural scarring was located.

There are no caves, cave entrances or rock shelters present within the Project Area.

### 6.3.3 Areas of Aboriginal Cultural Heritage Likelihood

A total of eight areas of Aboriginal cultural heritage likelihood were identified during the standard assessment (Map 9). Elevated landforms in the undulating plains and stony rises (Plate 9 and Plate 10) were determined to be sensitive for Aboriginal cultural heritage, as were the numerous natural drainage lines (Plate 11 and Plate 12), minor waterways such as Back Creek, and the larger waterways that pass through the Project Area, including Shaw River in the west and the Moyne River in the east. High ground near swampy areas were also considered to be sensitive areas because of their ability to attract faunal food sources and provide water.



**Plate 9:** Project Area facing north showing elevated stony rises typically designated as areas of Aboriginal cultural heritage likelihood



**Plate 10:** Project Area facing west showing rises typically designated as areas of Aboriginal cultural heritage likelihood



**Plate 11:** Project Area facing north showing a natural drainage line in the Project Area



**Plate 12:** Project Area facing west showing a natural drainage channel and nearby low-lying swampy area which may be sensitive for Aboriginal cultural heritage

### 6.3.4 Previous Ground Disturbance

Several areas of previous ground disturbance were identified during the standard assessment (Map 9).



- A high voltage electricity transmission line (Plate 13) and power station;
- Sealed roads and unsealed vehicle tracks (Plate 14);
- The location of an old house and associated farm outbuildings (Plate 15); and
- Dry stone walls and stockpiles of boulders indicating the modification of the landscape for pastoral purposes (Plate 16).



**Plate 13:** Project Area facing northwest showing a high voltage electricity transmission line



**Plate 14:** Project Area facing south showing vehicle tracks in Project Area



**Plate 15:** Project Area facing southwest showing the location of an old house and associated outbuildings



**Plate 16:** Project Area facing east showing the modification of the landscape for pastoral purposes

### 6.3.5 Survey of the Proposed Quarry Area

A targeted survey of the area proposed for the extraction of rock for use within the wind farm was undertaken on 22 September 2020 by Joshua Flynn (Heritage Advisor/Archaeologist) and Ashton Sinamai (Archaeologist) with Shane Harrison and Alieria Harrison representing the Eastern Maar Aboriginal Corporation. Following this survey, the Sponsor made an adjustment to the proposed location of the quarry area and a further survey was undertaken by Oona Nicolson (Heritage Advisor/Archaeologist) with Jyran Chatfield and Tylah Merriman representing the Eastern Maar on 21 April 2021.



The proposed quarry area is comprised of an extraction area and a stockpile area, as well as an area for additional facilities such as parking areas. Stony rises were present; therefore, it was decided to test the area proposed for the quarry to ascertain if any cultural heritage was present, although it was noted the area was not sheltered and subject to prevailing winds. However, the nearby proximity of the Shaw River meant that the potential for heritage should be considered.

## 6.4 Standard Assessment – Summary of Results and Conclusions

The standard assessment confirmed the presence of landforms identified in the desktop assessment, namely stony rises, undulating plains, and low-lying areas subject to inundation (swamps and their deposits). The desktop assessment stated that stone artefact scatters, Low Density Artefact Distributions, scarred trees, mounds and stony rises are the Aboriginal Place types most likely to occur within the Project Area; however, no such places were identified during the standard assessment. Moreover, the Aboriginal place previously recorded within the Project Area, VAHR Registered 1, could not be relocated.

A combination of survey strategies was employed to ensure that the entire Project Area was assessed. Targeted pedestrian survey was used to assess all areas where impacts to ground surfaces will be the greatest. Turbine locations, access tracks, cable routes and the proposed locations of permanent buildings such as substations were subjected to intensive pedestrian survey, regardless of the level of ground surface visibility. Parts of the Project Area that will not be impacted were surveyed from a vehicle, with areas of exposed ground closely inspected for surface signs of Aboriginal cultural heritage. These initial surveys were supplemented with additional surveys as infrastructure locations were determined and/or adjusted.

Ground surface visibility varied widely across the Project Area, with better GSV had on the tops of stony rises and in areas of erosion resulting from stock and vehicle movement. Much of the Project Area was covered in dense pastoral grass, resulting in an average GSV of less than 10% in those parts. Other portions had been subjected to cropping; however, since some time had passed since the Project Area was ploughed and crops been planted, there were no portions of the Project Area where recent ploughing had resulted in 100% GSV.

The standard assessment identified extensive areas of Aboriginal archaeological sensitivity or likelihood which had not been subjected to extensive Significant Ground Disturbance within the Project Area (see Map 9); it was therefore considered likely that subsurface Aboriginal cultural heritage is present in parts of the Project Area and that a complex assessment was required. Following the complex assessment, the areas of cultural heritage sensitivity would be re-evaluated for their likelihood to contain Aboriginal cultural heritage.

For the purposes of r.64 of the *Aboriginal Heritage Regulations 2018* complex assessment of an Activity Area (Project Area) is required if the results of a desktop and standard assessment indicate that Aboriginal cultural heritage is, or is likely to be, present and; it is not possible to identify the extent, nature, and significance of the Aboriginal cultural heritage unless a complex assessment is carried out. It was therefore deemed necessary to proceed to a complex assessment of the Project Area.

## 7 ABORIGINAL CULTURAL HERITAGE COMPLEX

### ASSESSMENT (SUBSURFACE EXCAVATION) RESULTS

#### 7.1 Subsurface Testing

##### 7.1.1.1 Stratigraphy

The subsurface program, as specified above, began with a 500 x 500 mm stratigraphic test pit centrally located on each potentially-sensitive turbine location. Each stratigraphic test pit (STP) was excavated in 100–200 mm increments by hand until the base or culturally sterile layer was encountered, i.e. the layer dating to before human occupation. Where able, this base layer was further dug into an additional 100 mm in order to demonstrate that the sediments were indeed culturally sterile and prove that this was in fact the base layer in order to meet First Peoples – State Relations (FP-SR) guidelines. Once excavated, 100% of soil removed was sieved through a 4 mm sieve for artefacts and cultural materials. Soil samples were collected so that pH and Munsell colours could be obtained, the soil profile was drawn in detail at a 1:10 cm scale recording stratigraphic layers, charcoal deposits and the location of any cultural heritage within. The stratigraphic test pit would then be photographed with a scale present in each photo, and all features would be recorded in detail on the standardised recording sheets.

Each STP was excavated by hand, effectively establishing the stratigraphy present at each turbine location prior to the program of transects and test holes being excavated.

Photographs were taken, and dumpy levels (excavation depth measurements) were recorded at the ground surface and at the base of each STP. At the conclusion of the excavation, scaled section drawings were recorded for one soil profile in each STP (arbitrarily taken to be the north section), with each soil context (stratum) shown. Samples were taken of each context and analysed for texture, colour and pH. Photographs were taken of the north (unless otherwise stated) section of the STPs (these will be included in the CHMP), before each test location was backfilled.

##### 7.1.1.2 Subsurface Testing

Over the course of the assessments, the nomenclature used to refer to test excavations has changed; in 2016 Aboriginal Victoria (now FP-SR) issued a Practice Note for Subsurface Testing. Table 5 sets out the number, type and dimensions of test excavations undertaken during the complex assessment.

**Table 5:** Excavation nomenclature, dimensions and number excavated

Type	Stratigraphic Test Pit (STP)	Shovel Test Hole (STH)	Random/Radial Test Hole RTH	Test Pit (TP)	Shovel Test Pit (STP)	Radial Test Pit (RTP)
Dimension (m)	0.5 x 0.5	0.4 x 0.4	0.4 x 0.4	1 x 1	0.5 x 0.5	0.5 x 0.5
Count						

Phase 1 (2011-2013)	53	1050	135	0	0	0
Phase 2 (2017)	0	0	0	5	0	20
Phase 3 (2020-2021)	0	0	0	8	31	0
<b>Total Area Excavated (sq. m)</b>	<b>26.5</b>	<b>420</b>	<b>54</b>	<b>8</b>	<b>15.5</b>	<b>10</b>

A total of 53 STPs measuring 500 x 500mm were excavated throughout the Project Area in areas where proposed wind turbine locations were situated in areas identified as having potential to contain Aboriginal cultural heritage. Most of these were excavated on the elevated stony rises identified as sensitive for Aboriginal cultural heritage following the surveys. Descriptions of each positive test pit can be found in Appendix 2. This level of testing served to establish the nature, location and extent of any Aboriginal Places within the activity area and also informed the model as to where such places were likely to be found, thereby allowing for the micrositing of turbines in the event that infrastructure needed to be moved from its planned location.

Where artefacts were found in test pits a series of radial test holes were excavated at 5 m intervals to locate the extent of the sub surface deposit. In addition to this, a series of strategic random and radial test holes were excavated at a distance to allow for the turbine to be relocated to a nearby area proven to be culturally sterile.

A total of 210 transects each measuring 50 m in length were excavated across the landscape, most of these were undertaken at turbine locations, in every case test holes measuring 400 x 400 mm were excavated at 10 m intervals. In some cases, transects were utilised in order to test elevated land forms in areas where buildings and other items of infrastructure were proposed.

Artefacts were identified in test holes on transects 72, 165 and 175. In each case a series of radial test holes were excavated at 5 m intervals in all cardinal directions to locate the extent of the deposit. Further testing was conducted in the area to allow the turbine to be micro-sited.

A total of 135 strategic random test holes (Random TH; RTH) measuring 400 x 400 mm were excavated throughout the Project Area. These were utilised in order to test sensitive landforms, potential infrastructure locations, hard stand areas, and check for possible micro site locations. These were also used to extent test Aboriginal places, where conventional radials had been ineffective, and to ensure coverage of landforms that had yielded artefacts. Random Test Holes 34, 37, 40 and 92 were found to contain stone artefacts. The intent of the strategic random test holes was to ensure that landform elements, particularly those that exhibited a degree of archaeological probability based on slope, proximity to resources or other attributes, could be tested thoroughly. These landforms may have been only minimally tested by the transects employed in the more structured STH methodology. Tables within the appendices describe each of the excavated random and radial test holes excavated across the landscape at Willatook and highlighted rows indicate the presence of artefacts. Random test hole numbers 34, 37, 40 and 92 were each found to contain artefacts (see Appendix 2), in each case this

necessitated further radial testing at 5 m intervals in all cardinal directions until the extent of the sub surface deposit was found.

Locating cultural heritage within the stratigraphic test pits, test holes, and random test holes necessitated a program of further extent testing using 400 x 400 mm radials placed at 5 m intervals in all cardinal directions. As the random test holes were also used to test site extent, often at a greater distance than the 5 m radials, and as their functional capacity was analogous, both types of testing retained the RTH label (Random/Radial Test Hole).

An intensive complex assessment of the proposed quarry area was also undertaken due to the impacts that will result from the extraction of stone as well as being the location of the proposed site offices/amenities and truck parking areas during the construction of the wind farm. Overburden from the quarry will also be deposited in stockpiles in this area.

The complex assessment of the quarry area was undertaken in two stages in September 2020 and June 2021 based on the changing footprint of the quarry and associated infrastructure and amenities. The assessment commenced in the east of the quarry area where extraction and storage of overburden will occur and dam facilities will be constructed. A total of four TPs and 15 STPs were excavated in the first phase of testing for the quarry, all of which were negative for Aboriginal cultural heritage. A second stage of complex assessment for the proposed quarry development: one TP was excavated at the location of the proposed truck parking and amenities area, and six STPs were excavated in the area where general disturbance such as access roads will occur. These test locations also were negative and contained no Aboriginal cultural heritage. During this phase of complex assessment, additional testing for a bridge crossing over the Shaw River was also subjected to complex assessment, to ensure that no Aboriginal cultural heritage was present at that location.

The complex assessment tested stony rise landforms, mid-slopes and low-lying areas subject to inundation. The soil profiles within the proposed quarry area are consistent with those found elsewhere across the activity area and comprise shallow clayey silt topsoils overlying either sterile clay base or rocky bottoms (or a combination of the two). The excavations generally reached maximum depths ranging from 120 – 330 mm.

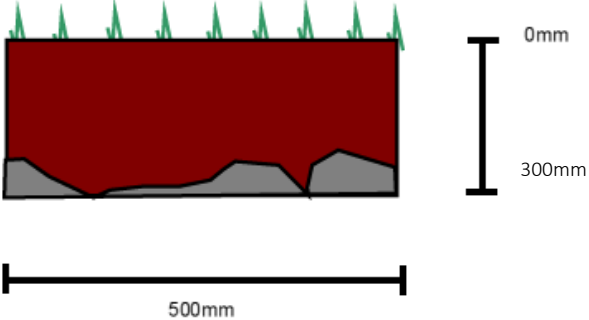
No Aboriginal cultural heritage was located during the complex assessment of the quarry area, nor at the bridge crossing over the Shaw River.

Three Aboriginal places were identified as a result of the complex assessment: VAHR Registered 2, VAHR Registered 3 and VAHR Registered 4. However as the Project Area has since been reduced in size, only two of these places remain located within the Project Area: VAHR Registered 1 and VAHR Registered 4 (Map 11). These places are discussed in more detail below in Section 7.3.

### 7.1.2 Stratigraphy

The soil profile was consistent throughout the Project Area, which is to be expected considering that the same elevated rocky landform was being consistently tested throughout the Project Area. A summary of the average soil profile and description from the stratigraphic test pits can be found in Table 6.

**Table 6:** Typical soil profile and description obtained from the stratigraphic test pits.

Soil Profile	Soil Description
 <p>The diagram illustrates a soil profile with two distinct layers. The top layer, Context 1, is a dark red color and extends from the surface (0 mm) down to a depth of 300 mm. The bottom layer, Context 2, is a grey color and begins at 300 mm depth, extending downwards. A horizontal scale bar below the profile indicates a width of 500 mm. A vertical scale bar to the right of the profile indicates a height of 300 mm, with the top of the profile at 0 mm.</p>	<p>Context 1: 0–90/300 mm (Indicative depth range)—Very dark brown firm silty clay. Munsell: 7.5YR 5/2, pH: 4.5</p> <p>Context 2: 90/300 mm + (indicative depth range) Very dark brown firm silty clay with frequent basalt boulders. Munsell: 7.5YR 5/2, pH: 6</p>

## 7.2 Complex Assessment Conclusions

Following the complex assessment and these results after the assessment, the areas that were designated as being sensitive for Aboriginal cultural heritage likelihood were reassessed. As a result, these areas were significantly reduced and became concentrated to areas within 200 m of the Shaw River to the west, the area within 200 m of the Moyne River to the east and two watercourses (Back Creek and an unnamed tributary) in the northeast of the Project Area (Map 9).

Stratigraphic profiles in the Project Area are generally characterised by clayey silts overlying sterile base clays or basalt rocks. The soil deposits are shallow, with sterile clay or rock bases being obtained at depths ranging from 90 mm to 390 mm.

The complex assessment failed to identify traces of the previously recorded mound earth feature associated with VAHR Registered 1. Three additional places were identified as a result of the complex assessment: VAHR Registered 2 is an artefact scatter comprised of one artefact, VAHR Registered 3 is recorded as an artefact scatter and is comprised of five artefacts; and VAHR Registered 4 is a Low Density Artefact Distribution comprised of ten artefacts. In all, a total of 16 subsurface artefacts were recorded within the Project Area during the complex assessment; this gives an artefact density of less than two artefacts per square kilometre across the Project Area. The artefacts are made of silcrete, quartz and hornfels, a type of metamorphic rock formed through contact with the heat associated with volcanic activity. These raw materials are commonly available throughout the geographic region.

Due to the changing boundaries of the Project Area, only VAHR Registered 1 and VAHR Registered 2 remain within the Project Area.

The methodology employed in the complex assessment allowed for the identification of Aboriginal cultural heritage at locations that will be impacted by the development and consequently facilitates the micro-siting of wind turbines and other infrastructure turbines so that impacts to known Aboriginal cultural heritage in the Project Area are avoided.

### 7.3 Cultural Heritage within the Project Area

A total of two Aboriginal places are located within the Project Area. VAHR Registered 1 was identified during the desktop assessment conducted for CHMP #11090 (Nicolson et al: in prep), which relates to this ACHIA. VAHR Registered 2 was identified during the complex assessment undertaken as part of CHMP #11090 (Nicolson et al: in prep).

- VAHR Registered 1 was registered as an Earth Feature, comprised of an elliptical mound measuring approximately 3.2 m x 2.2 m. It could not be re-located during the standard or complex assessments and has likely been ploughed out since its identification;
- VAHR Registered 2 was identified during the complex assessment process for CHMP #11090 (Nicolson et al.: in prep), and consists of a single hornfels artefact.

The stone artefact archaeological Place contains one flake made of commonly available raw material. The flake has edge damage/use wear on one lateral margin, suggesting that it may have been used as a tool, although environmental factors may also have resulted in such damage. Because of the small size of the assemblage and the fact that it is a common site type in the region, VAHR Registered 2 is considered to be of low archaeological/scientific significance. The mound may have been of moderate-high archaeological and scientific significance at the time of its registration; however, it has most likely since been destroyed and must now be considered as being of low archaeological significance.

## 8 RISK ASSESSMENT

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### 8.1 Background

The preliminary Environmental Risk Assessment (ERA) has guided the environmental studies for the Willatook Wind Farm. The objectives of the ERA are to:

- identify key environmental risks that relate to the development of the Project;
- guide the level and extent of data gathering necessary for accurately characterising the existing environment;
- help identify mitigation measures to avoid/minimise environmental risk and then to identify mitigation measures to reduce any likely effects during construction, operation and maintenance, and decommissioning; and
- inform assessment of likely residual effects that are expected to be experienced after all reasonable mitigation measures have been implemented.

The risk assessment process for the Environment Effects Statement (EES) incorporates key risk management requirements and includes:

- an approach to environmental management which is aligned with ISO 31000 Risk Management – Principles and Guidelines Systems;
- systems used to manage environmental risk and protect the environment, and how these are implemented at different stages of road construction, operation and maintenance; and
- tools and reporting requirements which provide guidance in managing environmental issues throughout the Project.

The ERA identifies impact events for each of these elements of the environment, details the potential risks and has informed the level and range of technical reporting required to address these impacts.

The ERA utilises a risk matrix approach (Table 7) where likelihood and consequence of an event occurring are considered (Table 8 and Table 9). The consequence criteria will be revisited throughout the EES process to confirm currency prior to exhibition (Table 10).



**Table 7: Risk Significance Matrix**

Likelihood	Consequence				
	Negligible	Minor	Moderate	Major	Severe
Almost certain	Low	Medium	High	Very High	Very High
Likely	Low	Medium	Medium	High	Very High
Possible	Low	Low	Medium	High	High
Unlikely	Negligible	Low	Low	Medium	High
Rare	Negligible	Negligible	Low	Medium	Medium

**Table 8: Likelihood Categories**

Descriptor	Explanation
Almost Certain	The event is expected to occur in most circumstances
Likely	The event will probably occur in most circumstances
Possible	The event could occur
Unlikely	The event could occur but is not expected
Rare	The event may occur only in exceptional circumstances

**Table 9: Consequence Definitions**

Consequence category	Description of consequence
Very Low	No impact on Aboriginal cultural heritage.
Low	Disturbance or destruction of a known or unknown Aboriginal Place assessed as being of low archaeological/scientific significance because of: <ul style="list-style-type: none"> <li>i) the common nature of the site type;</li> <li>ii) the easily available nature of raw materials used for artefact manufacture;</li> <li>iii) the low number of artefacts (&lt;10) or limited range of cultural materials contained in the site;</li> <li>iv) a previously recorded site of greater significance that has been previously disturbed or destroyed by taphonomic processes</li> </ul>
Medium	Disturbance or destruction of a known or unknown Aboriginal Place assessed as being of moderate archaeological significance because of: <ul style="list-style-type: none"> <li>i) the less common nature of the site type;</li> <li>ii) a wide range of raw materials including materials that are exotic to that place and therefore less readily available for artefact manufacture at that place;</li> <li>iii) a larger number of artefacts (&gt;10) or slightly wider range of cultural materials contained in the site;</li> <li>iv) a previously recorded site that has been previously disturbed or destroyed by taphonomic processes. Some stratigraphy may be in tact</li> </ul>
High	Disturbance or destruction of a known or unknown Aboriginal Place that has been assigned an archaeological or scientific significance assessment of moderate to high because <ul style="list-style-type: none"> <li>i) the place type occurs less frequently eg. stone arrangements;</li> <li>ii) the place contains a high number of artefacts or a wide range of cultural materials or largely intact stratigraphy;</li> <li>iii) spatial patterning between the site components may be discernible.</li> </ul>
Very High	Complete destruction of numerous known or unknown Aboriginal Place sites, artefacts or Aboriginal places across the Project Area. Disturbance or destruction of an Aboriginal burial site (Aboriginal Ancestral Remains).

The process assesses the primary environmental risk if all standard management and mitigation measures (both regulatory guidelines and industry standards) are in place and operating as intended. Where the risk rating is classified as medium or higher additional controls would be identified and a residual risk rating defined.

## 8.2 Risk Assessment Methodology

An initial environmental risk assessment (ERA) has been prepared for the Willatook Wind Farm. The aim was to assess the residual risk levels and to determine whether the calculated risk levels were supported by the technical information and determine if additional studies and assessments are required. The Aboriginal cultural heritage risk register is summarised in section 8.3 below.

With risks identified for Aboriginal cultural heritage, industry best practice and standard mitigation controls intrinsic to the Project were identified.

Other relevant Standards and Policies, include:

- EPA Victoria's Environmental Guidelines for Major Construction Sites.

## 8.3 Key Findings

The primary environmental risks identified for Aboriginal cultural heritage are provided below in Table 10.

Impacts to Aboriginal cultural heritage and Historical Heritage can be summarised into three categories:

- Impacts during construction;
- Impacts during operations/maintenance phases of the Project; and
- Impacts during the decommissioning of the Project.

The initial risk ratings for the Project consider standard inherent controls in accordance with the relevant standards and guidelines. The additional controls listed in the tables below are those recommended to further mitigate and minimise the primary environmental risks which were risk rated as medium or above. Primary environmental risks which were scored as low did not require additional controls to be applied.

### 8.3.1 Summary of Risks and Minimisation

#### Construction

VAHR Registered 1 and VAHR Registered 2 are not considered to be at risk during the construction phase of the Project as they will be protected by the implementation of no-go zones required by the Management Conditions of CHMP 11090. All relevant workers will be required to undergo Cultural Heritage Inductions to make them aware of the locations and nature of these places and to raise awareness of the nature of any Aboriginal cultural heritage within the Project Area. There is a low risk of undiscovered Aboriginal cultural heritage being uncovered or located during the construction phase of the Project. In this event, the Contingency Plans of CHMP 11090 set out the management of any cultural heritage that may be discovered during the activity and what to do in the unlikely event that cultural heritage is discovered during the works.

#### Operation

VAHR Registered 1 and VAHR Registered 2 are not considered to be at risk during the operational phase of the Project as they will be protected by the implementation of no-go zones required by the Management Conditions of CHMP 11090. Regular inspections of the no-go zones will be undertaken during the operation phase of the Project and cultural heritage inductions will be provided on an ongoing basis to relevant workers as required. There is a low risk of undiscovered Aboriginal cultural heritage being uncovered or located during the operational phase of the Project. In this event, the Contingency Plans of CHMP 11090 set out the management of any cultural heritage that may be discovered during the activity and what to do in the unlikely event that cultural heritage is discovered during the works.

#### Decommissioning

VAHR Registered 1 and VAHR Registered 2 are not considered to be at risk during the decommissioning phase of the project as they will be protected by the implementation of no-go zones required by the Management Conditions of CHMP 11090. Cultural Heritage Inductions will be provided to relevant workers. The no-go zones may be removed at the completion of the decommissioning works. There is a low risk of undiscovered Aboriginal cultural heritage being uncovered or located during the construction phase of the Project. In this event, the Contingency Plans of CHMP 11090 set out the management of any cultural heritage that may be discovered during the activity and what to do in the unlikely event that cultural heritage is discovered during the works.

### **8.3.2 Cumulative Impacts**

The volcanic plain of western Victoria including the volcanic cones and stony rises of southwestern Victoria have been found by numerous archaeological investigations to be sensitive for Aboriginal cultural heritage. However, unlike residential subdivisions which are prevalent on the volcanic plains surrounding the Melbourne metropolitan regions and have extensive blanket-like impacts to Aboriginal cultural heritage, the developments that have taken place in this portion of the volcanic plain have tended to be linear in nature, such as fibre-optic cable routes, pipelines and electricity transmission lines. These developments are more limited in their impacts, with greatest areas of impacts being restricted to the footprint of electrical substations, for example. As noted by Murphy and Amorosi (2005) windfarm developments have the ability to relocate infrastructure away from areas known to contain Aboriginal cultural heritage.

Smaller artefact scatter sites and LDADs of low significance are common across the wider Victorian landscape and are often destroyed, either under an approved CHMP or Cultural Heritage Permit. The cumulative impact to this type of site within both the wider region and more locally is considered to be reasonably high. However, within the geographic region, archaeological reports have identified a sparse range of low-density artefact scatters or isolated artefacts, with a small number of earth features being recorded. This CHMP has identified two artefact scatters and one LDAD within the activity area in addition to the previously recorded earth feature. This has resulted in the modification of the development and the relocation of infrastructure to areas where there will be no impacts to known Aboriginal cultural heritage; therefore, the cumulative impact of this type of development is considered to be low.

## 9 IMPACT ASSESSMENT

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### 9.1 Avoidance, Minimisation and Management of Harm and Contingency Planning

#### 9.1.1 Aboriginal Places within the Project Area

Following the standard and complex assessments of the Project Area, four Aboriginal Places comprised of one earth feature, two artefact scatters and one Low Density Artefact Distribution were identified; therefore, there is a requirement to consider measures for the avoidance and minimisation of harm to these places and management conditions to manage potential impacts to these Aboriginal Places.

### 9.2 Conditions in Relation to the Management of Aboriginal Places

Aboriginal cultural heritage is present within the Project Area; therefore, specific management conditions regarding Aboriginal places are presented below.

The assessment undertaken as part of the CHMP for the Project Area (Nicolson et al; in prep) determined that the proposed activity would have caused harm to the four Aboriginal places located within the Project Area. Willatook Wind Farm (the Sponsor) have environmental policies aimed at the preservation of places and have actively sought opportunities to avoid harm to the cultural heritage identified within the Project Area. As a result, the Sponsor has endorsed management recommendations that have engendered the philosophy for the protection of cultural heritage within the area and will completely avoid harm to all of the four Aboriginal places located within the Project Area.

The Sponsor has altered the design layout (adjusting the location of turbines, tracks, cabling and associated infrastructure) to the four places identified within the Project Area.

In addition to this, protective measures including the erection of temporary fencing/flagging tape will be used around each of the places prior to, and throughout the construction process. To further reinforce the protection of places within the area, cultural heritage inductions for the employees will be undertaken.

#### 9.2.1 VAHR Registered 1 (Earth Feature)

##### Avoidance of Harm

Harm to the recorded location of VAHR Registered 1 will be completely avoided. At the desktop stage of the CHMP, the Principal Heritage Advisor advised the Sponsor to avoid any impacts to this area. As a result, no infrastructure or works are planned to occur in this area thus completely avoiding harm to the site.

##### Minimisation of Harm

A buffer has been placed around the recorded Place extent of VAHR Registered 1 with no infrastructure placed within a minimum distance of 20 m of the Place.

No harm will be caused to the site; therefore, no further harm minimisation measurements are required.

### **Management Conditions**

The location of the site and its associated protective boundary must be marked on all relevant construction maps for employees to be aware of at all stages of the project.

## **9.2.2 VAHR Registered 2 (Artefact Scatter)**

### **Avoidance of Harm**

Harm to VAHR Registered 2 will be completely avoided, being located 1.5 km from the closest proposed infrastructure. The design plans that had previously located a turbine in the vicinity of this place have been adjusted so that no infrastructure or works will occur in this area thus completely avoiding harm to the place.

### **Harm Minimisation**

This place will not be harmed; therefore, no harm minimisation measures are required.

### **Management Conditions**

Prior to the activity commencing in this area, to ensure that this place is completely protected, the place must be fenced off using orange webbing and star picket temporary fencing. The fencing must include a protective buffer zone of 10 m around the place extent and must remain for the duration of the works. The fencing must be marked with appropriate signage restricting access and indicating that this is a “no go zone” for construction vehicles, material storage and personnel. The erection and maintenance of the fencing and signage throughout the construction process is the responsibility of the Sponsor.

The location of the place and its associated protective boundary must be marked on all relevant construction maps for employees to be aware of at all stages of the project. The fencing may be removed at the conclusion of works in this area.

## **9.2.3 Requirement for Contingency Planning for Aboriginal Places**

The contingency plans required by Clause 13(1) Schedule 2 of the *Aboriginal Heritage Regulations 2018* will be included in the CHMP currently being prepared for the Project Area (Nicolson et al: in prep), are as follows:

- The matters referred to in Section 61 of the *Aboriginal Heritage Act 2006*;
- The resolution of any disputes between the Sponsor and relevant Registered Aboriginal Party in relation to the implementation of the CHMP or the conduct of the Project;
- The discovery of Aboriginal cultural heritage during the Project;
- The notification of the discovery of Aboriginal cultural heritage during the carrying out of the Project;
- The management of Aboriginal cultural heritage found during the Project; and

- Reviewing compliance with the CHMP and mechanisms for remedying non-compliance.

#### **9.2.4 Requirement for Arrangements for the Custody and Management of Aboriginal Cultural Heritage (Artefacts)**

The custody of the Aboriginal cultural heritage from VAHR Registered 2 must comply with the *Aboriginal Heritage Act 2006* and be assigned to the RAPs responsible for the Project Area, the Gunditj Mirring and the Eastern Maar. It should be noted that any Heritage Advisor engaged to investigate any Aboriginal cultural heritage should be able to retain initial custody of Aboriginal cultural heritage for a reasonable period of time for the purposes of analysis.

In accordance with the *Aboriginal Heritage Act 2006*, during the period that the Heritage Advisor has custody of the Aboriginal cultural heritage, the Heritage Advisor must:

- Label and package collected artefactual material with reference to provenance; and
- Arrange storage of the material in a secure location together with copies of the catalogue, assessment documentation, management plan and results of the analysis.

Following the repatriation of Aboriginal cultural heritage held by the Heritage Advisor to the RAP, should the RAP wish to rebury the Aboriginal cultural heritage, the following must take place:

- The place record card must be updated, including an object collection component form;
- The reburial location must be known, relocatable and in an area, which is protected from future development or disturbance;
- Where possible, the Aboriginal cultural heritage should be reburied within the boundaries of the Aboriginal archaeological place from which the Aboriginal cultural heritage was originally excavated.
- Artefacts must be reburied in a durable container which may or may not be open bottomed to allow contact between the artefacts and the soil whilst allowing the reburied material to be readily identified as such; and
- An additional enclosed durable container must be buried next to the artefacts which contains copies of all documentation relating to the artefacts, including a copy of the relevant place card, artefact database, this CHMP and any salvage report.

## 10 CONCLUSION

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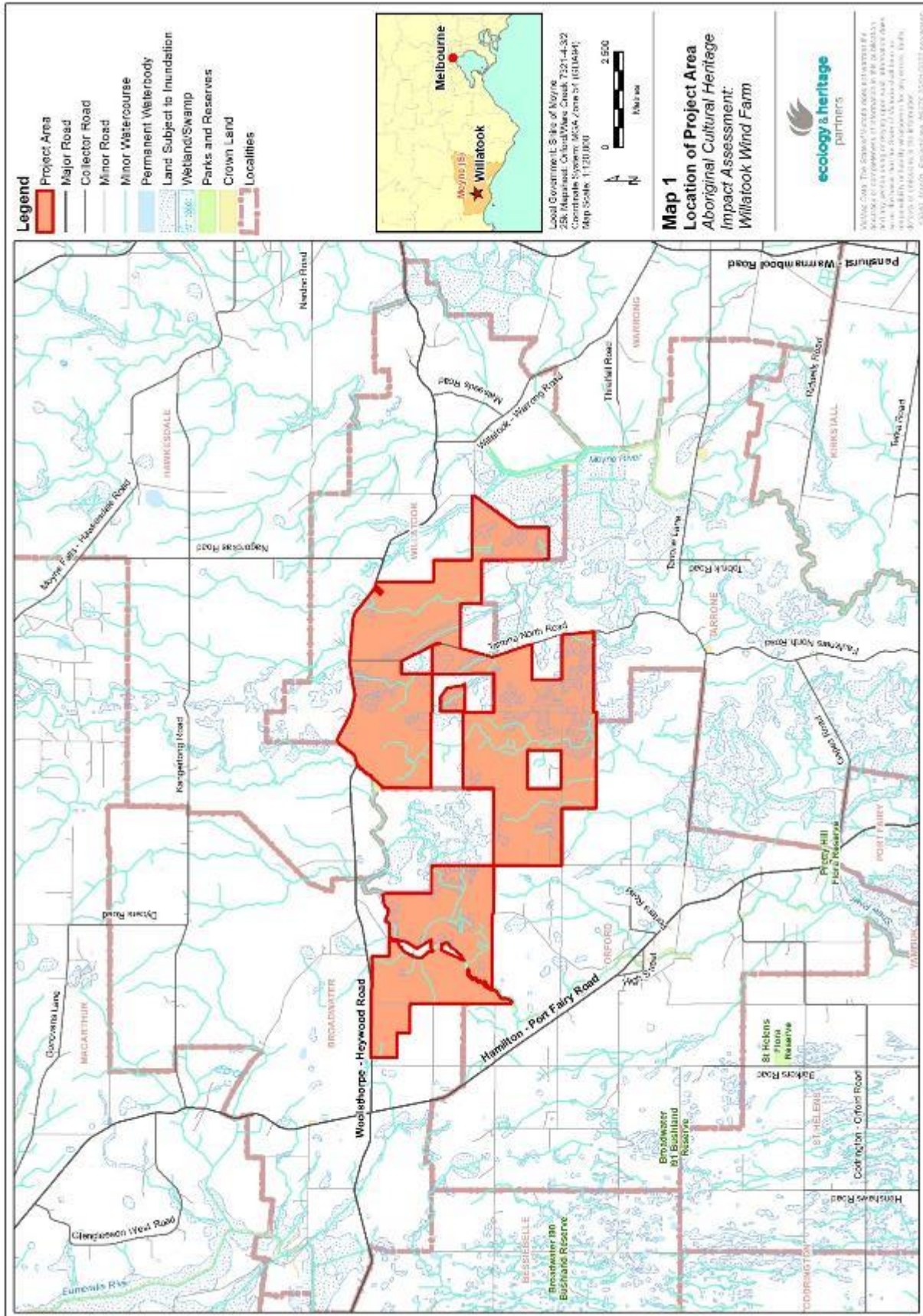
A total of two Aboriginal places are located within the Project Area of the Willatook Wind Farm (Map 11). These places will not be impacted by the Project and management conditions and risk assessment have addressed these impacts. As required in accordance with Part 4 of the Victorian *Aboriginal Heritage Act 2006* and the Victorian *Aboriginal Heritage Regulations 2018* (s.47) a CHMP is in progress to address these specific management conditions (Nicolson et al: in prep).

The two recorded Aboriginal Places are all considered to be of low scientific and archaeological significance. Although none of these Places will be harmed by the Project, management conditions relating to VAHR Registered 1 and 2 are required in order to ensure that the Project will cause no harm to the recorded locations of these places.

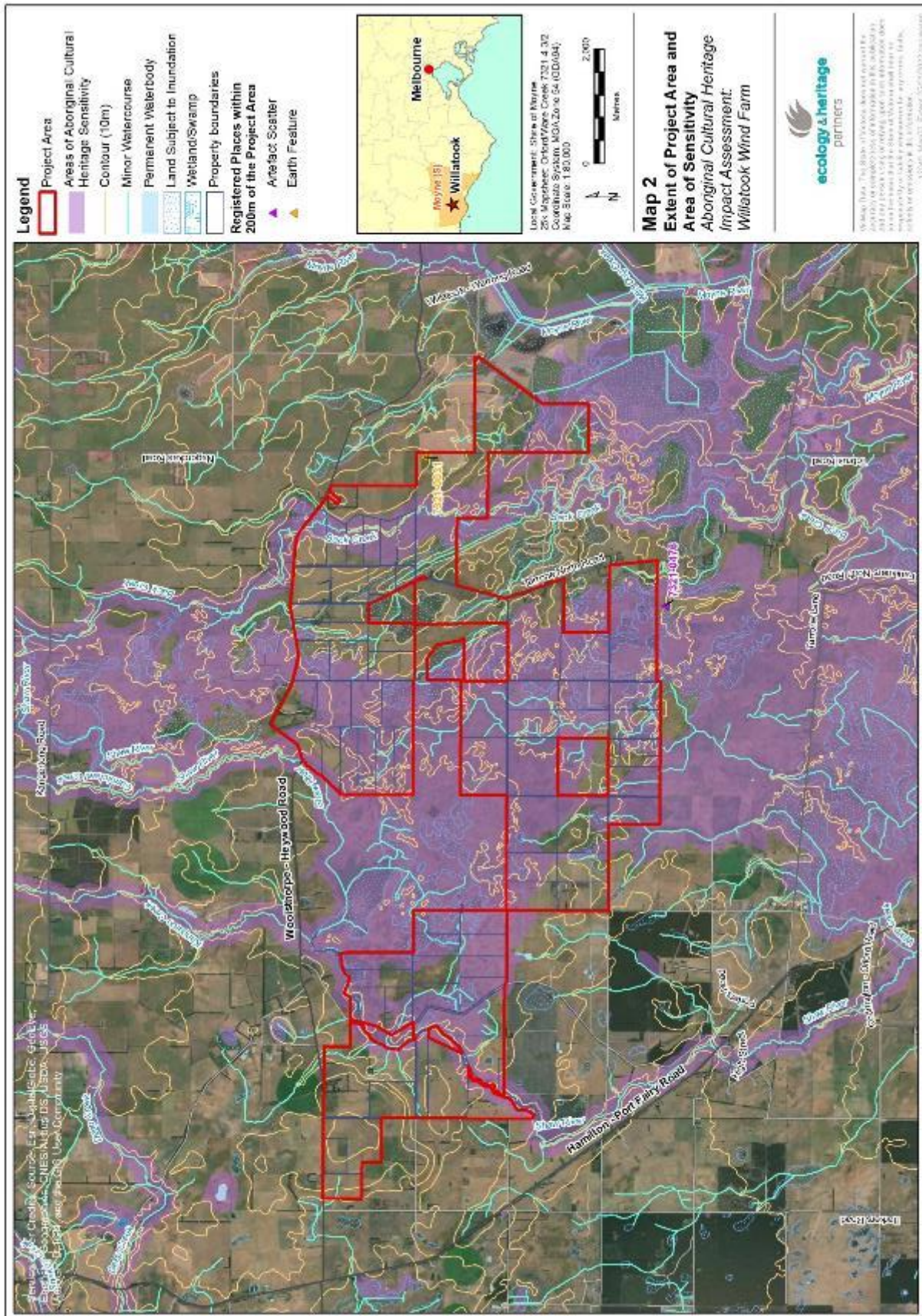


## MAPS

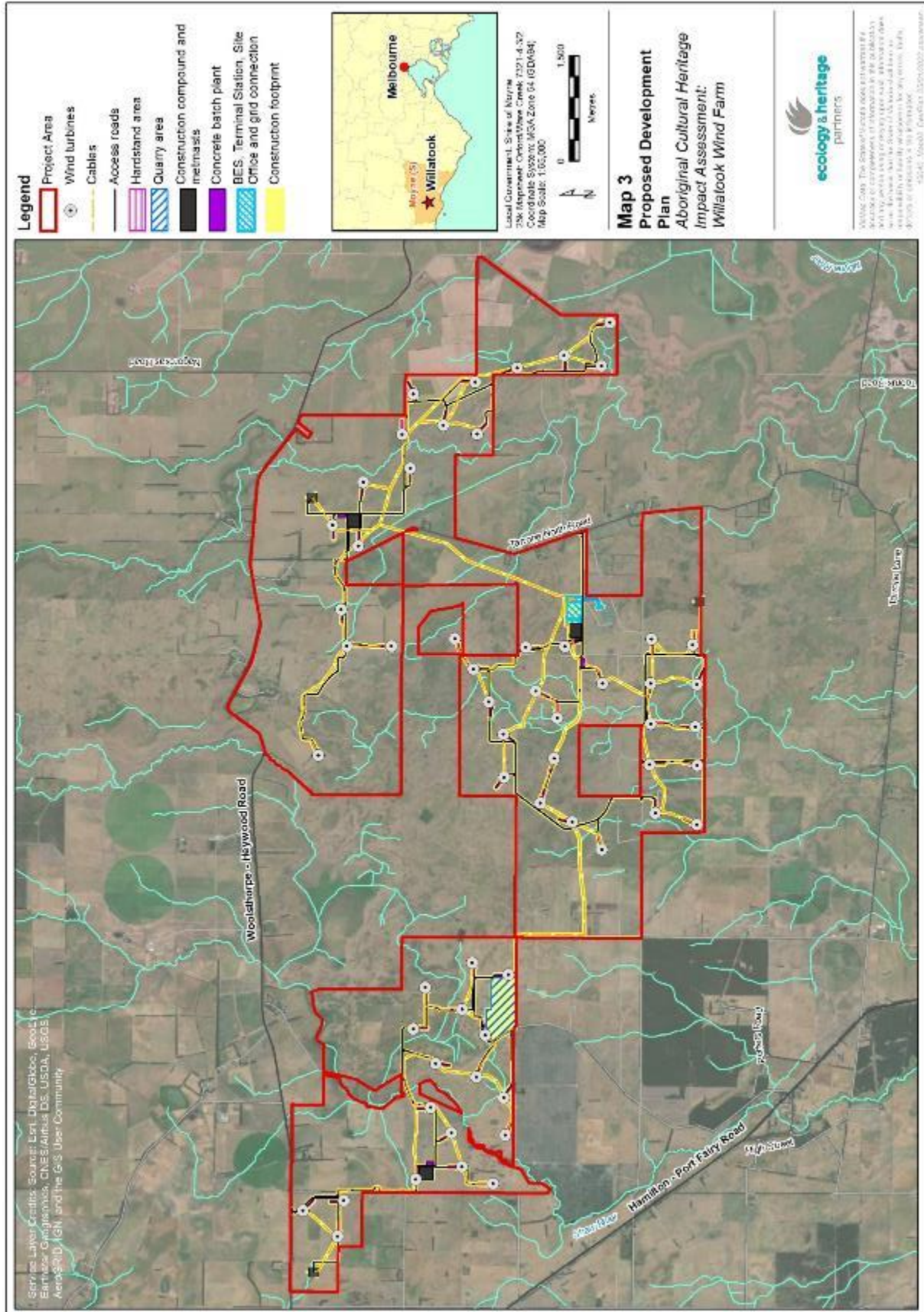
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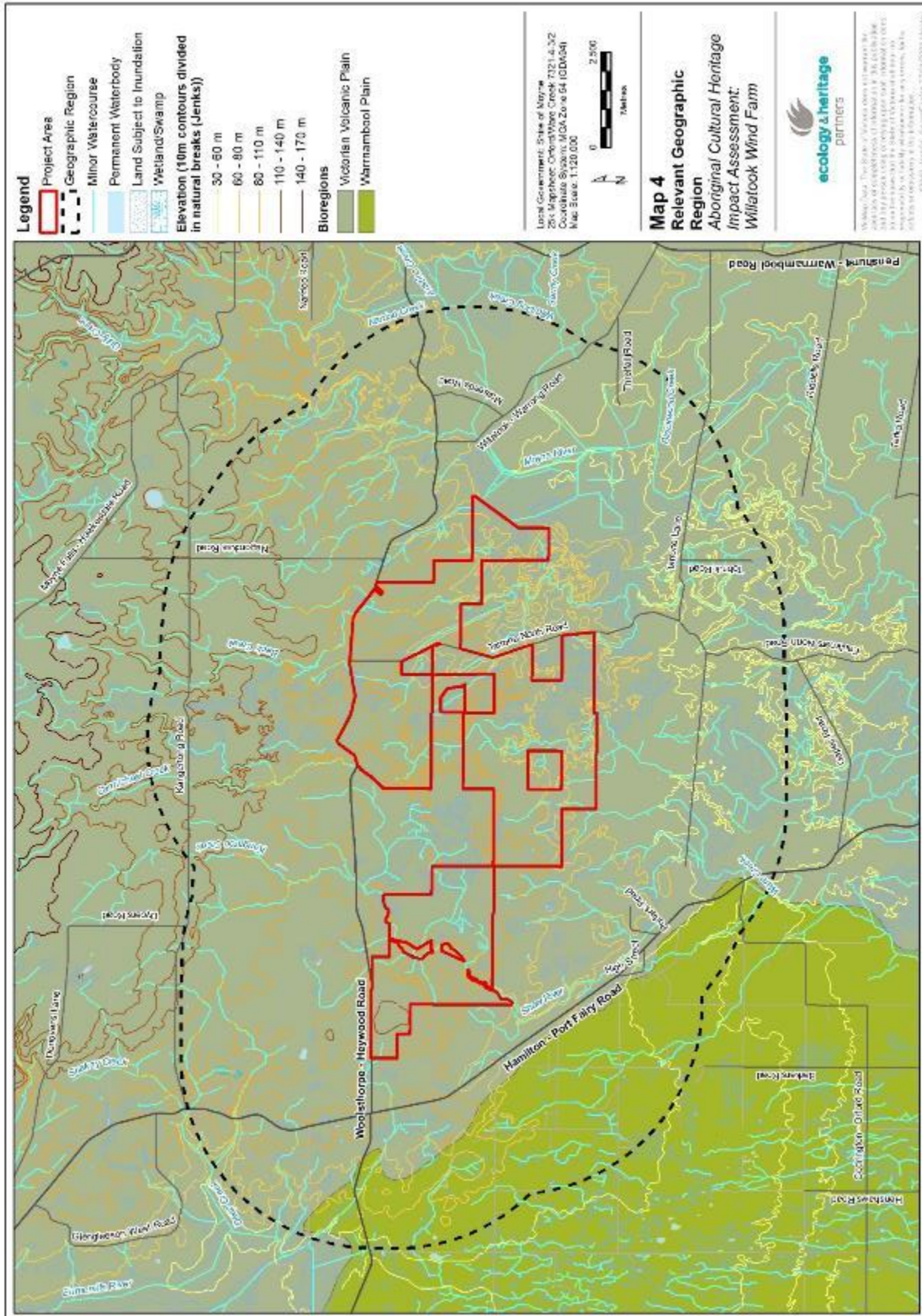




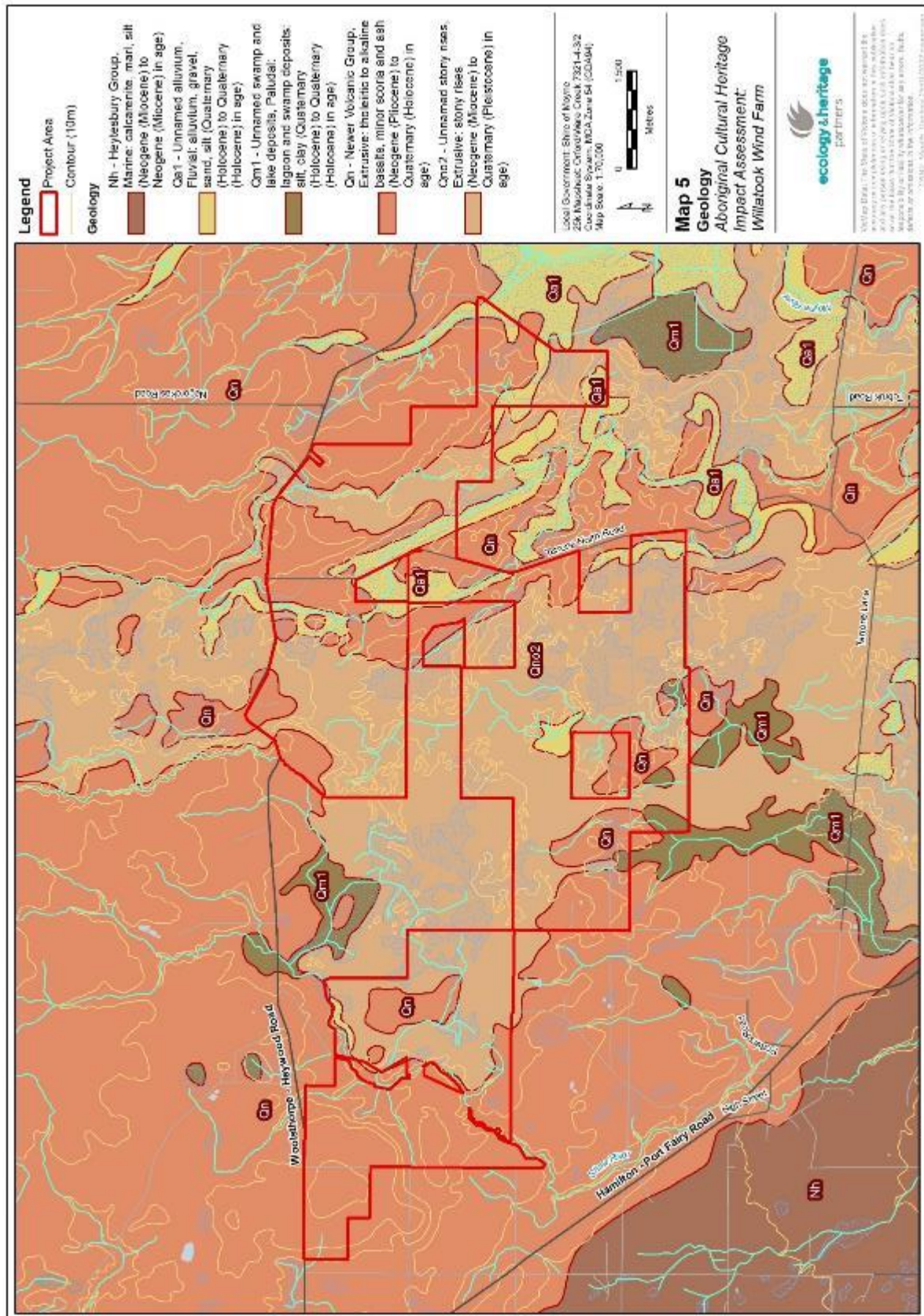




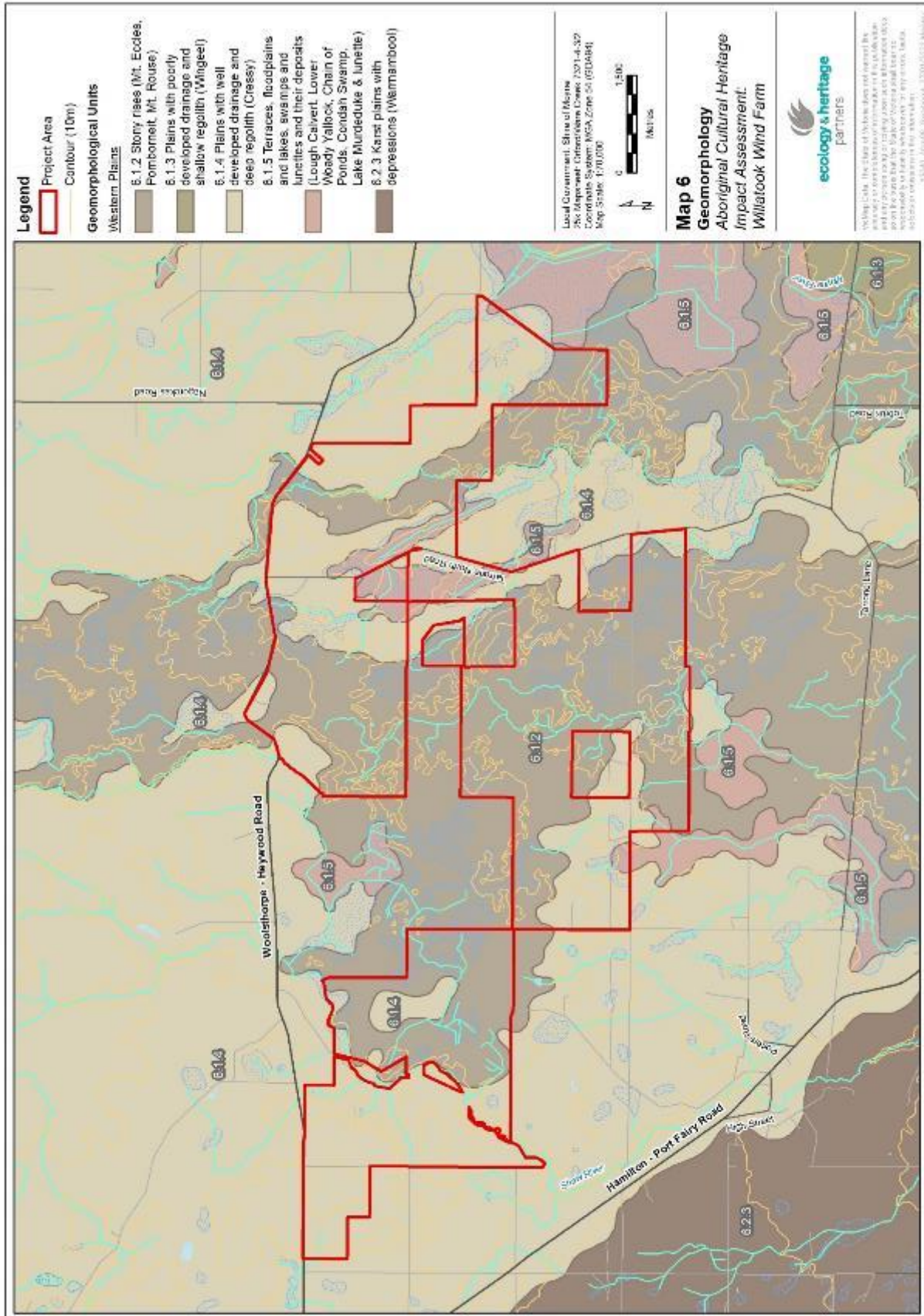




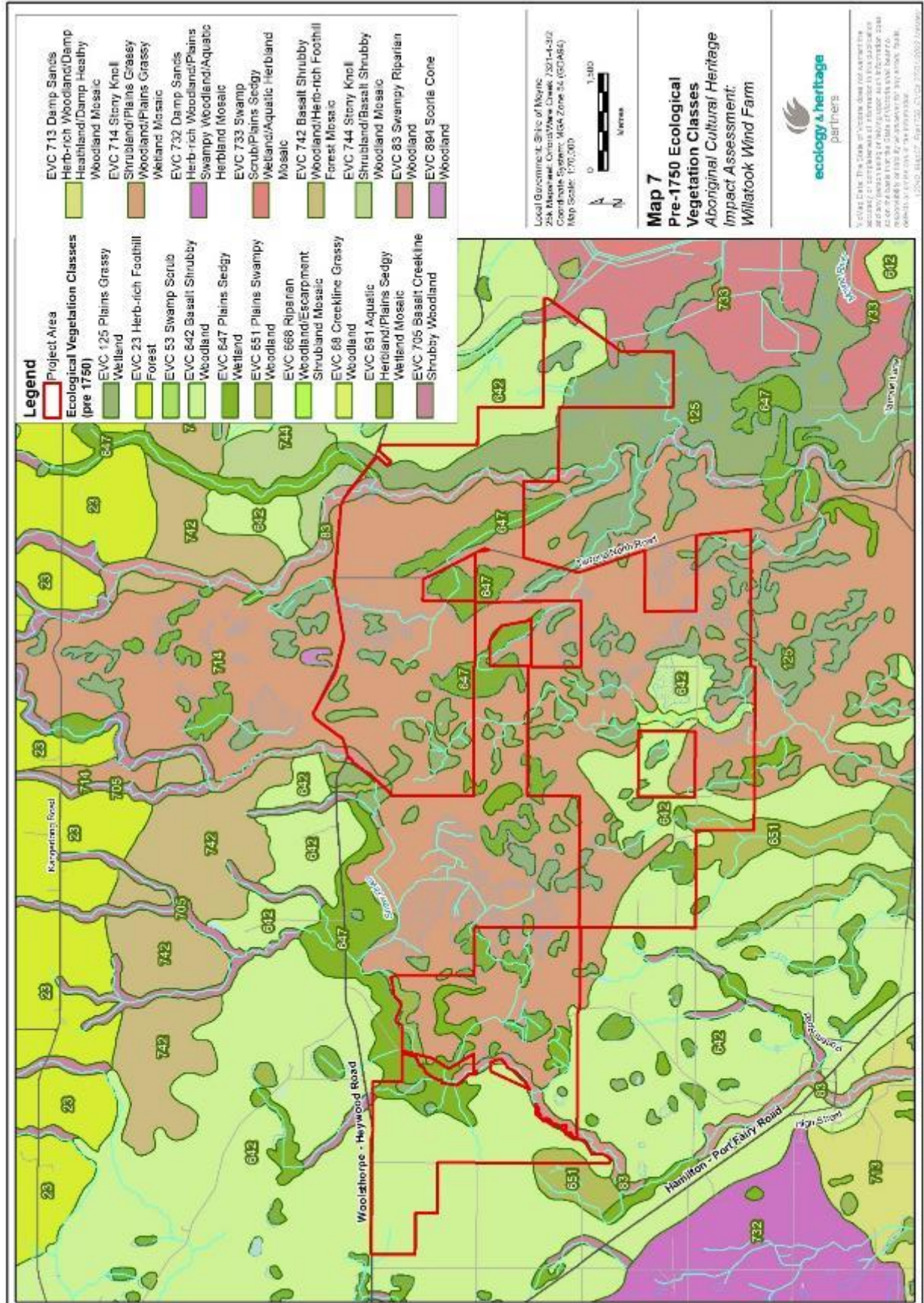




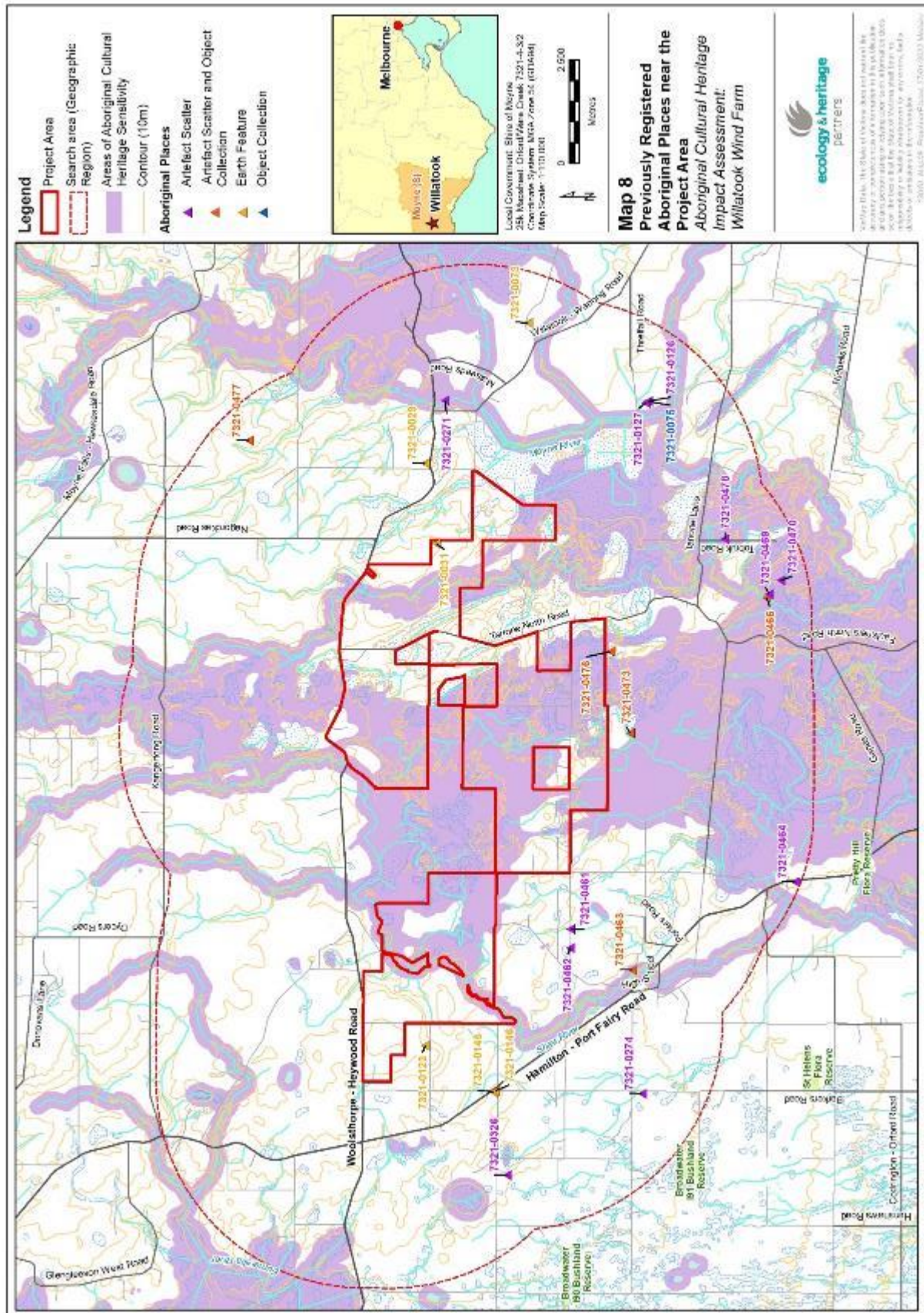












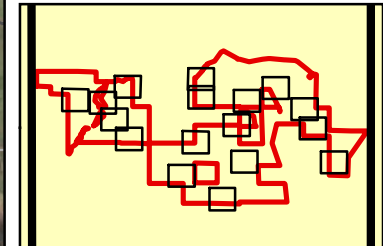
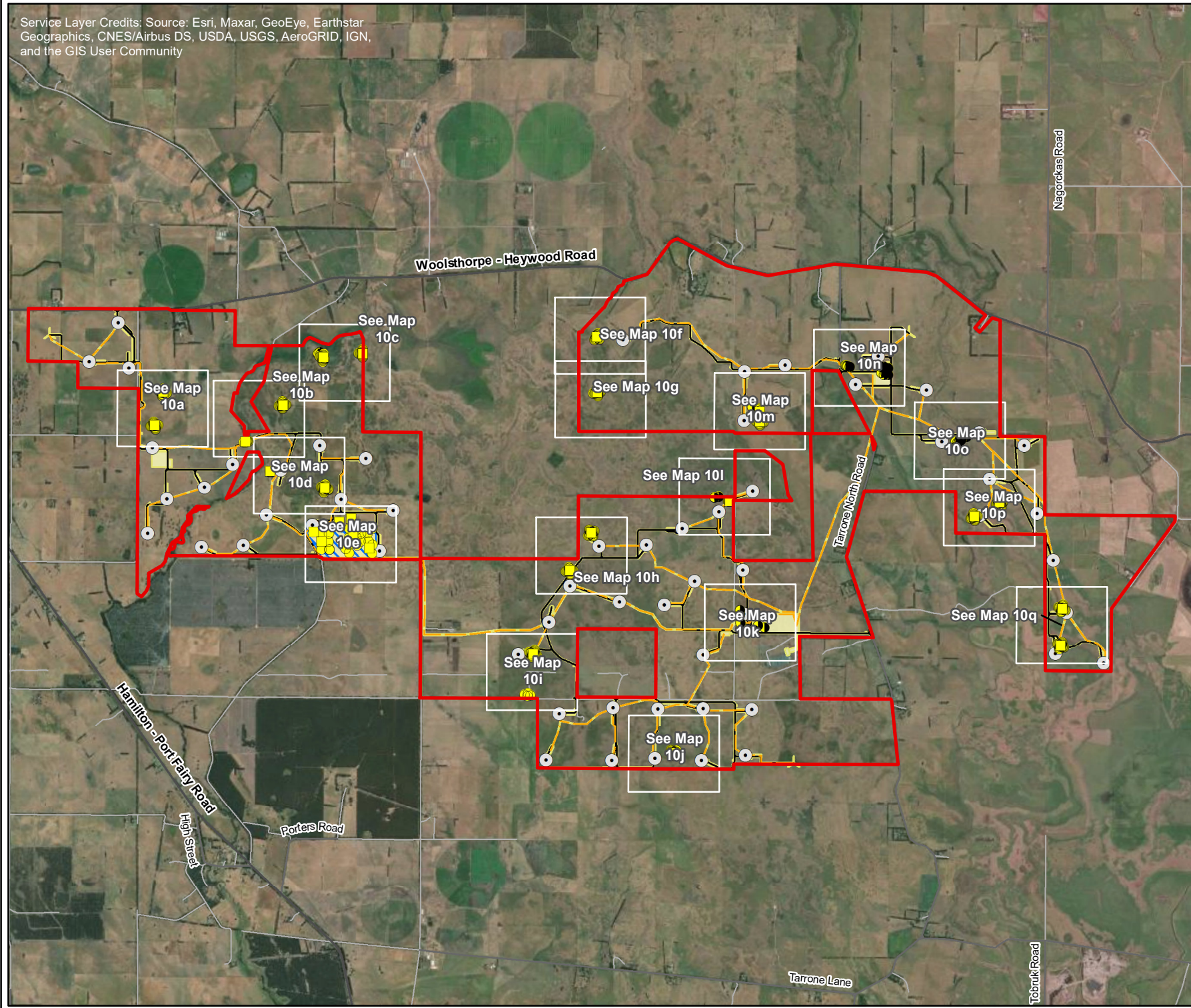






**Legend**

- Project Area
  - Wind turbines
  - Cables
  - Access roads
  - Quarry area
  - Construction footprint
- Testing locations**
- Test Pit - No artefacts
  - Shovel Test Pit - No artefacts
  - Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
 25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
 Coordinate System: MGA Zone 54 (GDA94)  
 Map Scale: 1:65,000








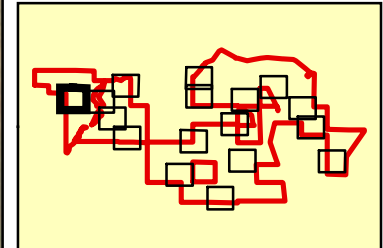
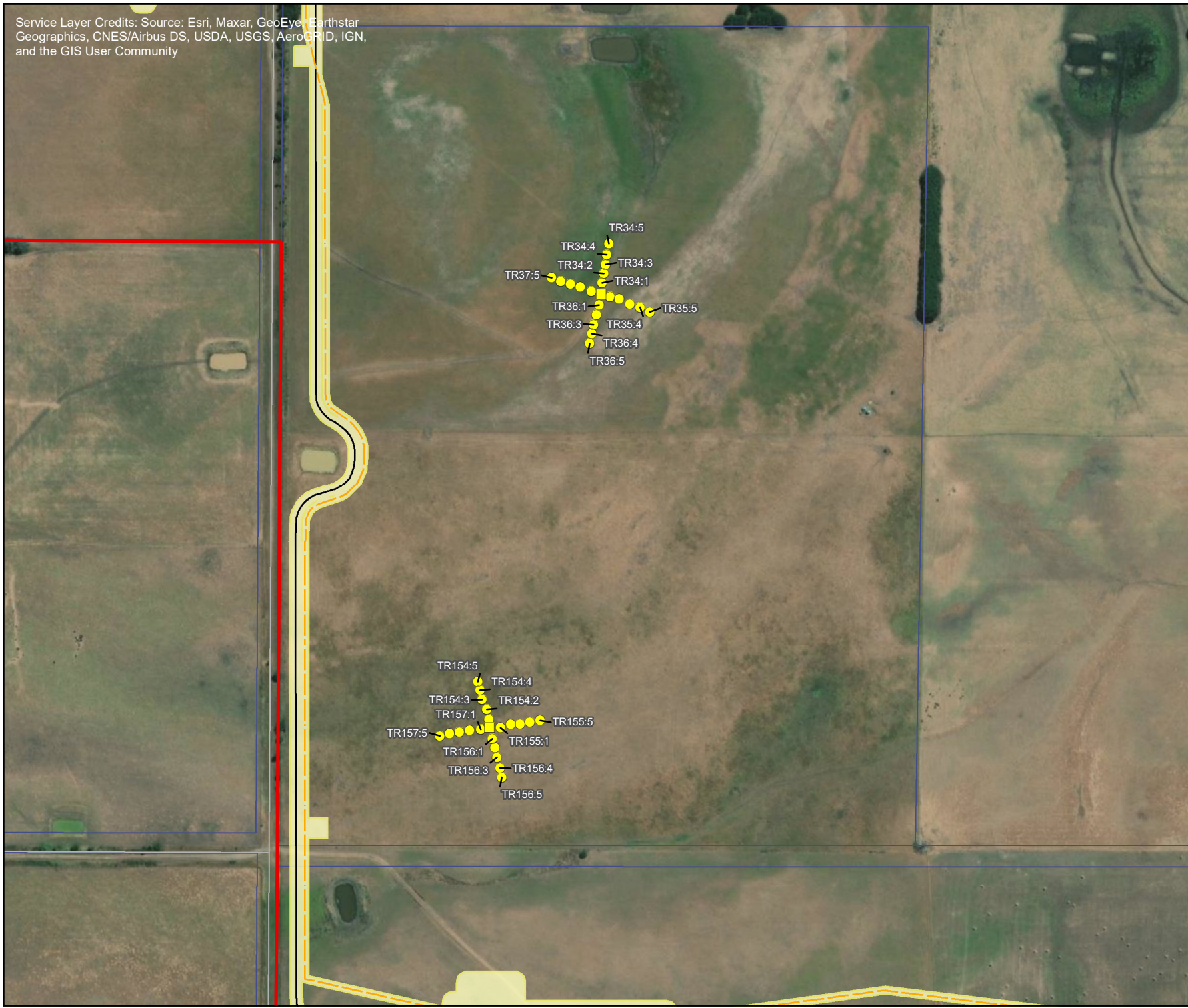
**Map 10 Overview**  
**Complex Assessment -**  
**Surveyed Area**  
*Aboriginal Cultural Heritage*  
*Impact Assessment:*  
*Willatook Wind Farm*



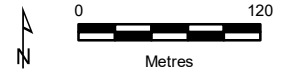


### Legend

-  Project Area
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
  -  Test Pit - No artefacts
  -  Shovel Test Pit - No artefacts



Local Government: Shire of Moyne  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000








## Map 10a Complex Assessment - Surveyed Area *Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm*

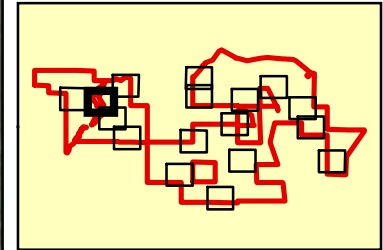
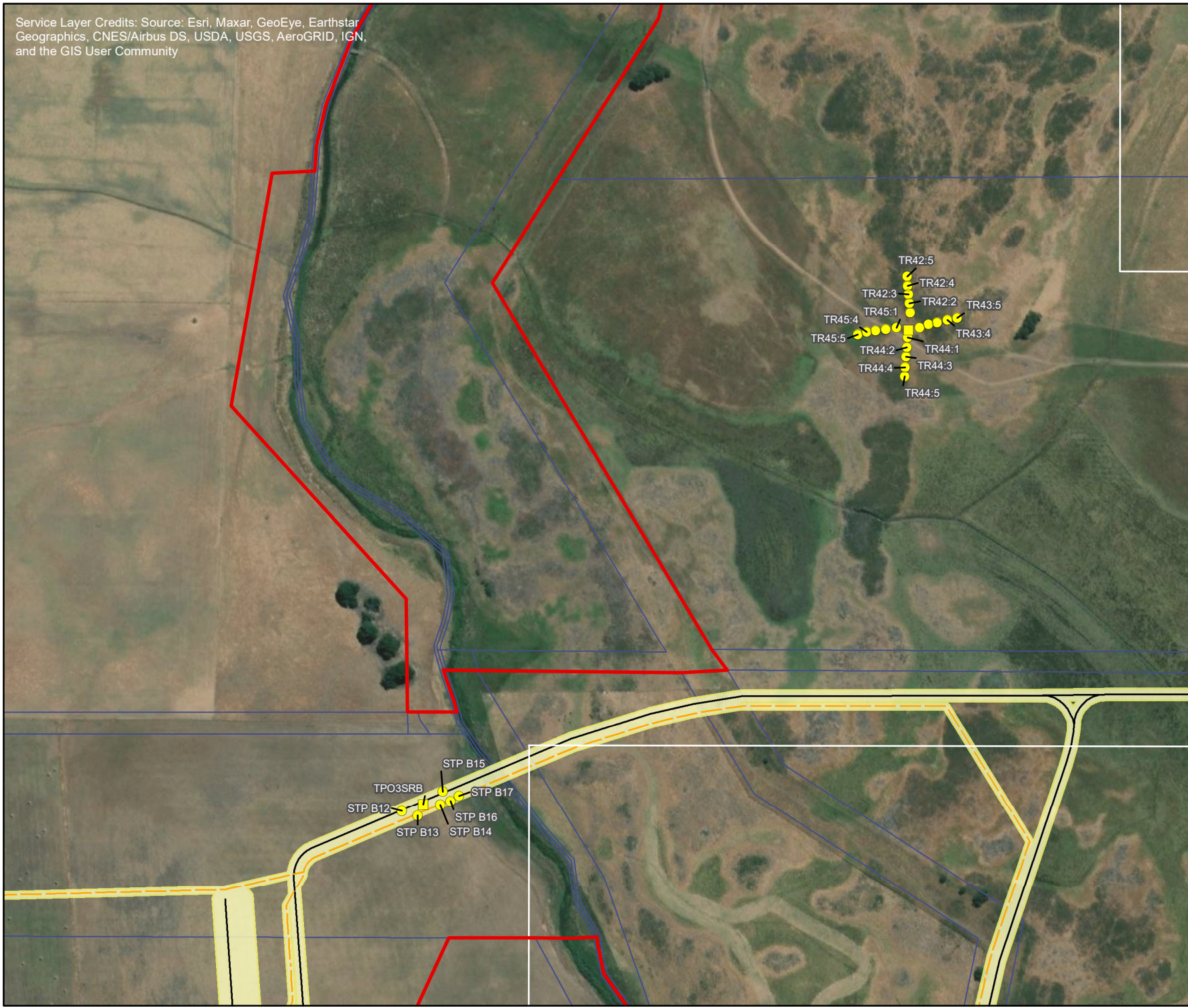




Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Legend**

-  Project Area
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts



Local Government: Shire of Moyné  
 25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
 Coordinate System: MGA Zone 54 (GDA94)  
 Map Scale: 1:5,000



**Map 10b**  
**Complex Assessment - Surveyed Area**  
*Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm*



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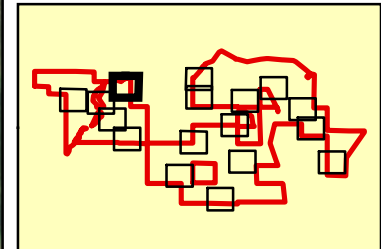
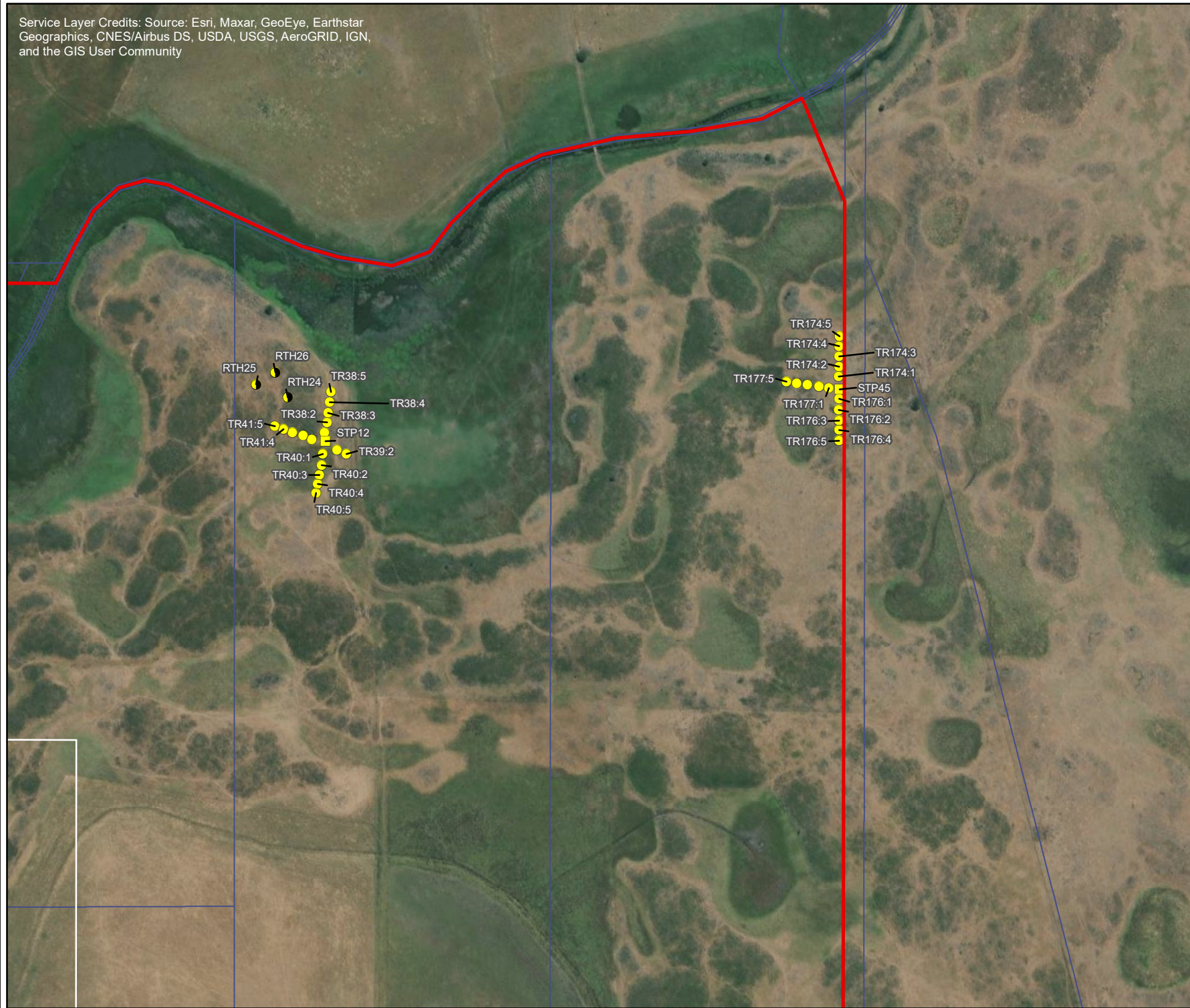
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Legend**

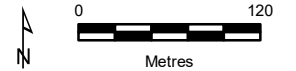
 Project Area

**Testing locations**

-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts
-  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
 25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
 Coordinate System: MGA Zone 54 (GDA94)  
 Map Scale: 1:5,000



**Map 10c**  
**Complex Assessment -**  
**Surveyed Area**  
*Aboriginal Cultural Heritage*  
*Impact Assessment:*  
*Willatook Wind Farm*



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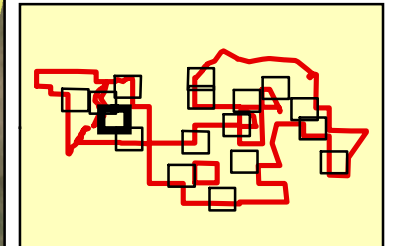


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

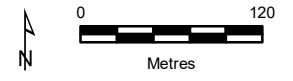


### Legend

- Project Area
- Wind turbines
- Cables
- Access roads
- Construction footprint
- Testing locations**
- Test Pit - No artefacts
- Shovel Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000



## Map 10d Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm



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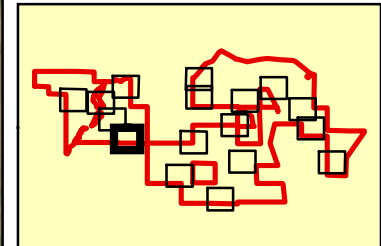
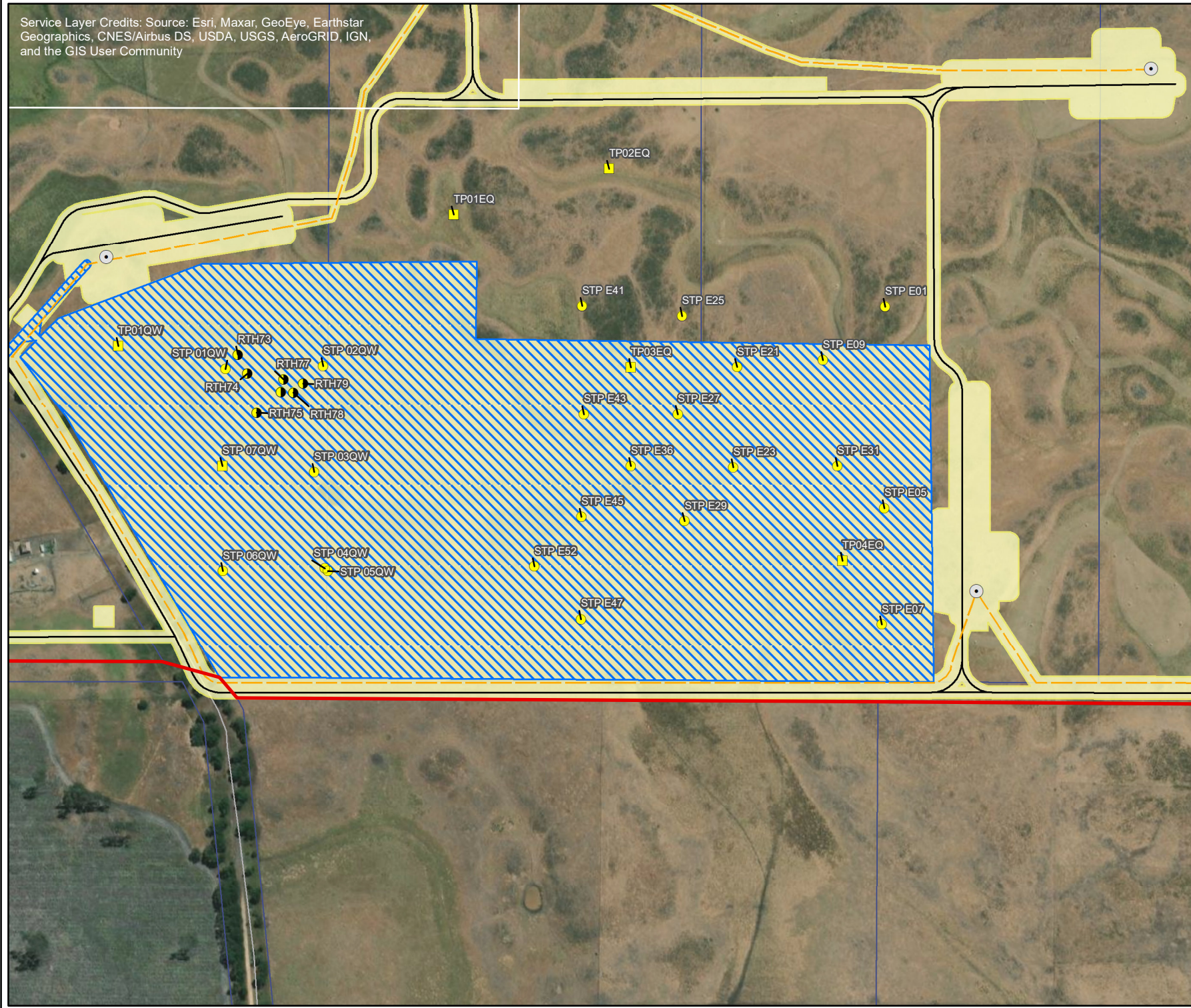
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

**Legend**

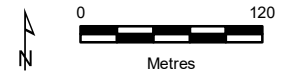
- Project Area
- Wind turbines
- Cables
- Access roads
- Quarry area
- Construction footprint

**Testing locations**

- Test Pit - No artefacts
- Shovel Test Pit - No artefacts
- Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
 25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
 Coordinate System: MGA Zone 54 (GDA94)  
 Map Scale: 1:5,000



**Map 10e**  
**Complex Assessment -**  
**Surveyed Area**  
*Aboriginal Cultural Heritage*  
*Impact Assessment:*  
*Willatook Wind Farm*











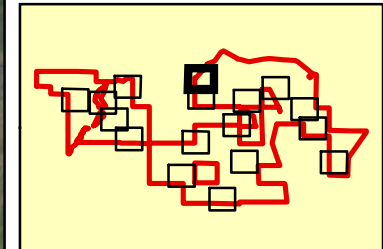
VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.  
 13040\_Map10\_CA\_Results\_MB\_27/01/2022\_Melsley



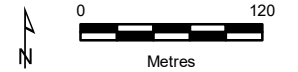
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### Legend

-  Project Area
  -  Wind turbines
  -  Cables
  -  Access roads
  -  Construction footprint
- Testing locations**
-  Test Pit - No artefacts
  -  Shovel Test Pit - No artefacts
  -  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000



## Map 10f

### Complex Assessment - Surveyed Area

*Aboriginal Cultural Heritage  
Impact Assessment:  
Willatook Wind Farm*






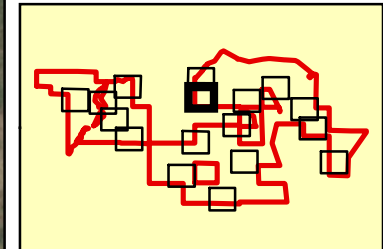
VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



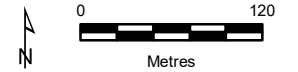
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### Legend

-  Project Area
- Testing locations**
-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000



## Map 10g Complex Assessment - Surveyed Area *Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm*










VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

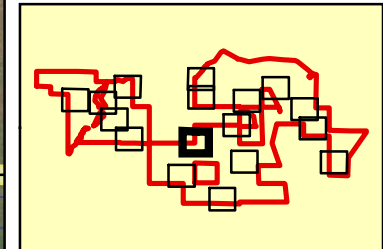


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

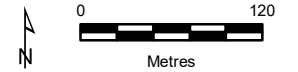


### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts



Local Government: Shire of Moynie  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000

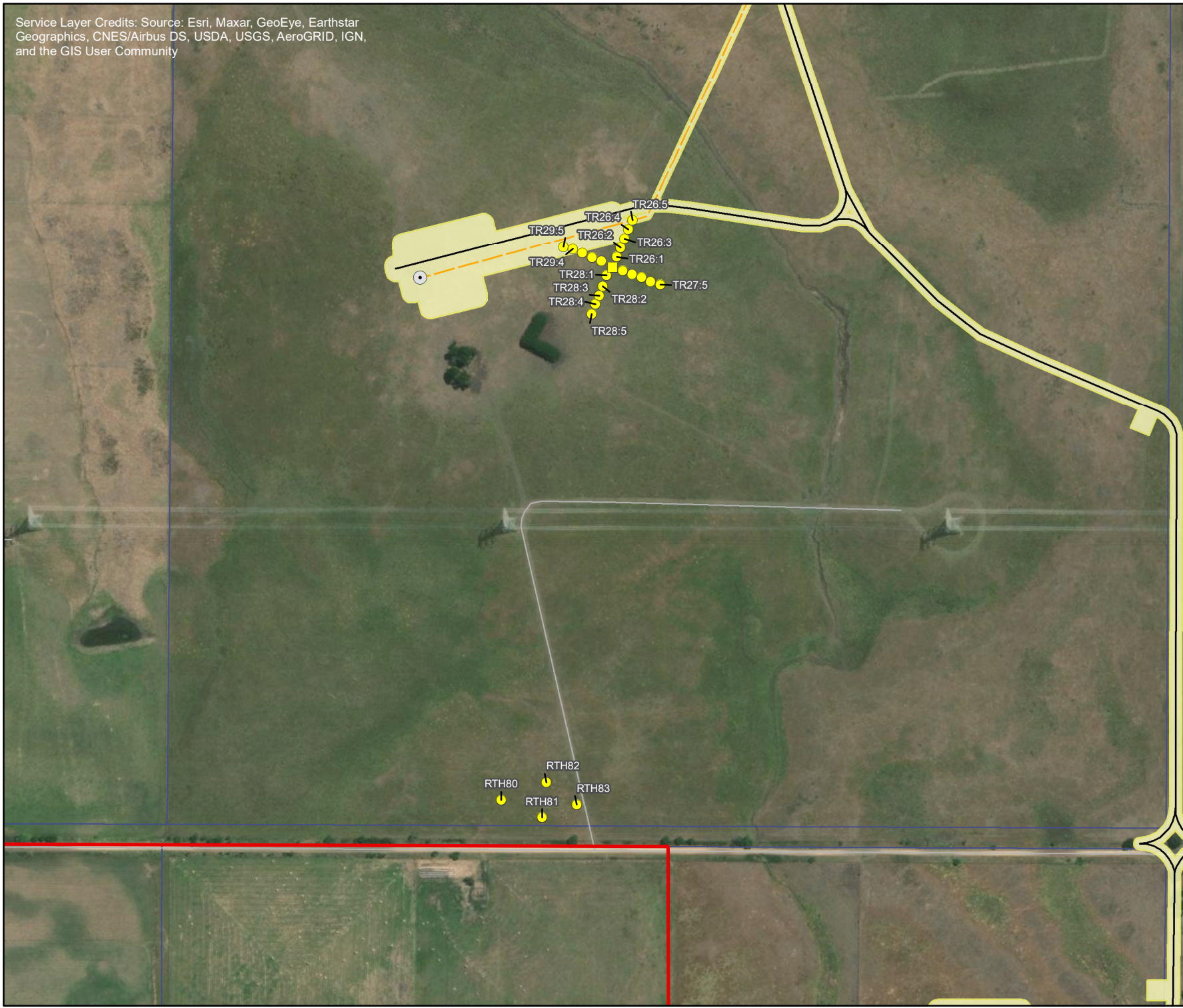


## Map 10h Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm



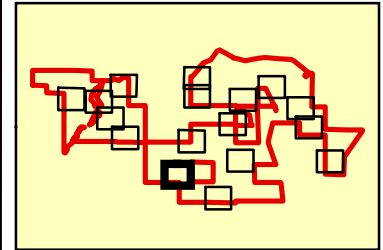
VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.



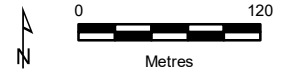


### Legend

- Project Area
- Wind turbines
- Cables
- Access roads
- Construction footprint
- Testing locations**
  - Test Pit - No artefacts
  - Shovel Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000



### Map 10i Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm










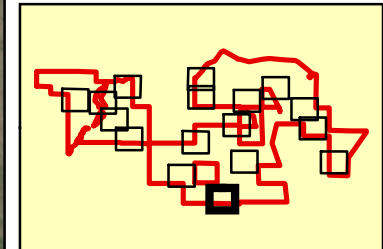
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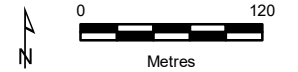
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000



## Map 10j

### Complex Assessment - Surveyed Area

*Aboriginal Cultural Heritage  
Impact Assessment:  
Willatook Wind Farm*









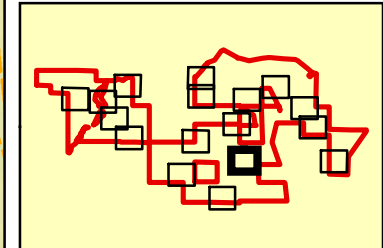
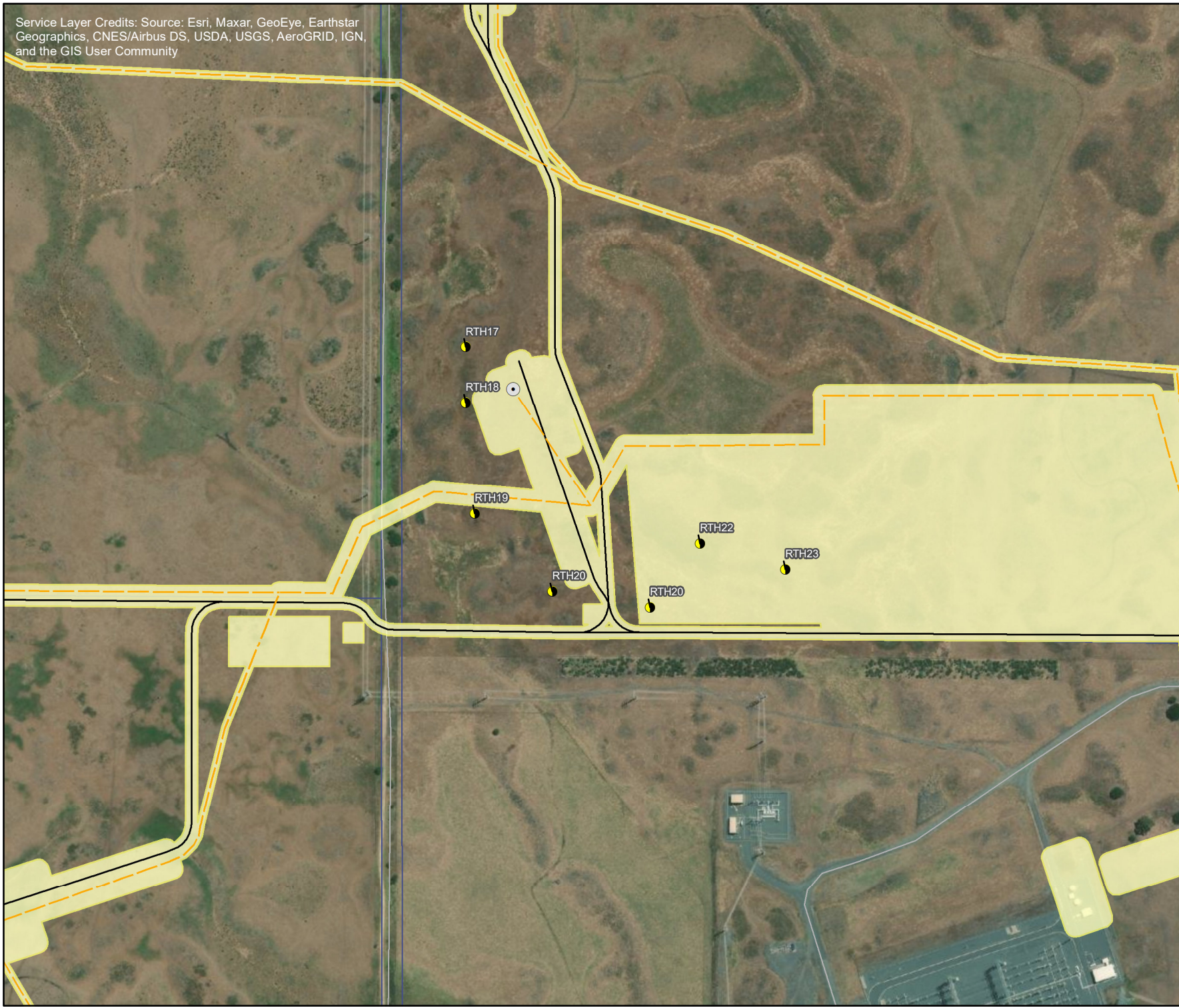
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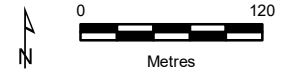
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### Legend

-  Project Area
  -  Wind turbines
  -  Cables
  -  Access roads
  -  Construction footprint
- Testing locations**
-  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000



## Map 10k Complex Assessment - Surveyed Area *Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm*











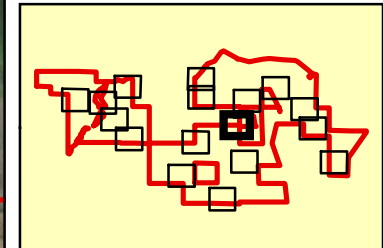
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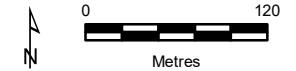
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts
-  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000











## Map 10I Complex Assessment - Surveyed Area *Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm*

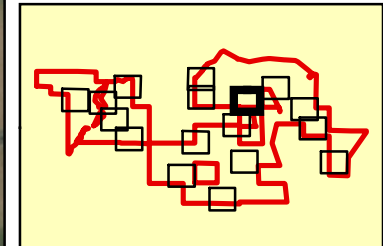
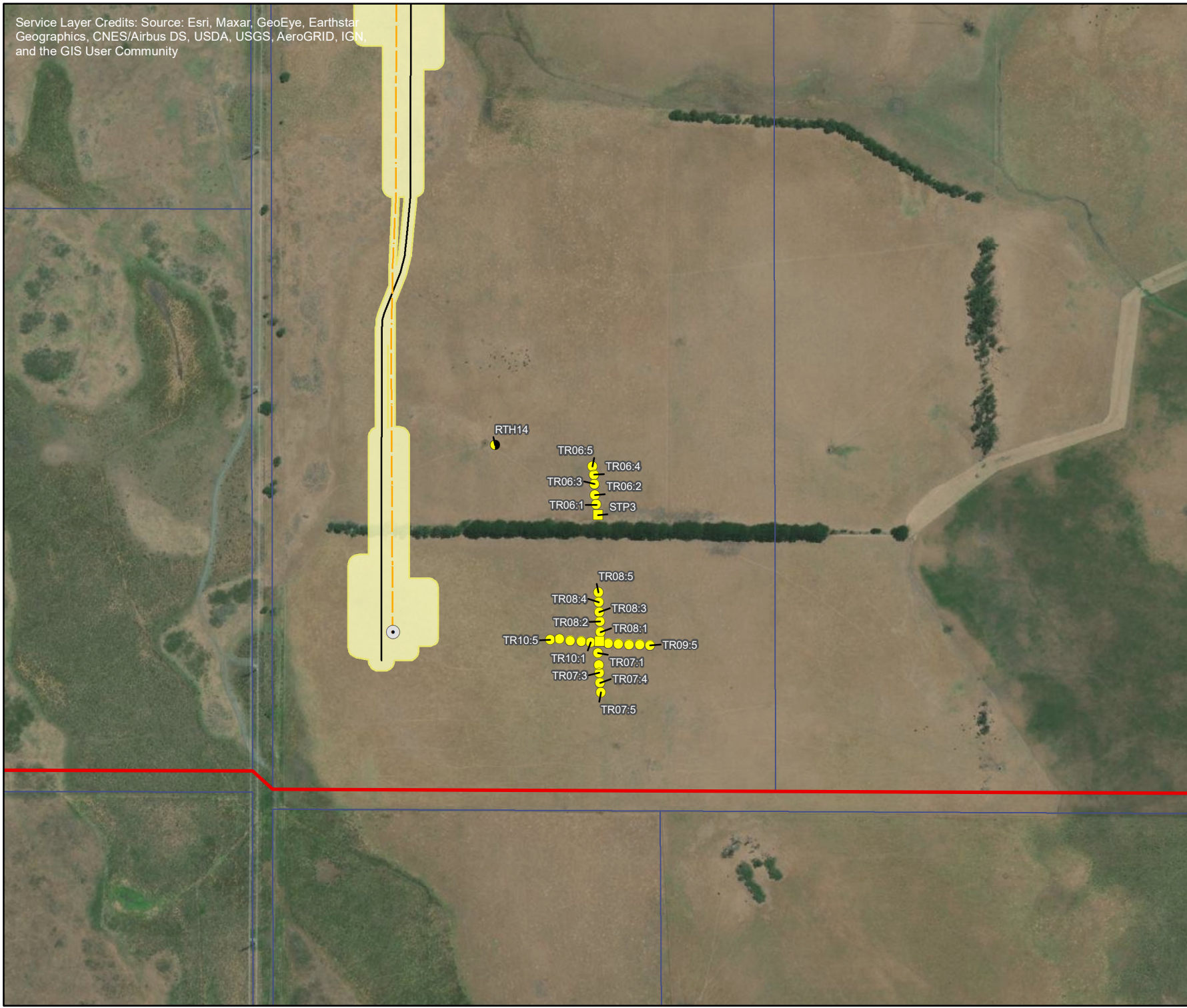


VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

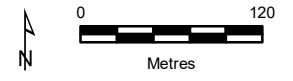


### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
  -  Test Pit - No artefacts
  -  Shovel Test Pit - No artefacts
  -  Radial Test Pit - No artefacts



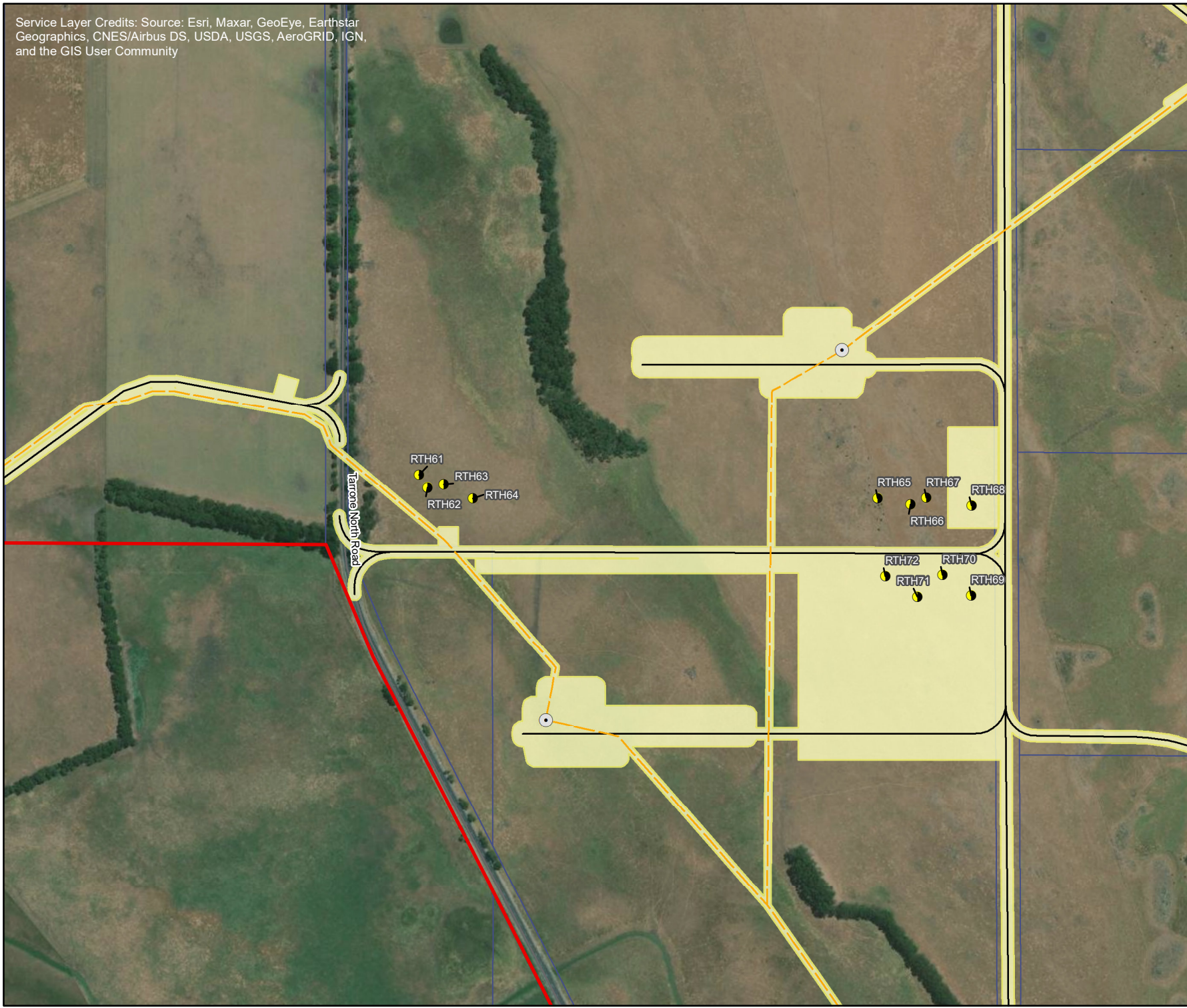
Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000









## Map 10m Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm

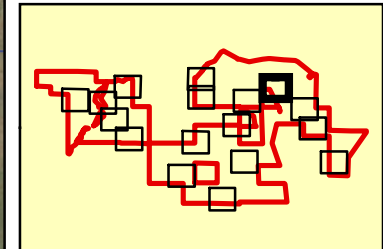




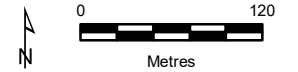


### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000









## Map 10n Complex Assessment - Surveyed Area *Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm*

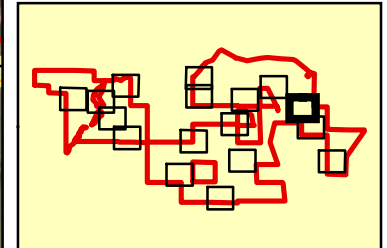
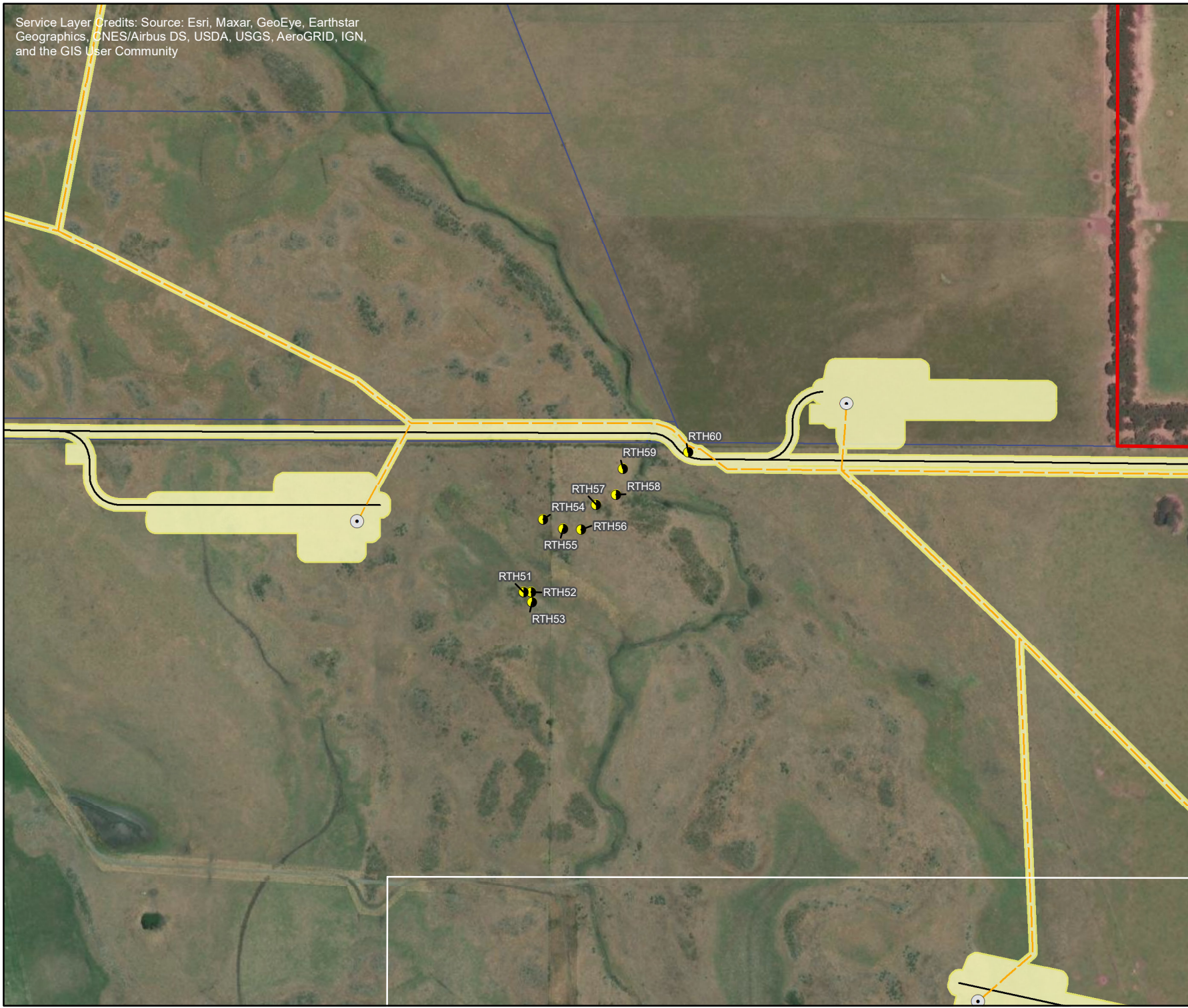




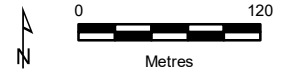
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000











## Map 10o Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm

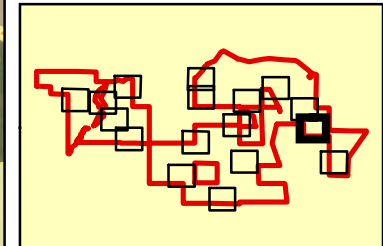
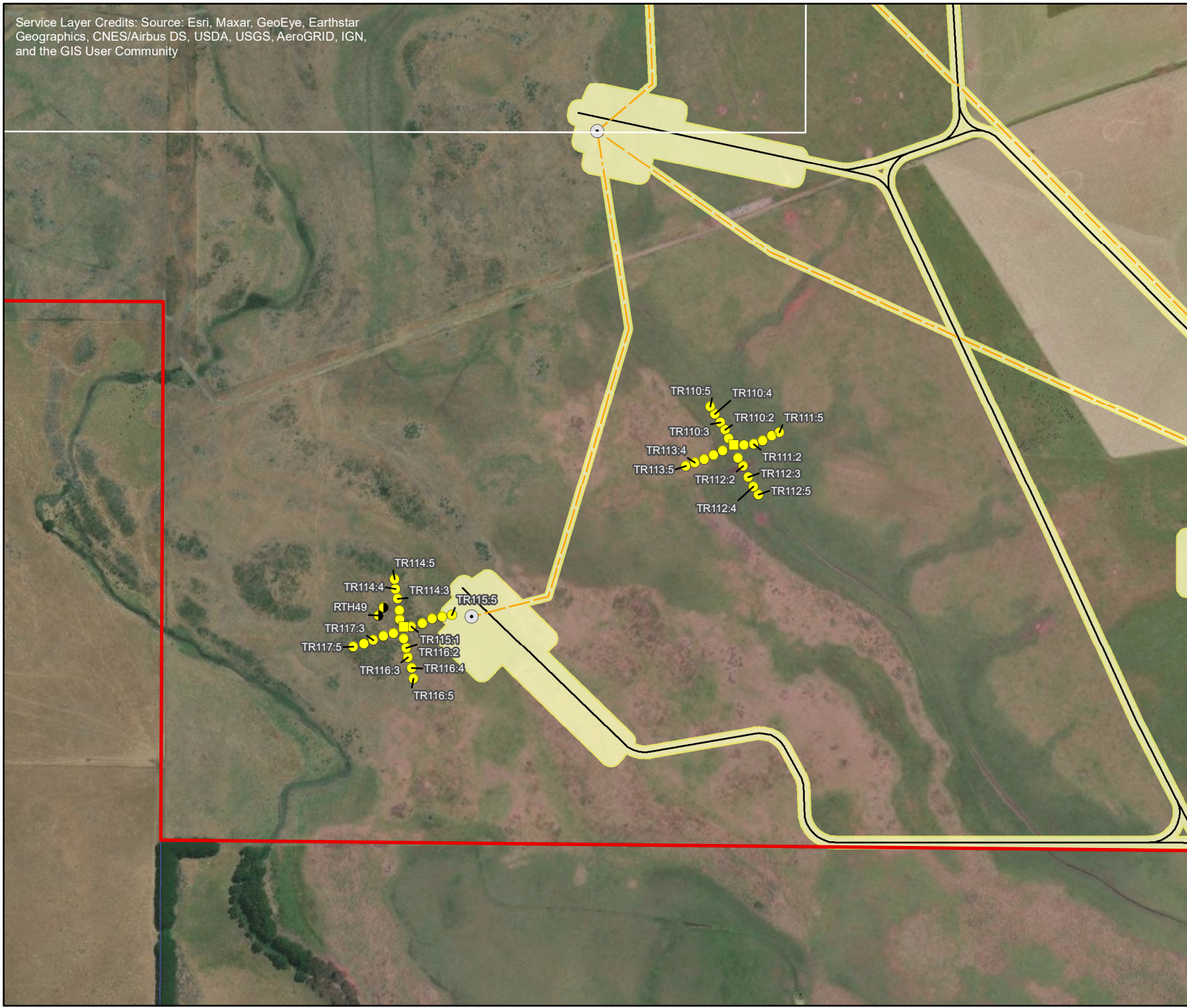


VicMap Data: The State of Victoria does not warrant the accuracy or completeness of information in this publication and any person using or relying upon such information does so on the basis that the State of Victoria shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information.

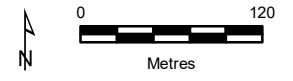


### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
  -  Test Pit - No artefacts
  -  Shovel Test Pit - No artefacts
  -  Radial Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000

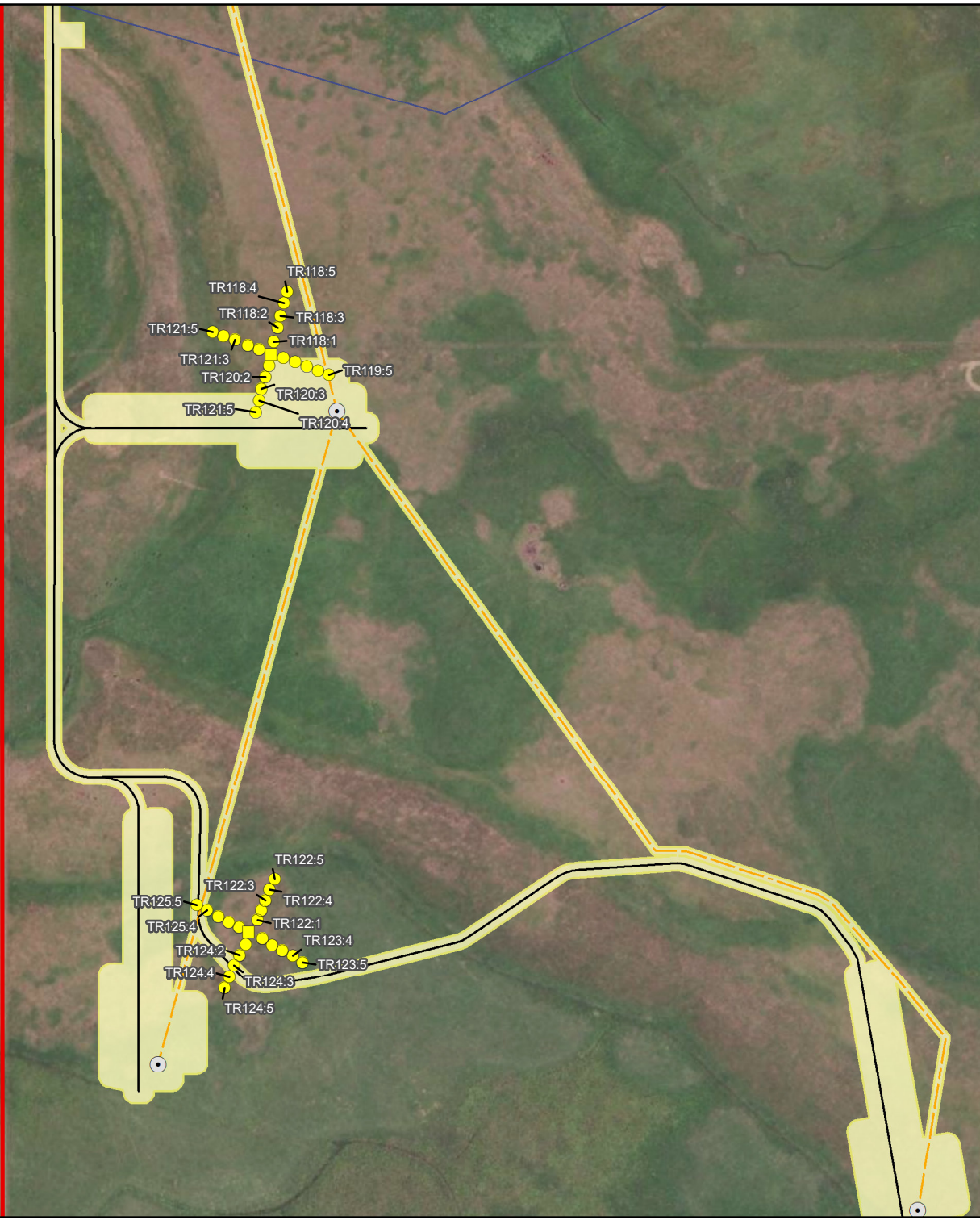


## Map 10p Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm










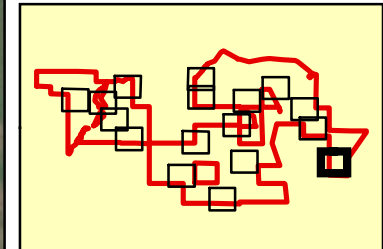


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

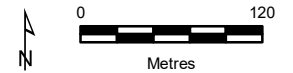


### Legend

-  Project Area
-  Wind turbines
-  Cables
-  Access roads
-  Construction footprint
- Testing locations**
-  Test Pit - No artefacts
-  Shovel Test Pit - No artefacts



Local Government: Shire of Moyné  
25k Mapsheet: Orford/Ware Creek 7321-4-3/2  
Coordinate System: MGA Zone 54 (GDA94)  
Map Scale: 1:5,000

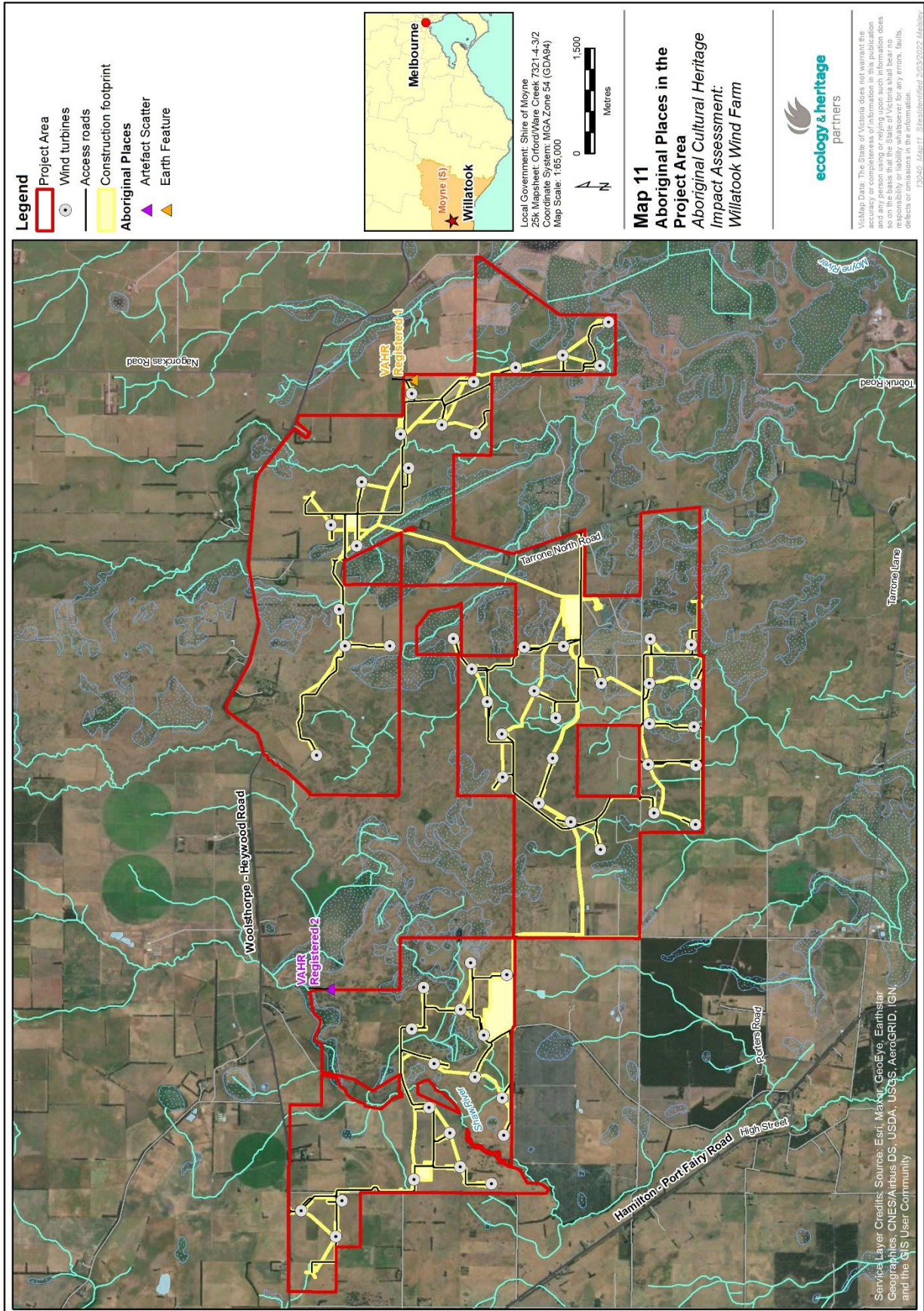


## Map 10q Complex Assessment - Surveyed Area Aboriginal Cultural Heritage Impact Assessment: Willatook Wind Farm



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## APPENDICES

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## Appendix 1: Glossary

Items highlighted in *bold italics* in the definition are defined elsewhere in the glossary.

Acronym	Description
Aboriginal Cultural Heritage Likelihood	An area assessed by a Heritage Advisor as having potential for containing either surface or subsurface Aboriginal archaeological deposits. This term is used in this report to differentiate between <i>legislated areas of cultural heritage sensitivity</i> and areas considered by an archaeologist to be sensitive.
Aboriginal Place	An area in Victoria or the coastal waters of Victoria that is of cultural heritage significance to the Aboriginal people of Victoria (the Act). For the purposes of this CHMP, an Aboriginal place is an <b>Aboriginal place</b> that has been registered on the <b>VAHR</b> .
Aboriginal Place	A location containing Aboriginal cultural heritage, e.g. <b>Artefact scatter, isolated artefact, scarred tree, shell midden</b> , whether or not the place is registered in the <b>VAHR</b> , cf. <b>Aboriginal Place</b> .
Angular Fragment	An artefact which has technologically diagnostic features but has no discernible ventral or dorsal surface and hence is unidentifiable as either a flake or a core
Area of Cultural Heritage Sensitivity	An area specified as an area of cultural heritage sensitivity in Division 3 or Division 4 of Part 2 of the <i>Aboriginal Heritage Regulations 2018</i> .
Artefact Scatter	Stone artefact scatters consist of more than one stone artefact. Activities associated with this place type include stone tool production, hunting and gathering or domestic places associated with campsites. Stone artefacts may be flakes of stone, cores (flakes are removed from the stone cores) or tools. Some scatters may also contain other material such as charcoal, bone, shell and ochre.
Assemblage	The name given to encompass the entire collection of artefacts recovered by archaeologists, invariably classified into diagnostic items used to describe the material culture.
Backed	When one margin of a flake is retouched at a steep angle, and that margin is opposite a sharp edge. The steep margin is formed by bi-polar or hammer and anvil knapping. Also used to describe artefacts with backing, e.g. Backed artefact.
Backed Artefact	A class of artefact employed by archaeologists to describe artefacts which are backed. Sometimes divided into elouera, bondi point, microlith and geometric.
Before Present (BP)	In relation to radiocarbon dating refers to a specified amount of time or a specific point in time before 1950 AD.
Bipolar	A flaking technique where the object to be reduced is rested on an anvil and struck. This process is identified by flakes with platform angles close to 90 degrees as well as apparent initiation from both ends. Some crushing may also be visible.
Burials	Aboriginal communities strongly associate burial places with a connection to country and are opposed to disturbance of burials or their associated places. General considerations for the presence of burial places are the suitability of Subsurface deposits for digging purposes; with soft soil and sand being the most likely. They are more likely near water courses or in dunes near old lake beds or near the coast. Burials are often located near other places such as oven mounds, <b>shell middens</b> or <b>artefact scatters</b> .
Chert	A cryptocrystalline siliceous sedimentary stone.
CHMP	<b>Cultural Heritage Management Plan</b> . A plan prepared under the <i>Aboriginal Heritage Act 2006</i> .
Core	An artefact which has technologically diagnostic features. Generally this class of artefact has only negative scars from flake removal, and thus no ventral surface, however, for the purposes of this research core has been employed to encompass those artefacts which were technically flakes but served the function of a core (ie. The provider of flakes).

Acronym	Description
Cortex	The weathered outer portion of a stone, often somewhat discoloured and coarser compared with the unweathered raw material.
Decortications	The process of removing cortex from a stone (generally by flaking).
Deep Ripping	The ploughing of soil using a ripper or subsoil cultivation tool to a depth of 60 cm or more (see <i>significant ground disturbance</i> ).
DELWP	<b>Department of Environment, Land, Water and Planning.</b> The Victorian State Government department responsible for management of natural and historical heritage in Victoria. <b>HV</b> , responsible for management of historical heritage in Victoria, is a part of DELWP.
DPC	<b>Department of the Premier and Cabinet.</b> The Victorian State Government department, of which <b>FP-SR</b> is a part, responsible for management of Aboriginal cultural heritage in Victoria.
DAWE	<b>Department of Agriculture, Water and the Environment.</b> The Commonwealth Government department responsible for management of heritage sites on the World, National or Commonwealth Heritage lists.
First Peoples – State Relations (FP-SR)	A division of <b>DPC</b> responsible for management of Aboriginal cultural heritage in Victoria, formerly Aboriginal Victoria (AV).
Flake	An artefact which has technologically diagnostic features and a ventral surface.
High Impact Project	An Project specified as a high impact Project in Division 5 of Part 2 of the <i>Aboriginal Heritage Regulations 2018</i> .
HV	<b>Heritage Victoria.</b> A division of <b>DELWP</b> responsible for management of historical heritage in Victoria.
Isolated Finds Or Artefacts	Isolated finds refer to a single artefact. These artefacts may have been dropped or discarded by its owner once it was of no use. This place type can also be indicative of further subsurface archaeological deposits. These place types can be found anywhere within the landscape, however, they are more likely to occur within contexts with the same favourable characteristics for stone artefact scatter places. Isolated finds are no longer registered on the <b>VAHR</b> as a place type; they now form part of an <b>LDAD</b> .
LDAD	<b>Low Density Artefact Distribution.</b> A category of <b>Aboriginal Place</b> type in the <b>VAHR</b> comprising single stone artefacts and/or distributions of multiple stone artefacts at concentrations of less than 10 artefacts in a 10 x 10 m area.
Manuport	An object which has been carried by humans to the place.
Oriented Length	Dimension measured according to the following criteria: The length of the flake from the platform, at 90° to force indicators such as ring-crack, bulb of percussion, force ripples and striations, to the opposing end. Where there were an insufficient number of features present to take this measurement, such as when the flake was broken, this variable was not recorded (sometimes referred to as percussion length).
Oriented Thickness	Dimension measured at 90° and bisecting the oriented width dimension. This was done from the ventral surface to the dorsal surface (sometimes referred to as percussion thickness).
Oriented Width	Dimension measured at 90° and bisecting the oriented length dimension. This was done from one margin to the other. As this measurement and oriented thickness, both rely on oriented length, these were not recorded where the oriented length was not recorded (sometimes referred to as percussion width).
Place Inspection Form	A Place Inspection Form (PIF) is to provide a consistent record of all inspections of a registered Aboriginal place or object. The PIF is used to record changes in condition, and to identify current impacts and potential threats to an Aboriginal place or object.
Potential Archaeological Deposit	An area of land that was not formally assessed but is considered likely to contain surface or subsurface archaeological deposits.



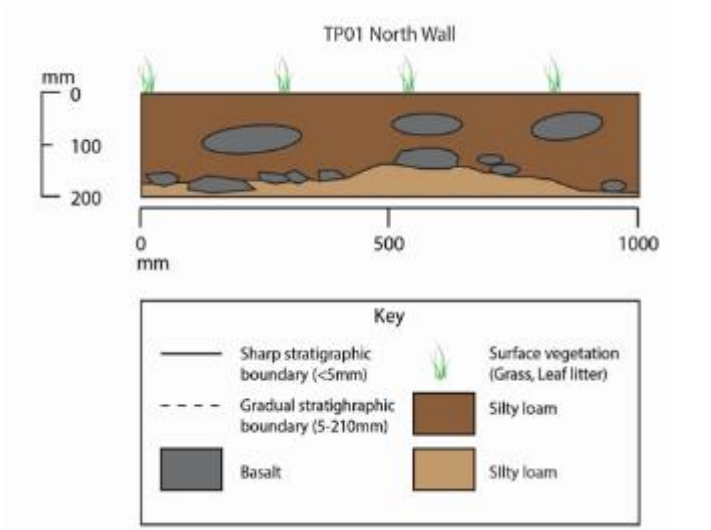

Acronym	Description
Procurement	The process of obtaining raw material for reduction.
Quarries	Stone quarries were used to procure the raw material for making stone tools. Quarries are rocky outcrops that usually have evidence of scars from flaking, crushing and battering the rock. There may be identifiable artefacts near or within the place such as unfinished tools, hammer stones, anvils and grinding stones.
Quartz	A crystalline form of silica.
RAP	<b>Registered Aboriginal Party.</b> An Aboriginal organisation with responsibilities relating to the management of Aboriginal cultural heritage for a specified area of Victoria under the <i>Aboriginal Heritage Act 2006</i> .
Raw Material	The kind of stone the artefacts were manufactured from.
Reduction	The process of removing stone flakes from another pieces of stone. Generally, this is performed by striking (hard hammer percussion) one rock with another to remove a flake.
Retouch	Retouch is when a <b>flake</b> is removed after the manufacture of the original flake. This sequence can be observed when a flake scar is present and encroaches over the ventral surface and thus must have been made after the initial flake removal. Recorded whether retouch was absent or present on the artefact.
Rock Shelter	A concave area in a cliff where the cliff overhangs; or a concave area in a tor where the tor overhangs; or a shallow cave, where the height of the concave area is generally greater than its depth.
Scarred Trees	It is known that the wood and bark of trees have been used for a variety of purposes, such as carrying implements, shield or canoes. The removal of this raw material from a tree produces a 'scar'. The identification of a scar associated with aboriginal custom as opposed to natural scarring can be difficult. The scar should be of a certain size and shape to be identifiable with its product; the tree should also be mature in age, from a time that aboriginal people were still active in the area.
Significant Ground Disturbance	Disturbance of topsoil or surface rock layer of the ground or a waterway by machinery in the course of grading, excavating, digging, dredging or <b>deep ripping</b> , but does not include ploughing other than <b>deep ripping</b> .
Silcrete	A silicified sedimentary stone, often with fine inclusions or grains in a cryptocrystalline matrix. Because of the nature of the grains in silcrete (a hindrance in knapping/flaking predictability) the stone is sometimes heat treated. This exposure to heat can be identified by the presence of pot-lidding as well as a 'lustre' to the stone which is otherwise absent in the stones' natural state. Exposure to sufficient heat homogenises the stone matrix and improves the knapping (flake path) predictive potential (Crabtree and Butler 1964; Mandeville and Flenniken 1974; Purdy 1974; Domanski and Webb 1992; Hiscock 1993; Domanski et al. 1994). Similar to indurated mudstone, it has also been demonstrated that silcrete from the hunter valley often turns a red colour after being exposed to heat (Rowney 1992; Mercieca 2000).
Stone Arrangements	Stone arrangements are places where Aboriginal people have deliberately positioned stones to form shapes or patterns. They are often known to have ceremonial significance. They can be found where there are many boulders, such as volcanic areas and are often large in size, measuring over five metres in width.
Taphonomy	The study of the processes (both natural and cultural) which affect the deposition and preservation of both the artefacts and the place itself.
Technology	A form of artefact analysis which is based upon the knapping/ manufacturing process, commonly used to subsequently infer behaviour patterns, cultural-selection and responses to raw material or the environment.

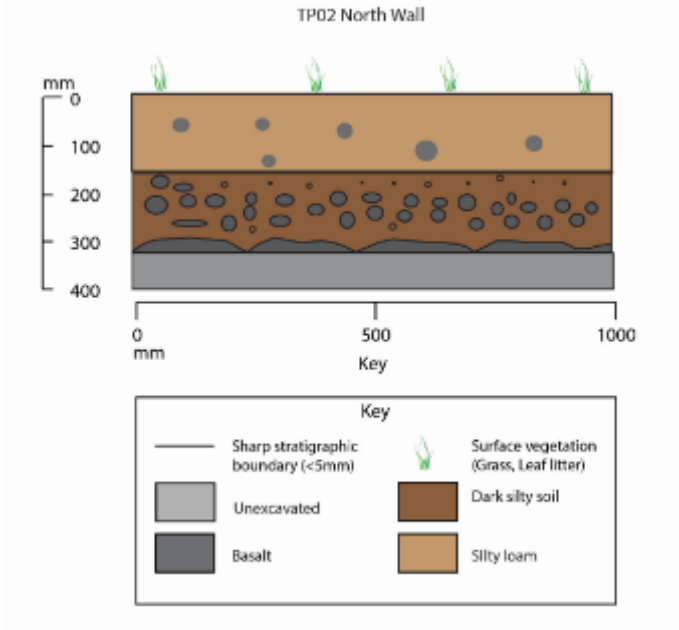

Acronym	Description
Thumbnail scraper	A conceptual class of artefact employed to describe small rounded retouched flakes with steep margins (based on the classification by Mulvaney and Kamminga 1999).
VAHR	<b>Victorian Aboriginal Heritage Register.</b> A register of <b>Aboriginal Places</b> maintained by <b>AV</b> .
VHI	<b>Victorian Heritage Inventory.</b> A register of places and objects in Victoria identified as historical archaeological sites, areas or relics, and all private collections of artefacts, maintained by <b>HV</b> . Sites listed on the VHI are not of State significance but are usually of regional or local significance. Listing on the <b>VHR</b> provides statutory protection for that a site, except in the case where a site has been “D-listed”.
VHR	<b>Victorian Heritage Register.</b> A register of the State’s most significant heritage places and objects maintained by <b>HV</b> . Listing on the VHR provides statutory protection for that a site.

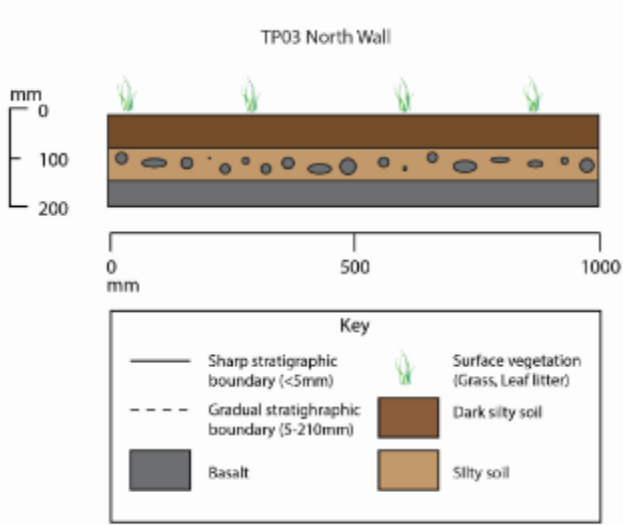

## **Appendix 2: Positive Test Location Data**



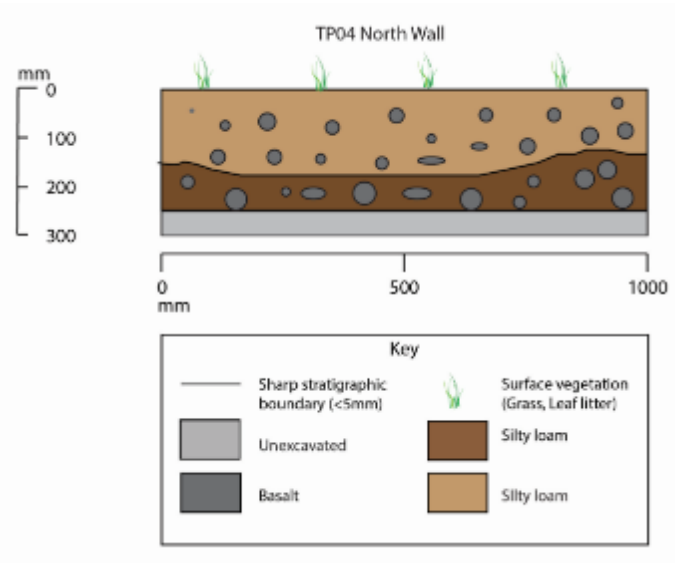

Positive Test Pits Excavated within the Project Area

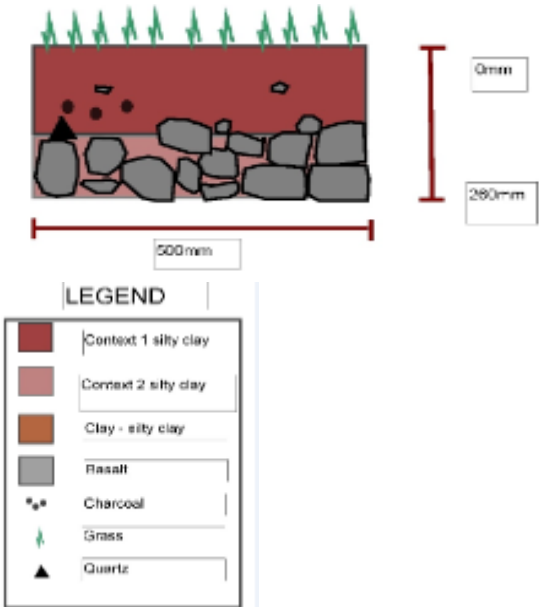
TP (SW) Size	Stratigraphic Profile	Stratigraphic Description
<p>TP01 –2017</p> <p>1 x 1 m</p>	 <p><b>Figure 2:</b> Stratigraphic Profile of TP 01</p>	<p><i>Context 1:</i> 0 to 140 mm: Dark silty brown loam, inclusion of basalt pebbles. No artefacts present. Munsell 7.5YR 2.5/2, pH 6.</p> <p><i>Context 2 (Base):</i> 140 to 190 mm: Light brown silty loam, inclusions of basalt gravels, pebbles and boulders. Weathered basalt particles. No artefacts present. Munsell 7.5YR 2.5/3, pH 6.5</p>
	<p><b>TP 01 Photograph</b></p>	<p><b>Site Name and Assemblage Details</b></p>
<p>1 x 1 m</p>	 <p><b>Plate 17:</b> Stratigraphy of TP01 north section</p>	<p>No artefacts present</p>

TP (SW) Size	Stratigraphic Profile	Stratigraphic Description
<b>TPo2- 2017</b>		
	 <p style="text-align: center;"><b>Figure 2: Stratigraphic Profile of TP02</b></p>	<p><i>Context 1:</i> 0 to 170 mm: Dark brown silty soil. Inclusions basalt and grassroots 0-90 mm. No artefacts present. Munsell 7.5YR 2.5/3, pH 6.</p> <p><i>Context 2 (Base):</i> 170 to 320 mm: Dark brown silty soil. Inclusions weathered basalt pebbled gravels, orange oxidised pellets present. Basalt pebbles present. No artefacts present. Munsell 7.5YR 2.5/3, pH 6.5</p>
<b>TP o2 Photograph</b>		<b>Site Name and Assemblage Details</b>
1 x 1 m	 <p style="text-align: center;"><b>Plate 18: Stratigraphy of TPo2north section</b></p>	

TP (SW) Coordinates	Stratigraphic Profile	Stratigraphic Description
<p>TP03-2017</p>	 <p>The diagram, titled 'TP03 North Wall', shows a cross-section of the soil profile. The vertical axis on the left is labeled 'mm' with markers at 0, 100, and 200. The horizontal axis at the bottom is labeled 'mm' with markers at 0, 500, and 1000. The profile shows three distinct layers: a top layer of dark silty soil (0-50 mm), a middle layer of dark brown silty soil with small basalt gravels (50-140 mm), and a bottom layer of high basalt grounds (140-170 mm). A key below the diagram defines symbols for sharp and gradual stratigraphic boundaries, surface vegetation, dark silty soil, silty soil, and basalt.</p> <p><b>Figure 3:</b> Stratigraphic Profile of TP03</p>	<p><i>Context 1:</i> 0 to 50 mm: Dark brown silty soil. Inclusions grassroots 0- 80 mm. Munsell 7.5YR 2.5/1, pH 6.5</p> <p><i>Context 2:</i> 50 to 140 mm: Dark brown silty soil with moderate small basalt gravels. Munsell 10YR 3/3, pH 6.</p> <p><i>Context 3 (Base):</i> 140 to 170 mm: High basalt grounds with orange oxidised from weathered basalt. Munsell 10YR 3/4, pH 6.5</p>
<p>Location &amp; Size</p>	<p>TP 03 Photograph</p>	<p>Site Name and Assemblage Details</p>
<p>1 x 1 m</p>	 <p>The photograph shows a 1 x 1 m square excavation of the soil profile. A red and white measuring rod is placed horizontally across the top of the excavation. A small wooden sign with handwritten text is visible at the top edge. The soil shows the same three-layer structure as the diagram: dark brown silty soil at the top, dark brown silty soil with small basalt gravels in the middle, and high basalt grounds at the bottom.</p> <p>Plate 19: Stratigraphy of TP03 north section</p>	



TP (SW) Coordinates	Stratigraphic Profile	Stratigraphic Description
<b>TPo4-2017</b>		
	 <p style="text-align: center;">Figure 4: Stratigraphic Profile of TP04 Stratigraphic Profile of TP04</p>	<p><i>Context 1:</i> 0 to 150 mm: Mod brown silty loam. Inclusions 0- 90 mm grassroots. Small basalt gravel. Munsell 7.5YR 2.5/3, pH 7.</p> <p><i>Context 2 (Base):</i> 150 to 240 mm: Light brown loam with orange clay pellets, high basalt gravels, oxidated yellow, orange and red particles. 1 artefact. Munsell 10YR 4/4, pH6.</p>
Location & Size	TP o4 Photograph	Site Name and Assemblage Details
1 x 1 m	 <p style="text-align: center;">Plate 12: Stratigraphy of TP04 north section</p>	

TP (SW) Coordinates GDA 94, Zone 54	Stratigraphic Profile		Stratigraphic Description
STP 38– (2013) Landform			
	<p style="text-align: center;"><b>Figure 1: Stratigraphic Profile of STP38</b></p>  <p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #8B0000; border: 1px solid black; margin-right: 5px;"></span> Context 1 silty clay</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #C06060; border: 1px solid black; margin-right: 5px;"></span> Context 2 silty clay</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #D2691E; border: 1px solid black; margin-right: 5px;"></span> Clay - silty clay</li> <li><span style="display: inline-block; width: 15px; height: 15px; background-color: #808080; border: 1px solid black; margin-right: 5px;"></span> Basalt</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: black; border-radius: 50%; margin-right: 5px;"></span> Charcoal</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: green; border: 1px solid black; margin-right: 5px;"></span> Grass</li> <li><span style="display: inline-block; width: 10px; height: 10px; background-color: black; border: 1px solid black; margin-right: 5px;"></span> Quartz</li> </ul>		<p><b>Stratigraphy</b></p> <p><i>Context 1:</i> 0 - 150mm Dark brownish firm silty clay with infrequent small charcoal chunks. Artefact at 150mm. Munsell: 10YR 2/2 Very dark brown pH: 6.0</p> <p><i>Context 2 (Base):</i> 150mm - 260mm Dark brownish compacted silty clay with frequent basalt rocks and boulders. Munsell: 10 YR 2/2 Very dark brown pH: 6.5</p>
Location & Size	STP 38 (2013) Photograph		Site Name and Assemblage Details
(500 x 500 mm)	