



## Alberton Wind Farm, Victoria: Cultural Heritage Assessment

**Prepared for Synergy Wind Pty Ltd**

**14 September 2017**

**Authors: Timothy Cavanagh, Kendal Houghton, Ben Howells and Martin Lawler**

## Biosis offices

### AUSTRALIAN CAPITAL TERRITORY

#### Canberra

Floor 1, Unit 3, 38 Essington Street  
Mitchell ACT 2911

Phone: (02) 6102 1200  
Email: [canberra@biosis.com.au](mailto:canberra@biosis.com.au)

### NEW SOUTH WALES

#### Newcastle

39 Platt Street  
Waratah NSW 2298

Phone: (02) 4968 4901  
Email: [newcastle@biosis.com.au](mailto:newcastle@biosis.com.au)

#### Sydney

Unit 14, 17-27 Power Avenue  
Alexandria NSW 2015

Phone: (02) 9101 8700  
Email: [sydney@biosis.com.au](mailto:sydney@biosis.com.au)

#### Wollongong

8 Tate Street  
Wollongong NSW 2500

Phone: (02) 4201 1090  
Email: [wollongong@biosis.com.au](mailto:wollongong@biosis.com.au)

### QUEENSLAND

#### Brisbane

Suite 4 First Floor, 72 Wickham Street  
Fortitude Valley QLD 4006

Phone: (07) 3831 7400  
Email: [brisbane@biosis.com.au](mailto:brisbane@biosis.com.au)

### VICTORIA

#### Ballarat

506 Macarthur Street  
Ballarat VIC 3350

Phone: (03) 5304 4250  
Email: [ballarat@biosis.com.au](mailto:ballarat@biosis.com.au)

#### Melbourne (Head Office)

38 Bertie Street  
Port Melbourne VIC 3207

Phone: (03) 8686 4800  
Fax: (03) 9646 9242  
Email: [melbourne@biosis.com.au](mailto:melbourne@biosis.com.au)

#### Wangaratta

16 Templeton Street (PO Box 943)  
Wangaratta VIC 3677

Phone: (03) 5721 9453  
Email: [wangaratta@biosis.com.au](mailto:wangaratta@biosis.com.au)

## Document information

<b>Report to:</b>	Synergy Wind Pty Ltd
<b>Prepared by:</b>	Timothy Cavanagh, Kendal Houghton, Ben Howells and Martin Lawler
<b>Biosis project no.:</b>	21624
<b>File name:</b>	21624.CulturalSurvey.AWF.FNL.20170914.docx
<b>Citation:</b>	Biosis (2017). Alberton Wind Farm. Cultural Heritage Assessment. Report for Synergy Wind Pty Ltd. Authors: T. Cavanagh, K. Houghton, B. Howells, M. Lawler, Biosis Pty Ltd, Melbourne. Project no. 21624.

## Document Control

Version	Internal reviewer	Date issued
Draft version 01	MT	03/08/2015
Draft version 02	IB	05/07/2016
Final version	MDL	14/09/2017

© Biosis Pty Ltd

This document is and shall remain the property of Biosis Pty Ltd. The document may only be used for the purposes for which it was commissioned and in accordance with the Terms of the Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Biosis Pty Ltd has completed this assessment in accordance with the relevant federal, state and local legislation and current industry best practice. The company accepts no liability for any damages or loss incurred as a result of reliance placed upon the report content or for any purpose other than that for which it was intended.



## Summary

---

This report documents the findings of a Cultural Heritage Assessment (CHA) for the proposed Alberton Wind Farm, Alberton, Victoria (the study area). The purpose of the CHA is to provide information on the Aboriginal and historical archaeological and cultural heritage values of the study area and provide advice with regards to the *Aboriginal Heritage Act 2006*, *Heritage Act 1995*, *Planning and Environment Act 1987* and the *Environment Effects Act 1978*, specifically the statutory and non-statutory obligations under these Acts.

### Assessments undertaken

An initial assessment, based on detailed background research and a targeted field inspection, was undertaken by Biosis Pty Ltd on behalf of Synergy Wind Pty Ltd in 2015, during the earlier design stages for the project. (Cavanagh, Houghton, & Howells, 2015). The primary intent of the 2015 assessment was to inform on legislative obligations with respect to future development, the potential risk associated with varying degrees of archaeological potential of different landforms, and provide a predictive model for the study area with respect to potential cultural heritage values. The results of the 2015 assessment informed the design of the turbine locations, enabling the project to avoid impact to all areas of designated cultural heritage sensitivity under the Aboriginal Heritage Regulations 2007. A Cultural Heritage Management Plan is not required for the proposed development under r.6 of the Regulations because the activity area will avoid all areas of designated cultural heritage sensitivity.

Following a decision on the intended locations of the turbines and the indicative electrical and access track layouts, Synergy Wind Pty Ltd commissioned a cultural heritage field survey of the proposed locations in 2016. The objective of the field survey has been to inspect each of the proposed turbine locations and the landforms crossed by the indicative electrical and access track layouts, and to assess these locations for potential cultural heritage impacts. The field inspections have been undertaken by an archaeologist from Biosis Pty Ltd and a cultural heritage field representative from the Gunai Kurnai Land and Waters Aboriginal Corporation (GLaWAC), which is the Registered Aboriginal Party for this region. The results of the field inspections of the proposed locations, combined with the evidence of the initial desk-based assessment and landform analysis, has been used to assess the potential impacts to cultural heritage of the proposed development. The resulting assessment has been used to provide further modification to the project design where required, to avoid any potential impacts to cultural heritage caused by the indicative electrical and access track layouts.

The cultural heritage assessment undertaken during the design stages of the project has been intended to ensure that the windfarm development will avoid impacts to all known and likely cultural heritage and historical archaeological places. The assessment provides due diligence for the proposed development under s.27 and s.28 of the *Aboriginal Heritage Act 2006*.

### Assessment results

Archaeological studies have identified that the region of the study area has been a focus for prehistoric and historic exploitation. No Aboriginal places have been recorded within the study area, however, one historic place, Gelliondale Briquette Plant (H8220-0008/ H1058/ HO81), is situated within the study area. In addition, no archaeological surveys have been completed in the study area, however, it exhibits a number of sensitive landforms that are likely to contain Aboriginal cultural heritage.

The study area is broken into five landform units, being creek margins, flat open plains, gentle slopes, isolated hills and swamp margins. Of these five units, three contain high to moderate archaeological potential for Aboriginal places – creek margins, isolated hills and swamp margins. The landform which constitutes the

majority of the study area – flat open plains – contains relatively low archaeological potential and may form the best option for future windfarm development. Areas of historic archaeological potential are limited to the township or are associated with farming and agricultural development, such as domestic houses and associated outbuildings.

Disturbances across the study area are relatively few for the size of the study area. Swamp drainage has occurred in sections, along with wide scale deforestation to allow for pastoral activities. Other areas include intermittent development zones, such as homesteads, farm infrastructure and roads.

Inspection of the proposed locations for the 34 turbines has shown that none of these lie within an area of cultural heritage sensitivity and that the construction of the turbines is unlikely to impact on any undetected Aboriginal cultural heritage.

Assessment of the landforms crossed by the indicative electrical and access track layouts has identified two Aboriginal artefact places and three additional landforms of sensitivity for undetected cultural heritage. The proposed designs will avoid each of these landforms.

Based on the findings, Biosis Pty Ltd advises the following recommendations.

### **Proposed turbine locations**

The locations of each of the 34 proposed turbines have been examined and assessed during the cultural heritage surveys. The turbine positions have been planned to avoid potential impacts to Aboriginal cultural heritage, based on the results of the initial assessment.

From the results of the second survey, none of the proposed turbine locations were assessed as being of cultural heritage sensitivity. It is unlikely, therefore, that the construction of the turbines and crane pads at any of the locations assessed would impact on any undetected Aboriginal cultural heritage.

*Recommendation 1: Based on our surveys and assessment, we consider it unlikely that any undetected Aboriginal cultural heritage would be impacted by the proposed construction of the turbines and crane pads at the locations shown. As the locations lie outside any areas of designated cultural heritage sensitivity under the Aboriginal Heritage Regulations 2007, we recommend that no further cultural heritage assessment is required at the proposed turbine locations.*

### **Recommendation 2: Proposed access tracks and electrical layout**

It is understood that the final designs of the associated infrastructure (including the access roads and electrical cable layout) will be subject to final design changes. The initial designs for the infrastructure were assessed as part of the cultural heritage survey.

None of the proposed locations (based on the initial designs) lie within an area of designated cultural heritage sensitivity under the *Aboriginal Heritage Regulations 2007*. Four landforms which are sensitive for Aboriginal cultural heritage have been identified during the survey:

- *Sandy rise to the north of Turbine T04.* This is a crescent-shaped shallow dune formation containing surface artefacts and has been registered as an Aboriginal place (Hedley AS 1: VAHR 8220-0171). No impacts must be caused by the proposed works to this landform. The area of the recorded cultural heritage place is shown in Figure 12.
- *Area of surface artefacts adjacent to a farm access track west of Turbine T12.* This has been registered as a Low Density Artefact Distribution (Hedley LDAD 1: VAHR 8220-0170) consisting of two surface artefacts, found in a disturbed context. No impacts must be caused by the proposed works to the location of the recorded place. The location of the recorded place is shown in Figure 15. The location of an Aboriginal place (as well as a buffer area extending to 50 metres distance from that place) is an area of designated sensitivity under the *Aboriginal Heritage Regulations 2007* (r.41).



- *Sandy rise between T12 and 13.* No artefacts have been recorded on this rise but it is assessed as being sensitive for Aboriginal cultural heritage. No impacts must be caused by the proposed works to this landform. The sensitive landform is shown in Figure 14. The development must avoid impacts to this landform under s27 and s.28 of the *Aboriginal Heritage Act 2006*.
- *Alluvial rise to the north of T34.* No artefacts have been recorded on this landform but it is assessed as being sensitive for Aboriginal cultural heritage. No impacts must be caused by the proposed works to this landform. The sensitive landform is shown in Figure 16. The development must avoid impacts to this landform under s27 and s.28 of the *Aboriginal Heritage Act 2006*.

*Recommendation 2: The Activity Area for the windfarm project must not extend within 50 metres of the two Aboriginal places recorded during the cultural heritage survey, unless a Cultural Heritage Management Plan is undertaken for the windfarm development. These places are shown in Figure 12 and Figure 15.*

*The activity must avoid any impacts to the two archaeologically-sensitive landforms identified during the cultural heritage survey. These places are shown in Figure 14 and Figure 16.*

### **Recommendation 3: Gelliondale Briquette Plant (H1058/ H8220-0008/ HO81)**

The recorded area of the historical site, which is recorded on the Heritage Register (H1058) and the Heritage Inventory (H8220-0008) lies 40 metres to the north of the proposed location for Turbine T08. The place is also listed on the Heritage Overlay (H081). The proposed turbine, crane pad and associated infrastructure will not impact on the historical site. A Heritage Permit would be required if the proposed works will impact on the historical site. Planning consent may also be required if the Heritage Overlay site is to be impacted. The area of the Heritage Register site H1058 is shown in Figure 13.

*Recommendation 3: The development activity must avoid impacts to the Heritage Register site Gelliondale Briquette Plant (H1058/ H8220-0008/ HO81). If any impacts are required to the registered site, then a Permit must be obtained from Heritage Victoria.*

*Planning consent may be required for any impacts (including visual impacts) to the Heritage Overlay site H081*

## **LEGISLATIVE CONSIDERATIONS**

### **Aboriginal Heritage Implications**

As a document that will serve to inform the design for the proposed windfarm, there are two significant legislative considerations for future development. These are:

1. If any development design plan covers any part of an area of cultural heritage sensitivity (CHS), **AND** that development is listed as a high impact activity under Section 43 of the *Aboriginal Heritage Regulations 2007*, then that development will trigger a mandatory cultural heritage management plan (CHMP). An exhaustive list of what constitutes high impact activity is listed in the *Aboriginal Heritage Regulations 2007*, and includes activities such as land used to generate electricity, including a wind energy facility.
2. If any development design plans do not include an area of designated cultural heritage sensitivity, then a mandatory CHMP is NOT triggered. For the windfarm being considered, the project has been designed to avoid impact to Aboriginal cultural heritage, and the proposed locations of the turbines and associated infrastructure do not lie within areas of designated cultural heritage sensitivity. For this reason, the proposed works would not trigger a mandatory CHMP.
3. All Aboriginal cultural heritage (whether it is already recorded or still undetected) is protected from disturbance undertaken without approval. Sections 27 and 28 of the *Aboriginal Heritage Act 2006* prohibit any activities that may knowingly or recklessly impact Aboriginal cultural heritage. For the present proposed windfarm development, the proponent has undertaken a detailed cultural heritage

assessment and survey to ensure that the proposed works are unlikely to impact on undetected cultural heritage.

### **Environment Effects Act 1978**

The Victorian *Environment Effects Act 1978* (EE Act) establishes a process to assess the environmental impacts of a project. If applicable, the EE Act requires that an Environment Effects Statement (EES) be prepared by the proponent. The EES is submitted to the Minister for Planning and enables the Minister to assess the potential environmental effects of the proposed development.

The Ministerial Guidelines for Assessment of Environmental Effects (DSE 2006) provide a range of criteria that can be used to determine whether an EES may be required for a project. These criteria relate to individual potential environmental effects and a combination of (two or more) potential environmental effects. However, the guidelines are not binding, and the decision as to whether an EES is required is ultimately at the discretion of the Minister for Planning.

Biosis has undertaken an initial assessment of the proposed windfarm against the referral criteria (Aboriginal Heritage only) in the EES guidelines (Tables 3 and 4) and it is unlikely that the project will require referral under the EE Act based on Aboriginal Heritage grounds.

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

The study area is covered by a number of planning scheme controls within the Wellington and South Gippsland Planning Schemes. The majority of the study area is included in the Farming Zone with a small parcel included in the Industrial 1 Zone.

A number of Overlays cover the study area including the State Resource Overlay (Gippsland Coalfields), Land Subject to Inundation Overlay, Bushfire Management Overlay, Design and Development Overlay and Heritage Overlay. The Particular Provisions Clause 52.17 – Native Vegetation, Clause 52.32 – Wind Energy facility and Clause 52.47 – Planning for Bushfire are applicable to the project.

Under Clause 61.01-1 of the Wellington and South Gippsland Planning Schemes the Minister for Planning is the responsible authority for processing and determining permit application for Windfarms.

### **Voluntary Cultural Heritage Management Plan**

The results of the 2015 and 2016 cultural heritage assessments and surveys have informed the layout of turbines, tracks, underground cable and indicative electrical layout ensuring the proposed Alberton Wind Energy Facility avoids impact to all known and likely cultural heritage and historical archaeological places. The assessment provides due diligence for the proposed development under Sections 27 and 28 of the Aboriginal Heritage Act 2006. A mandatory Cultural Heritage Management Plan (CHMP) is therefore not required under r.6 of the Regulations because the Activity Area, the Proposed Wind Energy Facility Area, will avoid all areas of designated cultural heritage sensitivity.

However, following further discussions, Aboriginal Victoria has indicated that cultural heritage for this area is relatively unknown, and that whilst low risk, there is a chance of encountering undiscovered cultural heritage during construction. Accordingly, Synergy Wind has commenced preparation of a voluntary CHMP for the Proposed Alberton Wind Energy Facility (CHMP Plan ID. 15167). The Standard Assessment has already been completed. Further consultation with the Registered Aboriginal Party (RAP) has been undertaken to inform the level of investigation that the RAP will be required for the Complex Assessment to approve the voluntary CHMP.

Following issue of a Planning Permit, Development Plans will be prepared in compliance with Planning Permit requirements, and the voluntary CHMP will be completed at this time, when the proposed extent of the

Activity Area is known, noting that the outcomes of the CHMP Complex Assessment and other specialist Detailed Assessments may result in further micro-siting of infrastructure to avoid potential impacts.



# Table of Contents

<b>Summary .....</b>	<b>ii</b>
<b>1. Introduction .....</b>	<b>1</b>
1.1 Project Background.....	1
1.1.1 Assessments undertaken .....	1
1.2 Assessment Objectives.....	1
1.3 Location of the Study Area .....	2
1.4 Proposed Design for the Study Area.....	2
1.5 Cultural Heritage Advisors.....	2
1.6 Registered Aboriginal Parties.....	3
1.7 Owners/Occupiers of the Study Area .....	3
1.8 Legislative Framework.....	3
1.9 Limitations.....	3
<b>2. Consultation .....</b>	<b>7</b>
2.1.1 Consultation with Heritage Victoria.....	7
2.1.2 Consultation with Traditional Owners .....	7
<b>3. Background Research .....</b>	<b>8</b>
3.1 Environmental Background .....	8
3.1.1 Geographic Region .....	8
3.1.2 Geology and Geomorphology .....	8
3.1.3 Climate .....	8
3.1.4 Flora .....	9
3.1.5 Fauna.....	10
3.2 Aboriginal & Historic Heritage .....	15
3.2.1 Ethnohistory.....	15
3.2.2 Historical Accounts of Aboriginal People .....	16
3.2.3 Post Contact History .....	17
3.2.4 VAHR Places .....	19
3.2.5 Historic Places .....	21
3.2.6 Previous Archaeological Assessments.....	24
3.2.7 Regional History .....	28
3.2.8 Land Use History.....	30
3.3 Conclusions and Place Prediction Model .....	32
<b>4. Targeted Inspection of the Study Area.....</b>	<b>36</b>
4.1 Methods.....	36
4.2 Results.....	36

4.2.1	Landforms .....	42
4.2.2	Ground surface visibility and ground surface exposures.....	49
4.2.3	Disturbance.....	49
4.2.4	Archaeological potential.....	49
4.2.5	Conclusion.....	50
<b>5.</b>	<b>Cultural heritage survey of design footprint.....</b>	<b>53</b>
5.1	Methods.....	53
5.2	Results.....	54
5.3	Revised predictive model.....	57
5.3.1	Landforms .....	57
5.3.2	Land use .....	58
5.3.3	Assessment of archaeological sensitivity .....	58
5.4	Detailed assessments.....	60
5.4.1	Turbine T01 (Group A) .....	60
5.4.2	Turbine T02 (Group A) .....	61
5.4.3	Turbine T03 (Group A) .....	62
5.4.4	Turbine T04 (Group A) .....	63
5.4.5	Turbine T05 (Group A) .....	66
5.4.6	Turbine T06 (Group A) .....	67
5.4.7	Turbine T07 (Group A) .....	68
5.4.8	Turbine T08 (Group B) .....	69
5.4.9	Turbine T09 (Group C) .....	71
5.4.10	Substation location (Group B).....	72
5.4.11	Turbine T10 (Group B) .....	73
5.4.12	Turbine T11 (Group B) .....	74
5.4.13	Turbine T12 (Group D).....	75
5.4.14	Turbine T13 (Group D).....	79
5.4.15	Turbine T14 (Group D).....	80
5.4.16	Turbine T15 (Group D).....	81
5.4.17	Turbine T16 (Group D).....	82
5.4.18	Turbine T17 (Group E).....	83
5.4.19	Turbine T18 (Group D).....	84
5.4.20	Turbine T19 (Group D).....	85
5.4.21	Turbine T20 (Group F).....	86
5.4.22	Turbine T21 (Group F).....	87
5.4.23	Turbine T22 (Group D).....	88
5.4.24	Turbine T23 (Group F).....	89
5.4.25	Turbine T24 (Group E).....	90

5.4.26 Turbine T25 (Group E).....	91
5.4.27 Turbine T26 (Group E).....	92
5.4.28 Turbine T27 (Group D).....	93
5.4.29 Turbine T28 (Group F).....	94
5.4.30 Turbine T29 (Group E).....	95
5.4.31 Turbine T30 (Group F).....	96
5.4.32 Turbine T31 (Group D).....	97
5.4.33 Turbine T32 (Group D).....	98
5.4.34 Turbine T33 (Group D).....	99
5.4.35 Turbine T34 (Group D).....	100
5.5 Recommendations.....	102
5.5.1 Proposed turbine locations.....	102
5.5.2 Proposed access tracks and electrical layout.....	102
5.5.3 Gelliondale Briquette Plant (H1058/ H8220-0008/ HO81).....	103
<b>6. Legislative Considerations.....</b>	<b>105</b>
<b>Bibliography .....</b>	<b>107</b>

## List of Figures

Figure 1: Location of the Study Area .....	5
Figure 2: The extent of the Study Area.....	6
Figure 3: Geology of the study area.....	11
Figure 4: Geomorphology and VAHR Places within the geographic region .....	12
Figure 5: Historic Places in the Geographic Region .....	13
Figure 6: Pre-1750 Ecological Vegetation Classes (EVCs) of the study area .....	14
Figure 7: Aboriginal heritage predictive modelling.....	35
Figure 8: Landforms in the study area .....	48
Figure 9: Revised predictive model for Aboriginal archaeological potential based on the site survey.....	51
Figure 10: Legislated areas of cultural heritage sensitivity and assessment type recommendations.....	52
Figure 11: Proposed turbine locations .....	59
Figure 12. Aboriginal place recorded to north of T04 .....	65
Figure 13. Gelliondale Briquette Plant (H1058/ H8220-008/ H081) .....	70
Figure 14. Sensitive landform between T12 and T13.....	77
Figure 15. Low Density Artefact Distribution 0.7 km to west of T12.....	78
Figure 16. Sensitive landform to south of T34 .....	101
Figure 17: Summary of assessed sensitivity and recommendations at completion of assessment .....	104

## List of Tables

Table 1: Bioregions and EVCs within the study area .....	9
Table 2: VAHR places within the geographic region, places within the study area shaded dark grey .....	19



Table 3: Previously recorded VHI & VHR sites in the geographic region .....	22
Table 4: Aboriginal archaeological assessments within two kilometres of the study area .....	26
Table 5: Types of landforms across the study area.....	36
Table 6. Results of cultural heritage survey.....	54

## List of Plates

Plate 1: 1845 map of the first track drawn between Melbourne and Traralgon.....	18
Plate 2: Typical flat open plain landform .....	37
Plate 3: Typical flat open plain landform .....	37
Plate 4: Flat open plain with the Jack River .....	38
Plate 5: Remnant native trees near VAHR 8220-0080 .....	38
Plate 6: Isolated hill landform.....	39
Plate 7: Sloping landform.....	39
Plate 8: Albert River.....	40
Plate 9: Meandering alluvial terrace .....	40
Plate 10: Swamp margins.....	41
Plate 11: Hill crest in background .....	43
Plate 12: Gentle slopes .....	44
Plate 13: Meandering alluvial terrace.....	45
Plate 14: Swamp margin with drainage channel .....	46
Plate 15: Flat open plains .....	47
Plate 16. Location of T01, view to NW. ....	60
Plate 17. Location of T01, view to SE. ....	60
Plate 18. Location of T01, view to SW.....	60
Plate 19. Location of T01, view to E. ....	60
Plate 20. Location of T02, view to NW. ....	61
Plate 21. Location of T02, view to W.....	61
Plate 22. Location of T02, view to SE. ....	61
Plate 23. Location of T02, ground surface. ....	61
Plate 24. Location of T03, view to NE.....	62
Plate 25. Location of T03, view to W.....	62
Plate 26. Location of T03, view to E. ....	62
Plate 27. Location of T03, view to SE. ....	62
Plate 28. Aboriginal artefact distribution on rise to N of T04, looking SW. ....	64
Plate 29. Aboriginal artefact distribution with flagged artefacts, looking S. ....	64
Plate 30. Silcrete microblade core. ....	64
Plate 31. Silcrete struck flakes.....	64
Plate 32. Sandy rise, looking E. T04 located on lower lying ground at far right. ....	64
Plate 33. Artefact (flagged) in loose sand on rise, disturbed by animal burrow. ....	64
Plate 34. Location of T05, view to SW.....	66
Plate 35. Location of T05, view to N.....	66

Plate 36. Location of T05, view to NE.....	66
Plate 37. Location of T05, ground surface. ....	66
Plate 38. Location of T06, view to NW. ....	67
Plate 39. Location of T06, view to NE.....	67
Plate 40. Location of T06, view to S. ....	67
Plate 41. Location of T06, view to W. ....	67
Plate 42. Location of T07, view to SW.....	68
Plate 43. Location of T07, view to SW.....	68
Plate 44. Location of T07, view to NW. ....	68
Plate 45. Location of T07, view to E. ....	68
Plate 46. Location of T08, view to NE.....	69
Plate 47. Location of T08, view to NW. ....	69
Plate 48. Location of T08, view to SW.....	69
Plate 49. Location of T08, ground surface. ....	69
Plate 50. Location of T09, view to E. ....	71
Plate 51. Location of T09, view to S. ....	71
Plate 52. Location of T09, view to NE.....	71
Plate 53. Location of T09, ground surface. ....	71
Plate 54. Location of substation, view to NE. ....	72
Plate 55. Location of substation, view to NE. ....	72
Plate 56. Location of substation, view to NE. ....	72
Plate 57. Location of substation, ground surface. ....	72
Plate 58. Location of T10, view to SE. ....	73
Plate 59. Location of T10, view to NE.....	73
Plate 60. Location of T10, view to NW. ....	73
Plate 61. Location of T10, ground surface. ....	73
Plate 62. Location of T08, view to NE.....	74
Plate 63. Location of T08, view to NW. ....	74
Plate 64. Location of T08, view to SW.....	74
Plate 65. Location of T08, ground surface. ....	74
Plate 66. Location of T12, view to SE. ....	75
Plate 67. Location of T12, view to W. ....	75
Plate 68. Location of T12, ground conditions.....	76
Plate 69. Soil profile in field ditch to S of T12, looking E. ....	76
Plate 70. Sandy rise between T12 and T13, looking SE. ....	76
Plate 71. Sandy rise between T12 and T13, looking E. ....	76
Plate 72. Silcrete flake recorded near farm track, 0.7 km to west of T12.....	76
Plate 73. Rose quartz flake recorded near farm track, 0.7 km west of T12. ....	76
Plate 74. Location of T08, view to NE.....	79
Plate 75. Location of T08, view to S. ....	79
Plate 76. Location of T12, view to W. ....	79

Plate 77. Location of T12, ground surface. ....	79
Plate 78. Location of T14, view to SE. ....	80
Plate 79. Location of T14, view to SW. ....	80
Plate 80. Location of T14, view to N. ....	80
Plate 81. Location of T14, ground surface. ....	80
Plate 82. Location of T15, view to NE. ....	81
Plate 83. Location of T15, view to SE. ....	81
Plate 84. Location of T15, view to W. ....	81
Plate 85. Location of T15, ground surface. ....	81
Plate 86. Location of T16, view to NW. ....	82
Plate 87. Location of T16, view to SW. ....	82
Plate 88. Location of T17, view to SE. ....	82
Plate 89. Location of T16, ground surface. ....	82
Plate 90. Location of T17, view to SW. ....	83
Plate 91. Location of T17, view to SW. ....	83
Plate 92. Location of T17, view to NE. ....	83
Plate 93. Location of T17, ground surface. ....	83
Plate 94. Location of T18, view to W. ....	84
Plate 95. Location of T18, view to S. ....	84
Plate 96. Location of T18, view to E. ....	84
Plate 97. Location of T18, ground surface. ....	84
Plate 98. Location of T19, view to E. ....	85
Plate 99. Location of T19, view to SE. ....	85
Plate 100. Location of T19, view to SW. ....	85
Plate 101. Soil profile in wombat burrow near T19. ....	85
Plate 102. Location of T20, view to W. ....	86
Plate 103. Location of T20, view to NW. ....	86
Plate 104. Location of T20, view to E. ....	86
Plate 105. Location of T20, ground surface. ....	86
Plate 106. Location of T21, view to E. ....	87
Plate 107. Location of T21, view to N. ....	87
Plate 108. Location of T21, view to W. ....	87
Plate 109. Location of T21, ground surface. ....	87
Plate 110. Location of T22, view to NW. ....	88
Plate 111. Location of T22, view to SE. ....	88
Plate 112. Location of T22, view to SW. ....	88
Plate 113. Location of T22, ground surface. ....	88
Plate 114. Location of T23, view to W. ....	89
Plate 115. Location of T23, view to E. ....	89
Plate 116. Location of T23, view to N. ....	89
Plate 117. Location of T23, ground surface. ....	89



Plate 118. Location of T24, view to W.....	90
Plate 119. Location of T24, view to NW.....	90
Plate 120. Location of T24, view to NW.....	90
Plate 121. Location of T24, ground surface.....	90
Plate 122. Location of T25, view to E.....	91
Plate 123. Location of T25, view to SW.....	91
Plate 124. Location of T25, view to NW.....	91
Plate 125. Location of T25, ground surface.....	91
Plate 126. Location of T26, view to NE.....	92
Plate 127. Location of T26, view to SW.....	92
Plate 128. Location of T26, view to W.....	92
Plate 129. Location of T25, ground surface.....	92
Plate 130. Location of T27, view to S.....	93
Plate 131. Location of T27, view to N.....	93
Plate 132. Location of T27, view to W.....	93
Plate 133. Location of T27, ground surface.....	93
Plate 134. Location of T28, view to W.....	94
Plate 135. Location of T28, view to S.....	94
Plate 136. Location of T28, view to N.....	94
Plate 137. Location of T28, ground surface.....	94
Plate 138. Location of T29, view to SW.....	95
Plate 139. Location of T29, view to SE.....	95
Plate 140. Location of T29, view to NE.....	95
Plate 141. Location of T29, ground surface.....	95
Plate 142. Location of T30, view to W.....	96
Plate 143. Location of T30, view to E.....	96
Plate 144. Location of T30, view to N.....	96
Plate 145. Location of T30, ground surface.....	96
Plate 146. Location of T31, view to SE.....	97
Plate 147. Location of T31, view to SW.....	97
Plate 148. Location of T31, view to NE.....	97
Plate 149. Location of T31, ground surface.....	97
Plate 150. Location of T32, view to SE.....	98
Plate 151. Location of T32, view to NE.....	98
Plate 152. Location of T32, view to W.....	98
Plate 153. Location of T32, ground surface.....	98
Plate 154. Location of T33, view to SW.....	99
Plate 155. Location of T33, view to W.....	99
Plate 156. Location of T33, view to E.....	99
Plate 157. Location of T33, ground surface.....	99
Plate 158. View from rise to T34 location in background, view to N.....	100

---

Plate 159. Location of T34 on far side of stream, view to NE.....	100
Plate 160. View from T34 location, view to SW. ....	100
Plate 161. Rise to S of T34 location, view to NW.....	100

# 1. Introduction

---

## 1.1 Project Background

This report documents the findings of a Cultural Heritage Assessment (CHA) for the proposed Alberton Wind Farm, Alberton, Victoria (the study area). The purpose of the CHA is to provide information on the Aboriginal and historical archaeological and cultural heritage values of the study area and provide advice with regards to the *Aboriginal Heritage Act 2006*, *Heritage Act 1995*, *Planning and Environment Act 1987* and the *Environment Effects Act 1978*, specifically the statutory and non-statutory obligations under these Acts.

The study area covers approximately 2,270 hectares of rural land in Alberton, Victoria. Synergy Wind Pty Ltd are coordinating and managing the preparation of the proposed Alberton Wind Farm project, including detailed design.

### 1.1.1 Assessments undertaken

An initial assessment, based on detailed background research and a targeted field inspection, was undertaken by Biosis Pty Ltd on behalf of Synergy Wind Pty Ltd in 2015, during the earlier design stages for the project. (Cavanagh, Houghton, & Howells, 2015). The primary intent of the 2015 assessment was to inform on legislative obligations with respect to future development, the potential risk associated with varying degrees of archaeological potential of different landforms, and provide a predictive model for the study area with respect to potential cultural heritage values. The results of the 2015 assessment informed the design of the turbine locations, enabling the project to avoid impact to all areas of designated cultural heritage sensitivity under the Aboriginal Heritage Regulations 2007. A Cultural Heritage Management Plan is not required for the proposed development under r.6 of the Regulations because the activity area will avoid all areas of designated cultural heritage sensitivity.

Following a decision on the intended locations of the turbines and the indicative electrical and access track layouts, Synergy Wind Pty Ltd commissioned a cultural heritage field survey of the proposed locations in 2016. The objective of the field survey has been to inspect each of the proposed turbine locations and the landforms crossed by the indicative electrical and access track layouts, and to assess these locations for potential cultural heritage impacts. The field inspections have been undertaken by an archaeologist from Biosis Pty Ltd and a cultural heritage field representative from the Gunai Kurnai Land and Waters Aboriginal Corporation (GLaWAC), which is the Registered Aboriginal Party for this region. The results of the field inspections of the proposed locations, combined with the evidence of the initial desk-based assessment and landform analysis, has been used to assess the potential impacts to cultural heritage of the proposed development. The resulting assessment has been used to provide further modification to the project design where required, to avoid any potential impacts to cultural heritage caused by the indicative electrical and access track layouts.

The cultural heritage assessment undertaken during the design stages of the project has been intended to ensure that the windfarm development will avoid impacts to all known and likely cultural heritage and historical archaeological places. The assessment provides due diligence for the proposed development under s.27 and s.28 of the *Aboriginal Heritage Act 2006*.

## 1.2 Assessment Objectives

The following is the summary of the major objectives for the cultural heritage assessment:



- Undertake relevant database searches and background research to identify known historical and Aboriginal places, and identify landforms and environmental data that may influence Aboriginal archaeological locations.
- Review previous archaeological studies and Cultural Heritage Management Plans to develop a site prediction model relating an appropriate geographic region surrounding the study area.
- Carry out an initial targeted inspection of selected areas within the study area to identify and describe Aboriginal and historical cultural heritage values. Provide details of identified Aboriginal and historical places, areas of archaeological potential and cultural values, and illustrate on appropriate mapping for inclusion in the report. This information has been used in the design stages of the project in order to minimise potential impacts to Aboriginal cultural heritage and historical archaeology.
- Following the design of the location of the turbines and the likely extent of associated infrastructure, undertake a detailed cultural heritage survey of each of the proposed locations by an archaeologist and a representative of the Registered Aboriginal Party for the region (Gunai Kurnai Land and Waters Aboriginal Corporation).
- Evaluate the potential impacts of the project design to Aboriginal cultural heritage and historical archaeology.
- Provide advice on likely EES triggers and likely planning pathways. Provide an evaluation of the cultural heritage legislation and government policies that will be applicable.

### **1.3 Location of the Study Area**

The study area is located about 230 kilometres east of Melbourne CBD in the locality of Alberton. The Study Area comprises mostly open and wooded pastoral country and covers approximately 2,270 hectares.

The study area comprises a number of separately owned parcels of land. It is located within the Wellington Shire Council Local Government Area and is bounded by Alberton township in the east, the South Gippsland Highway in the south, cleared farmed ranges to the west and Nicols Road in the north.

Current land use in the study area is predominantly rural in nature.

### **1.4 Proposed Design for the Study Area**

An initial project area was examined for the desktop study ((Cavanagh, Houghton, & Howells, 2015). Following the completion of the initial study, design for the wind farm has been produced. This will consist of 34 turbines with associated access tracks and electrical layout. It is understood that the design of the access track and electrical layout may be subject to further modification as required.

### **1.5 Cultural Heritage Advisors**

The qualified Cultural Heritage Advisors (CHA) for this CHA are Timothy Cavanagh and Martin Lawler, Biosis Pty Ltd.

#### **Timothy Cavanagh BA (Hons)**

Timothy has over five years experience years working as an archaeologist in Victoria, Western Australia and the Republic of Georgia. Prior to commencing with Biosis, Timothy received a BA (Hons) from the University of Queensland and the University of Melbourne, and is currently completing a Master of Philosophy in archaeology at the latter.

Timothy has experience in consultation, surveying, sub-surface testing, monitoring and excavating Aboriginal and historical sites. During his time working as an archaeologist in Victoria he has authored CHMP's, due diligence and salvage reports in the Melbourne metropolitan region and regional Victoria. Other areas of specialisation include residue analysis, molecular analysis and identification of human remains. Timothy is a member of the Global Heritage Fund, the Australian Society of Historic Archaeology and the Australasian Institute of Maritime Archaeology.

### **Martin Lawler (BA (Hons))**

Martin has over 38 years of industry experience as a professional archaeologist. He has a wide range of fieldwork and consulting experience in the UK. For the past 20 years he has also worked on Aboriginal and historical projects in NSW and Victoria. Martin joined the Biosis cultural heritage team in 2007 and is based in the Melbourne office. He is registered as a Heritage Advisor for the purposes of the *Aboriginal Heritage Act* and is a full member of the Chartered Institute for Field Archaeologists and the Australian Association of Consulting Archaeologists Inc.

## **1.6 Registered Aboriginal Parties**

The Registered Aboriginal Party (RAP) for the study area is the Gunai Kurnai Land and Waters Aboriginal Corporation (GLaWAC).

## **1.7 Owners/Occupiers of the Study Area**

There are a total of 17 separate individuals who own the property parcels in the study area.

## **1.8 Legislative Framework**

This report has been prepared in accordance with the *Aboriginal Heritage Act 2006* and the *Heritage Act 1995*, specifically the statutory and non-statutory obligations under these Acts.

## **1.9 Limitations**

The intention of this report has been:

- To inform on the statutory and non-statutory obligations under the *Aboriginal Heritage Act 2006* the *Heritage Act 1995*, *Planning and Environment Act 1987* and the *Environment Effects Act 1978*.
- To compile a predictive model of the study area in respect to areas of high, moderate and low archaeological potential. This has been informed and developed using a mathematical based model combined with a ground inspection.
- To provide an archaeological ground survey of each of the proposed locations for the windfarm turbines and landforms of cultural heritage sensitivity likely to be affected by the associated infrastructure including access tracks and electrical layout.
- To assess the impacts of the project design on Aboriginal cultural heritage and historical archaeological sites and to make recommendations if required.

The proposed locations of each of the 34 turbines were examined during the survey. In most cases, the ground surface visibility of the grazed paddocks was poor, and the assessment of cultural heritage potential was based primarily on landform. No subsurface investigations have been undertaken for the assessment.

Examination of the alignments for the proposed access roads and electrical layout was restricted to those landforms which were considered to be of archaeological sensitivity.

The assessment does not form part of a Cultural Heritage Management Plan, which is not required for this project.

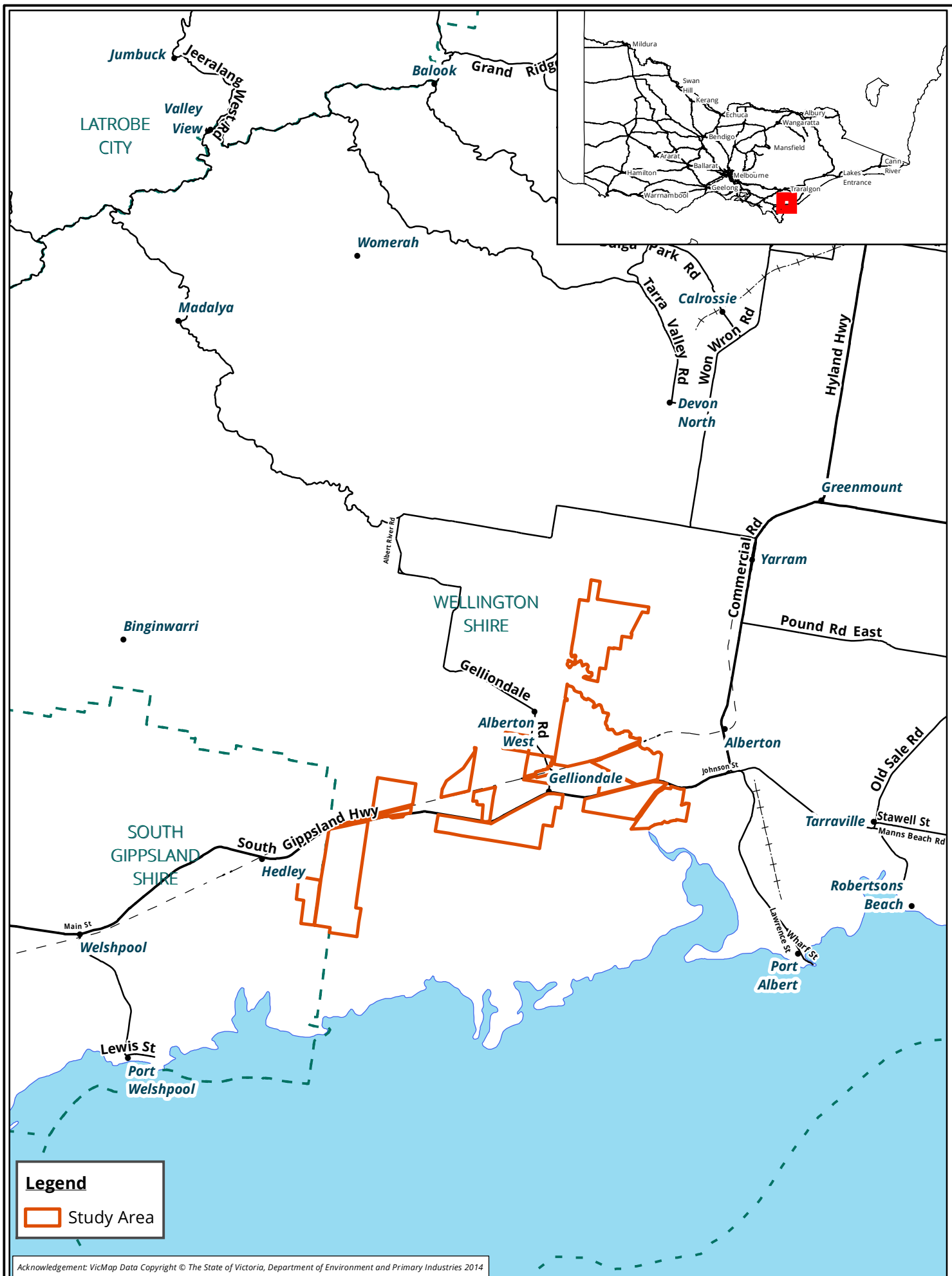
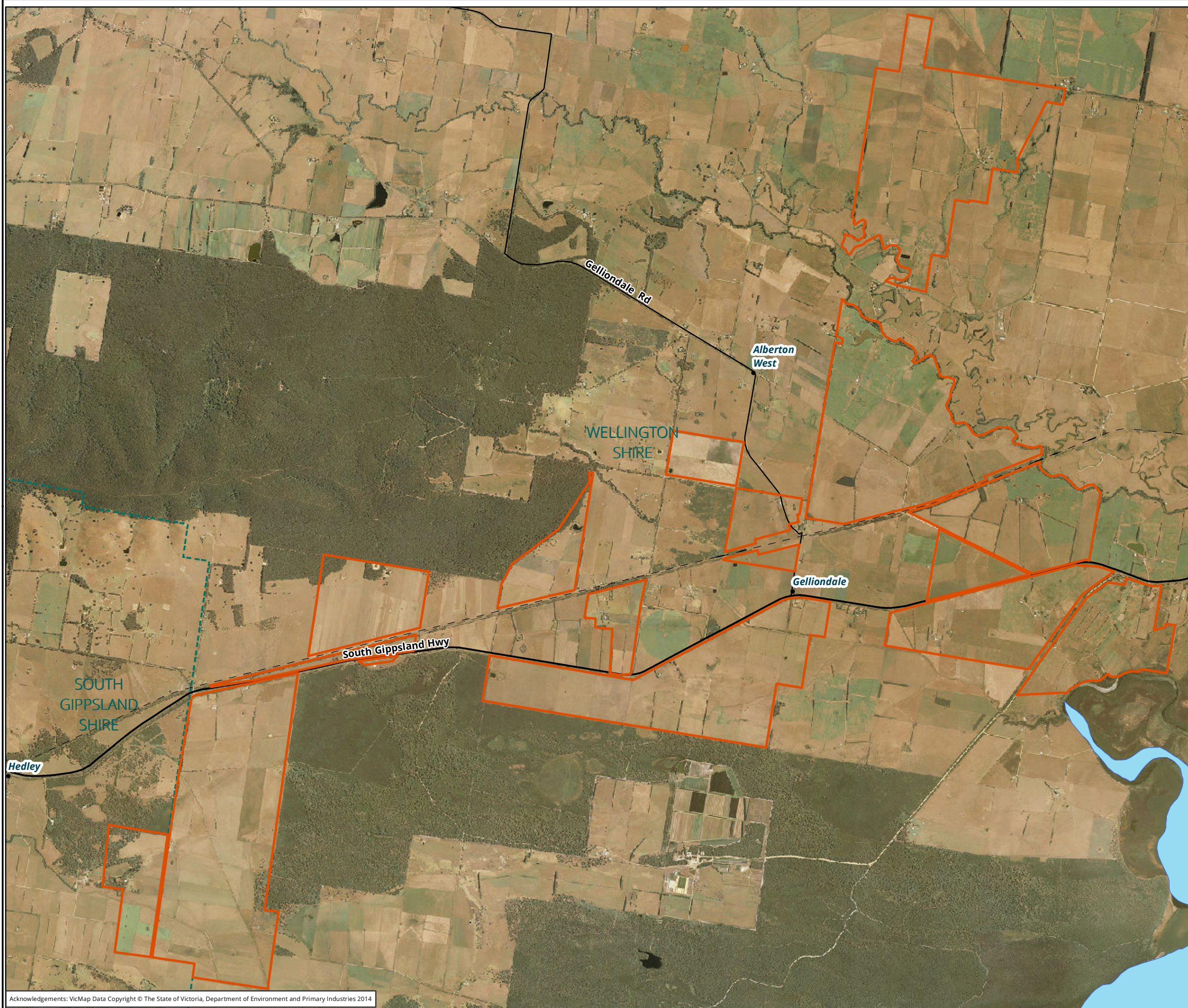


Figure 1: Location of the Study Area





**Legend**

Study Area

**Figure 2: Extent of the Study Area**

0 390 780 1,170 1,560 1,950  
 Metres

Scale: 1:40,000 @ A3  
 Coordinate System: GDA 1994 MGA Zone 55



Ballarat, Brisbane, Canberra, Melbourne,  
 Newcastle, Sydney, Wangaratta & Wollongong

Matter: 19686,  
 Date: 19 June 2015,  
 Checked by: TSC, Drawn by: LH, Last edited by: lharley  
 Location: P:\19600s\19686\Mapping\19686\_F2\_StudyArea



## 2. Consultation

---

### 2.1.1 Consultation with Heritage Victoria

Before undertaking surveys for historical heritage places there is a statutory requirement to notify Heritage Victoria – the State government agency responsible for historical cultural heritage places. The protection and management of Aboriginal archaeological places and sites is addressed under the provisions of the *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2007*.

As the assessment was primarily directed to assessing the potential for Aboriginal cultural heritage at the proposed turbine locations, and was not undertaken as part of a CHMP, submission of a 'Notice of intention to carry out an Archaeological Survey' to Heritage Victoria under Section 131(1) of the *Heritage Act 1995* was not considered necessary.

### 2.1.2 Consultation with Traditional Owners

The Gunai Kurnai Land and Waters Aboriginal Corporation (GLaWAC) is the Registered Aboriginal Party (RAP) for the study area.

Following the completion of the initial desktop assessment, GLaWAC was invited to participate in the detailed cultural heritage assessment stage of the project. A cultural heritage officer representing the RAP took part in the survey at each location. At the completion of the survey, the results for each location were discussed between the CHA and the GLaWAC cultural heritage officer.

A request has been submitted to GLaWAC for appropriate names for the two Aboriginal places which were recorded during the field survey stage of the assessment. A draft copy of this assessment report is being provided to the RAP for comment.

## 3. Background Research

---

### 3.1 Environmental Background

#### 3.1.1 Geographic Region

A geographic region has been selected to represent a range of landforms and resources that would be accessible from the study area. The study area is situated around the townships of Alberton West, Hedley and Gelliondale in the coastal regions of Southern Gippsland. The geographic region is located on the Southern Uplands and the Eastern Plains geomorphological units and is characterised by low lying coastal and alluvial plains, moderate to steep slopes, alluvial swamp fans and deeply incised blocks of sandstone, siltstone and shale. Jack River, Albert River, Tarra River, Muddy Creek, Stoney Creek, Nine Mile Creek and their tributaries are all present within the geographic region. This environment would have afforded abundant opportunities for Aboriginal people to access food, water and other resources. The study area would have been favourably situated with respect to resource exploitation.

#### 3.1.2 Geology and Geomorphology

The study area is located on the Southern Uplands, Eastern Plains and coastal regionals of southern Gippslands geomorphological units (Department of Environment, Land, Water and Planning, 2015). The landscape is comprised of low relief, undulating rises to the north and high level terraces and fans to the south (Land Conservation Council, 1974). A number of later terraces are present which are attributed to sea level changes associated with glacial periods during the Quaternary. The most widespread terrace is thought to date from the early Quaternary; this is a high level terrace which extends from Stratford to Bairnsdale. Parts of the terrace are mantled by sand dunes formed by sand accumulating downwind from the beds of south-flowing streams (Birch, 2003).

Extensive Quaternary high terraces and fans occur in the northern, eastern and southern parts of the Eastern Plains. The southern and eastern parts are mantled by siliceous sand sheets and dunes running east to west. Surface sediments across the plains are mostly alluvial and range in age from Quaternary to recent. The youngest sediments are on the floodplains, swamps and morasses associated with present rivers and streams (Birch, 2003).

Sea level changes throughout the Quaternary are believed to have been associated with the uplift of the land surface. The Tarra River east of the study area has cut deep valleys into the earlier floodplains as a result of sea level fall. There is now a well-defined break between the old flood plain (upper terrace) and the present floodplain (lower terrace). The wider region can be divided into three geomorphological units: present flood plains and morasses; prior stream plains; and older alluvial plains and terraces (Birch, 2003). The area is arbitrarily subdivided into plains and dissected plains, both comprised of Neogene and early Quaternary sediments. Areas of these terraces are covered with dune fields: some as a result of blown coastal sand, and other as a result of reworked Neogene sediments which were mobilised during the cold, dry and windy conditions associated with past glacial periods (Birch, 2003).

#### 3.1.3 Climate

The climate of the geographic region has been relatively stable for the last 5,000 years with warm dry summers and mild wet winters. Prior to about 10,000 years ago, particularly at the end of the Last Glacial Maximum, conditions were cooler and drier than today, but may have still resulted in relatively abundant resources on which Aboriginal people depended.

Victoria is within a Temperate Zone signified by a warm summer and cool winter, autumn and spring being the mildest seasons with short occasional rainfall. In the region, the mean maximum temperature in January is 26.5° C, falling to 3.7° C in July and annual rainfall is 736.8 millimetres a year (Australian Government Bureau of Meteorology, 2015).

These climatic conditions, as well as historical climatic extremes such as seasonal drought, the strength of prevailing winds and variation in water abundance would have influenced Aboriginal occupation and settlement patterns due to the particular species of flora and fauna supported by these conditions and hence the practicality of harvesting food and material resources.

### 3.1.4 Flora

The geographic region is located within the Gippsland Plain and Strezelecki Ranges bioregions, which are characterised by low lying coastal and alluvial plains, moderate to steep slopes, alluvial swamp fans and deeply incised blocks of sandstone, siltstone and shale (Department of Environment and Primary Industries, 2015). These areas typically consist of a variety of yellow and grey gradational texture contrast soils (Chromosols and Sodosols) and friable red earths, giving rise to a very wide variety of Eucalypt species including Messmate Stringybark *Eucalyptus oblique*, Mountain Grey-gum *Eucalyptus cypellocarpa*, Eurabbie *Eucalyptus globulus* ssp. *bicostata*, Yellow Stringybark *Eucalyptus muelleriana*, But But *Eucalyptus bridgesiana* s.l., Messmate *Eucalyptus oblique*, Narrow-leaf Peppermint *Eucalyptus radiata* s.l., Jimmy's Shining Peppermint *Eucalyptus willisii*, Messmate Stringybark *Eucalyptus oblique* and Rough-barked Manna Gum *Eucalyptus viminalis* ssp. *pryoriana* (Department of Environment and Primary Industries, 2015). Along the banks of Middle Creek the understorey would have included Slender Knot Weed *Polygonum minus*, Water Pepper *P. hydropiper* and Curled Dock *Rumex crispis* as well as rushes and riparian grasses. These together with tussock grasses form a continuous ground cover (LCC 1974; 59-60). Willow and introduced grasses are now common across the study area.

Classification of native vegetation in Victoria follows a typology in which ecological vegetation classes (EVC) are the primary level of classification. An EVC contains one or more plant (floristic) communities, and represents a grouping of broadly similar environments. Classification of EVCs in this CHMP follows Department of Sustainability and Environment benchmarks.

The pre-1750 mapping of the area encompassing the Study Area would have previously supported several EVCs from both the Gippsland Plain and Strezelecki Ranges bioregions (Department of Environment and Primary Industries, 2015). These EVCs are outlined in Table 1 below.

**Table 1: Bioregions and EVCs within the study area**

Gippsland Plain	Strezelecki Ranges
8 Wet Heathland	23 Herb-rich Foothill Forest
9 Coastal Saltmarsh	29 Damp Forest
48 Heathy Woodland	151 Plains Grassy Woodlands
53 Swamp Scrub	
686 Wet Heathland / Damp Heathland Mosaic	
687 Swamp Scrub / Plains Grassy Forest Mosaic	

Aboriginal people living in the vicinity of the area would have utilised the tree canopies of the local eucalypt species as part of their subsistence strategies. Tree bark was cut and used to form canoes and dishes and the burls were hollowed out to create bowls and water carriers (Gott & Conran, 1991). The flowers of some

eucalypt species were soaked in water to allow the nectar to seep out, creating a sweet drink (Zola & Gott, 1992). The sap and leaves were also used for medicinal purposes: the sap to give relief from burns and the leaves as a steam bath (Gott & Conran, 1991).

In addition to the tree canopy, many species available in the understory were harvested for food and material resources. One of the most important plants was the bulrush (*Typha* sp.) as this grew commonly along swamp and river margins. The roots were collected in great summer, when they were abundant, and were used for making cord for nets, fishing lines, ropes, belts and bags, while the stems were used for nose pieces, spear shafts and necklaces (Aboriginal Affairs Victoria 1996, p.7). Bulrush nets were made by chewing the roots, and some of the larger nets are known to have been 100 metres long (Aboriginal Affairs Victoria 1996, p.4). Some species such as Golden Wattle *Acacia pycnantha* produces a sweet gum which was collected by seasonal notching of the bark in to stimulate the gum expulsion (Gott & Conran, 1991). Balls of the gum were collected and either eaten or carried around and dissolved in water with flower nectar to make sweet drinks. Species such as Black-anther Flax Lily *Dianella revolute* s.l. were split along the centre rib and twisted together to make strong ties (Zola & Gott, 1992).

Aboriginal people living along the waterways in north-eastern Victoria, were known to construct weirs made from interlaced tree branches and turf across dry creek beds close to their junction with the Murray. After the river flooded and began to recede these weirs were supported with wooden stakes to trap the fish behind them, enabling their easy capture (Aboriginal Affairs Victoria 1996, p.3).

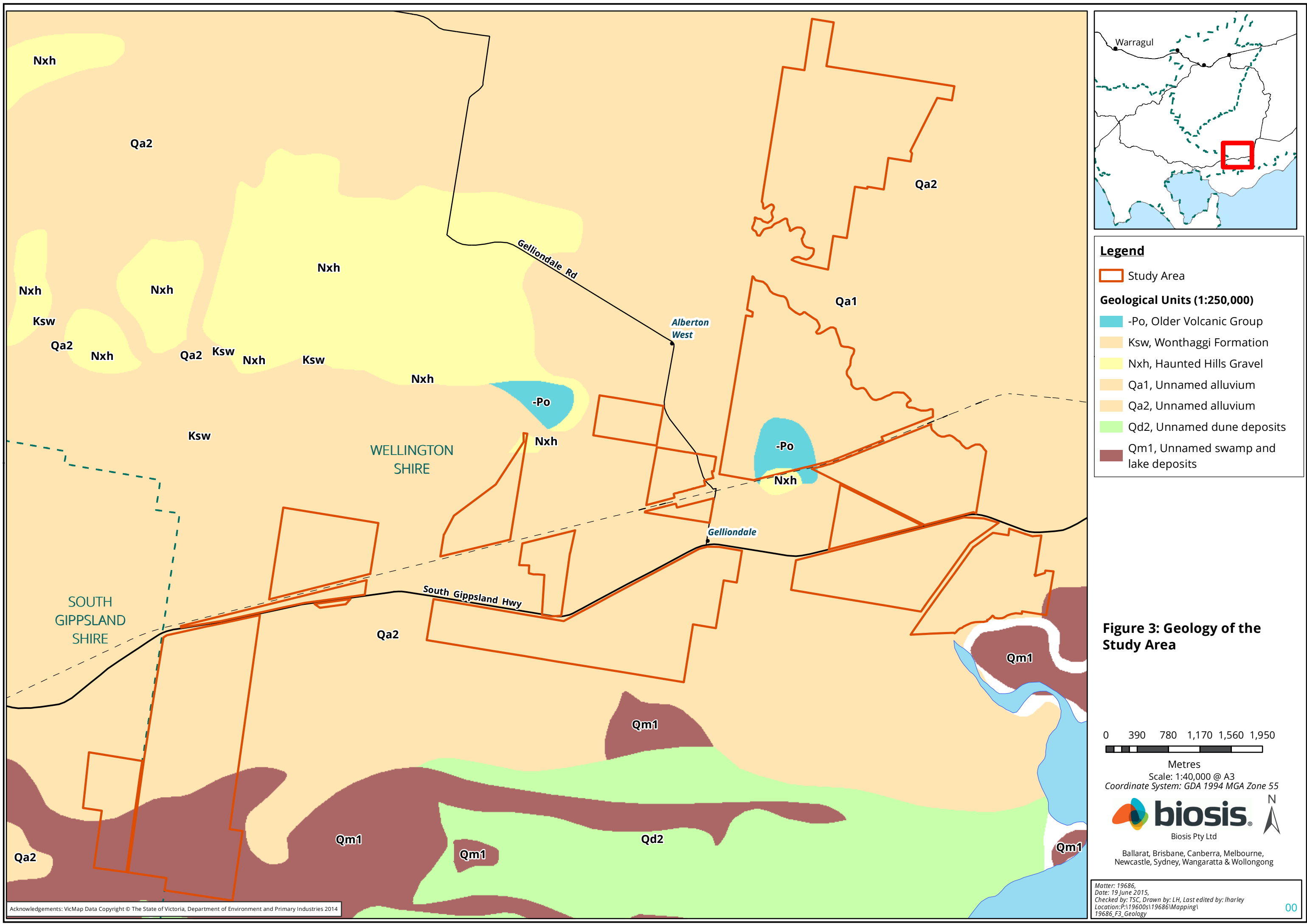
Current EVC mapping indicates that remnant native vegetation is still present within the study area. As these EVCs contain large eucalypt species there is potential for evidence of previous occupation by Aboriginal people such as scarred trees to be present within the boundary of the study area. This type of archaeological evidence will be identified during a Standard Assessment.

### 3.1.5 Fauna

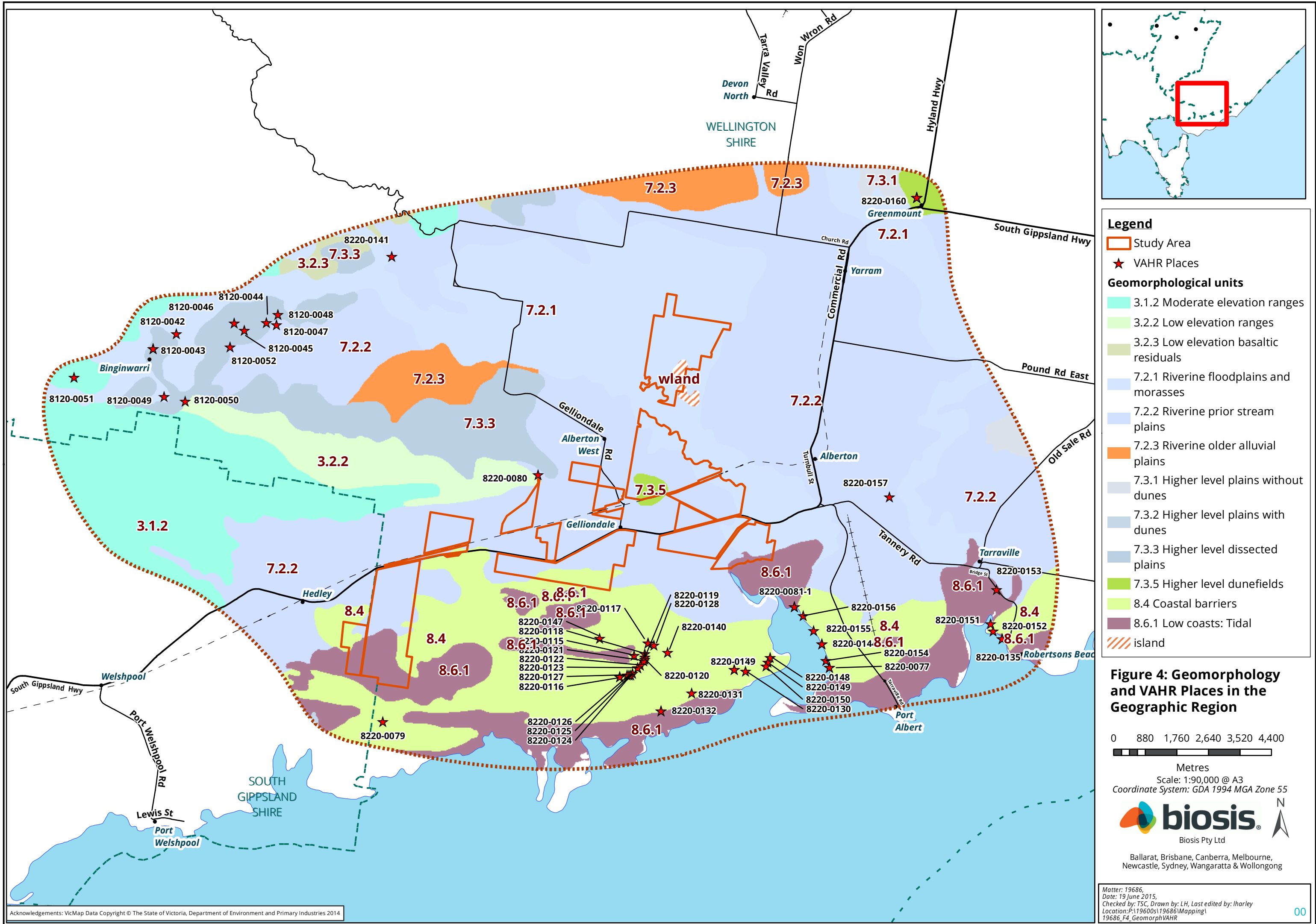
A wide variety of fauna species have been recorded within the study area. Mammalian species such as the Eastern Grey Kangaroo *Macropus giganteus*, Sugar Glider *Petaurus breviceps breviceps*, Sugar Glider *Petaurus breviceps breviceps*, Common Ringtail Possum *Pseudocheirus peregrinus*, Short-beaked Echidna *Tachyglossus aculeatus*, Common Brushtail Possum *Trichosurus velpecula*, Common Wombat *Vombatus ursinus* and Swamp Wallaby *Wallabia bicolor* have all been recorded within the study area since European exploration and were prevalent across the surrounding region (GlobalBiodiversityInformationFacility, 2015). These species were hunted by Aboriginal people for their meat and the pelts were used to make clothing and other items. Strict fire regimes were utilised to clear land for containing larger animals such as kangaroos and wallabies to certain areas by encouraging particular vegetation on which the animals grazed (Aboriginal Affairs Victoria, 1996).

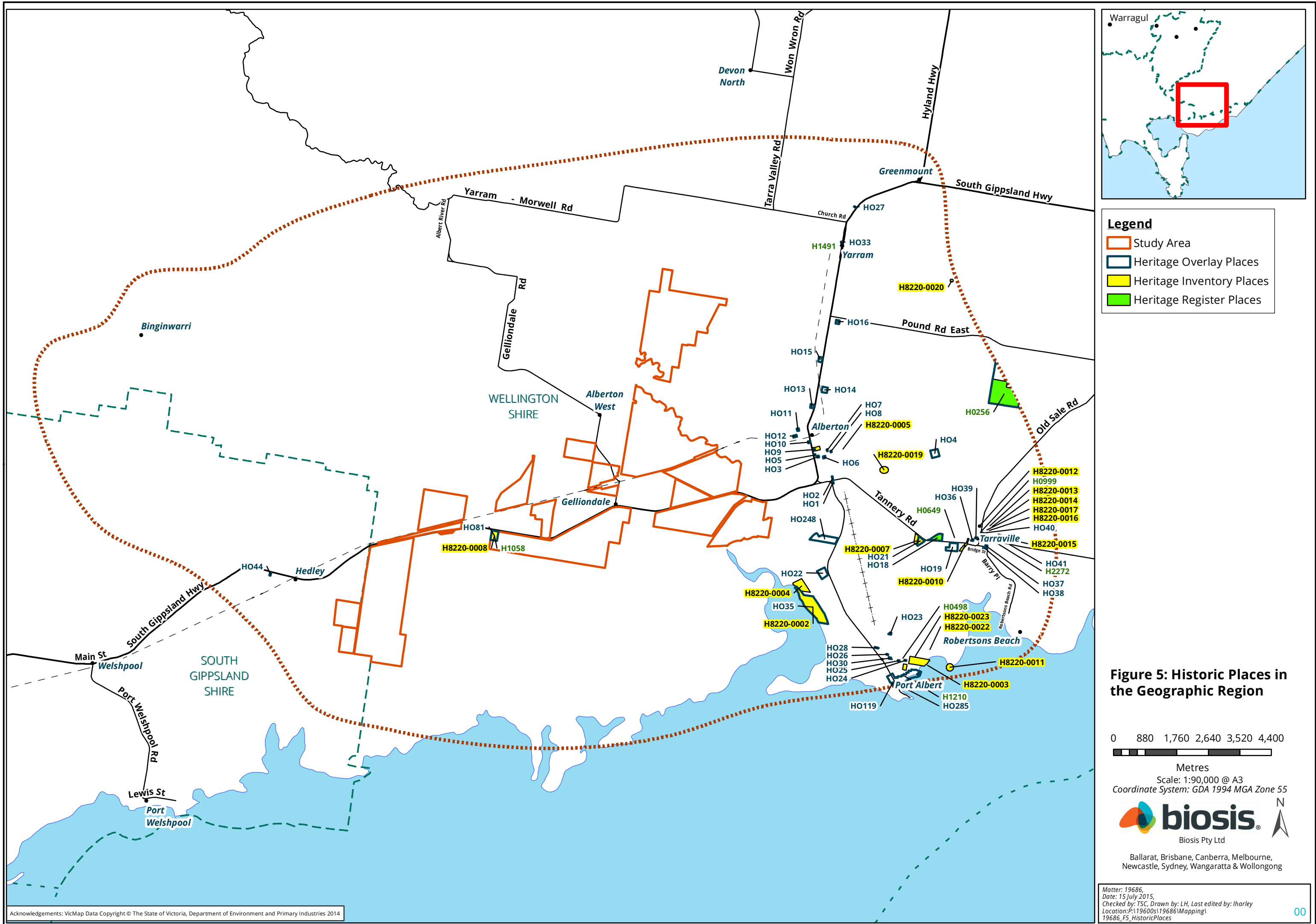
Nine Mile Creek, Muddy Creek, Jack River and their tributaries runs through the study area. These riverine environments and the swamps and coastal marine areas would have provided species such as water birds, ducks and swans as part of the Aboriginal diet, as well as various species of fish, shellfish, crayfish, turtles, water rats and eels.

Prior to European settlement, the grassy woodlands of the geographic region would have provided extensive subsistence resources for Aboriginal people. However, the introduction of the rabbit, fox, cat, house mouse, black rat and hare has greatly reduced the native fauna and these introduced species are now widespread across north-eastern Victoria.

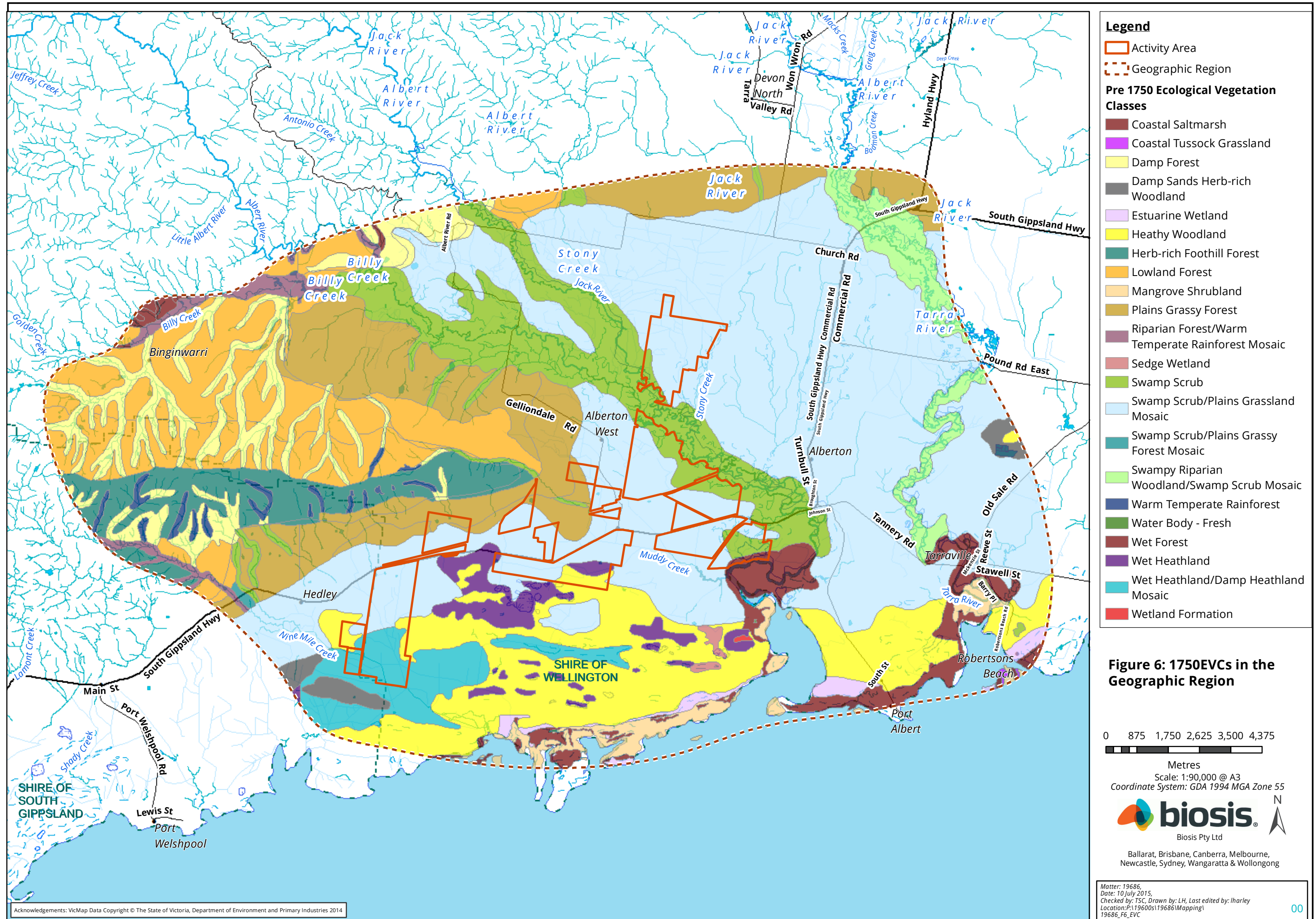












## 3.2 Aboriginal & Historic Heritage

For the purposes of this assessment, information about Aboriginal Victorian pre and post contact history has been sourced from nineteenth and twentieth century primary and secondary ethnographic/historical records.

### 3.2.1 Ethnohistory

#### Linguistic Boundaries and Social Organisation

Prior to European colonisation, the Victorian landscape was delineated by socio-dialectical groups who shared a common language and who as a group identified as owning particular areas of land, with individually owned tracts of country. This was a system of spatial organisation based on land tenure (Clark I., 1990).

Aboriginal groups mapped natural features as boundaries for their ranges, estates and economic territories. The *Gunai/Kurnai* held land from the coast at Cape Liptrap, west of Wilson's Promontory and east to Point Hicks; this includes lands across the Gippsland Lanes and up to 200 km inland to the Great Dividing Range.

Land ownership and access rights or responsibilities centred on the smaller named groups that formed the broader language grouping. These groups are often called 'clans' or 'local descent groups', however as (Wesson, 2000, p. 8) reasons, they are better described as 'named groups', as the membership structure of these groups, and their degree of division from other groups, could vary. In most instances, primary allegiance was owed to this named group, although this could vary according to context and location. Commonly, named groups were led by senior elders who exercised internal political and religious authority, as well as being recognised as their spokesperson when dealing with other groups (Atkinson & Berryman, 1983). Particularly influential group leaders could also assume authority over the leaders of other culturally affiliated groups (Wesson, 2000). The *Gunai* was comprised of five named groups: the *Brataualung*, *Brayakaulung*, *Tatungalung*, *Brabalung* and *Krautungalung*. The named group who occupied the study area were the *Brataualung* (Clark I., 1990).

Social activity involving neighbouring named or socio-dialectical groups was usually held in warmer periods, held at the intersection of group boundary's and arranged by a person assigned of the responsibility of travelling between groups to organise the time, place, and events of the meeting. This person could speak a number of different dialects and acted as intermediaries in negotiations between the groups. Activities would include sports and dancing, with up to 500 men, women and children attending. (Atkinson & Berryman, 1983).

The succession or inheritance of lands and named-group estates could occur in a number of ways. Individuals and groups could inherit lands from their father, their mother, through their birthplace, conception place, the burial place of their ancestors, and through totemic connections (Wesson, 2000). Access rights also crossed generations and marriage partners. Howitt (1904, p. 311) wrote that:

The right to hunt and to procure food in any particular tract of country belonged to the group of people born there, and could not be infringed by others without permission. But there were places which such a group of people claimed for some special reason, and in which the whole of the tribe had interest. Such a place was the stone quarry at Mt. William near Lancefield, from which the material for making tomahawks was procured. The family proprietorship in the quarry had wide ramifications... when neighbouring groups wished for some stone they sent a messenger to Bill-billeri saying that they would send goods in exchange for it, for instance, skin-rugs.

People would often travel or reside in the territory of another named-group so that they could fulfil religious or family obligations, or exercise the privilege, granted to them by family or moiety associations, of exploiting the resources of another estate (Barwick, 1984). For daily activities and the exploitation of local estates, people are thought to have travelled in small residential units or extended family groups - often termed bands (Wesson, 2000).

## **Moiety Affiliation**

A further level of social organisation was moiety affiliation. Observations made by Bulmer were that there were two totems related to the Gunai: men belonged to the 'Yerang' and women to the 'Djeetgang'. Both totems are small birds, reflecting the sharing of a common life based on descent through mothers (Vanderwal 1994).

Membership to a named group is variably defined by a localised matrilineal or patrilineal descent group, with female member of the group partnering with men outside of their group (exogamous) and across moiety lines; however they maintained an identity of belonging to their father's group. Men then had to adhere to certain duties such as providing food to their father-in-law. Social engagement could be influenced by appropriate conduct between family members, for example men had avoidance behaviours they had to adhere to in the presence of their mother-in-law, and there were other speech or special duties which were expected in family relationships (Atkinson & Berryman, 1983).

## **Religion**

Knowledge of Aboriginal religion was recorded and maintained through visual and oral tradition which ensured the maintenance of social structures through generations. Such knowledge was not always readily shared with non-Indigenous social observers and as such limited written versions from early settlers, explorers or government employees exist for Victoria. Ceremonies were occasionally performed to entertain Europeans however the meaning behind these performances was never fully explained (Robinson, 1840). Private ceremonies and locations, such as age initiations were actively kept secret (Presland, 1994).

## **Economy and Resource Utilisation**

Certain individuals within Aboriginal groups had responsibilities assigned to them for the management of natural resources. Anthropogenic manipulation of the environment was observed by the first Europeans within northern Victoria, for example fire regimes which cleared tracks also aided in hunting and dissuaded settlers for entering Aboriginal territory (Atkinson & Berryman, 1983).

Canoes were cut from the bark of river red-gums and box trees in spring to early summer, hafted with stone axe heads, shaped over a fire, seasoned in the sun, then the end blocked with clay (Edwards, 1975). Hooped nets made from fibre were used to catch crayfish, yabbies and fish, while cross-line nets were strung low above the water for catching ducks or below the water to catch schools of fish (Gott & Conran, 1991). Line nets were also used to catch emus and kangaroos; a strategically placed group of people drove the animals towards the nets. Reed spears with hafted bone, carved barbs, stone pieces or hardened wooden points set into the head were used for catching larger marsupials. Oven mounds, an underground cooking pit, were then constructed to bake the game or large volumes of vegetables. (Atkinson & Berryman, 1983)

### **3.2.2 Historical Accounts of Aboriginal People**

The rapid spread of European colonisation altered Victorian Aboriginal society. Wesson (2000) described the Tarra River as being inhabited by the Yowung, a group of the *Brataualung*. The group was thought to number approximately 300 in 1844 however by 1863 only nine men, five women and three children were recorded by the missionary Hagenauer (Wesson 2000). The increased presence of settlers resulted in dispossession of Aboriginal people from their traditional land and diminished access to resources. These factors combined with population decline from introduced diseases and conflict, transformed Aboriginal society.

The establishment of Aboriginal missions, the Native Police Corps, the Aboriginal Protectorate Board and the later Aboriginal Reserves all changed the way Aboriginal people. It is believed that this is reflective of the sparse contact between the *Gunai* of Gippsland and other Aboriginal groups in Victoria (Broome, 2005). However this changed with the formation of mission station at Lake Tyers in 1863. The mission was founded



by Reverend John Bulmer and was one of six missions in Victoria at the time (Fission & Howitt, 1880). The remaining people were moved to Lake Tyers where the station residents were granted formal ownership of the mission under the Aboriginal Land Act 1970.

### **3.2.3 Post Contact History**

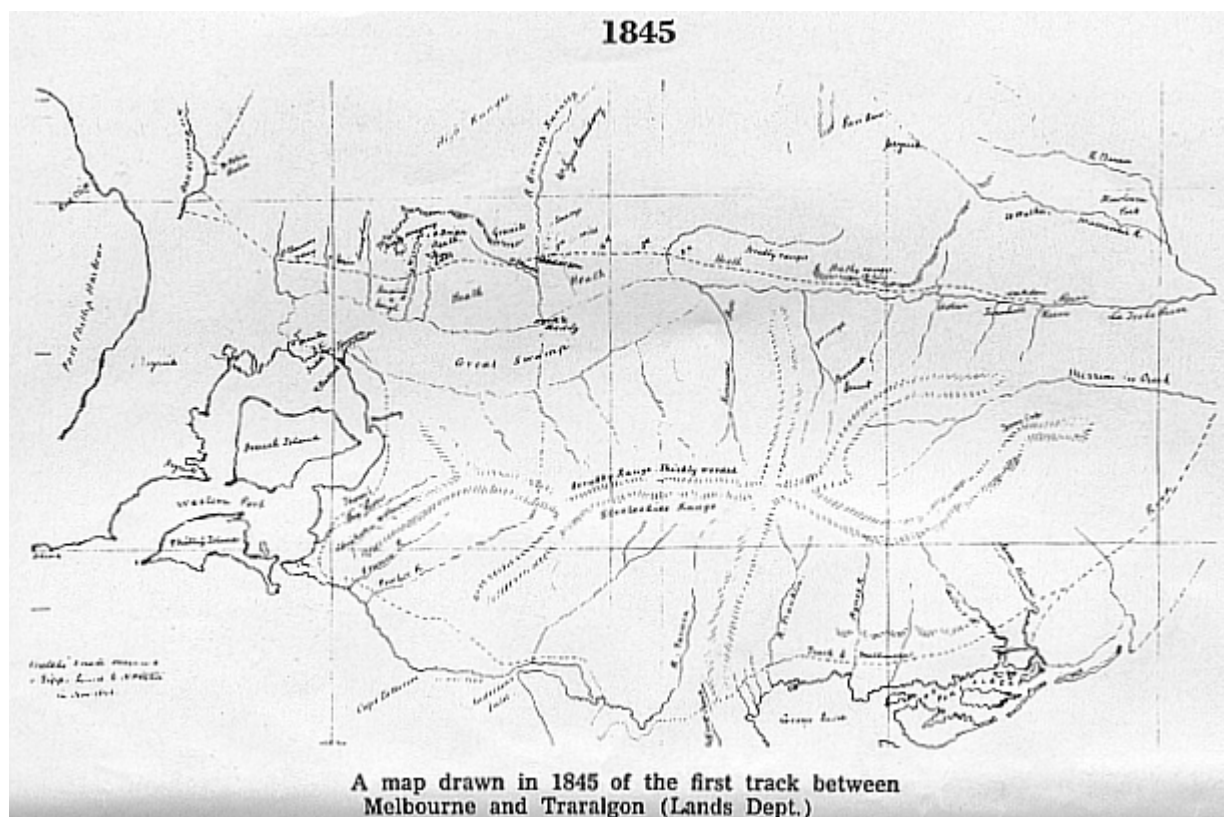
In 1802, Charles Grimes, Surveyor General of New South Wales, explored the shores of Port Philip Bay with instructions from Governor King to survey the bay and report on its suitability for settlement, and agricultural land for the possible creation of a convict colony (Boyce, 2012). Explorers Hamilton Hume and William Hovell travelled overland from Sydney to Port Philip Bay in 1824, and described the country as favourable for agriculture and grazing (Hovell, Hume, & Bland, 1965). The short lived settlements at Sullivans Bay (1803-4) and Corinella (1826-8)(P.J.F., 1983) were precursors to private settlement by the Port Phillip Association, led by John Batman and John Pascoe Fawkner, in 1836 (Brown, 1966). The land claims of the Port Phillip Association were disallowed, by the proclamation of Governor Bourke which also opened the district to settlement.

Some of the earliest explorations of the Gippsland region began in the early nineteenth century. Squatters Macarthur and Blaxland sailed to Ninety Mile Beach, east of the study area, in search of good land for pastoral runs in 1837 (Billis & Kenyon, 1974). Between 1839 and 1841 Angus McMillan further explored the inland terrain over three separate journeys. McMillan initially named the region Caledonia Australia; later Paul Strzelecki renamed the region Gippsland after the New South Wales Governor Gipps (Billis & Kenyon, 1974). The first official settlement in Gippsland was at Port Albert, south of the study area.

From 1839 to 1846 grazing licenses for cattle and sheep were issued by the New South Wales government and from 1847 new regulations allowed squatters to purchase pre-emptive rights to their household blocks (Boyce, 2012). In addition, in 1849 new regulations were applied in the settled areas of Victoria and run holders were permitted to buy a 640 acre block containing their homestead and other improvements.

The Gippsland Company was founded by a group of Melbourne businessmen with the aim of establishing Port Albert and opening up the surrounding landscape for settlement (Morgan, 1997) Combined with the efforts of McMillan to clear a course from New South Wales to Gippsland, settlers began to flow into Port Albert. The land was officially surveyed in 1843 and land sales soon followed. Yarram was considered to be the supply town for squatters in the surrounding region (Morgan, 1997).





**Plate 1: 1845 map of the first track drawn between Melbourne and Traralgon**

<http://www.traralgonhistory.asn.au/rolf/images/1845map.jpg>

Port Albert was separately established in 1841 when the Gippsland Company investigated the area following favourable reports from explorer Angus McMillan. In May of that year the first settlers arrived. The township of Alberton was surveyed in 1842, initially with two separate settlements, (Alberton and Victoria), which were separated by Victoria Street (renamed Brewery Road in 1847).

Yarram was identified in 1841 by Aeneas Ronaldson MacDonnell in 1841 as a potential settlement for Scottish migrants. However, the experiment folded and he subsequently moved to New Zealand. In 1853 the township was first sold for farming lots. The town retained the name Yarram Yarram until 1924; the name is believed to be derived from a local Aboriginal word meaning 'plenty of water' (Morgan, 1997).

After the initial gold rush and formalisation of the Colony of Victoria in 1851, a series of Government Acts encouraged closer settlement of land. Squatting licences were cancelled and many of the large pastoral leases were subdivided and sold at auction or made open for selection for farming and agricultural purposes (Serle, 1963).

A post office was established at Yarram in 1861 and houses and shops were constructed in increasing numbers through the 1870s and 80s. The town of Yarram was gazetted in 1893. Agriculture, in particular dairying, and extractive industries have been an important part of Gippsland's development. Trees were cleared in large swathes to provide wood for the building boom in Melbourne during the 1880 (Debney, Nicholson, Sheehan, Stevens, & Amorosi, 2001). Many of these industries are still operating in the region.

### 3.2.4 VAHR Places

A search of the Victorian Aboriginal Heritage Register (VAHR) was undertaken on 1 July 2015 by Kendal Houghton, Biosis Pty Ltd. A total of 54 previously recorded Aboriginal places are present within the geographic region (Table 2). An updated search through ACHRIS was undertaken In June 2016.

One of these places is located **within 100 metres** of the study area:

**Gelliondale 3 (VAHR 8220-0080)** is a surface scatter of quartz and silcrete artefacts. This Aboriginal place is located on either side of a vehicle track adjacent to a fence line to the west. The place has been severely damaged by wind and gully erosion and is currently in poor condition; only 20-40% intact.

The majority of the places within the geographic region are artefact scatters (82.5%). Shell middens (13.5%), earth features (1.5%), object collections with no archaeological provenance (1%), low density artefact distributions (LDADs) (0.5%), scarred trees (0.5%) and burials (0.5%) are also present. The most frequently occurring raw material type present within these artefact scatters is quartz. Given the close proximity of previously recorded artefact scatters to water sources, such as Billy Creek, various unnamed tributaries of larger waterways and the swampy landscape north of the coastal dunefield, it is highly likely that local quartz cobbles would have been sourced from the creek and river banks for tool production. It also indicates the potential for artefact scatters to be present within the study area within close proximity to water sources.

**Table 2: VAHR places within the geographic region, places within the study area shaded dark grey**

VAHR No.	Name	Type
8120-0042	Binginwarri 1	Artefact Scatter
8120-0043	Binginwarri 2	Artefact Scatter And Earth Feature
8120-0044	Binginwarri 3	Artefact Scatter
8120-0045	Binginwarri 4	Artefact Scatter
8120-0046	Binginwarri 5	Artefact Scatter
8120-0047	Binginwarri 6	Artefact Scatter
8120-0048	Binginwarri 7	Artefact Scatter
8120-0049	Binginwarri 8	Artefact Scatter
8120-0050	Binginwarri 9	Artefact Scatter
8120-0051	Binginwarri 10	Artefact Scatter
8120-0052	Binginwarri 11	Artefact Scatter
8120-0053	Binginwarri 12	Artefact Scatter
8220-0077	Old Settlement Beach 1	Shell Midden And Earth Feature
8220-0079	Gelliondale 2	Artefact Scatter

VAHR No.	Name	Type
8220-0080	Gelliondale 3	Artefact Scatter
8220-0081	GM 1 OSB1 (OLS Settlement Beach)	Shell Midden And Earth Feature
8220-0082	GM 2	Shell Midden
8220-0115	Rankins Hill	Artefact Scatter
8220-0116	Old Port Welshpool Rd 1	Shell Midden And Artefact Scatter
8220-0117	Rankins Hill 1	Shell Midden And Artefact Scatter
8220-0118	Rankins Hill 2	Artefact Scatter
8220-0119	Rankins Hill 3	Artefact Scatter
8220-0120	Rankins Hill 4	Artefact Scatter
8220-0121	Rankins Hill 5	Artefact Scatter
8220-0122	Rankins Hill 6	Artefact Scatter
8220-0123	Rankins Hill 7	Shell Midden And Artefact Scatter
8220-0124	Rankins Hill 8	Artefact Scatter
8220-0125	Rankins Hill 9	Artefact Scatter
8220-0126	Rankins Hill 10	Artefact Scatter
8220-0127	Rankins Hill 11	Artefact Scatter
8220-0128	Rankins Hill 12	Artefact Scatter
8220-0129	Nooramunga 1	Shell Midden And Artefact Scatter
8220-0130	Nooramunga 2	Artefact Scatter
8220-0131	Nooramunga 3	Artefact Scatter
8220-0132	Nooramunga 4	Shell Midden And Artefact Scatter
8220-0134	Tarra River 1	Shell Midden
8220-0135	Robertson's Beach 1	Shell Midden And Artefact Scatter

VAHR No.	Name	Type
8220-0140	Rankins Hill 13	Artefact Scatter
8220-0141	Billy Creek 01	Scarred Tree
8220-0142	Pt Albert Maritime Museum Coll.	Object Collection
8220-0143	Aitken Stone Axe	Object Collection
8220-0144	Old Settlement Beach Burial	Aboriginal Ancestral Remains (Burial)
8220-0147	Hancocks Nursery 1	Artefact Scatter
8220-0148	Albert River West 1	Artefact Scatter
8220-0149	Albert River West 2	Artefact Scatter
8220-0150	Albert River West 3	Artefact Scatter
8220-0151	Tarra River 2	Shell Midden
8220-0152	Tarra River 3	Artefact Scatter
8220-0153	Tarra River 4	Shell Midden
8220-0154	Albert River 1	Shell Midden
8220-0155	Albert River 3	Shell Midden
8220-0156	Albert River 4	Shell Midden
8220-0157	Reverend Bean Site	Artefact Scatter
8220-0160	Tarra River East 1 LDAD	Low Density Artefact Distribution

### 3.2.5 Historic Places

Database searches have been undertaken of recorded post-contact heritage places in the vicinity of the study area (Table 3; Figure 5). The searches included the following sources and the results are included in relevant tables following:

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

- Australian Heritage Database

There are 18 VHI places, 11 VHR places and 38 heritage overlay places in the geographic region. The majority of these places are clustered around the township of Alberton, with very few recordings in the open rural plains in which the study area is located.

One of these places is located **within the study area**:

**Gelliondale Briquette Plant (H8220-0008/H1058/HO81):** Listed on the VHI, VHR and heritage overlay, the Gelliondale Briquette Plant is located along Coal Pit Road and the South Gippsland Highway, Gelliondale. The Plant began manufacturing briquettes in 1934 under the ownership of James T Knox and was decommissioned fully in 1950.

The site's significance is based around the Plant's demonstration of technical accomplishment and a rare surviving example of a briquette plant. It also represents early private enterprise into a brown coal mining enterprise. The site currently consists of a dam, mullock heap, trolley line, boiler mountings, coal bunker and various other associated infrastructure.

**Table 3: Previously recorded VHI & VHR sites in the geographic region**

Heritage List	Inventory Number	Site Name & Type
VHR	H1058	Martins Road Historical Complex
VHR	H0999	Christ Church
VHR	H0649	Woodcot Park
VHR	H0256	Hawthorn Bank
VHR	H1491	Court House
VHR	H2272	Residence
VHI	H8220-0003	Port Albert Powder Magazine
VHI	H8220-0013	Crane's Shop, Tarraville
VHI	H8220-0014	East Loughnan & Reece Building & Well
VHI	H8220-0015	Constable's Hut
VHI	H8220-0016	Loughnan Street
VHI	H8220-0017	Fermaner's Cottage
VHI	H8220-0022	Port Albert Historical Scatter 1
VHI	H8220-0023	Port Albert Historical Scatter 2
VHI	H8220-0002	Old Settlement Beach
VHI	H8220-0004	Seabank
VHI	H8220-0005	Alberton Cordial Factory

Heritage List	Inventory Number	Site Name & Type
VHI	H8220-0007	McGrath's Tannery
VHI/VHR/HO	H8220-0008/H1058/HO81	Gelliondale Briquette Plant
VHI	H8220-0010	Tarra River – Bottle Scatter
VHI	H8220-0011	Chinese Fish Processing Site
VHI	H8220-0012	Royal Hotel
VHI	H8220-0019	Willoughby Beans Parsonage
VHI	H8220-0020	Greenmount
HO/VHR	HO285/H1210	Port Albert Maritime Museum
HO	HO25	2-4 Brisbane St, Palmerston
HO	HO39	Ruinous House
HO	HO41	Farm House
HO/VHR	HO30/H498	Police Station & Immigration Barracks
HO	HO44	Farm Complex
HO	HO23	Tarrawonga
HO	HO28	House
HO	HO24	House
HO	HO22	House
HO	HO19	Farm House
HO	HO40	Former Commercial Hotel
HO	HO38	State School
HO	HO37	House
HO	HO16	House
HO	HO14	House
HO	HO13	Farm House



Heritage List	Inventory Number	Site Name & Type
HO	HO11	Eabon Eabon
HO	HO10	Victoria Hotel
HO	HO1	House
HO	HO9	House
HO	HO5	Store & Residence
HO	HO6	House
HO	HO7	House
HO	HO8	House
HO/VHR	HO33/H1491	Court House
HO	HO27	Yarram Butter Factory
HO	HO35	Old Port Foreshore Reserve
HO	HO12	Alborton Butter Factory
HO	HO3	Mareen
HO	HO26	House
HO	HO15	House
HO	HO2	House
HO	HO21	House
HO	HO248	Alborton Cemetery
HO	HO119	Robert's Drapers Shop
HO/VHR	HO36/H999	Christ Anglican Church

### 3.2.6 Previous Archaeological Assessments

#### Aboriginal Archaeology

Aboriginal archaeological studies associated with specific developments and broad regional studies have been carried out across the geographic region. These reports are shown in

**Table 4** below.

The majority of studies undertaken which include the study area are wide ranging regional studies of the broader Gippsland or south-eastern Victoria region. These studies have predominantly been in response to development proposals, and so are haphazardly located with regard to landform. Given the sporadic nature of archaeological survey across the geographic region and the limited survey coverage previously undertaken, there is high potential for as yet unrecorded Aboriginal places to be present within the study area outside of these previously investigated areas. However the surveys are valuable in contributing to predictive models for the location of unrecorded Aboriginal places to be made for the study area.

**Djekic** (1998) undertook an update of the 1981 archaeological survey of the Latrobe Valley coalfields, which expanded the initial survey area to include the present study area. The updated survey was designed to identify and amend inadequate data collected during the initial survey and to identify areas of high archaeological potential across the region. Fifty Aboriginal places were recorded during the survey, which incorporated both vehicle and pedestrian survey. Of these, one place (VAHR 8220-0080) was identified within the current study area (for discussion of this place, please see Section 3.2.4). A comparison of these places identified that the majority of Aboriginal places across the south Gippsland region dated from c.5,000 years and were predominantly located within undisturbed contexts. Places identified or revisited were predominantly artefact scatters and isolated artefacts, however quarries, scarred trees, shell middens and axe grinding grooves are also discussed. The most commonly occurring artefacts within the places recorded are retouched or utilised flakes which were predominantly of quartz and silcrete construction. This study identifies that: the likelihood of archaeological material being present in relatively undisturbed contexts within the study area; that the most likely place type to be present are artefact scatters or isolated artefacts; and that these artefacts are likely to be of quartz or silcrete construction.

**Clark et al** (2003) undertook a cultural heritage investigation of the South Gippsland Highway west of Alberton which is located adjacent to several areas of the present study area. This assessment covered approximately 212 kilometres of the highway and included a pedestrian survey and sub-surface testing program. The survey identified very poor surface visibility within the study area due to ground cover. The sub-surface testing program was comprised of a series of shovel probe transects located approximately five to ten metres apart and excavated to a between 30 and 50 centimetres, some of which occurred within the study area. These excavations were directed at the rises and slopes through the landscape which were identified to have higher archaeological potential than surrounding areas. No archaeological material was identified as part of this assessment.

**Robb, De Maria and Lawler** (2014) undertook a cultural heritage management plan for the Yarram fibre optic link, north east of the study area. This assessment included both pedestrian survey and sub-surface testing which was undertaken within similar landforms to those present within the present study area. Pedestrian survey identified the floodplains, levees and level terraces within this environment to have higher potential to contain archaeological material than the surrounding landscapes. These areas were tested for the present or absence of archaeological material using one 1 metre x 1 metre test pit and 28 shovel probes excavated to a maximum depth of , identifying an alluvial clay silt soil profile within the stratigraphy. A similar stratigraphic profile can be expected to occur within the study area. One LDAD was located during the sub-surface excavation program. VAHR 8020-0160 is located on a level terrace overlooking a drainage gully. The assemblage consists of six silcrete flakes which were located between 400 and 300 millimetres depth. Radial shovel probes were excavated to determine the nature and extent of the assemblage; no additional archaeological material was recorded.

These previous archaeological assessments outline the relatively undisturbed nature of the landscape within the study area. Sub-surface testing programs have identified Aboriginal material within the top 600 millimetre of the soil profile and areas containing levee banks, level terraces, and slopes are likely to have higher potential to contain archaeological material than surrounding areas.

**Table 4: Aboriginal archaeological assessments within two kilometres of the study area**

Report No.	Author	Year	Title	Report Type
803	McNiven, I.	1995	Archaeological Survey of Nooramunga Marine and Coastal Park South Gippsland, Victoria: Land-Use Patterns, Sites and Management Recommendations	Desktop or Paper or Due Diligence or Other
1285	Djekic, A.	1998	Latrobe Valley Coalfields 1981 Archaeological Study Update	Survey
1320	Du Cros, H. & Rhodes, D.	1998	Aboriginal Archaeological Sensitivities Study of the Water Ways and Flood Plains of Greater Melbourne	Desktop or Paper or Due Diligence or Other
1370	Marshall, B. & Schell, P.	1998	Coast Action Coast Care 1998/99 Aboriginal Archaeological Desktop Study	Desktop or Paper or Due Diligence or Other
2112	Clark, V., Langberg, V., George, F. And Thomson, M.	2003	South Gippsland Highway Western Approach to the Albert River: Cultural Heritage Investigation	Survey
2127	Tulloch, J.	2003	An Archaeological Desktop Survey of Six Proposed Windfarm Sites In South Gippsland, Victoria	Desktop or Paper or Due Diligence or Other
2425	Ellender, I.	2002	The Yowenjerre of South Gippsland: Traditional Groups, Social Boundaries and Land Succession	Desktop or Paper or Due Diligence or Other
2703	McConnell, A, Buckley, K & Wickman, S	2002	Aboriginal Heritage Management in Victorian Forests Volume 3 Subsidiary Report	Desktop or Paper or Due Diligence or Other
3511	Freslov, J	2006	Aboriginal Heritage Values Assessment Study and Management Recommendations, Nooramunga Marine and Coastal Park, South Gippsland	Survey
3867	Schlitz, M.	2007	Desktop Cultural Heritage Assessment of a Proposed Marina and Residential Development, Port Albert, Victoria	Desktop or Paper or Due Diligence or

Report No.	Author	Year	Title	Report Type
				Other
10063	Schlitz, M	2008	Magazine Point Marine Residential Development, Port Albert, Victoria	CHMP Complex Assessment
10505	Murphy, A & Owen, D	2009	Residential Subdivision of 187 Yarram- Port Albert Road, Port Albert	CHMP Complex Assessment
13035	Kasey F. Robb, Nicole De Maria, Martin Lawler	2012	Fibre Optic Link, Yarram, Victoria	CHMP Complex Assessment

## Historic Archaeology

A number of previous cultural heritage studies were consulted to determine whether the current study area had been surveyed for historical sites. **No previous survey for historical sites has been undertaken within the study area.** The following are a relevant sample of heritage studies that have been completed in the geographic region.

**Context Pty Ltd (2005):** Context completed a regional heritage study for the Shire of Wellington. The results of study for the Shire incorporate and update the heritage studies undertaken by **Graeme Butler and Associates (1982; 2002)** for the former Shire of Alberton (Port Albert, Tarraville and Alberton). The Port Albert Conservation Study (1982) listed 59 places and precincts and these were reviewed and added to the Shire of Wellington Heritage Places Database. The Wellington Shire has given a regional significance ranking for the Port Albert Heritage Precinct (see HO34) number of planning amendments C26 Amendment.

**Alister Bowen (2005)** conducted excavations at a fish curing site occupied by Chinese which dates to the early 1860s (H8220-0011). The site is situated approximately 1.5 kilometres north-east of Port Albert. Bowen confirmed that the site was occupied by from the 1860s to around 1900 and that the predominant activity was fishing and fish curing. It was recommended that the site be given a high local and state wide significance rating.

**Alasdair Brooks, Susan Lawrence and Jane Lennon (2006)** have conducted a project entitled *Pre-Gold Rush Settlement in South Gippsland, Victoria* which uses a community studies approach to develop archaeological perspectives on British settlement in Victoria before the upheavals of the gold rush in the 1850s. A number of households in Tarraville and Port Albert were excavated in 2006 and the artefact assemblages are currently being analysed to determine the role of goods in the formation of culture within a frontier region.

Documentary evidence of the Wellington Street Port Albert site indicated one of the earliest areas of residential occupation in Port Albert (**Brooks, 2007**). An 1848 map clearly shows several small buildings in the area, including four cottages on what became Wellington Street. Pre-disturbance geophysical testing was conducted to determine the character and extent of any subsurface features. Results so far indicated that the earlier cottage was built between 1844 and 1848, and torn down between c.1890 and 1941. Brooks notes that knowledge of who resided in the cottages is incomplete as this stage of the research although the area served as the residence of the official port pilots from the earliest period of occupation, and that the cottage was occupied during the 1850s by one of these pilots. La Trobe University recorded a significant variety of cultural materials directly associated with the cottage, dating from the 1830s through to the first decade of the 20<sup>th</sup> century.

## Register of the National Estate

A number of historic buildings and other sites near the study area are listed on the Register of the National Estate.

Within 200 metres of the activity area is the former Bank of Victoria (now the Port Albert Maritime Museum), constructed in 1861, and of historical and architectural significance to the State of Victoria. It is a rare example of Conservative Classical revival architecture and was designed and positioned to demonstrate the importance of Gippsland to the wider Victorian community. It reflects a time when trading activity through the port was at its peak.

The Port Albert Post Office located in Wharf Street is one of the earliest buildings in the State and has been assessed as probably the earliest one in Gippsland (Register of the National Estate 4728). The Post Office is situated within the Wellington Planning Scheme - Heritage Overlay (HO116).

The Immigration Depot located at 6 Denison Street (Register of the National Estate, H0498) was constructed in 1858. The building is significant as it demonstrates the role of government in the development of Port Albert and the importance of labour required for the Gippsland economy in the mid-nineteenth century. It appears the depot became redundant from the period between 1865 and 1870 when trade began to decline.

The Brick Bond Store (former) (RNE 4801) is highly significant in that it illustrates early Colonial building traditions. It was built c1844 for the customs agents and merchants Turnbull, Orr and Company. After 1860 the building was modified for use as a residence. It represents one of the earliest buildings in the Gippsland region and is regarded as significant for the early commercial activity of Port Albert.

The Derwent Hotel (RNE, 4799) located on the corner of Wharf and Victoria streets, Port Albert, was built in 1858 in the Colonial style and represents a good example of any early hotel.

One of the significant shipwrecks in the history of Port Albert is the *Clonmel* (1841) which ran aground within the Port Albert entrance. The wreck represents the transition of shipbuilding technology from wooden to iron hulls and sail to steam vessels. It also illustrates early development of efficient marine engines and one of the largest steamers sent from England for the intercolony trade and transport of passengers (Register of the National Estate 100896). The Australian Heritage Database lists this wreck as the earliest located steamship wreck in Australian waters. The event was instrumental in the formation of a syndicate which sought to establish a harbour settlement (initially Old Port at the Albert River) for the Gippsland interior.

The Register of the National Estate also lists the *Blackbird* (1878) (RNE 100898) shipwreck located in shallow water some 300 metres from the southern shore of Clonmel Island, south of Port Albert and the study area. The wreck is a good example of an auxiliary steamer plying colonial trade between Port Albert and Melbourne.

## 3.2.7 Regional History

### Exploration in South Gippsland and the Port Albert region

Following exploration of the southern Victorian coast from the 1790s, and inland exploration during the 1820s, settlement by Europeans in Gippsland started in the 1830s. George McKillop came down from the Monaro area in 1835 looking for suitable grazing land. Other overlanders and explorers such as Walter Mitchell and Edward Bayliss ventured within the Gippsland area prior to the arrival of McMillan and Strzelecki (Synan, 1994:18). Drought during the late 1830s encouraged more squatters to move south into Gippsland (Wells 1986: 16-17). Pastoralists took up runs in the Tambo Valley in 1838 and 1839 and exploration continued with pastoralists looking for grazing land and a route through to the coast. In 1841 a party found a route between Port Albert and Melbourne, along which cattle could be moved.

By early 1841 McMillan had blazed a trail from Numbla Mungie [Ensay] to Port Albert. News of the coastal steamer Clonmel running aground at Corner Inlet reached Melbourne and helped to bring more attention to Port Albert (Synan, 1994:18). These events resulted in the formation of the Gippsland Company which charted the Singapore to Corner Inlet and the establishment of the first settlement at Port Albert in 1841.

Charles Tyers was appointed Crown Lands Commissioner for Gippsland in September 1943 and one year later preferred to sail for Port Albert rather than take the overland route (Synan, 1994:19). Until the establishment of the rail link with Sale in 1877, many travellers east from Melbourne preferred to go by sea to Port Albert and then take the road to Sale (Priestly, 1984:53).

Before banks were established in Gippsland, the firm Turnbull, Orr and Co. from Port Albert acted as the bankers for the squatters further north around Sale. The schooner and ketch trade between Hobart Town and Port Albert at this time were stores for the developing Gippsland region in return for cattle, sheep, hides and wool. The Gippsland Company established a settlement at Port Albert in 1841, and large numbers of settlers began arriving from Melbourne. The plains along the coast were the first to be selected for farming, and settlers soon brought herds of cattle and sheep (Murphy 2000).

By 1848, Port Albert had only "...seven or eight huts and fifty souls..." and a couple of miles away at Alberton there was "...just a court house, lock-up with one man in charge of it and an empty shed..." (Priestly, 1984: 68). Early pastoral workers, "...ticket of leave men of obscure background...", single female immigrants, early selectors, gold miners, craftspeople and traders came through Port Albert in the first few decades (Synan, 1989:6). Extensive gold diggings occurred at Stockyard Creek near Foster, and by the early 1870s the township boasted numerous facilities including shops and a library (Wilson et al 1995: 9).

By 1840 pastoralists had settled in east and west Gippsland and by 1851 the main river valleys, and the Gippsland Lakes area, were taken up as cattle runs. Under an 1847 Land Act Gippsland squatters were allowed to secure a lease for eight years, during which time no one but the lessee could buy any of the land. In 1841, Aeneas Ranaldson MacDonnell (Chief of Glengarry) was assisted by Archie McIntosh in the establishment of Greenmount Station near Port Albert. Within two years this venture had failed and MacDonnell returned to Scotland (Synan, 1994:23).

During the 1860s the decline of Port Albert was accelerated by the reduction of the cattle trade coming from Hobart and Launceston. This trade slowed due to the dismantling of the convict system in Tasmania (Synan, 1989:7, 37). A peak wool export of 472, 188 bales recorded in 1852 had reduced to just 27, and 658 bales by 1857 (Synan, 1989:198, Appendix 1 – Value of Exports for Port Albert, 1844-57, source: Gipps Land Guardian 17 September 1858). The economic decline of Port Albert can be viewed as a combination of market forces, its remoteness from the gold activity and the newly opened up transport links from the Lakes Entrance region and the major road from Melbourne to Sale.

The Gippsland Times correspondent described Port Albert in the following terms:

*"Five times out of seven a person may walk up and down Port Albert without seeing a living animal. The town appears literally empty, as though all the inhabitants were all away at a picnic, all asleep, all defunct or about to become so. On a Wednesday however the Avon SS arrives from the lakes..."*  
(Synan, 1989: 39).

The inefficiencies of the Port Albert shipping service in terms of stock movement was also criticised by Edward Crooke whose views resulted in public debate in Gippsland (Synan, 1989:8-9). The residents of Port Albert had good reason to argue for improved transport solutions that would continue to channel the trade from the Central Gippsland region through Port Albert. They proposed a canal and from time to time light rail for the north-south Gippsland route (Synan, 1994:35). The dependence on the long, costly road from Port Albert was retarding economic development on the central plains. The prominence of Port Albert in the supply route overland was exemplified by Malcolm Campbell in 1858 when he steered his schooner Georgina Smith



through the natural entrance into the Gippsland Lakes and off-loaded supplies for the diggings at Omeo, demonstrating that he could halve the cost of the overland route from Port Albert 200 miles to the south coast (Synan, 1994:35; Priestly, 1984:58).

The teamsters and traders preferred to remain in the Tarraville area as good water was available from the Tarra Rivulet and from wells sunk above the tidal reaches and coastal lowland around the Port Albert township (Rash and McClure, n.d: 2; see section 2.1.1).

The Gippsland Company (later the Port Albert Company) through the agents Turnbull, Orr and Co applied for a John Orr Special Survey of 5120 acres between the Albert and Tarra Rivers. Surveyor Townsend was directed to undertake the survey for the Port Albert Township in 1841 and while the Special Surveys were gazetted by Governor Gipps in that year it was not until Townsend returned to the Port that Alberton was surveyed and gazetted on 27 September 1842. The Special Survey system was introduced in Port Albert and surrounds on the 4 March 1841 allowing special surveys of eight square miles which were required to be a distance of 3 miles from settled areas. The Government intervened to withdraw the Special Surveys due to land speculation (Rash and McClure, n.d: 1).

Some of the earliest explorations of the Gippsland region began in the early nineteenth century. Squatters Macarthur and Blaxland sailed to Ninety Mile Beach, in search of good land for inland terrain over three separate journeys. McMillan initially named the region Caledonia Australia; later Paul Strzelecki renamed the region Gippsland after the New South Wales Governor Gipps (Billis & Kenyon, 1974). The first official settlement in Gippsland was at Port Albert. The Gippsland Company was founded by a group of Melbourne businessmen with the aim of establishing Port Albert and opening up the surrounding landscape for settlement (Morgan, 1997). Combined with the efforts of McMillan to clear a course from New South Wales to Gippsland, settlers began to flow into Port Albert. The land was officially surveyed in 1843 and land sales soon followed. Yarram was considered to be the supply town for squatters in the surrounding region (Morgan, 1997).

### **The study area**

The study area are located within Alberton and Alberton West which are located within the broader region of the Yarram (also known as Yarram Yarram township). Yarram Yarram was originally identified in 1841 by Aeneas Ronaldson MacDonnell in 1841 as a potential settlement for Scottish migrants. However, the experiment folded and he subsequently moved to New Zealand. In 1853 the township was first sold for farming lots. The town retained the name Yarram Yarram until 1924; the name is believed to be derived from a local Aboriginal word meaning *plenty of water* (Morgan, 1997). A post office was established at Yarram in 1861 and houses and shops were constructed in increasing numbers through the 1870s and 80s. The town of Yarram was gazetted in 1893. Agriculture, in particular dairying, and extractive industries have been an important part of Gippsland's development. Trees were cleared in large swathes to provide wood for the building boom in Melbourne during the 1880 (Debney, Nicholson, Sheehan, Stevens, & Amorosi, 2001). Construction of the railway in Yarrum began in 1897 and resulted in many businesses relocating to Yarrum by 1921 when the railway was connected.

### **3.2.8 Land Use History**

Before its subdivision into freehold farm lots, the land within the study area was part of the Tarra Creek, Cascade and Alberton squatting runs, also known as Trenton Valley (Spreadborough & Anderson, 1983). These runs were established by Charles Lucus (Cascade in 1848) and Edmund (Tarra Creek in 1847) Henry Bodman (Trenton Valley in 1848) and were managed as cattle and sheep runs. The land was gradually turned to the dairy industry for which south Gippsland is now famous and the land within the study area subjected to land clearance, more stringent fencing and dam construction.

During the initial phases of European settlement in the south Gippsland area tree and scrub removal was undertaken on a wide scale to make room for pasture for livestock and to enable travel routes between the coastline in the south, Melbourne in the west and the ranges, river lands and inland settlements to the north. This resulted in the large scale removal of native vegetation (outlined in section 3.1.4) including large eucalypts which were utilised by Aboriginal people and occur within the archaeological record as scarred trees. It is therefore extremely unlikely that scarred trees will be present within the study area outside the areas which retain remnant native vegetation.

Podding and pugging (cattle damage) has occurred across the study area. Rather than remove archaeological material from the landscape completely, it is likely that this activity has redeposited any archaeological material present. Similarly, the construction of dams and watering areas for livestock across the study area will have redeposited any archaeological material present from its original context. This material is likely to remain in the landscape, within close proximity to its original context within excavated spoil piles, which may appear as small hillock or mounds within the study area. Dairy farming remains the predominant use of land within the study area.

### 3.3 Conclusions and Place Prediction Model

The study area is situated around the townships of Alberton West, Hedley and Gelliondale in the coastal regions of Southern Gippsland. The study area is situated on the Southern Uplands, Eastern Plains and coastal regionals of southern Gippsland in an area dominated by low relief, undulating rises to the north and high level terraces and fans to the south. Jack River, Albert River, Tarra River, Muddy Creek, Stoney Creek, Nine Mile Creek and their tributaries are all present within or in close proximity to the study area. These water ways contain quartz and silcrete cobbles and it is possible that Aboriginal people utilised these local sources for the manufacture of stone artefacts.

The climate has remained relatively stable over the last 5,000 years with an average rainfall of between 700 and 800 millimetres per annum, creating an ideal environment for the plant and animal resources used by Aboriginal people in the region.

A variety of previously recorded Aboriginal places are located within close proximity to the study area (n=54). The majority of these places are artefact scatters (82.5%), although shell middens, earth features, low density artefact distributions (LDADs), scarred trees and burials are also present. There is one previously recorded Aboriginal place within the study area. Gelliondale 3 (VAHR 8220-0080) is a surface scatter of quartz and silcrete artefacts. The assemblage is located on either side of a vehicle track adjacent to a fence line. The area is severely damaged by wind and gully erosion and is currently in poor condition. Artefacts associated with scatters in the geographic region contain a majority of quartz artefacts, likely sourced from local outcrops or river quartz pebbles. Given the location of several named and unnamed waterways and tributaries within the study area, it is possible that quartz artefacts present in this region may have been sourced locally from river quartz pebbles. Previous archaeological research within the study area indicates that greater densities of sites will occur within close proximity of waterways (indicating the potential for Aboriginal places to be present within the study area in these locations).

The study area has been partially subject to previous archaeological investigations. Djekic (1998) and Clark et al (2003) have undertaken broad ranging assessment across the southern Gippsland region which included with study area. These assessments highlight the relatively undisturbed nature of the landscape within the study area. Sub-surface testing programs undertaken within similar landforms to those present within the study area have identified Aboriginal material within the top 600 millimetres of the soil profile and areas containing levee banks, level terraces, and slopes are likely to have higher potential to contain archaeological material than surrounding areas.

#### Place Prediction Model

Based on the above review of the geographic region, including its environment, recorded Aboriginal places, previous archaeological assessments and information on the activities of Aboriginal people, an Aboriginal place prediction model has been developed.

There is a high likelihood for the following Aboriginal place types to be found within the study area:

- **Artefact scatters** consisting of one or more stone artefacts are associated with tool production, domestic activities and resource procurement. Based on regional assessments and previous archaeological surveys artefact scatters and isolated finds are most likely to occur within the within close proximity of swamps and water courses such as the Albert River which intersects the study area. One artefact scatter is located within 100 metres of the study area (VAHR 8220-0080). Given the lack of disturbance associated with this area and the presence of the artefacts within a naturally occurring landform there is potential for additional material to be present within the study area associated with this previously recorded place.

- **Scarred trees** represent cultural modifications of trees to obtain the bark for use as shelters, canoes and shields. Despite widespread removal of native forest during historical land clearance current EVC mapping indicated small pockets of remnant native vegetation within the study area. Although the study area has been subjected to previous land clearance to open the landscape for grazing after European settlement, some remnant old natives may remain.

Additionally, the following Aboriginal place types may also be present within the study area, although the likelihood of encountering them is limited by the factors discussed below.

- Burials of human remains can occur where the subsurface deposit is suitable for digging, with soft soil and sand being the most probable. As the soils within the study area are predominantly shallow, they would not be suitable as locations for human burials. Human remains have been found to the south of the geographic region in the coastal dunes, however this geomorphology is generally not present in the study area except in small sections.
- Earth features/mounds can include evidence of occupation such as charcoal, burnt clay, lithic material, animal bones and shells. They are usually identified in preserved landscapes where the material has been covered by successive deposits of alluvium and elevated ridges or rises, or within proximity to water sources. These places are often floodplains of major waterways where the deposition and redeposition of sediments accumulates between periods of inundation. As the study area is intersected by the Albert River which was subject to seasonal inundation, there is moderate potential for earth mounds to be present in undisturbed areas of the study area.
- Quarries consist of negative flaking scars on rocky outcrops where Aboriginal people procured their lithic resources. No Aboriginal quarries have been recorded within the vicinity of the study area and the analysis of regional the geology and geomorphology outlined in Section 2.1.1 indicates the most likely source of raw material for stone tool manufacture is quartz. The majority of artefact scatters found within two kilometres of the study area contain quartz artefacts, likely sources from outcrops along local river banks or quartz pebbles from the river beds. As the study area is intersected by the Albert River and several unnamed tributaries, it is likely that the local source of material would have been quartz river pebbles and there is therefore very low potential for quarries to be located within the study area.
- Rock art includes stencils, prints and drawings in rock shelters and engravings in limestone caves. The study area is located on a geomorphic landform where limestone caves and other appropriate surfaces are not found. It is therefore unlikely that rock art will be present within the study area.
- Middens contain the remains of consumed shellfish and other faunal remains and are located in coastal areas or associated with inland waterways. These deposits often occur in a sub-surface context or can be seen eroding from the banks of waterways. Middens have been previously recorded within the geographic region, however they are generally found to the south in the coastal dunes. There is therefore low potential for midden material to be present within the study area.
- Stone features are places where Aboriginal people have positioned stones deliberately to form shapes or patterns, or where naturally occurring stone features were utilised by Aboriginal people. The purpose of these arrangements is often unknown. Stone feature have not been previous recorded within the region and the area does not typically contain the large stones utilised as part of these installations. However as the purpose of these places is unknown, the motivation to relocated stones with which to form these places can not be directly determined. Subsequently there is low potential for stone features to be present within the study area.

## Spatial Prediction Model

Further to the Aboriginal place prediction modelling, spatial modelling for Aboriginal heritage in the study area is mapped in Figure 7. To assess the potential of environmental features and landforms for Aboriginal cultural material, this spatial predictive modelling was undertaken in ArcGIS using Spatial Analyst tools to compare, analyse and overlay numerous environmental and topographic datasets. Four main datasets were considered during the modelling process. These include:

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

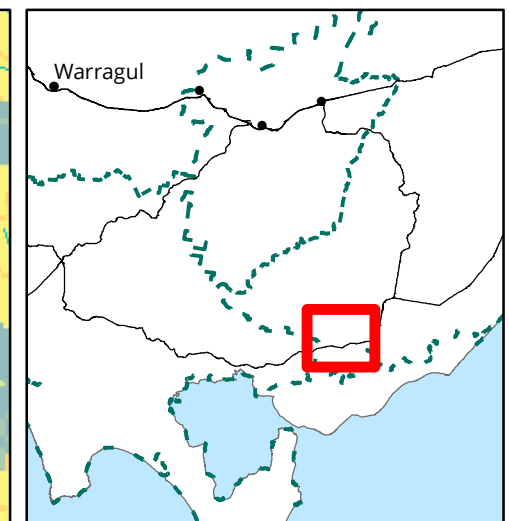
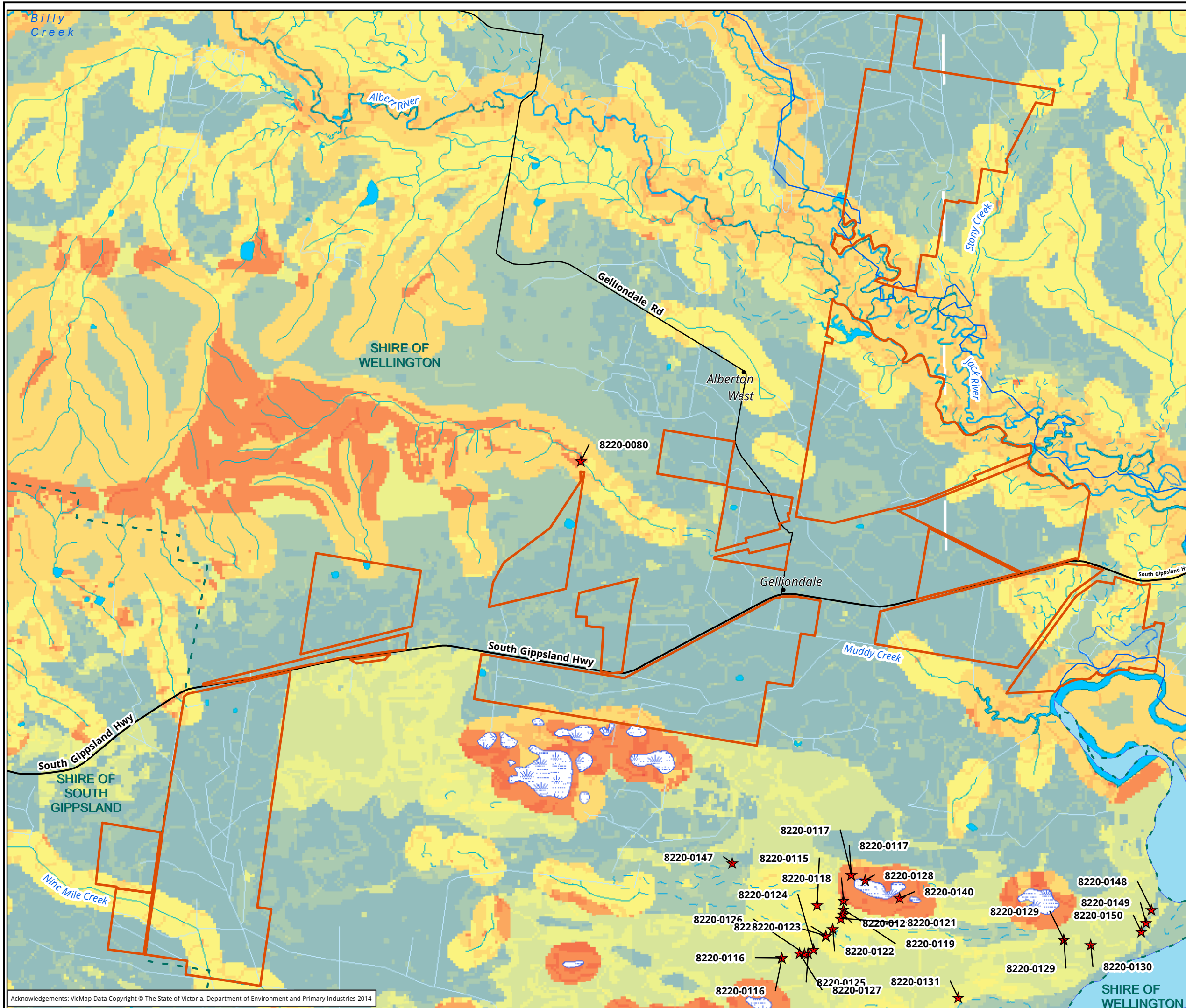
All of these layers are weighted and ranked according to an equivalent but arbitrary scale of 0-3, with '3' being areas most likely to support Aboriginal places and '0' being very unlikely to support Aboriginal places. Once all of the four component layers are added together into a single layer, zones of high, moderate and low archaeological potential were developed. Areas of high potential scored between 10-15 (red on Figure 7), moderate potential scores between 5-10 (yellow on Figure 7) and low potential scored between 0-5 (blue on Figure 7). The results of the predictive modelling are shown on Figure 7. In this figure, areas with a low cumulative score have a lower likelihood of containing Aboriginal places, blue being the lowest and red being the highest level of sensitivity.

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

The prediction model acts as a guideline for designing further research strategies and identifies key points for consideration during the targeted inspection.

The results of the desktop assessment indicate the potential for unidentified Aboriginal cultural heritage material to be present within the study area.

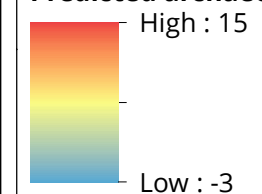




#### Legend

- Study Area
- ★ VAHR Places

#### Predicted archaeological potential



**Figure 7: Predictive Model for Aboriginal Places**

0 390 780 1,170 1,560 1,950

Metres  
Scale: 1:40,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55



Ballarat, Brisbane, Canberra, Melbourne,  
Newcastle, Sydney, Wangaratta & Wollongong

Matter: 19686,  
Date: 10 July 2015,  
Checked by: TSC, Drawn by: LH, Last edited by: lharley  
Location: P:\19600s\19686\Mapping\19686\_F7\_PredAboriginalPlaces



## 4. Targeted Inspection of the Study Area

A targeted inspection was undertaken on Wednesday 24 and Thursday 25 June 2015 by Timothy Cavanagh, Biosis Pty Ltd. It informs the results of the background research, identifies landforms and their archaeological potential based on the ground conditions and our original predictive model.

### 4.1 Methods

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

It was not the aim of the study area inspection to identify Aboriginal or historical archaeological places. If sites are encountered, then these will be recorded appropriately.

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

The study area was divided into a number of landform units based on geology, geomorphology and contours. The extent of each landform would be refined following the results of the site inspections. Table 5 following describes each of the landforms considered across the study area.

**Table 5: Types of landforms across the study area**

Landform Unit	Land Use	Features
Flat Open Plains	Grazing/residential	Low-lying grassed river floodplain divided into paddocks. Low alluvial rises.
Isolated Hills	Grazing	Natural rises in the landscape, usually from old volcanic activity
Creek margins	Reserve/grazing	Focused around waterways, composed of creek sediment buildup.
Gentle Slopes	Grazing/residential	Sloping plains
Swamp Margins	Grazing	Areas surrounding current and former swamps

### 4.2 Results

The study area largely consists of open grazing paddocks across floodplains that ascend to hills to the north-west and spread to coastal dunes to the south. Much of the vegetation has been removed from the area except for occasional tree strands or isolated old gums remaining in the paddock that serve as shade trees for the livestock.

Most of the study area was accessed from the South Gippsland Highway, a major thoroughfare that bisects the study area into north and south portions. The survey was opportunistic in its sampling, taking indicative photos of the major landform units identified in the desktop assessment and the areas of varying

archaeological potential as mapped on the predictive model shown on Figure 7. The boundaries of each landform across the study area are illustrated on Figure 8 following.

Old homesteads, dairies, cattle locking docks and stockyards are dotted throughout the study area. The floodplains landform in which the majority of these buildings occurred showed little variation other than slight bumps, rises and depressions where natural drainage points formed. The study area has been largely cleared of trees, however small stands exist, particularly near where VAHR 8220-0080 is located. It is considered that there is moderate potential for scarred trees to occur in this zone based on the presence of old growth trees adjacent to a major watercourse and known artefact scatter.



**Plate 2: Typical flat open plain landform**



**Plate 3: Typical flat open plain landform**





**Plate 4: Flat open plain with the Jack River**



**Plate 5: Remnant native trees near VAHR 8220-0080**

Gentle slopes marked the middle north of the study area and in the surrounds of the isolated hill to the north-east. Generally this landform would provide limited chance of archaeological material, however, due to the presence of an Aboriginal place, remanent native vegetation, nearness of a major waterway, and its location as a natural highpoint, this landform is considered to contain moderate archaeological potential.

An isolated hill formed from old volcanic activity is in the north-east of the study area (Plate 6). Due to its prominence above the otherwise flat landscape, it is considered to contain high archaeological potential.



**Plate 6: Isolated hill landform**



**Plate 7: Sloping landform**

Alluvial terraces were present along the creek margins of the Albert River. The landform here is formed from slow sediment build up, a geomorphological process conducive to preserving archaeological remains. This type of landform is typically associated with intensive use by past Aboriginal communities due to the resources available, and is assessed at having high archaeological potential.

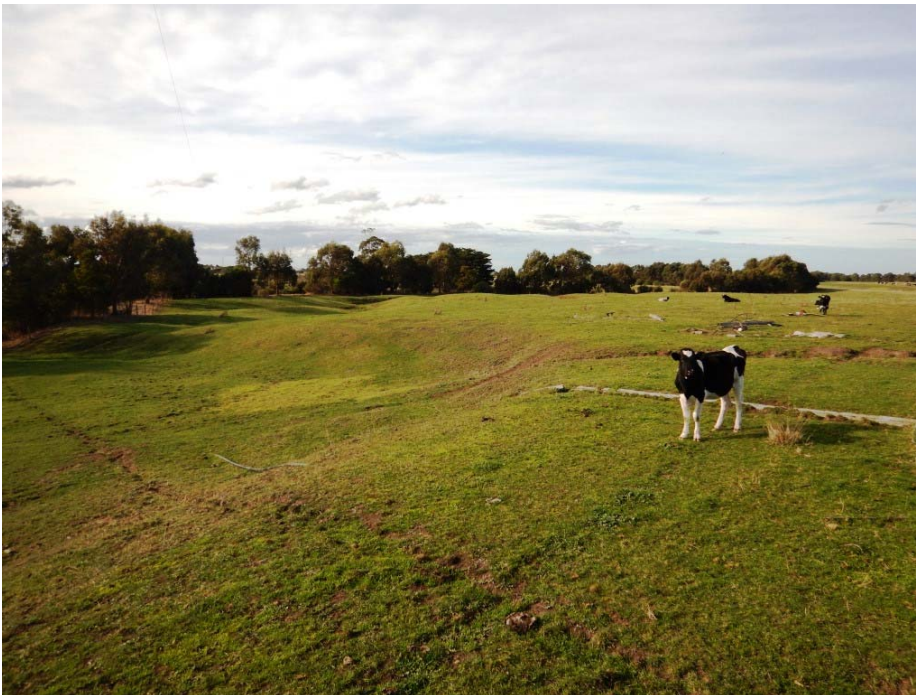
Swamp margins were the last landform identified. These areas are typically low lying and subject to inundation, and would have formed a resource point for past Aboriginal groups. Because these areas are marshy and prone to flooding, they do not make ideal camping sites, but the outer fringes on drier land may have allowed for intermittent occupation. Due to the nature of swamps continually growing and receding, the



entirety of the swamp areas and their immediate surrounds are considered to have high archaeological potential.



**Plate 8: Albert River**



**Plate 9: Meandering alluvial terrace**



**Plate 10: Swamp margins**

Of the five landforms identified, four evidenced high to moderate archaeological potential. These landforms, creek margins, gentle slopes, isolated hills and swamp margins would have served either as camping spots or vantage points, providing access to fresh water from the drainage points and the Albert River, and also access to the abundant resources of the flood plains.

The following section breaks down the five identified landforms into their archaeological potential, disturbances and other factors such as visibility.



### 4.2.1 Landforms


The following section describes in detail each landform identified during the ground survey and provides information on their archaeological potential (Figure 8). The definitions of archaeological potential are described here:


**Low Archaeological Potential:** This level of potential refers to areas where land use would have been sporadic and opportunistic. Any cultural heritage within these areas is likely to be in the form of isolated artefacts or low density artefact scatters reflecting single use and discard events. Occasional isolated scarred trees may also be present in this category.


**Moderate Archaeological Potential:** A moderate level of archaeological potential designates areas that would have been used on an intermittent or seasonal basis. They include outlying areas adjacent to zones in which more permanent camps would have been established, places near minor waterways and drainage lines, and places used as thoroughfares from one resource point to the next. Cultural heritage may include artefact scatters of medium to high density and isolated scarred trees.

**High Archaeological Potential:** High archaeological potential designates areas in which resource exploitation would have been focused. Examples of this include permanent or seasonal camp sites adjacent to major waterways, high points in the landscape and areas allowing easy access to major resource points. Cultural heritage in these zones may include artefact scatters of medium to high density, specific stone tool types such as grinding stones or axes, earth mounds, scarred trees and rarely, human remains.


It is important to note that the archaeological potential of the landforms is not an absolute reading of the study area. It serves as an informative guide to the type and density of cultural heritage that may be found in certain areas, but does not preclude the possibility of sites of high significance being located in areas of low potential, or vice versa. An isolated scarred tree may be located in an area of low archaeological potential, but it may contain high significance either scientifically or culturally.


Landform – Isolated Hills	
Description	Prominent rise overlooking the plain
Notable disturbances	Vegetation clearance.
Disturbance level	Low to moderate. Some clearing and land development.
Visibility	Approximately 10% (low) overall due to vegetation cover, including leaf litter.
Notable exposures	Around the bases of trees
Area of exposure	Approximately 5% overall.
Aboriginal sites	None.
Archaeological Sensitivity	High to moderate – stone artefact occurrences on the flat above the break of slope.
Photo	
	
Plate 11: Hill crest in background	

Landform – Gentle Slopes	
Description	Sloping plains near remnant vegetation and major watercourses
Notable disturbances	Vegetation clearance
Disturbance level	Low. Relatively intact due to primary use as grazing land.
Visibility	Approximately 5% (low) overall due to vegetation cover, including leaf litter.
Notable exposures	Around the bases of trees, soil exposures.
Area of exposure	Approximately 5% overall.
Aboriginal sites	None.
Archaeological Sensitivity	High to moderate – directly associated with known archaeological place
Photo	
	
Plate 12: Gentle slopes	

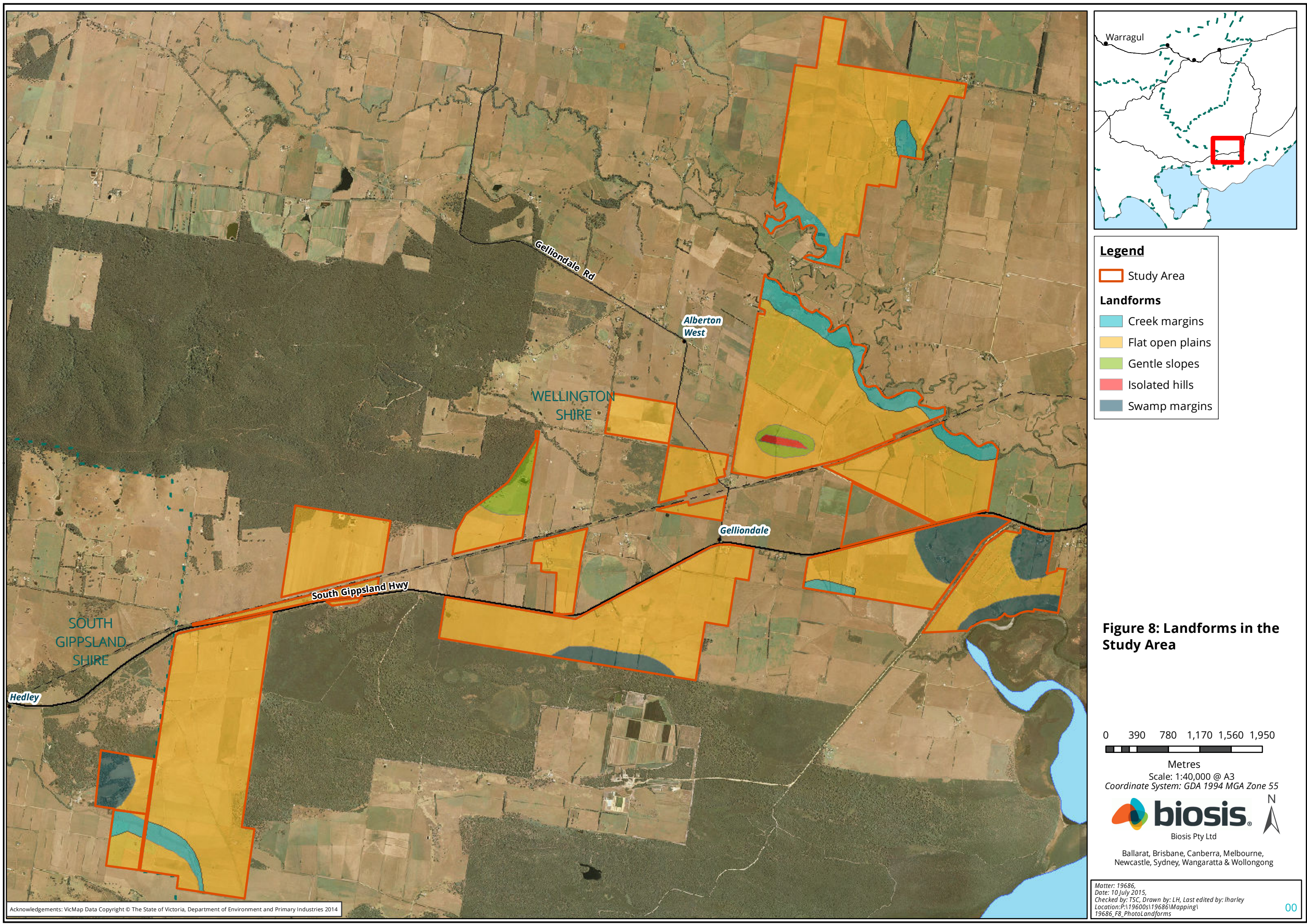
Landform – Creek margins	
Description	Alluvial terraces
Notable disturbances	Relatively intact. Some fencing and grazing.
Disturbance level	Low.
Visibility	Approximately 10% (low) overall due to vegetation cover, including leaf litter
Notable exposures	Around the bases of trees, banks, scours.
Area of exposure	Approximately 15% overall
Aboriginal sites	None
Archaeological Sensitivity	High – stone artefact occurrences on the tops of alluvial terrace and within silt deposits. Scarred trees also a likelihood here.
Photo(s)	
	
Plate 13: Meandering alluvial terrace	



Landform – Swamp Margins	
Description	Marshy plain
Notable disturbances	Minimal. Some clearing and grazing.
Disturbance level	Low.
Visibility	Approximately 10% (low) overall due to vegetation cover.
Notable exposures	Some soil exposures.
Area of exposure	Approximately 5% overall
Aboriginal sites	None.
Archaeological Sensitivity	Moderate to high. Resource exploitation would have been high in these zones.
Photo(s)	
	
Plate 14: Swamp margin with drainage channel	

Landform – Flat Open Plains	
Description	Open plains with small undulations, rises and depressions
Notable disturbances	Minimal. Some clearing and grazing. Some housing.
Disturbance level	Low to moderate. Vast tracts only used for grazing.
Visibility	Approximately 10% (low) overall due to vegetation cover.
Notable exposures	Some soil exposures, around base of trees.
Area of exposure	Approximately 5% overall
Aboriginal sites	None
Archaeological Sensitivity	Low. Landform is not conducive to archaeological sites. Low density artefact scatters may be present throughout.
Photo	
	
Plate 15: Flat open plains	







## **4.2.2 Ground surface visibility and ground surface exposures**

Ground surface visibility was relatively low due to the dense grass and vegetation litter covering much of the study area, estimated at 5-10%.

## **4.2.3 Disturbance**

Areas that can be considered disturbed include the roads and road reserves throughout the study area, various farmers dams created within the paddocks for livestock use, and the homestead sites and their associated infrastructure. These areas would have created significant ground disturbance during their construction and either destroyed or removed, from context, any Aboriginal archaeological deposits.

Laser levelling is also likely to have occurred across a number of properties within the study area. While these areas could not be specifically identified during the site inspections, the process would have also disturbed subsurface deposits. These are most likely to have occurred in the floodplain landforms.

Apart from these major disturbances, soil disturbance is gauged to have been relatively mild (livestock activity, ploughing, landscaping) and it is considered that the majority of the study area remains undisturbed.

## **4.2.4 Archaeological potential**

### **Aboriginal potential**

There is potential for Aboriginal archaeology throughout the study area, particularly within the alluvial terraces fronting onto the Albert River that have not been subject to repeated fluvial action. Deposits here are likely to have significant silt accumulations, and the ground survey identified these areas as relatively undisturbed. The availability of stone along the major watercourses in the study area indicates that raw material for knapping would have been readily accessible to past inhabitants, particularly quartz. There is also a potential for scarred trees in this area and in the sloping land form near VAHR 8220-0080. Any future impact to these areas should involve subsurface testing to substantiate the presence of further archaeological material.

The other areas of archaeological potential include the isolated hills and swamp margin landforms. While no archaeological material found in these landforms, they form natural focal points for past Aboriginal activity, and other previously recorded sites in the wider region are recorded in similar features. The isolated hills allow for natural vantage points across the landscape, and the swamp margins are likely resource points. As such, it should be considered that these areas and areas within the immediate proximity may contain the potential for Aboriginal heritage, likely containing stone artefacts where food may have been immediately treated after capture/gathering.

Across much of the open plains, there is lower archaeological potential. Broadly, the lack of landscape features that might have attracted past Aboriginal activity (natural rises offering dry ground, vantage points) are absent. In addition to this, the fluvial reworking of the upper sediment layers on the plains caused by past flooding events would tend to remove from context any *in situ* archaeological deposits. There is, however, still potential for subsurface archaeological material to occur, particularly in areas where land use has been restricted to pastoral grazing or where swamps have been drained.

The predictive model findings, shown in Figure 7, act as an effective tool in identifying broad scale archaeological potential. The areas identified in the modelling generally correspond to the landforms of greater archaeological sensitivity (hill tops, alluvial terraces and swamp boundaries) clearly defined as a result of the targeted inspections.



The only 'outlier' to the archaeological potential model is the presence of individual remnant trees that are scattered throughout the study area, which are not picked up with the predictive modelling or captured as part of any one landform unit. These features can, and do, occur across the entire study area in varying numbers.

### **Historical potential**

There are few recorded historical archaeological sites within the study area. This is probably a reflection of the small number of surveys that have been carried out in the broader region, rather than an accurate reflection of the likely number of sites in the area. Historical site types that have been recorded are indicative of farming and coal mining in the area during the second half of the nineteenth century. The study area contains a former briquette plant, which include a dam, mullock heap, trolley line, boiler mountings, coal bunker and various other associated infrastructure.

Site types which could be expected to occur within the study area may include coal processing infrastructure and farm ruins, including huts, sheds, yards, and machinery. The study area has been used for dairying and dryland grazing pasture.

Based on the site inspection and the historical background information, there is moderate potential for the presence of historical archaeological sites within the study area.

### **4.2.5 Conclusion**

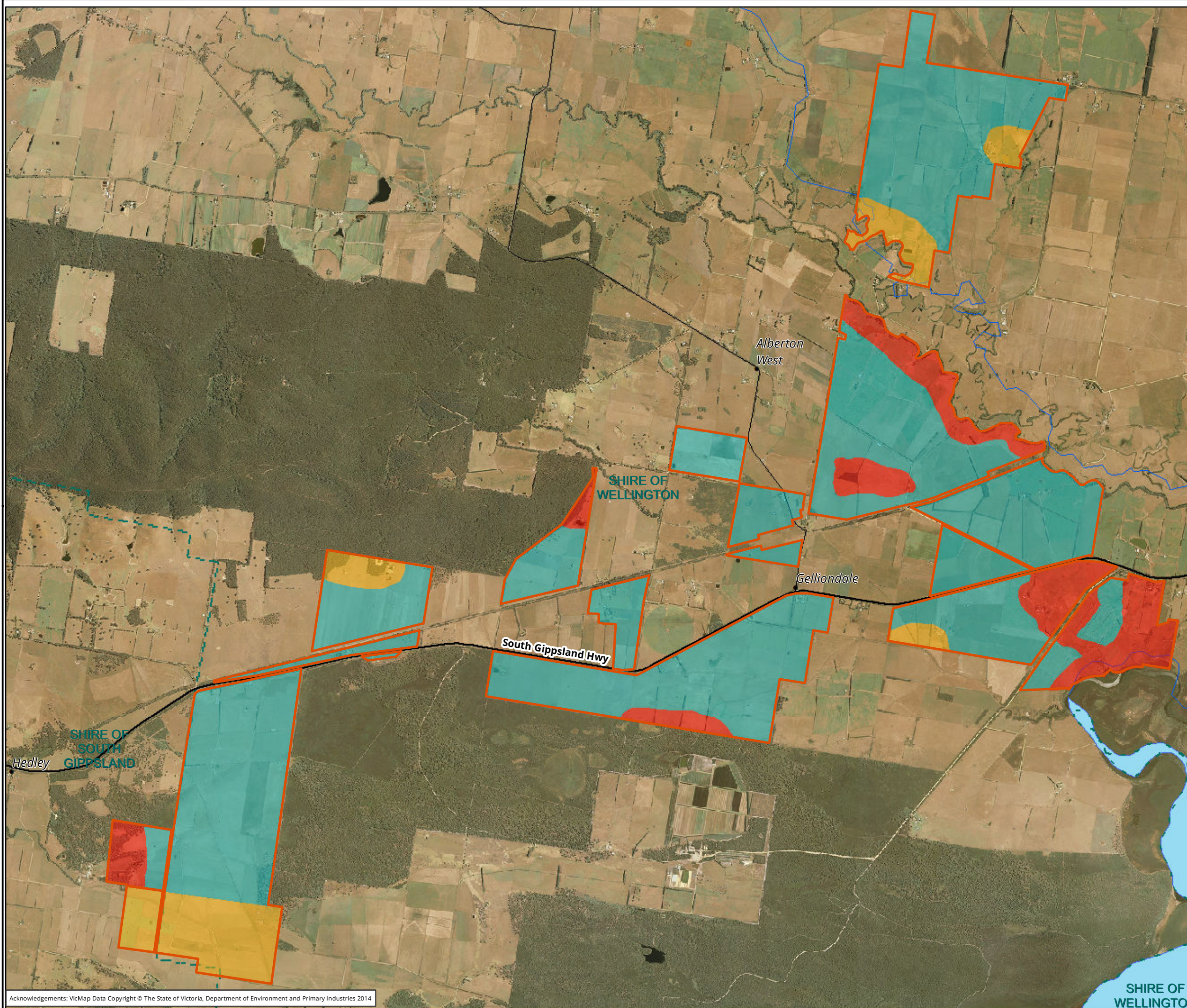
The study area has been broken into five landform units, being flat open plains, creek margins, gentle slopes, isolated hills and swamp margins (Figure 8). Of these five units, four contain high to moderate archaeological potential – creek margins, swamp margins, gentle slopes and isolated hills that generally align with the archaeological potential identified in the initial prediction model.

Disturbances across the study area are relatively few for its size. The land has been largely cleared of trees and swamp drainage has occurred. Other areas include intermittent development zones, such as homesteads, farm infrastructure and roads.

In considering development areas, a comprehensive Aboriginal cultural heritage investigation is recommended for the four landform units that contain high to moderate archaeological potential. The landform which constitutes the majority of the study area – flat open plains – contains relatively low archaeological potential and may form the best option for future development. Some cultural heritage may be present in this zone in the form of low density artefact distributions or scarred trees, but it is anticipated that these Aboriginal places should be intermittent and form a 'background scatter' of low archaeological significance.

Due to the possibility of historical ruins and sites within the study area, it is also recommended that a comprehensive historical study be undertaken.





#### Legend

Study Area

#### Revised Archaeological Potential

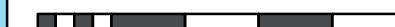
High Potential

Moderate Potential

Low Potential

**Figure 9: Revised Predictive Model for Aboriginal Archaeological Potential**

0 390 780 1,170 1,560 1,950



Metres

Scale: 1:40,000 @ A3

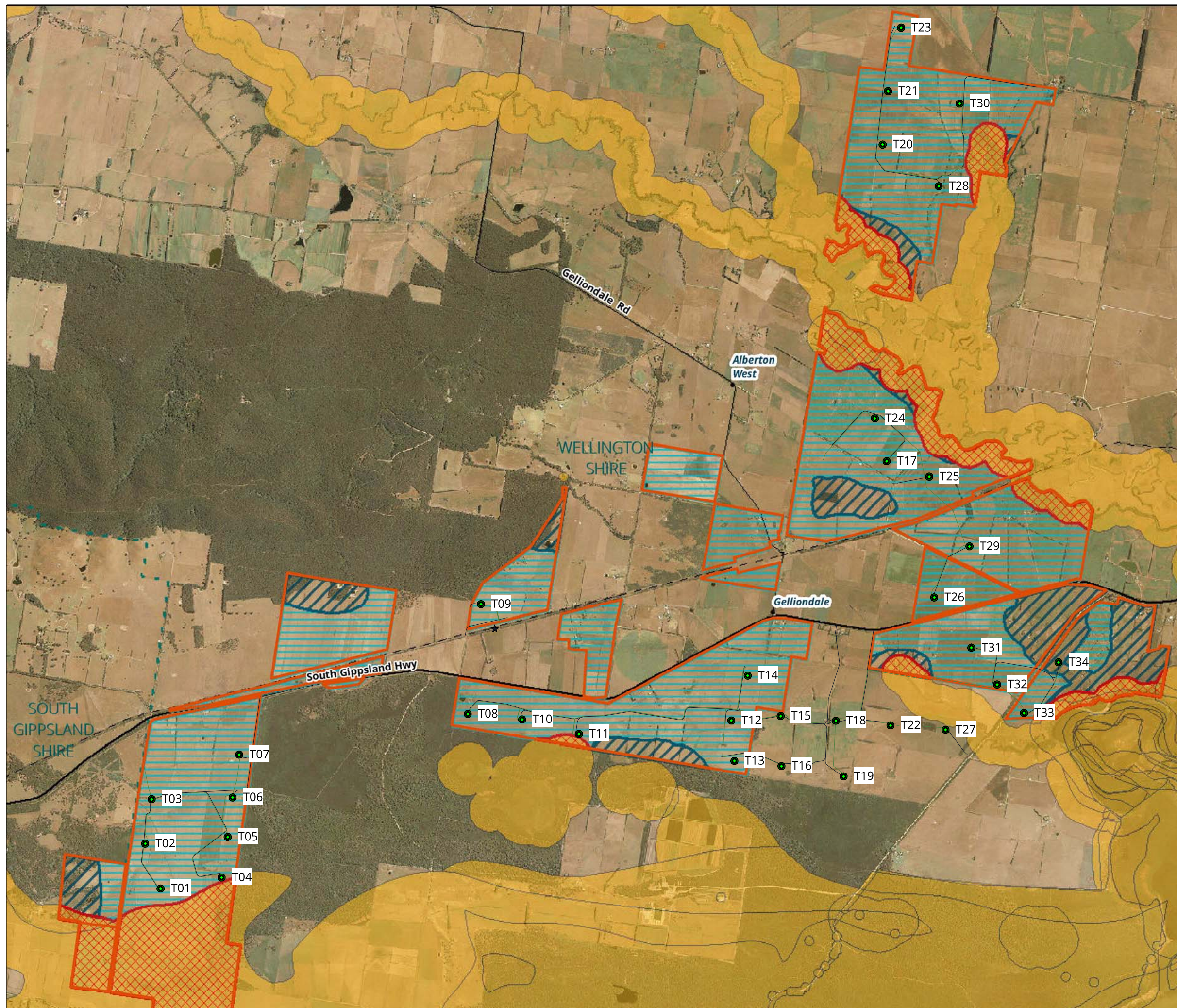
Coordinate System: GDA 1994 MGA Zone 55



Ballarat, Brisbane, Canberra, Melbourne, Newcastle, Sydney, Wangaratta & Wollongong

Matter: 19686,  
Date: 10 July 2015,  
Checked by: TSC, Drawn by: LH, Last edited by: Iharley  
Location: P:\19600s\19686\Mapping\19686\_F9\_RevisedPredModel





### Legend

- Proposed turbine locations  
(PostOptimisedLayout\_20170907)
- Study Area
- Areas of Cultural Sensitivity
- Potential Mandatory CHMP
- Voluntary CHMP Recommended
- Site Inspection and Risk Evaluation Recommended

**Figure 10: Legislated Areas of Cultural Heritage Sensitivity and Assessment Type Recommendations**



Scale : 1:40,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55

**biosis**   
Biosis Pty Ltd  
Ballarat, Melbourne, Newcastle,  
Sydney, Wangaratta & Wollongong

Matter No: 21624  
Date: 14 September 2017  
Checked by: MDL Drawn by: Iharley Last edited by: mlawler  
Location: 21624/Mapping/Figure 10.wor



## 5. Cultural heritage survey of design footprint

---

The designs for the project have incorporated the results of the initial desktop study and modelling of areas of archaeological sensitivity (Cavanagh, Houghton, & Howells, 2015). The designs of the turbines and their associated infrastructure thus avoided areas of predicted sensitivity, locating the turbines in areas which were assessed as having low archaeological potential. These are principally the flat open plains landforms, which are considered to be less likely to contain undetected Aboriginal cultural heritage (see Figure 9).

Following the decision on preferred turbine locations for the project, a cultural heritage field survey was undertaken of the locations of each of the proposed turbine sites and the landforms crossed by the proposed access tracks and electrical layout. The field survey was undertaken by Martin Lawler (Biosis Pty Ltd) and Tim Paton (GLaWAC) between the 6<sup>th</sup> and the 10<sup>th</sup> June 2016. The objective of the field survey was to assess any potential impacts of the proposed designs to Aboriginal cultural heritage or historical archaeology. The field survey has refined the original archaeological predictive model based on the results of the background research and initial inspection. The cultural heritage survey was not undertaken as part of a CHMP but adopted the methodology used by ground surveys for CHMP Standard Assessments.

### 5.1 Methods

For the purposes of the field survey, the proposed designs with turbine locations and the proposed access track and electrical layout were uploaded to DGPS. The location of each of the 34 proposed turbines was visited and inspected, noting geomorphology and ground conditions and taking into account ground surface visibility (GSV) and ground surface exposure (GSE). Where the proposed access tracks and electrical layout crossed landforms of sensitivity for cultural heritage, these areas were also inspected.

Locations of identified Aboriginal cultural heritage material and areas of potential for Aboriginal cultural heritage were recorded using a Trimble Geo XH DGPS and post-processed to within one metre accuracy, in accordance with the AV (2008) target standard for recording Aboriginal places.

At each location, the members of the survey team assessed the cultural heritage values of the area examined, and any measures that might be required to avoid potential impacts to cultural heritage, including possible realignments.

## 5.2 Results

The proposed locations of the 34 turbines and their associated access tracks and electrical layouts lie in six general clusters, lying within an area of some 10 km x 10 km between the localities of Hedley to the south-west and Devon North to the north-east.

Detailed assessments of each of the proposed turbine locations are presented in Section 5.4. The results of the cultural heritage survey at each location are summarised as follows:

**Table 6. Results of cultural heritage survey**

Survey group	Proposed turbine	Landform	Recorded cultural heritage	Sensitive landforms	Comments
<b>Group A</b>	T01	Flat open plains	None	None	No comments
	T02	Flat open plains	None	None	No comments
	T03	Undulating open plains	None	None	No comments
	T04	Low-lying, flat open plains with source bordering dunes	Aboriginal surface artefact distribution on dune between T04 and T05. 39 surface artefacts recorded on east side of dune.	Dune on north side of former swamp, with artefacts on east side of dune, adjacent to woodland.	Recorded surface artefact distribution on dune will not be impacted by the locations of T04 and T05 (which lie more than 50 metres from the recorded place). Recommended that the access track and electrical layout should avoid crossing the dune landform.
	T05	Undulating open plains	(see details under T04 above)	(see details under T04 above)	(see details under T04 above)
	T06	Undulating open plains	None	None	No comments
	T07	Undulating open plains	None	None	No comments



Survey group	Proposed turbine	Landform	Recorded cultural heritage	Sensitive landforms	Comments
<b>Group B</b>	T08	Undulating open plains	None	None	Lies 40 metres to south of the Gelliondale Briquette Plant (H1058/ H8220-008/ H081). The historical site will not be impacted by the proposed turbine and crane pad construction.
	T09	Undulating open plains	None	None	No comments
	T10	Undulating open plains	None	None	No comments
	T11	Undulating open plains	None	None	No comments
<b>Group C</b>	T09	Undulating open plains	None	None	No comments
	Substation	Undulating open plains	None	None	No comments
<b>Group D</b>	T12	Undulating open plains with sandy rises	None within project footprint.  Low Density Artefact Distribution (2 artefacts) recorded off farm track from highway, 0.7 km west of T12. No impact caused by construction.	Sandy rise between T12 and T13	Sandy rise will not be impacted by the locations for T12 and T13, which lie at more than 200 metres from this landform  Recommended that access track and electrical layout should avoid crossing the sandy rise.
	T13	Undulating open plains	None	See T12 above. Sandy rise between T12 and T13	See T12 above
	T14	Flat open plains	None	None	No comments

Survey group	Proposed turbine	Landform	Recorded cultural heritage	Sensitive landforms	Comments
	T15	Low lying open plains	None	None	No comments
	T16	Low-lying flat open plain near swamp margins	None	None	No comments
	T18	Flat open plains	None	None	No comments
	T19	Undulating plains	None	Sandy rise adjacent to swamp margins to south	Sandy rise considered to be of moderate potential. No cultural heritage detected, however.
	T22	Flat open plains	None	None	No comments
	T27	Flat open plains	None	None	No comments
	T31	Flat open plains	None	None	No comments
	T32	Flat open plains	None	None	No comments
	T33	Undulating open plains	None	None	No comments
	T34	Alluvial terraces dissected by drainage lines	None	Alluvial terrace to south of T34. (No impact caused by turbine location).	Recommend that cable alignment should avoid alluvial rise to the south.
<b>Group E</b>	T17	Undulating open plains to NE of isolated hill	None	None	No comments
	T24	Low-lying, flat open plains	None	None	No comments
	T25	Flat open plains	None	None	No comments
	T26	Undulating open plains	None	None	No comments

Survey group	Proposed turbine	Landform	Recorded cultural heritage	Sensitive landforms	Comments
	T29	Undulating open plains	None	None	No comments
<b>Group F</b>	T20	Undulating plains	None	None	No comments
	T21	Undulating plains	None	None	No comments
	T23	Undulating plains	None	None	No comments
	T28	Undulating plains	None	None	No comments
	T30	Undulating plains	None	None	No comments

## 5.3 Revised predictive model

The results of the field survey have generally confirmed the results of the initial predictive modelling provided by the desktop and initial site inspection stages of the project.

### 5.3.1 Landforms

As was demonstrated in Table 6 (above), the proposed turbines and their associated infrastructure are located principally within the open plains landforms. These plains can be broadly subdivided into low-lying open flat ground (largely reclaimed marshland); level plains and undulating plains (formerly Plains Grassland and woodland). In this region, Aboriginal places are most likely to be found along watercourses and on rises overlooking the wetlands. For this reason, the level, featureless plains, at a distance both from the major streams and rises, have been assessed as being of low sensitivity compared with the swamp margins, creeklines and hills.

Two landforms of greater sensitivity were identified during the survey: *sandy rises* and *alluvial terraces*. Sandy rises, which have developed as shallow source bordering dunes associated with some of the former wetland basins (probably incorporating extensive older barrier dune material), were noted in two areas to the south of the South Gippsland Highway, where the turbines of Groups A and D are located. At two locations, the sandy rises were assessed as being sensitive for Aboriginal cultural heritage. The first location lies to the north of the position of Turbine T04 and consists of a crescent-shaped dune bordering a lower lying former wetland. A distribution of 39 surface artefacts was recorded along part of the rise, where the surface has been disturbed by drainage works and around tree bases. The turbine location itself lies in the lower part of the former wetland basin, and will not impact on the sandy rise (See Figure 12).

A second sandy rise was identified midway between the T12 and T13 turbine positions. No Aboriginal artefacts were recorded on the latter rise, but the landform has potential for artefacts. The two turbine positions to north and south of the rise (T12 and T13) lie in the lower lying reclaimed marshlands, and will not impact on the sandy rise (See Figure 14).

At the south-eastern edge of the project area (Group D) is a complex of alluvial terraces associated with the Albert River floodplain. An alluvial rise lies to the south of the location for the T34 turbine. The turbine position itself is located to the north of the alluvial ridge and will not impact on this landform (See Figure 16).

### **5.3.2 Land use**

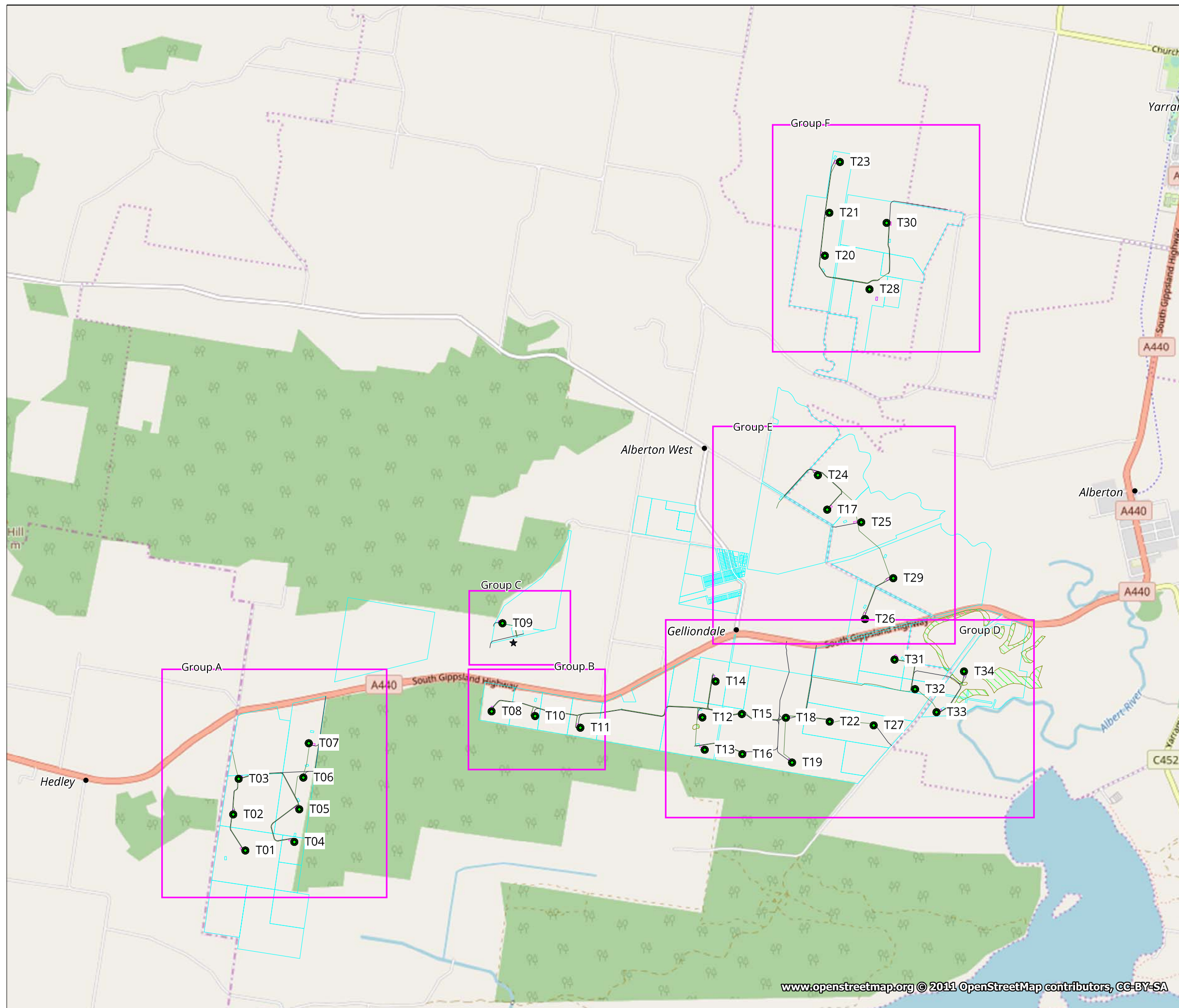
All of the areas examined were cleared pasture. No mature indigenous trees that might bear cultural scars were noted at any of the proposed turbine locations or on the alignments of the proposed infrastructure. Much of the farmland appears to have been cleared within the past 75 years; some of this within the lifetimes of the present landholders. At some of the proposed locations (T05, T14, T23, T25 and T26) the ground had been recently tilled and sown with grass, allowing good conditions of surface visibility. More frequently, however, the paddocks were under thick grass cover with poor visibility. Vehicle and stock tracks, fencelines, animal burrows and tree throws offered patchy exposure. In these areas, the assessment of cultural heritage potential was based primarily on landform.

### **5.3.3 Assessment of archaeological sensitivity**

From the results of the cultural heritage survey, the initial model of archaeological sensitivity can be revised as follows:

- The open plains landforms are assessed as being of low potential for Aboriginal cultural heritage. These landforms includes the locations of each of the proposed turbines.
- Areas of low-lying plains that were initially assessed as being of potential sensitivity have been reassessed as having being unlikely to contain Aboriginal cultural heritage because these landforms are former swamplands. It is likely that Aboriginal camps were located on rises adjacent to the swamps and wetlands.
- Two types of landforms found in association with the open plains have moderate to high potential for Aboriginal cultural heritage. These are the sandy rises which border the former wetland basins and the alluvial ridges on the Albert River floodplain.

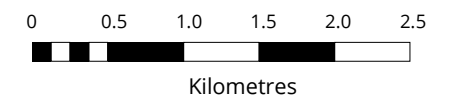




# Legend

- Proposed turbine locations  
(PostOptimisedLayout\_20170907)

**Figure 11:**  
**Proposed turbine locations**



Scale : 1:50,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55



Matter No: 21624  
Date: 14 September 2017  
Checked by: MDL Drawn by: MDL Last edited by: mlawler  
Location: 21624/Mapping/Figure 11.wor

www.openstreetmap.org © 2011 OpenStreetMap contributors, CC-BY-SA

## 5.4 Detailed assessments

### 5.4.1 Turbine T01 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Level, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Small pockets of soil exposure
Ground disturbance	Farm access track adjacent to proposed turbine location
Mature trees	None
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
	
	
<p><b>Plate 16. Location of T01, view to NW.</b></p> <p><b>Plate 17. Location of T01, view to SE.</b></p>	
	
	
<p><b>Plate 18. Location of T01, view to SW.</b></p> <p><b>Plate 19. Location of T01, view to E.</b></p>	



## 5.4.2 Turbine T02 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Level, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Small pockets of soil exposure
Ground disturbance	None
Mature trees	None
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 20. Location of T02, view to NW.**



**Plate 21. Location of T02, view to W.**



**Plate 22. Location of T02, view to SE.**



**Plate 23. Location of T02, ground surface.**

### 5.4.3 Turbine T03 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Small pockets of soil exposure
Ground disturbance	Drainage furrows
Mature trees	None. Stands of planted trees in reserve to W and planted fenceline trees. Some felled timber in vicinity (no scars recorded)
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

#### Photos



**Plate 24. Location of T03, view to NE.**



**Plate 25. Location of T03, view to W.**



**Plate 26. Location of T03, view to E.**



**Plate 27. Location of T03, view to SE.**



#### 5.4.4 Turbine T04 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Low lying, open plains with silty clay soil. Sandy rise to north of proposed turbine location
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low) with better visibility in areas of ground disturbance
Surface exposure	Pockets of soil exposure along drainage line to east and base of trees
Ground disturbance	Drainage lines, tree throws, animal disturbance
Mature trees	None
Cultural heritage recorded	Aboriginal surface artefact distribution on eastern side of sandy rise to north of location of T04. (See Figure 3). 39 artefacts recorded, predominantly of silcrete, with struck flakes, cores, scrapers and utilised flakes. The artefacts were recorded on the eastern side of a low sandy rise (source bordering dune) which curves along the north side of low lying former swamplands. The Aboriginal place probably continues eastwards through the adjacent woodland reserve. Artefacts were found in pockets of surface exposure along drainage line to east, at base of trees and in pockets of animal disturbance (See Figure 11).
Sensitivity for undetected cultural heritage	Aboriginal artefacts probably extend across the sandy rise to east and west of the exposed artefacts. Artefacts may occur in subsurface contexts within the sandy rise. The proposed location for T04 lies on lower lying ground (former swamplands) which are not considered to be sensitive
Sensitive landforms in vicinity	Sandy rise to north of T04 location is sensitive for Aboriginal artefacts. Proposed T04 location itself will be on lower lying ground to south of the rise (former swamplands), which is not considered to be sensitive
Historical archaeology	None
Recommendations	Aboriginal artefacts are located on the sandy rise between the proposed locations of T04 and T05. The proposed turbines themselves lie on lower lying clay flats and will not impact on the sensitive landform.  The access track and cable alignment between T04 and T05 should avoid any impact to the sandy rise landform.

## Photos



**Plate 28. Aboriginal artefact distribution on rise to N of T04, looking SW.**



**Plate 29. Aboriginal artefact distribution with flagged artefacts, looking S.**



**Plate 30. Silcrete microblade core.**



**Plate 31. Silcrete struck flakes.**

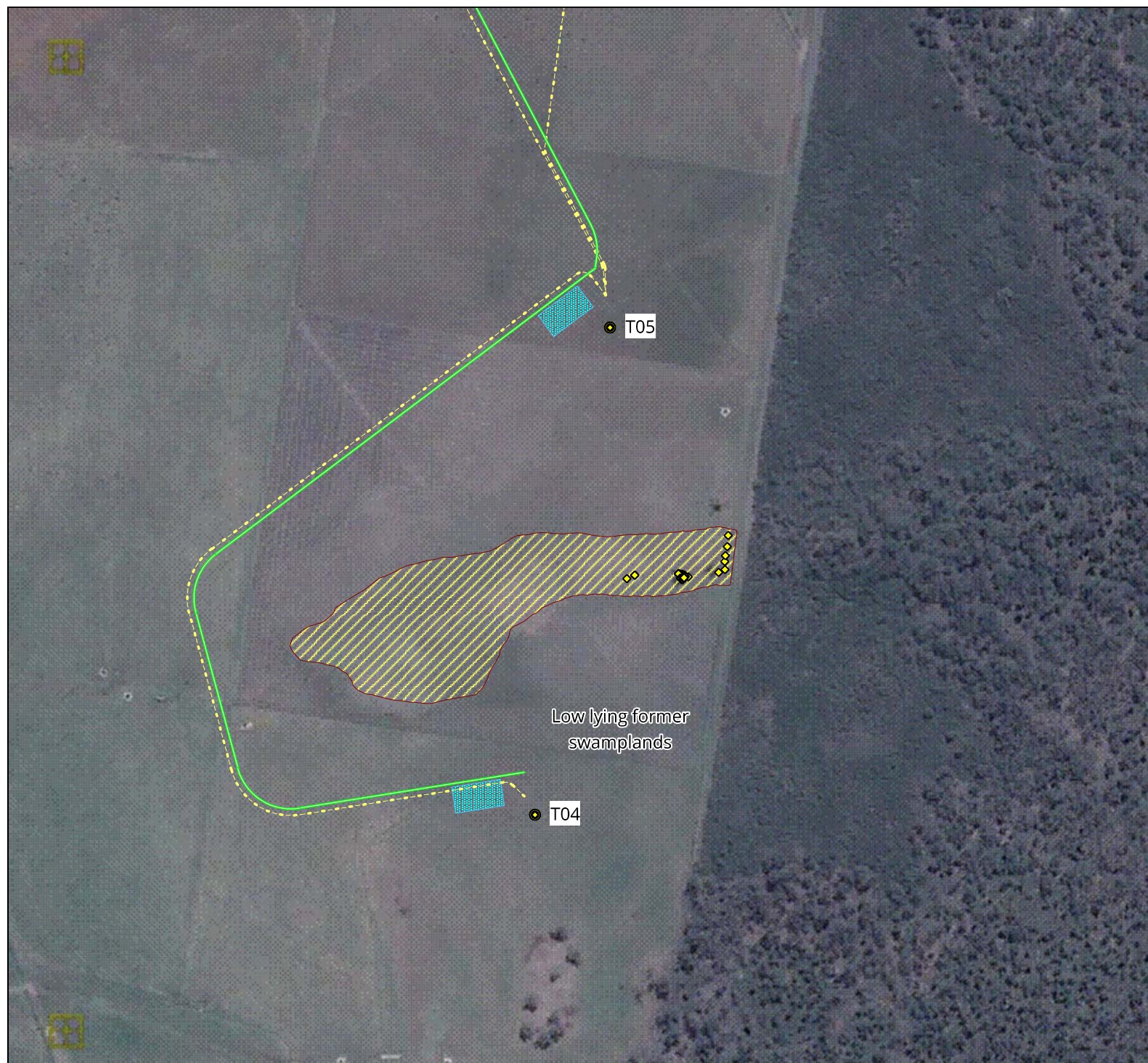


**Plate 32. Sandy rise, looking E. T04 located on lower lying ground at far right.**



**Plate 33. Artefact (flagged) in loose sand on rise, disturbed by animal burrow.**





## Legend

◆ Aboriginal surface artefacts

▨ Aboriginal place occupying sandy rise

## Proposed works

● Proposed turbine (centre point)

— Access track

- - - Underground cable

▨ Crane pad

**Figure 12:**  
**Aboriginal place recorded to north of T04**

0 50 100 150 200 250  
Metres

Scale : 1:5,000 @ A4  
Coordinate System: GDA 1994 MGA Zone 55

 **biosis**®  
Biosis Pty Ltd  
Ballarat, Melbourne, Newcastle,  
Sydney, Wangaratta & Wollongong

Matter No: 21624  
Date: 30 July 2017  
Checked by: MDL Drawn by: MDL Last edited by: mlawler  
Location: 21624/Mapping/Figure 12.wor



### 5.4.5 Turbine T05 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture, with recently sown grass
Ground surface visibility	Approximately 35% (moderate)
Surface exposure	Good exposure along furrows
Ground disturbance	Cultivation
Mature trees	None.
Cultural heritage recorded	None (see description under T04 of Aboriginal artefact distribution on sandy rise between T04 and T05)
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	Sandy rise to south of T05 location is sensitive for Aboriginal artefacts. Proposed T05 location to the north is not sensitive.
Historical archaeology	None
Recommendations	As T04: Aboriginal artefacts are located on the sandy rise between the proposed locations of T04 and T05. The access track and cable alignment between T04 and T05 should avoid any impact to the sandy rise landform.

### Photos



**Plate 34. Location of T05, view to SW.**



**Plate 35. Location of T05, view to N.**



**Plate 36. Location of T05, view to NE.**



**Plate 37. Location of T05, ground surface.**

## 5.4.6 Turbine T06 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 10% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	None
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 38. Location of T06, view to NW.**



**Plate 39. Location of T06, view to NE.**



**Plate 40. Location of T06, view to S.**



**Plate 41. Location of T06, view to W.**



## 5.4.7 Turbine T07 (Group A)

Assessment	
Date of inspection	6-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 2% - 5% (low)
Surface exposure	Small pockets of surface exposure along fenceline
Ground disturbance	None
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 42. Location of T07, view to SW.**



**Plate 43. Location of T07, view to SW.**



**Plate 44. Location of T07, view to NW.**



**Plate 45. Location of T07, view to E.**



## 5.4.8 Turbine T08 (Group B)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	None
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	The Heritage Register and Heritage Inventory site Gelliondale Briquette Plant (H1058/ H8220-0008/ HO81) lies 40 metres to the north of the proposed turbine and crane pit. The historical site will not be impacted by the proposed turbine and crane pad (See Figure 12).
Recommendations	No cultural heritage recommendations. The works should avoid impacts to the Gelliondale Briquette Plant historical site

## Photos



**Plate 46. Location of T08, view to NE.**



**Plate 47. Location of T08, view to NW.**



**Plate 48. Location of T08, view to SW.**







**Plate 49. Location of T08, ground surface.**

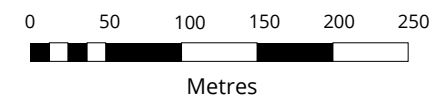




### Legend

-  Gelliondale Briquette Plant (H1058/ H8220-0008/ H081)
-  Proposed turbine location
-  Proposed cable and access track
-  Proposed crane pad

**Figure 13:**  
**Gelliondale Briquette Plant**  
**(H1058/ H8220-0008/ H081)**







Scale : 1:5,000 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



Matter No: 21624  
Date: 30 July 2017  
Checked by: MDL Drawn by: MDL Last edited by: mlawler  
Location: 21624/Mapping/Figure 13.wor







### 5.4.9 Turbine T09 (Group C)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	Fencelines
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 50. Location of T09, view to E.</b></p> <p><b>Plate 51. Location of T09, view to S.</b></p>	
 	
<p><b>Plate 52. Location of T09, view to NE.</b></p> <p><b>Plate 53. Location of T09, ground surface.</b></p>	



#### 5.4.10 Substation location (Group B)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Fencelines and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
	
	
Plate 54. Location of substation, view to NE.	Plate 55. Location of substation, view to NE.
Plate 56. Location of substation, view to NE.	Plate 57. Location of substation, ground surface.

### 5.4.11 Turbine T10 (Group B)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	Stock tracks
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

#### Photos



**Plate 58. Location of T10, view to SE.**



**Plate 59. Location of T10, view to NE.**



**Plate 60. Location of T10, view to NW.**



**Plate 61. Location of T10, ground surface.**



## 5.4.12 Turbine T11 (Group B)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% - 10% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	None
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 62. Location of T08, view to NE.**



**Plate 63. Location of T08, view to NW.**



**Plate 64. Location of T08, view to SW.**



**Plate 65. Location of T08, ground surface.**



### 5.4.13 Turbine T12 (Group D)

Assessment	
Date of inspection	9-06-2016
Landform	Undulating, open plains with sandy rises
Land use	Grazed pasture
Ground surface visibility	Approximately 10% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	Field ditches, stock disturbance
Mature trees	None.
Cultural heritage recorded	No cultural heritage recorded within the project footprint. Low Density Artefact Distribution (LDAD) consisting of 2 surface artefacts recorded adjacent to farm track from highway, 0.7 km to west of T12 location. No impact will be caused by the proposed construction (See Figure 14).
Sensitivity for undetected cultural heritage	Turbine location itself is of low sensitivity.
Sensitive landforms in vicinity	Sandy rise located between proposed locations of T12 and T13. Sandy rise will not be impacted by the locations for T12 and T13, which lie at more than 200 metres from this landform (See Figure 13).
Historical archaeology	None
Recommendations	Access track and electrical layout should avoid crossing the sandy rise which lies between the locations of T12 and T13

#### Photos



**Plate 66. Location of T12, view to SE.**



**Plate 67. Location of T12, view to W.**



**Plate 68. Location of T12, ground conditions.**



**Plate 69. Soil profile in field ditch to S of T12, looking E.**



**Plate 70. Sandy rise between T12 and T13, looking SE.**



**Plate 71. Sandy rise between T12 and T13, looking E.**



**Plate 72. Silcrete flake recorded near farm track, 0.7 km to west of T12.**




**Plate 73. Rose quartz flake recorded near farm track, 0.7 km west of T12.**






### Legend

 Sandy rise between T12 and T13

### Proposed works

 Proposed turbine (centre point)

 Access track

 Underground cable

 Crane pad

**Figure 14:**  
**Sensitive landform between**  
**T12 and T13**

0 50 100 150 200 250  
Metres

Scale : 1:5,000 @ A4  
Coordinate System: GDA 1994 MGA Zone 55

 **biosis**®  
Biosis Pty Ltd  
Ballarat, Melbourne, Newcastle,  
Sydney, Wangaratta & Wollongong

Matter No: 21624  
Date: 30 July 2017  
Checked by: MDL Drawn by: MDL Last edited by: mlawler  
Location: 21624/Mapping/Figure 14.wor

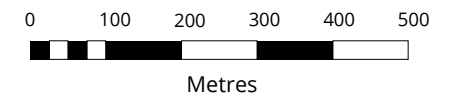




### Legend

- Proposed turbine location
- Proposed underground cable
- Proposed access track
- Proposed crane pad
- ◆ Surface artefacts found adjacent to farm track 0.7 km to west of T12
- Sandy rise (sensitive landform)

**Figure 15:**  
**Low Density Artefact**  
**Distribution 0.8 km to**  
**west of T12**



Scale : 1:10,000 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



Matter No: 21624  
Date: 30 July 2017  
Checked by: MDL Drawn by: MDL Last edited by: mlawler  
Location: 21624/Mapping/Figure 15.wor



#### 5.4.14 Turbine T13 (Group D)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating, open plains with silty clay soil
Land use	Grazed pasture
Ground surface visibility	Approximately 5% - 10% (low)
Surface exposure	Small pockets of surface exposure
Ground disturbance	None
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	Sandy rise between T12 and T13 is sensitive landform
Historical archaeology	None
Recommendations	As T12: Access track and electrical layout should avoid crossing the sandy rise which lies between the locations of T12 and T13

#### Photos



**Plate 74. Location of T08, view to NE.**



**Plate 75. Location of T08, view to S.**



**Plate 76. Location of T12, view to W.**



**Plate 77. Location of T12, ground surface.**



### 5.4.15 Turbine T14 (Group D)

Assessment	
Date of inspection	10-06-2016
Landform	Flat open plains with light, loamy soil
Land use	Grazed pasture with newly sown grass
Ground surface visibility	Approximately 35% (moderate)
Surface exposure	Good visibility along furrows
Ground disturbance	Cultivation
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 78. Location of T14, view to SE.**



**Plate 79. Location of T14, view to SW.**







**Plate 80. Location of T14, view to N.**



**Plate 81. Location of T14, ground surface.**



### 5.4.16 Turbine T15 (Group D)

Assessment	
Date of inspection	10-06-2016
Landform	Low lying open plains adjacent to dam, with clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Pockets of visibility along stock tracks and fencelines
Ground disturbance	Dam construction and field drains
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 82. Location of T15, view to NE.</b></p> <p><b>Plate 83. Location of T15, view to SE.</b></p>	
 	
<p><b>Plate 84. Location of T15, view to W.</b></p> <p><b>Plate 85. Location of T15, ground surface.</b></p>	

### 5.4.17 Turbine T16 (Group D)

Assessment	
Date of inspection	7-06-2016
Landform	Undulating open plains with silt clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Pockets of exposure
Ground disturbance	Stock tracks
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 86. Location of T16, view to NW.</b></p> <p><b>Plate 87. Location of T16, view to SW.</b></p>	
 	
<p><b>Plate 88. Location of T17, view to SE.</b></p> <p><b>Plate 89. Location of T16, ground surface.</b></p>	



### 5.4.18 Turbine T17 (Group E)

Assessment	
Date of inspection	9-06-2016
Landform	Undulating open plains with silt clay soils to NE of isolated hill
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Pockets of exposure on stock track, field entrances and trough
Ground disturbance	Cattle trough and fences
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	Isolated hill to NE is sensitive
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 90. Location of T17, view to SW.**



**Plate 91. Location of T17, view to SW.**



**Plate 92. Location of T17, view to NE.**



**Plate 93. Location of T17, ground surface.**



### 5.4.19 Turbine T18 (Group D)

Assessment	
Date of inspection	10-06-2016
Landform	Flat open plains with silt clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Pockets of exposure
Ground disturbance	Field drains
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 94. Location of T18, view to W.</b></p> <p><b>Plate 95. Location of T18, view to S.</b></p>	
 	
<p><b>Plate 96. Location of T18, view to E.</b></p> <p><b>Plate 97. Location of T18, ground surface.</b></p>	

## 5.4.20 Turbine T19 (Group D)

Assessment	
Date of inspection	7-06-2016
Landform	Undulating plains with light sandy soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Animal burrows and occasional pockets of surface exposure
Ground disturbance	Animal burrows and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	Sandy rise adjacent to swamp margins to south
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 98. Location of T19, view to E.**



**Plate 99. Location of T19, view to SE.**



**Plate 100. Location of T19, view to SW.**



**Plate 101. Soil profile in wombat burrow near T19.**



## 5.4.21 Turbine T20 (Group F)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 102. Location of T20, view to W.**



**Plate 103. Location of T20, view to NW.**



**Plate 104. Location of T20, view to E.**



**Plate 105. Location of T20, ground surface.**



## 5.4.22 Turbine T21 (Group F)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% - 10%(low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 106. Location of T21, view to E.**



**Plate 107. Location of T21, view to N.**






**Plate 108. Location of T21, view to W.**



**Plate 109. Location of T21, ground surface.**

### 5.4.23 Turbine T22 (Group D)

Assessment	
Date of inspection	7-06-2016
Landform	Flat plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 110. Location of T22, view to NW.</b></p> <p><b>Plate 111. Location of T22, view to SE.</b></p>	
 	
<p><b>Plate 112. Location of T22, view to SW.</b></p> <p><b>Plate 113. Location of T22, ground surface.</b></p>	



#### 5.4.24 Turbine T23 (Group F)

Assessment	
Date of inspection	10-06-2016
Landform	Flat plains with silty clay soils
Land use	Grazed pasture with newly sown grass
Ground surface visibility	Approximately 70% (high)
Surface exposure	Exposure of cultivated soil surface under newly sown grass
Ground disturbance	Cultivation
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

#### Photos



**Plate 114. Location of T23, view to W.**



**Plate 115. Location of T23, view to E.**




**Plate 116. Location of T23, view to N.**



**Plate 117. Location of T23, ground surface.**

### 5.4.25 Turbine T24 (Group E)

Assessment	
Date of inspection	9-06-2016
Landform	Low lying flat plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 15% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
	
	
	

**Plate 118. Location of T24, view to W.**

**Plate 119. Location of T24, view to NW.**

**Plate 120. Location of T24, view to NW.**

**Plate 121. Location of T24, ground surface.**



## 5.4.26 Turbine T25 (Group E)

Assessment	
Date of inspection	9-06-2016
Landform	Flat plains with silty clay soils, under recently sown grass
Land use	Grazed pasture
Ground surface visibility	Approximately 20% (moderate)
Surface exposure	Cultivation furrows
Ground disturbance	Cultivation
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 122. Location of T25, view to E.**



**Plate 123. Location of T25, view to SW.**



**Plate 124. Location of T25, view to NW.**



**Plate 125. Location of T25, ground surface.**

### 5.4.27 Turbine T26 (Group E)

Assessment	
Date of inspection	9-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 20% (moderate)
Surface exposure	Cultivated surface
Ground disturbance	Cultivation
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

#### Photos



**Plate 126. Location of T26, view to NE.**



**Plate 127. Location of T26, view to SW.**







**Plate 128. Location of T26, view to W.**



**Plate 129. Location of T25, ground surface.**



## 5.4.28 Turbine T27 (Group D)

Assessment	
Date of inspection	7-06-2016
Landform	Flat plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 10% (low)
Surface exposure	Occasional pockets of surface exposure
Ground disturbance	Stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 130. Location of T27, view to S.</b></p> <p><b>Plate 131. Location of T27, view to N.</b></p>	
 	
<p><b>Plate 132. Location of T27, view to W.</b></p> <p><b>Plate 133. Location of T27, ground surface.</b></p>	

## 5.4.29 Turbine T28 (Group F)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

### Photos



**Plate 134. Location of T28, view to W.**



**Plate 135. Location of T28, view to S.**



**Plate 136. Location of T28, view to N.**



**Plate 137. Location of T28, ground surface.**



### 5.4.30 Turbine T29 (Group E)

Assessment	
Date of inspection	9-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Occasional pockets of surface exposure
Ground disturbance	Stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

#### Photos



**Plate 138. Location of T29, view to SW.**



**Plate 139. Location of T29, view to SE.**



**Plate 140. Location of T29, view to NE.**



**Plate 141. Location of T29, ground surface.**

### 5.4.31 Turbine T30 (Group F)

Assessment	
Date of inspection	10-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations

#### Photos



**Plate 142. Location of T30, view to W.**



**Plate 143. Location of T30, view to E.**







**Plate 144. Location of T30, view to N.**



**Plate 145. Location of T30, ground surface.**



### 5.4.32 Turbine T31 (Group D)

Assessment	
Date of inspection	10-06-2016
Landform	Low lying flat plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 10% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 146. Location of T31, view to SE.</b></p> <p><b>Plate 147. Location of T31, view to SW.</b></p>	
 	
<p><b>Plate 148. Location of T31, view to NE.</b></p> <p><b>Plate 149. Location of T31, ground surface.</b></p>	

### 5.4.33 Turbine T32 (Group D)

Assessment	
Date of inspection	10-06-2016
Landform	Flat plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Fencelines and occasional pockets of surface exposure
Ground disturbance	Tree planting and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
	
	

**Plate 150. Location of T32, view to SE.**


**Plate 151. Location of T32, view to NE.**

**Plate 152. Location of T32, view to W.**





**Plate 153. Location of T32, ground surface.**



#### 5.4.34 Turbine T33 (Group D)

Assessment	
Date of inspection	7-06-2016
Landform	Undulating plains with silty clay soils
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Vehicle tracks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity
Sensitive landforms in vicinity	None
Historical archaeology	None
Recommendations	No cultural heritage recommendations
Photos	
 	
<p><b>Plate 154. Location of T33, view to SW.</b></p> <p><b>Plate 155. Location of T33, view to W.</b></p>	
 	
<p><b>Plate 156. Location of T33, view to E.</b></p> <p><b>Plate 157. Location of T33, ground surface.</b></p>	






### 5.4.35 Turbine T34 (Group D)

Assessment	
Date of inspection	7-06-2016
Landform	Alluvial terraces with silty clay soils, dissected by drainage lines
Land use	Grazed pasture
Ground surface visibility	Approximately 5% (low)
Surface exposure	Vehicle tracks and occasional pockets of surface exposure
Ground disturbance	Access road, drainage earthworks and stock disturbance
Mature trees	None.
Cultural heritage recorded	None
Sensitivity for undetected cultural heritage	Low sensitivity at proposed turbine location. Greater sensitivity along rise to south of proposed turbine location
Sensitive landforms in vicinity	Moderate sensitivity along alluvial rise to south of turbine location (See Figure 15).
Historical archaeology	None
Recommendations	Access track and cable alignment should avoid rise to south of proposed turbine location. Turbine location itself is not sensitive.
Photos	
	
<p><b>Plate 158. View from rise to T34 location in background, view to N.</b></p>	<p><b>Plate 159. Location of T34 on far side of stream, view to NE.</b></p>
	
<p><b>Plate 160. View from T34 location, view to SW.</b></p>	<p><b>Plate 161. Rise to S of T34 location, view to NW.</b></p>

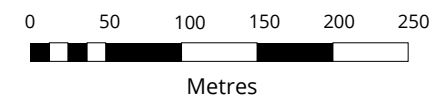




### Legend

-  Proposed turbine location
-  Proposed underground cable
-  Proposed access track
-  Proposed crane pad
-  Alluvial rise (sensitive landform)

**Figure 16:**  
**Sensitive landform**  
**to south of T34**



Scale : 1:5,000 @ A4  
Coordinate System: GDA 1994 MGA Zone 55



Matter No: 21624  
Date: 30 July 2017  
Checked by: MDL Drawn by: MDL Last edited by: mlawler  
Location: 21624/Mapping/Figure 16.wor



## 5.5 Recommendations

### 5.5.1 Proposed turbine locations

The locations of each of the 34 proposed turbines have been examined and assessed during the cultural heritage surveys. The turbine positions have been planned to avoid potential impacts to Aboriginal cultural heritage, based on the results of the initial assessment.

From the results of the second survey, none of the proposed turbine locations were assessed as being of cultural heritage sensitivity. It is unlikely, therefore, that the construction of the turbines and crane pads and at the locations assessed would impact on any undetected Aboriginal cultural heritage. (See Figure 17).

*Recommendation 1: Based on our surveys and assessment, we consider it unlikely that any undetected Aboriginal cultural heritage would be impacted by the proposed construction of the turbines and crane pads at the locations shown. As the locations lie outside any areas of designated cultural heritage sensitivity under the Aboriginal Heritage Regulations 2007, we recommend that no further cultural heritage assessment is required at the proposed turbine locations.*

### 5.5.2 Proposed access tracks and electrical layout

It is understood that the final designs of the associated infrastructure (including the access roads and electrical cable layout) will be subject to final design changes. The initial designs for the infrastructure were assessed as part of the cultural heritage survey.

None of the proposed locations lie within an area of designated cultural heritage sensitivity under the *Aboriginal Heritage Regulations 2007*. Four landforms which are sensitive for Aboriginal cultural heritage have been identified during the survey:

- *Sandy rise to the north of Turbine T04.* This is a crescent-shaped shallow dune formation containing surface artefacts and has been registered as an Aboriginal place (Hedley AS 1: VAHR 8220-0171). No impacts must be caused by the proposed works to this landform. The area of the recorded cultural heritage place is shown in Figure 12.
- *Area of surface artefacts adjacent to a farm access track west of Turbine T12.* This has been registered as a Low Density Artefact Distribution (Hedley LDAD 1: VAHR 8220-0170) consisting of two surface artefacts, found in a disturbed context. No impacts must be caused by the proposed works to the location of the recorded place. The location of the recorded place is shown in Figure 15. The location of an Aboriginal place (as well as a buffer area extending to 50 metres distance from that place) is an area of designated sensitivity under the *Aboriginal Heritage Regulations 2007* (r.41).
- *Sandy rise between T12 and 13.* No artefacts have been recorded on this rise but it is assessed as being sensitive for Aboriginal cultural heritage. No impacts must be caused by the proposed works to this landform. The sensitive landform is shown in Figure 14. The development must avoid impacts to this landform under s27 and s.28 of the *Aboriginal Heritage Act 2006*.
- *Alluvial rise to the north of T34.* No artefacts have been recorded on this landform but it is assessed as being sensitive for Aboriginal cultural heritage. No impacts must be caused by the proposed works to this landform. The sensitive landform is shown in Figure 16. The development must avoid impacts to this landform under s27 and s.28 of the *Aboriginal Heritage Act 2006*.

*Recommendation 2: The Activity Area for the windfarm project must not extend within 50 metres of the two Aboriginal places recorded during the cultural heritage survey, unless a Cultural Heritage Management Plan is undertaken for the windfarm development. These places are shown in Figure 12 and Figure 15.*



*The activity must avoid any impacts to the two archaeologically-sensitive landforms identified during the cultural heritage survey. These places are shown in Figure 14 and Figure 16.*

### **5.5.3 Gelliondale Briquette Plant (H1058/ H8220-0008/ H081)**

The recorded area of the historical site, which is recorded on the Heritage Register (H1058) and the Heritage Inventory (H8220-0008) lies 40 metres to the north of the proposed location for Turbine T08. The place is also listed on the Heritage Overlay (H081). The proposed turbine, crane pad and associated infrastructure will not impact on the historical site. A Heritage Permit would be required if the proposed works will impact on the historical site. Planning consent may also be required if the Heritage Overlay site is to be impacted. The area of the Heritage Register site H1058 is shown in Figure 13.

*Recommendation 3: The development activity must avoid impacts to the Heritage Register site Gelliondale Briquette Plant (H1058/ H8220-0008/ H081). If any impacts are required to the registered site, then a Permit must be obtained from Heritage Victoria.*

*Planning consent may be required for any impacts (including visual impacts) to the Heritage Overlay site H081.*





# Legend

Study Area

Areas of designated (legislative) cultural heritage sensitivity

## Zones within the Study Area

Areas of legislative cultural heritage sensitivity. Potential mandatory CHMP if impacts are unavoidable

Areas of moderate to high sensitivity identified in the present assessment. Recommend a voluntary CHMP if impacts are unavoidable

Areas identified in the present assessment as having low cultural heritage sensitivity. No further assessment recommended

Area of low-lying reclaimed riverine marsh assessed as being of low cultural heritage potential. No further assessment recommended

Proposed turbine locations (PostOptimisedLayout\_20170907)

Proposed infrastructure

**Figure 17: Summary of assessed sensitivity and recommendations at completion of assessment (Revised figure 14/09/2017)**

(Further refinements to turbines, tracks and cables may be made to further minimise cultural heritage impact in response to the impending Voluntary Cultural Heritage Management Plan)



Scale : 1:40,000 @ A3  
Coordinate System: GDA 1994 MGA Zone 55

**biosis**  
Biosis Pty Ltd  
Ballarat, Melbourne, Newcastle,  
Sydney, Wangaratta & Wollongong

Matter No: 21624  
Date: 14 September 2017  
Checked by: MDL Drawn by: lharley Last edited by: mlawler  
Location: 21624/Mapping/Figure 17.wor



## 6. Legislative Considerations

---

### Aboriginal Heritage Implications

As a document that will serve to inform the design for the proposed windfarm, there are two significant legislative considerations for future development. These are:

1. If any development design plan covers any part of an area of cultural heritage sensitivity (CHS), **AND** that development is listed as a high impact activity under Section 43 of the *Aboriginal Heritage Regulations 2007*, then that development will trigger a mandatory cultural heritage management plan (CHMP). An exhaustive list of what constitutes high impact activity is listed in the *Aboriginal Heritage Regulations 2007*, and includes activities such as land used to generate electricity, including a wind energy facility.
2. If any development design plans do not include an area of designated cultural heritage sensitivity, then a mandatory CHMP is **NOT** triggered. For the windfarm being considered, the project has been designed to avoid impact to Aboriginal cultural heritage, and the proposed locations of the turbines and associated infrastructure do not lie within areas of designated cultural heritage sensitivity. For this reason, the proposed works would not trigger a mandatory CHMP.
3. All Aboriginal cultural heritage (whether it is already recorded or still undetected) is protected from disturbance undertaken without approval. Sections 27 and 28 of the *Aboriginal Heritage Act 2006* prohibit any activities that may knowingly or recklessly impact Aboriginal cultural heritage. For the present proposed windfarm development, the proponent has undertaken a detailed cultural heritage assessment and survey to ensure that the proposed works are unlikely to impact on undetected Aboriginal cultural heritage.

### Environment Effects Act 1978

The Victorian *Environment Effects Act 1978* (EE Act) establishes a process to assess the environmental impacts of a project. If applicable, the EE Act requires that an Environment Effects Statement (EES) be prepared by the proponent. The EES is submitted to the Minister for Planning and enables the Minister to assess the potential environmental effects of the proposed development.

The Ministerial Guidelines for Assessment of Environmental Effects (DSE 2006) provide a range of criteria that can be used to determine whether an EES may be required for a project. These criteria relate to individual potential environmental effects and a combination of (two or more) potential environmental effects.

However, the guidelines are not binding, and the decision as to whether an EES is required is ultimately at the discretion of the Minister for Planning.

Biosis has undertaken an initial assessment of the proposed windfarm against the referral criteria (Aboriginal Heritage only) in the EES guidelines (Tables 3 and 4) and it is unlikely that the project will require referral under the EE Act based on Aboriginal Heritage grounds.

### Planning and Environment Act 1987

The study area is covered by a number of planning scheme controls within the Wellington and South Gippsland Planning Schemes. The majority of the study area is included in the Farming Zone with a small parcel included in the Industrial 1 Zone.

A number of Overlays cover the study area including the State Resource Overlay (Gippsland Coalfields), Land Subject to Inundation Overlay, Bushfire Management Overlay, Design and Development Overlay and Heritage

Overlay. The Particular Provisions Clause 52.17 – Native Vegetation, Clause 52.32 – Wind Energy facility and Clause 52.47 – Planning for Bushfire are applicable to the project.

Under Clause 61.01-1 of the Wellington and South Gippsland Planning Schemes the Minister for Planning is the responsible authority for processing and determining permit application for Windfarms.

### **Voluntary Cultural Heritage Management Plan**

The results of the 2015 and 2016 cultural heritage assessments and surveys have informed the layout of turbines, tracks, underground cable and indicative electrical layout ensuring the proposed Alberton Wind Energy Facility avoids impact to all known and likely cultural heritage and historical archaeological places. The assessment provides due diligence for the proposed development under Sections 27 and 28 of the Aboriginal Heritage Act 2006. A mandatory Cultural Heritage Management Plan (CHMP) is therefore not required under r.6 of the Regulations because the Activity Area, the Proposed Wind Energy Facility Area, will avoid all areas of designated cultural heritage sensitivity.

However, following further discussions, Aboriginal Victoria has indicated that cultural heritage for this area is relatively unknown, and that whilst low risk, there is a chance of encountering undiscovered cultural heritage during construction. Accordingly, Synergy Wind has commenced preparation of a voluntary CHMP for the Proposed Alberton Wind Energy Facility (CHMP Plan ID. 15167). The Standard Assessment has already been completed. Further consultation with the Registered Aboriginal Party (RAP) has been undertaken to inform the level of investigation that the RAP will be required for the Complex Assessment to approve the voluntary CHMP.

Following issue of a Planning Permit, Development Plans will be prepared in compliance with Planning Permit requirements, and the voluntary CHMP will be completed at this time, when the proposed extent of the Activity Area is known, noting that the outcomes of the CHMP Complex Assessment and other specialist Detailed Assessments may result in further micro-siting of infrastructure to avoid potential impacts.



## Bibliography

---

- Aboriginal Affairs Victoria. (1996). *Aboriginal People in the Environment*. Melbourne: Aboriginal Affairs Victoria.
- Aboriginal Affairs Victoria. (2008). *Standards for Recording Victorian Aboriginal Heritage Places and Objects*. Melbourne: State of Victoria Department of Planning and Community Development.
- Albury-Wodonga Development Corporation. (1982). *Aboriginal Archaeology of the Albury-Wodonga Region*. Albury-Wodonga Development Corporation.
- Andrews, A. (1920). *The First Settlement of the Upper Murray 1835-1845*. Sydney: D.S Ford Printers.
- Atkinson, W., & Berryman, A. (1983). *Aboriginal Association with the Murray Valley Study Area*. Victoria: La Trobe University.
- Australian Government Bureau of Meteorology. (2015). *Climate Information*. Retrieved April 2015, from [http://www.bom.gov.au/climate/map/annual\\_rainfall/](http://www.bom.gov.au/climate/map/annual_rainfall/)
- Barwick, D. (1984). Mapping the Past. An Atlas of Victorian Clans 1835-1904. *Aboriginal History* , 8, 100-131.
- Bell, J., & Edwards, A. (2011). *Proposed Residential and Commercial Subdivision, North Leneva: Cultural Heritage Management Plan*. Euroa: Jo Bell Heritage Services.
- Billis, R., & Kenyon, A. (1974). *Pastoral Pioneers of Port Phillip*. Melbourne: Stockland Press.
- Birch, W. (2003). *Geology of Victoria*. Melbourne: Geological Society of Australia.
- Boyce, J. (2012). *1835: The Founding of Melbourne and the Conquest of Australia*. Melbourne: Black Inc.
- Broome, R. (2005). *Aboriginal Victorians. A History Since 1800*. Crows Nest: Allen and Unwin.
- Brown, P. (1966). Batman, John (1801-1839). In A. N. University, *Australian Dictionary of Biography*. Canberra: Australian National University.
- Cavanagh, T., Houghton, K., & Howells, B. (2015). *Alberton Wind Farm, Victoria: Cultural Heritage Assessment*. Report for Synergy Wind Pty Ltd, Biosis Pty Ltd, Melbourne.
- Clark, I. (1990). *Aboriginal Languages and Clans. An Historical Atlas of Western and Central Victoria*. Melbourne: Monash University.
- Clark, V., Langberg, V., George, F., & Thomson, M. (2003). *South Gippsland Highway: Western Approach to Albert River, cultural heritage investigation*. Woodend: Dr Vincent Clark & Associates Pty Ltd.
- Crosby, E. (1980). *Archaeological surveys for the Albury-Wodonga Development Corporation* . Canberra: Canberra Archaeological Services.
- Debney, T., & Cekalovic, H. (2004). *Archaeological survey and sub-surface testing for Baranduda Range Stages 8 and 9, Baranduda, Victoria*. Melbourne: Biosis Research Pty Ltd.
- Debney, T., Nicholson, O., Sheehan, M., Stevens, J., & Amorosi, L. (2001). *Basslink Cultural Heritage Assessment, Phase 4: Old Rosedale Road Interconnector Alignment Preliminary Assessment, South Gippsland, Victoria*.
- Department of Environment and Primary Industries. (2015). *Victoria's Bioregions*. Retrieved July 2015, from Conservation and Environment: <http://www.dse.vic.gov.au/conservation-and-environment/native-vegetation-groups-for-victoria/victorias-bioregions>

- Department of Environment and Primary Industries. (2015). *Ecological Vegetation Class Benchmarks*. Retrieved July 2015, from Victorian bioregions: <http://www.depi.vic.gov.au/environment-and-wildlife/biodiversity/evc-benchmarks>
- Department of Environment, Land, Water and Planning. (2015). *Geomorphology of Victoria*. Retrieved July 2015, from [http://vro.depi.vic.gov.au/dpi/vro/map\\_documents.nsf/pages/grg\\_vic\\_tier2](http://vro.depi.vic.gov.au/dpi/vro/map_documents.nsf/pages/grg_vic_tier2)
- Djekic, A. (1998). *La Trobe Valley Coalfields 1981 Archaeological Study Update*. Melbourne: Aboriginal Affairs Victoria.
- Dunlop, A. (1976). *Wodonga over River and Plain*. Wodonga.
- Edwards, R. (1975). *Aboriginal Bark Canoes of the Murray Valley*. Adelaide: South Australia Museum.
- Fission, L., & Howitt, A. (1880). *The Kurnai: Their Customs in Peace and War*. Melbourne: George Robinson.
- GlobalBiodiversityInformationFacility. (2015). *Atlas of Living Australia - Species*. Retrieved July 2015, from Atlas of Living Australia: <http://regions.ala.org.au>
- Gott, B., & Conran, J. (1991). *Victorian Koorie Plants*. Hamilton: Aboriginal Keeping Place.
- Hovell, W., Hume, H., & Bland, W. (1965). *Journey of Discovery to Port Phillip, New South Wales by Messers W.H. Hovell and Hamilton Hime in 1824 and 1825*. Adelaide: Libraries Board of South Australia.
- Howitt, A. (1904). *The Native Tribes of South East Australia*. Canberra: Aboriginal Studies Press.
- Jones, H. (1998). *Wodonga City: A Jubilee History*. Wodonga: Wodonga Rural City Council.
- Jones, P. (1992). The boomerang's erratic flight: the mutability of ethnographic objects. In B. Atwood, J. Arnold, & (eds), *Power, Knowledge and Aborigines: Special edition of Aboriginal Studies*.
- Land Conservation Council. (1974). *Report on the North East Area: Districts 3, 4 and 5*. Melbourne: Land Conservation Council.
- Morgan, P. (1997). *The Settling of Gippsland: A Regional History*.
- P.J.F., C. (1983). *Corinella, a forgotten episode in Victoria's history. Part 1. History and description of the settlement*. Records of the Victorian Archaeological Survey ; no. 15.
- Paton, R. (1993). *An archaeological investigation of several short optical fibre cable routes in northeast Victoria*. Downer: Robert Paton Archaeological Studies Pty Ltd.
- Presland, G. (1994). *Aboriginal Melbourne: the Lost Land of the Kulin People*. Ringwood: McPhee Gribble Publishers .
- Presland, G. (1994). *Aboriginal Melbourne: the Lost Land of the Kulin People*. Ringwood: McPhee Gribble Publishers .
- Robb, K., De Maria, N., & Lawler, M. (2014). *Fibre Optic Link, Yarrum, Victoria*. Melbourne: Biosis Pty Ltd.
- Robinson, G. A. (1840). *Journals of George Augsuts Robinson January - March 1840* (Second ed.). (G. Presland, Ed.) Victoria: Records of the Victorian Archaeological Survey.
- Serle, G. (1963). *The Golde Age: A History of the Colony of Victoria, 1851-1861*. Parkville: Melbourne University Press.
- Spreadborough, R., & Anderson, H. (1983). *Victorian Squatters*. Ascot Vale: Red Rooster Press.
- Thomson, C. (1996). *An archaeological survey of North East Victoria*. Melbourne: Report of Aboriginal Affairs Victoria.
- Thomson, M., Cekalovic, H., & Matthews, L. (2003). *An archaeological survey of the proposed Leneva Rezoning, Levena, Victoria*. Melbourne: Biosis Research.
- Wesson, S. (2000). *Historical Atlas of the Aborigines of Eastern Victoria and Far Southeastern New South Wales*. Melbourne: Monash University.



Witter, D. (1978). *Archaeological study of Baranduda and Thurgoona*. Canberra: Victorian Archaeological Survey.

Zola, N., & Gott, B. (1992). *Koorie Plants, Koorie People. Traditional Aboriginal Food, Fibre and Healing Plants of Victoria*. Melbourne: Koorie Heritage Trust.