



View of a fine-grained basalt blade recorded at Queenlee OS-1.

## **ABORIGINAL CULTURAL HERITAGE & HISTORIC HERITAGE ASSESSMENT REPORT**

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### **WINTERBOURNE WIND FARM**

WALCHA NSW

SEPTEMBER 2022

Report prepared by  
OzArk Environment & Heritage  
for WinterbourneWind Pty Ltd

Classification: Confidential

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## ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

<b>Report Title</b>	Aboriginal Cultural Heritage & Historic Heritage Assessment Report. Winterbourne Wind Farm
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<b>Address of Subject Area</b>	Address: Walcha Title Reference: various Local Government Area: Walcha and Uralla LGAs
<b>Report prepared for</b>	Company Name: WinterbourneWind Pty Ltd  Contact Person: Doug Landfear, Project Director Address: Level 4/312 St Kilda Rd, Southbank VIC 3006
<b>Date of Report</b>	September 2022
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## DOCUMENT CONTROLS

Proponent	WinterbourneWind Pty Ltd
Client	WinterbourneWind Pty Ltd
Document Description	ACHAR and Historic Heritage Assessment: Winterbourne Wind Farm
File Location	OzArk Job No.
S:\OzArk EHM Data\Clients\Vestas\Winterbourne Windfarm Walcha April 2020\Report	2645
Document Status: V3.3 FINAL	Date: 30 September 2022
Author to Editor OzArk	V1.1-1.3: BF author 2/3/21 V1.4: TF author 18/3/21 V1.5 BC author 24/3/21
Draft report for release to client	V2.0 BC prepares client draft 11/4/21 V2.2 BC incorporates client edits 24/8/21 V2.3 BC incorporates client edits 17/11/21 V2.4 BC prepares for RAP release 18/11/21
Final report	V3.0 OzArk finalises 18/12/21 V3.1: BC amends with ERM comments 2/5/22 V3.2: BC finalises 7/6/22 V3.3: BC amends 29/9/22
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### **Acknowledgement**

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

## ABBREVIATIONS AND GLOSSARY

ACHAR	Aboriginal Cultural Heritage Assessment Report. As set out in the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> , all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> . Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
ACHMP	Aboriginal Cultural Heritage Management Plan. The instrument developed with Heritage NSW and the RAPs that regulates the management of Aboriginal cultural heritage within the Project Area.
AHIMS	Aboriginal Heritage Information Management System. Administered by Department of Premier and Cabinet, AHIMS is the central register of all Aboriginal sites within NSW.
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> under Part 6 NPW Act. Issued by DECCW in 2010, the Code of Practice is a set of guidelines that allows limited test excavation without the need to apply for an AHIP.
DPC	NSW Department of Premier and Cabinet
DPE	NSW Department of Planning and Environment
EIS	Environmental Impact Statement. A required document for major projects documenting all potential impacts to the environment, including heritage, that may arise due to the development.
ETL	Electricity transmission line
Heritage Act	<i>Heritage Act 1977</i> . Provides for the protection and conservation of historical places and objects of cultural heritage significance and the registration of such places and objects.
Heritage Council	The Heritage Council makes decisions about the care and protection of heritage places and items that have been identified as being significant to the people of NSW.
Heritage NSW	Government department tasked with ensuring compliance with the NPW and Heritage Acts. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC) and is part of the Department of Premier and Cabinet.

HHMP	Historic Heritage Management Plan. The instrument developed following project approval that regulates the management of historic cultural heritage within the Project Area.
NPW Act	<i>National Parks and Wildlife Act 1974</i> . Primary legislation governing Aboriginal cultural heritage within NSW.
PAD	Potential archaeological deposit. Indicates that a particular location has potential to contain subsurface archaeological deposits, although no Aboriginal objects are visible.
Project Area	Referred to as the Project Area in the EIS, the Project Area includes approximately 22,285 ha within which all major project components such as turbines, access roads, electrical reticulation lines (overhead and trenched), and ancillary infrastructure will be located.
RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the project.
SEARs	Secretary's Environmental Assessment Requirements issued by the NSW Department of Planning and Environment.
SHR	State Heritage Register. A heritage list of places in NSW that are protected by NSW legislation, generally covered by the Heritage Act.
Survey Boundary	Area within the Project Area where all ground disturbing impacts will be located. This area was the focus of the survey effort. The Survey Boundary included 1,300 ha and this includes the area of disturbance (576.04 ha; termed the Development Footprint in the EIS), as well as a buffer around the Development Footprint.
SSD	State Significant Development
WWF	Winterbourne Wind Farm
WWPL	WinterbourneWind Pty Ltd

## EXECUTIVE SUMMARY

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OzArk Environment & Heritage (OzArk) has been engaged by WinterbourneWind Pty Ltd (WWPL) to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) and a historic heritage assessment for the proposed Winterbourne Wind Farm (WWF, the project) located near Walcha, New South Wales. The project extends over approximately 22,285 hectares (ha), of which approximately 576.04 ha is expected to be disturbed during construction of the proposed project.

The WWF is designated as a State Significant Development, SSD-10471, and this ACHAR will form part of the Environmental Impact Statement for the project.

The fieldwork component of this assessment was undertaken by OzArk and Registered Aboriginal Parties (RAPs) (or their representatives) in three stages:

- Stage 1 – Monday 20 July 2020 to Friday 31 July 2020
- Stage 2 – Monday 2 November 2020 to Friday 6 November 2020
- Stage 3 – Tuesday 23 February 2021 to Wednesday 24 February 2021.

In total, there were 27 days of fieldwork (Stage 1: 20 days comprising two independent teams over 10 days, Stage 2: five days, Stage 3: two days) consisting of 79 person days of survey (including both OzArk archaeologists and RAPs).

### Aboriginal cultural heritage

The current assessment follows the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Field assessment and reporting followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). Aboriginal community consultation will follow the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010b).

As a result of the survey associated with the project, 16 Aboriginal sites were recorded and the one previously recorded site in the Project Area was revisited. The newly recorded sites include artefact scatters, isolated finds, scarred trees, a quarry site, and an engraving site.

Of these 16 newly recorded sites, nine sites will be avoided by the project as they either are at a distance to project impacts or will be protected during construction works (Woodburn IF-2, Bywell OS-1, Bywell OS-2, Green Range OS-1, Green Range OS-2 with PAD (potential archaeological deposit), Green Range OS-3 with PAD, Millbank OS-1, Queenlee E-1, and Talisker ST-1).

Of the remaining seven sites that could potentially be harmed by the project, it is recommended that Queenlee OS-1 with PAD that is within the overhead electricity transmission line (ETL) alignment be avoided as the site has high cultural and scientific values that require its

conservation in the landscape. Based on undertakings given by WWPL, Queenlee OS-1 with PAD is therefore not included in the list of impacted sites and it is regarded that six sites consisting of four isolated finds, a low-density artefact scatter, and a scarred tree could potentially be impacted (Yalgoo IF-1, Table Top Rd IF-1, Woodburn IF-1, The Ranch IF-1, The Ranch OS-1 with PAD [partial impact], and Tarwonga ST-1).

Of these six potentially impacted sites, three sites may be avoided if final project design of the ETL accounts for their location and avoids harm to the sites (Woodburn IF-1, The Ranch OS-1 with PAD, and The Ranch IF-1). One further scarred tree site, Tarwonga ST-1, is also within the ETL corridor. However, it is recommended that the significant portion of the site is retained in the landscape by lopping the tree at least 60 centimetres above the scar and leaving the tree with the scarred portion in place if the tree will be impacted by construction or operation of the ETL.

If the three sites within the ETL corridor can be avoided by considered project design, if any impact to Queenlee OS-1 with PAD is avoided, and if the scarred portion of Tarwonga ST-1 can be left in place, it is therefore considered that only two isolated finds will be impacted by the project (Yalgoo IF-1 and Table Top Rd IF-1).

The only previously recorded site in the Project Area, AHIMS site 21-4-0041, is outside of the Survey Boundary (referred to as the Development Footprint in the EIS) and will not be harmed.

#### Measures to protect Aboriginal objects

Two sites, Green Range OS-3 with PAD and Millbank OS-1 are avoided by project impacts. However, both sites are in vulnerable locations where ongoing non-project impacts are likely to harm Aboriginal objects. It is therefore recommended that these sites be managed to conserve Aboriginal cultural values.

##### *Green Range OS-3 with PAD*

Green Range OS-3 with PAD is recorded within the Winterbourne Road corridor, around a farm gate, and within a regularly ploughed paddock to the south. Aboriginal objects associated with the site are therefore at risk of vehicle traffic and road maintenance in the portion of the site within the road corridor, and from continued ploughing in the southern portion of the site.

It is therefore recommended that a prudent measure would be to record, collect and relocate Aboriginal objects from the surface at Green Range OS-3 with PAD. The potential subsurface components of the site that may exist below the plough zone will be retained in the landscape.

##### *Millbank OS-1*

Millbank OS-1 is recorded within the Winterbourne Road corridor and around a regularly used farm gate. Aboriginal objects associated with the site are therefore at risk of vehicle traffic and road maintenance in the portion of the site within the road corridor.

It is therefore recommended that a prudent measure would be to record, collect and relocate Aboriginal objects from the surface at Millbank OS-1. As the site is assessed as a surface manifestation only, this action would remove the site from the landscape.

### Further research

It is recommended that further research, with landowner consent, should take place at sites Queenlee OS-1 with PAD and Queenlee E-1. This research will be non-invasive and include a detailed recording of each site. The recording would include a photographic record and a detailed site plan of each site. In the case of Queenlee E-1, a detailed recording of the engraving should be undertaken.

In summary, management of all sites recorded during the survey are detailed in **Executive Summary Table 1**. The column 'potential for avoidance' refers to the likelihood that the site can be avoided through project design.

**Executive Summary Table 1: Management recommendations for sites recorded during the survey.**

Site Name	AHIMS ID	Type of Harm (Direct / Partial / None)	Potential for avoidance	Management
Woodburn IF-2	21-4-0383	None	N/A	The site is distant to proposed works and no further management is required.
Yalgoo IF-1	21-4-0382	Direct	Low	The site is likely to be harmed through the construction of an access road and an underground electrical reticulation line. The site will be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b> .
Bywell OS-1	21-4-0381	None	N/A	The site is distant to proposed works and no further management is required.
Bywell OS-2	21-4-0380	None	Requires management	The site is out of impact but within 6 m of the ETL easement. The site will be protected from inadvertent harm through the installation of temporary fencing as set out in <b>Section 8.2.2.2</b> .
Green Range OS-1	21-4-0393	None	Requires management	The site is out of impact but within 36 m of the proposed works. The site will be protected from inadvertent harm through the installation of temporary fencing as set out in <b>Section 8.2.2.2</b> .
Green Range OS-2 with PAD	21-4-0392	None	N/A	The site is distant to proposed works and no further management is required.
Green Range OS-3 with PAD	21-4-0391	None	Requires management	The site is out of impact but within 16 m of the proposed works. The site will be protected from inadvertent harm through the installation of temporary fencing as set out in <b>Section 8.2.2.2</b> . To protect visible Aboriginal objects from on-going harm from road use and maintenance, as well as ploughing in the south, a collection of surface artefacts will take place from within the Winterbourne Road corridor and from within the ploughed paddock to the south as is explained in <b>Section 8.2.3.4</b> .
Millbank OS-1	21-4-0384	None	N/A	To stop on-going harm from the use of Winterbourne Road and the property access gate around which the site was recorded, all surface artefacts at the site be collected to remove them from on-going, non-project impacts as is explained in <b>Section 8.2.3.4</b> .

Site Name	AHIMS ID	Type of Harm (Direct / Partial / None)	Potential for avoidance	Management
Table Top Rd IF-1	21-4-0394	Direct	Low	The site is likely to be harmed through the road construction and an underground electrical reticulation line. The site will be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b> .
Woodburn IF-1	21-4-0395	Direct	High	The site is located within the middle of the ETL easement. The site will be avoided by locating any impacts including electricity poles and access tracks away from the site by providing at least a 5 m buffer. If it is not possible to avoid the site should be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b> .
Tarwonga ST-1	21-4-0397	Direct	Moderate	The design of the overhead ETL will ensure that the site is spanned and that any associated access tracks avoid the site. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as set out in <b>Section 8.2.2.2</b> .  If there are clearance issues for the ETL, WWPL will trim the tree 60 centimetres above the scarred portion and retain the scarred portion of the tree in place as set out in <b>Section 8.2.2</b> . The top of the cut tree should be protected by an affixed metal (tin) cap to prevent water egress into the tree's heartwood to assist its preservation.  If, for whatever reason, the scarred portion of the tree cannot be retained in place, it should be removed to a place of safe-keeping as set out in <b>Section 8.2.3.3</b> .
The Ranch OS-1 with PAD	21-4-0385	Partial	High	The design of the overhead ETL will ensure that the site is spanned and that any associated access tracks avoid the site. The site should be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as set out in <b>Section 8.2.2.2</b> .  If the site cannot be avoided, the portion of the site in the ETL easement should be salvaged through a collection of the surface artefacts following the procedure set out in <b>Section 8.2.3.2</b> .
The Ranch IF-1	21-4-0386	Direct	High	The design of the overhead ETL will ensure that the site is spanned and that any associated access tracks avoid the site. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as set out in <b>Section 8.2.2.2</b> .  If the site cannot be avoided, the site should be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b> .
Queenlee OS-1 with PAD	20-6-0080	None	Requires management	This site has high cultural and scientific values and will be avoided by the project. This will involve designing the overhead ETL to ensure that the site is spanned and that any associated access tracks avoid the site. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as is set out in <b>Sections 8.2.2.1 and 8.2.2.2</b> .  With the landowner's permission, WWPL will fund a non-invasive study of the site including mapping and photography as is set out in <b>Section 8.2.3.1</b> .  WWPL will consult with the landowner about the possibility of permanently fencing the site. Managed crash grazing of the site area would be permissible to keep grass and weed growth under control (see <b>Section 8.2.2.2</b> ).

Site Name	AHIMS ID	Type of Harm (Direct / Partial / None)	Potential for avoidance	Management
Queenlee E-1	21-4-0387	None	Requires management	<p>This site has high cultural and scientific values and will be avoided by the project. However, the site should be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as is set out in <b>Section 8.2.2.2</b>.</p> <p>With the landowner's permission, WWPL will fund a non-invasive study of the site including mapping and photography as set out in <b>Section 8.2.3.1</b>.</p> <p>WWPL will consult with the landowner about the possibility of permanently fencing the site. Managed crash grazing of the site area would be permissible to keep grass and weed growth under control (see <b>Section 8.2.2.2</b>).</p>
Talisker ST-1	20-6-0079	None	Requires management	<p>The design of the connection switchyard will ensure that the site is avoided. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as is set out in <b>Section 8.2.2.2</b>.</p> <p>If the site is likely to be harmed, WWPL will consult with the Aboriginal community to determine if the scarred portion of the tree should be moved to a place of safe-keeping (see <b>Section 8.2.3.3</b>).</p>

In conclusion, the ACHAR findings are:

- The level of assessment achieved during the field survey is considered adequate for the purposes of determining the cultural and archaeological status of the Survey Boundary
- Most Aboriginal object sites recorded were recorded outside areas of the proposed impacts
- WWPL, through project redesign, has conserved the most culturally and scientifically important sites recorded during the assessment
- WWPL will endeavour to avoid impact to several sites in the project impact area with the result that, potentially, only two isolated finds will be harmed
- WWPL has undertaken to consider further research at two culturally and scientifically important sites
- WWPL has undertaken to fund management of Aboriginal objects at two sites where objects are at risk of non-project impacts
- The proposed impacts to the archaeological resource are considered discrete in nature and would occupy a relatively small footprint in the surrounding environment
- The archaeological resource in the broader area (those areas which lie outside actual proposed impacts) will not sustain any impacts because of the proposal
- Based on a consideration of the nature of the landforms where impacts are proposed, subsurface test excavation was not warranted.
- The Aboriginal cultural heritage values identified within the Survey Boundary can be appropriately managed by implementing the conservation measures set out in this report

Recommendations concerning Aboriginal cultural values within the Project Area are as follows:

1. Following development consent of the project, WWPL will develop an *Aboriginal Cultural Heritage Management Plan* (ACHMP) which is approved by the Department of Planning and Environment (DPE) and which includes consultation with the RAPs. The ACHMP will also include an unanticipated finds protocol, unanticipated skeletal remains protocol and procedures for the long-term management of any artefacts. Examples of these protocols are provided in **Section 8.2.5.1** and **Section 8.2.6.1**.
2. Should development consent for the project be granted, archaeological management strategies to manage and mitigate the impact of the WWF are set out in **Section 8.2** and detailed in **Executive Summary Table 1**. Regarding this, the following recommendation is made:
  - a. Every effort should be made to avoid impact to sites listed below through project design. In particular, the project infrastructure should be designed to avoid Queenlee OS-1 with PAD that has high cultural and scientific values:

ETL design. Ensure electricity towers are designed so that sites are spanned and that access tracks avoid sites		
Queenlee OS-1 with PAD	Tarwonga ST-1	Woodburn IF-1
The Ranch OS-1 with PAD	The Ranch IF-1	

3. Although avoidance will be a priority, if the following five surface artefact sites (Yalgoo IF-1, Table Top Rd IF-1, Woodburn IF-1, The Ranch IF-1, The Ranch OS-1 with PAD [partial impact]) will be harmed by the project, it is recommended that the sites are salvaged through the recording and collection of the surface artefacts prior to construction works proceeding.
  - a. The recommended methodology for the salvage will be finalised after the approvals process has been completed in the ACHMP but will include the measures outlined in **Section 8.2.3.2**.
  - b. The salvage works will include the mapping, analysis, and collection of the surface artefact at the affected site. Results will be included in a brief report to preserve the data in a useable form and an Aboriginal Site Impact Recording Form (ASIRF) will be submitted to the Aboriginal Heritage Information Management System (AHIMS).
4. If the scarred portion of site Tarwonga ST-1 cannot be retained in the landscape due to clearance or other issues, the ACHMP should consider how the scarred portion of the tree can be removed to a place of safe-keeping. The ACHMP would nominate a suitable place for the relocation that can be considered by the RAPs in their review of the document.

5. The project should consider funding additional research to take place at Queenlee OS-1 with PAD and Queenlee E-1 with landowner consent. The study should involve non-invasive recording, mapping, and photography at each site.
6. Green Range OS-3 with PAD and Millbank OS-1 will not be impacted by the project and they are listed in **Table 7-2** as two of the 10 sites that will be avoided by the project. However, the sites are located within the Winterbourne Road corridor and around farm gates, and in the case of Green Range OS-3 with PAD, within a regularly ploughed paddock. As the surface artefacts are at risk from continued impacts from vehicle traffic, road maintenance, or ploughing it is recommended that the sites be managed through a collection of surface artefacts (following the methodology set out in **Section 8.2.3.2**; see also **Section 8.2.3.4**).
7. All land-disturbing activities must be confined to within the Survey Boundary. Should the parameters of the proposed work extend beyond this, then further archaeological assessment may be required.

### Historic Heritage

The assessment for historic heritage values was undertaken at the same time as the Aboriginal cultural values survey. Three items were recorded (HS01–HS03) although all were assessed as being without heritage value.

One item listed on the Muswellbrook Local Environmental Plan is located near where ground disturbing works associated with the transport corridor are planned. Although not at risk of harm, all efforts should be made to ensure that the item is not inadvertently harmed.

Recommendations concerning the historic values within the Project Area are as follows.

8. HS01: if it is possible to conserve the item in the landscape this would be a desirable heritage outcome. However, if it is not possible to conserve the site, it may be harmed as it represents a common rural feature without heritage values.
9. HS02 and HS03: Both items will not be harmed by the project and there is no further management required.
10. Kayuga Cemetery: The heritage curtilage of this listed item is outside of proposed impacts; however, care needs to be taken in the design of the transport route that all impacts remain outside of the identified heritage curtilage.
11. Following development consent of the project, an Historic Heritage Management Plan (HHMP) will be developed and then used during the construction and ongoing use of the project. If items of historic heritage significance are uncovered during the project, then the unanticipated finds protocols in the HHMP will be enacted. An example is provided in **Section 12.3.1**.

12. To avoid the potential for harm to historic objects on unassessed adjacent landforms, all ground surface disturbing activities must be confined to the Survey Boundary.

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## 1 INTRODUCTION

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### 1.1 DESCRIPTION OF THE PROJECT

OzArk Environment & Heritage (OzArk) has been engaged by WinterbourneWind Pty Ltd (WWPL) to complete an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) and a historic heritage assessment for the proposed Winterbourne Wind Farm (WWF, the project) located near Walcha, New South Wales. The project extends over approximately 22,285 hectares (ha), of which approximately 576.04 ha is expected to be disturbed during construction of the proposed project.

The WWF is located near the townships of Walcha and Uralla NSW, approximately 34 kilometres (km) south of Armidale and 67 km northeast of Tamworth. The WWF is in the Local Government Areas (LGAs) of Uralla Shire Council and Walcha Council (**Figure 1-2**).

The WWF is designated as a State Significant Development (SSD), SSD-10471, and this ACHAR will form part of the Environmental Impact Statement (EIS) for the project.

### 1.2 PROPOSED WORK

The WWF involves the construction and operation of a wind farm with up to 119 wind turbine generators (WTG), together with associated and ancillary infrastructure.

The project design has been revised and refined in response to the identification and assessment of environmental constraints, constructability requirements, and consideration of the outcomes of Agency, landowner, and community consultations.

The project consists of the following key components:

- Up to 119 WTGs, each with:
  - Three blades mounted to a rotor hub (hub height of 149 metres [m]), with a blade tip height (blade length plus hub height) of up to 230 m above ground level
  - Adjacent hardstands for use as crane pads, assembly and laydown areas.
- Two 33/330 kV electrical substations, including control room, transformers, circuit breakers, switches, and other ancillary equipment
- An operations and maintenance facility
- Site buildings and facilities for construction contractors / equipment, including site offices, car parking and amenities for the construction workforce
- Mobile concrete batching plant/s to supply concrete for WTG footings and substation construction works
- Hardstand laydown areas for the storage of construction materials, plant, and equipment

- A battery energy storage system (BESS) of up to 100 MW/200 MWh capacity (two hours of storage)
- Aboveground and underground 33 kilovolt (kV) electrical reticulation and fibre optic cabling connecting the WTGs to the onsite substations (generally following site access tracks). The internal electrical reticulation network will comprise approximately 324 km of underground and/or overhead 33kV cables. Where possible the cabling will be in underground trenches, which run parallel to an access track. Where deviation from the access track is required due to geotechnical or other constraints, or to reduce overall cable length, these deviations will be positioned to minimise impact to ecological and heritage areas of high significance. The trenching for underground electrical cabling will be approximately 0.6 m wide per circuit by 1.0 m deep, located within a works area of approximately 5 m to accommodate the excavator and stockpiling of spoil and bedding sand. Trenches will be progressively backfilled during the construction works. Where ground conditions are not suitable for open cut trench installation, an overhead single circuit electricity transmission line (ETL) will be installed using concrete poles
- A 330kV single or double circuit twin conductor overhead ETL route of approximately 50 km connecting the two substations to a new electrical switchyard (including circuit breakers, switches, and other ancillary equipment), located approximately 7 km south of Uralla and adjacent to TransGrid's 330kV Tamworth to Armidale transmission line (Line 85). The ETL towers are approximately 40 m high, spaced approximately 500 m apart, subject to terrain and final design. The towers generally require concrete footings for each of the four legs and a disturbance area of approximately 30 m in diameter during construction. The ETL includes a 60 m wide easement with unformed access tracks up to 3 m wide (equivalent to a farm track) to facilitate operational access by TransGrid (for maintenance, repair, and hazard reduction). The ETL will not affect the ongoing use of the land for agricultural purposes such as grazing
- Internal access tracks (combined total length of approximately 113 km) connecting the WTGs and associated project infrastructure with the public road network. Where practicable, the internal access track network will be aligned along the route of existing farm tracks to reduce impacts to biodiversity and to provide upgraded access for ongoing agricultural activities. The internal access tracks will typically have a 5.5 m trafficable width on straights, with localised widening on curves and where required to support transportation of the over-dimensional WTG component vehicles. The internal access tracks will be constructed using unsealed pavements
- Upgrades to roads and intersections required for the delivery of oversize and overmass WTG components, transformers and associated construction-phase materials and vehicular movements. The Port of Newcastle will likely be utilised for import and unloading of wind turbine components. Due to the size of the WTG components and some substation components, Restricted Access Vehicles will be required for transportation from the Port of Newcastle to the Project Area and will require some road and intersection upgrades to the existing network.

Beneficial reuse of materials won from within the impact footprint during cut and fill and WTG foundation excavation works will be used in access track, hardstands, and foundation material.

The exact size and type of tower foundation will be based on subsurface soil conditions and the results of geotechnical surveys undertaken during the detailed design phase, prior to commencement of construction at each WTG site.



The three common types of foundations used for wind turbines are Gravity Foundations, Rock Anchors, and Pile Foundations, or a combination of these depending on geotechnical conditions. The most common type of foundation is the Gravity Foundation in which an area is excavated suitable to support the burying of a “pedestal” design of concrete and reinforced steel sufficient to create a gravity foundation. These are typically 3–5 m deep and 20–30 m in diameter depending on the tower design. The volume can be between 500–900 cubic metres (m<sup>3</sup>) depending on the turbine, geotechnical conditions, and other environmental factors. The gravity foundation is then backfilled so that only the connection to the base tower section is visible above ground.

Ultimately the project will be decommissioned and the site will be rehabilitated as is further discussed in the EIS.

**Figure 1-1** has been provided to provide an indication of the impacts likely from the proposed works. The EIS also includes further detailed information, along with indicative photographs, of the proposed project impacts.

**Figure 1-1: View of wind turbine transport and construction (various sources).**

	
<p>1. A view of impacts associated with the construction of turbine foundations (Gravity Foundation) (photo source: Engineers Australia: <i>Design and Construction. Aspects of Foundations for Onshore Wind Turbines</i>).</p>	<p>2. Construction of the turbine foundations involves a localised impact including the area of foundations, as well as soil stockpiles and construction vehicle parking areas (photo source: Vestas, Collector Wind Farm, NSW).</p>

	
<p>3. Transporting the turbine elements requires substantial access tracks given the length of the components being transported (photo source: Goldwind. Cattle Hill Wind Farm, Tasmania).</p>	<p>4. A view of the blades being attached to the turbine hub. Note the area needed for material laydown and construction vehicle, such as the crane, and parking (photo source: Vestas, Collector Wind Farm, NSW).</p>

### 1.3 PROJECT AREA

The Project Area encompasses approximately 22,285 ha and includes the main wind farm area and a transmission line area which extends northwest from the wind farm for approximately 23 km, as well as the infrastructure required to connect into the existing transmission grid. This area includes all major project components such as turbines, access roads, electrical reticulation lines (overhead and trenched), substations, switchyard, overhead transmission line, and ancillary infrastructure. These major components are shown on **Figure 1-3**.

### 1.4 SURVEY BOUNDARY

The construction and use of the WWF do not impact all areas within the Project Area, which means that the archaeological survey instead focused on what is termed in this report as the Survey Boundary.

The Survey Boundary comprises approximately 1,300 ha as it includes the direct impact footprint (576.04 ha; termed the Development Footprint in the EIS), along with a buffer around all project components. For example, the direct impact area at a turbine location is approximately 1.5 ha, however, a 100 metre (m) radius or 3.2 ha is included in the Survey Boundary at all turbine locations. Similarly, the width of the Survey Boundary for access roads and underground reticulation lines is 30 m, although the direct impact area is less than this. Therefore, the Survey Boundary describes the area where all new impacts will be located with a suitable buffer to allow

some small movement of project components if necessary. The Survey Boundary does not include areas where impacts associated with the transport route are required outside the Project Area. These are assessed separately in **Section 6.8**.

The Survey Boundary includes the ETL alignment to the proposed connection switchyard. All archaeological survey was confined to the Survey Boundary only and not the larger Project Area. Aerials showing the Survey Boundary and project components are shown on **Figure 1-4** to **Figure 1-8**.

## **1.5 REPORT FORMAT**

The ACHAR is presented in **Sections 3** to **8** of this report while the historic heritage assessment is presented in **Sections 9** to **12** of this report. The project background and environmental context of the Project Area presented in **Sections 1** and **2** are also applicable to both the Aboriginal and historic heritage assessments. Recommendations regarding Aboriginal cultural heritage and historic heritage are provided in **Section 13**.

Figure 1-2: Map showing the location of the Project Area.

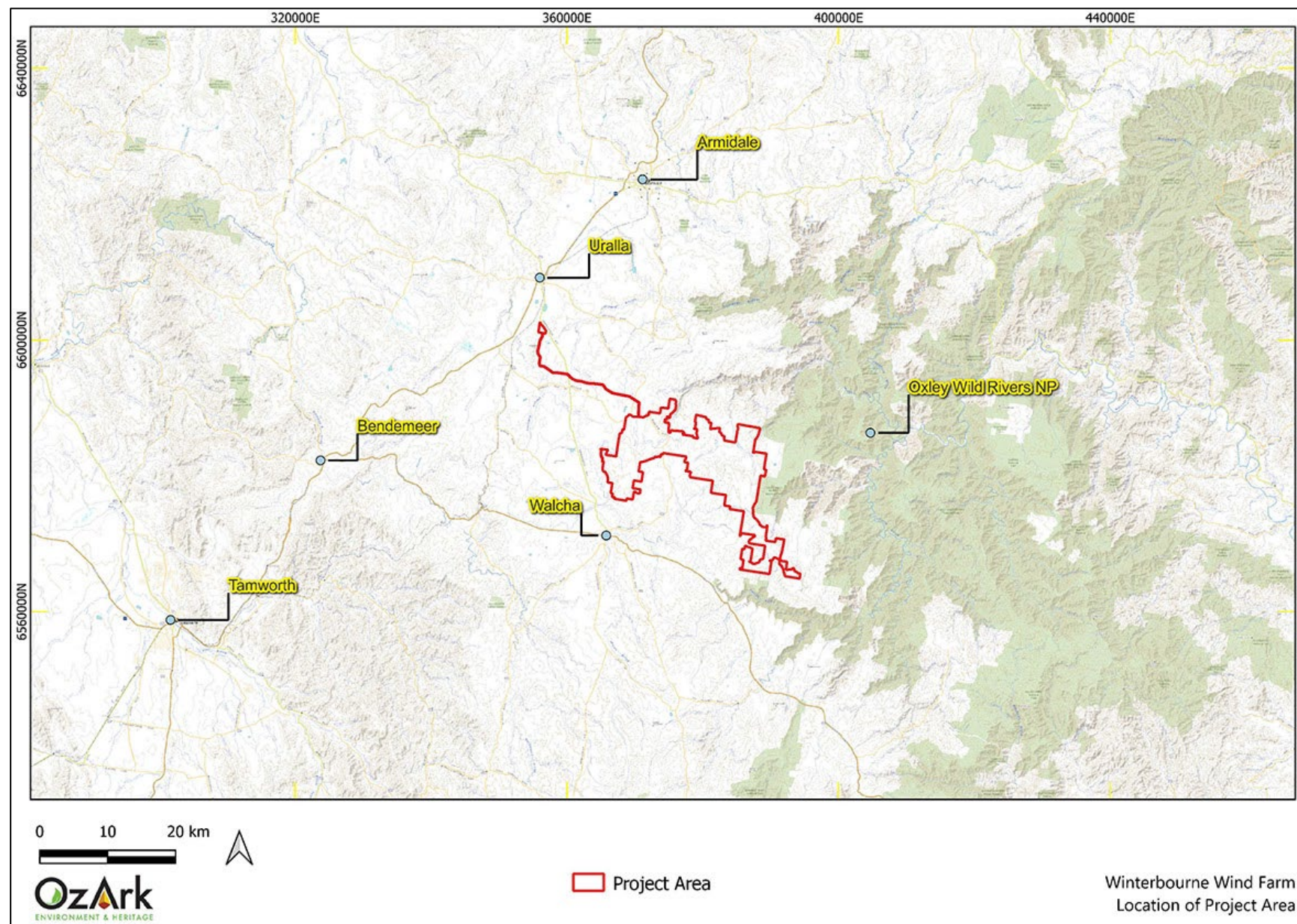


Figure 1-3: Aerial showing the main project components.

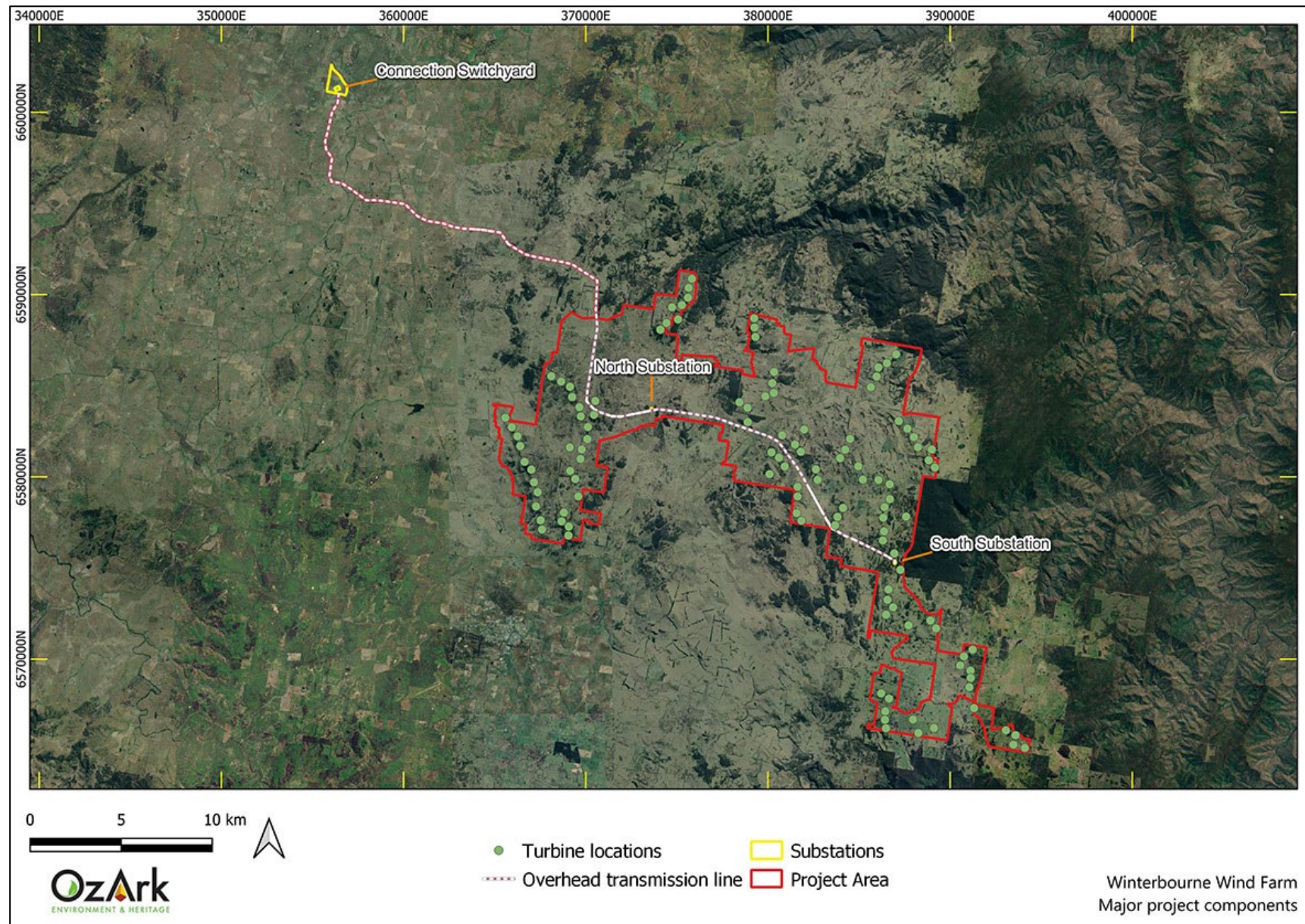


Figure 1-4: Aerial showing the main project components in the Project Area (west).

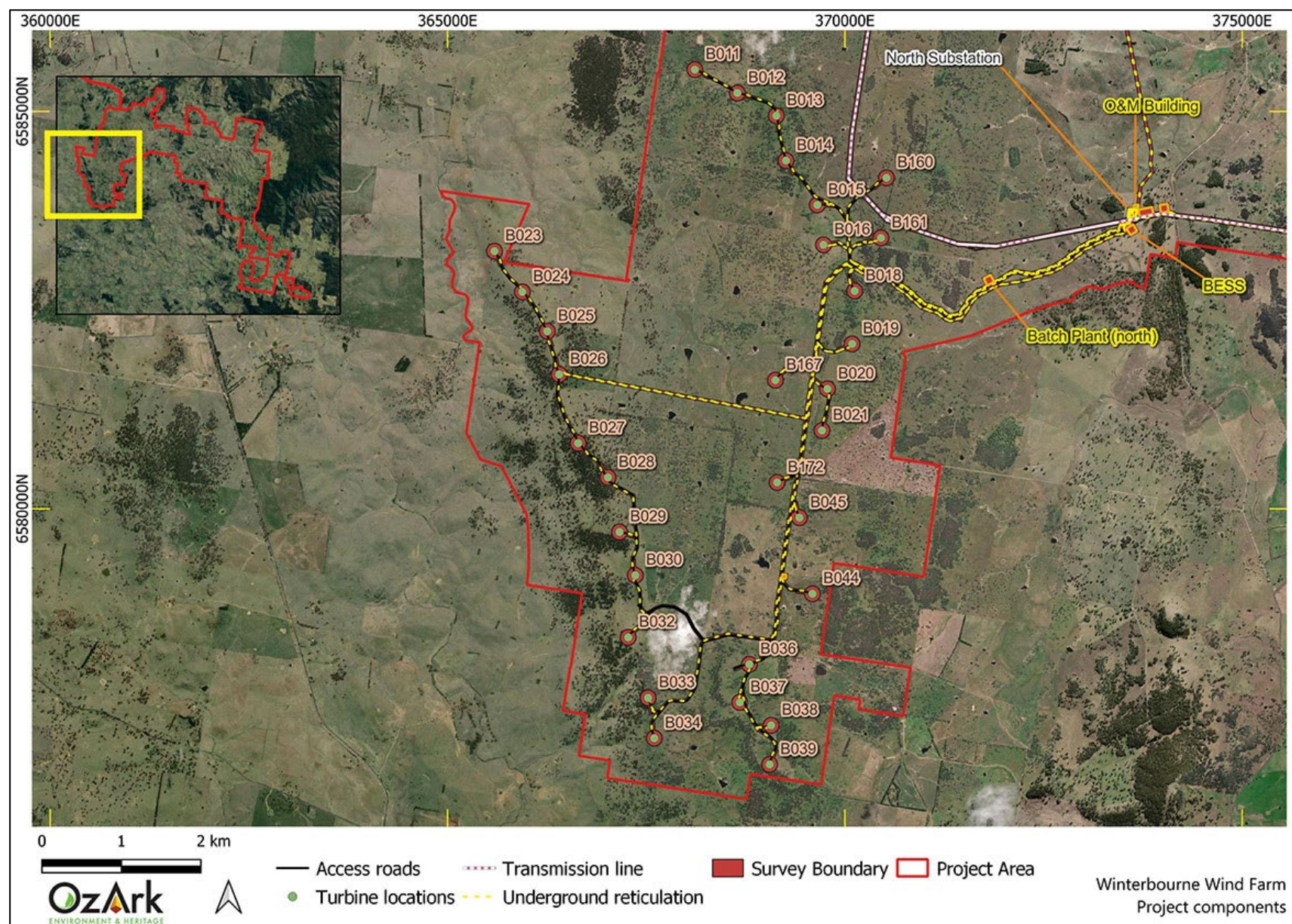


Figure 1-5: Aerial showing the main project components in the Project Area (northwest).

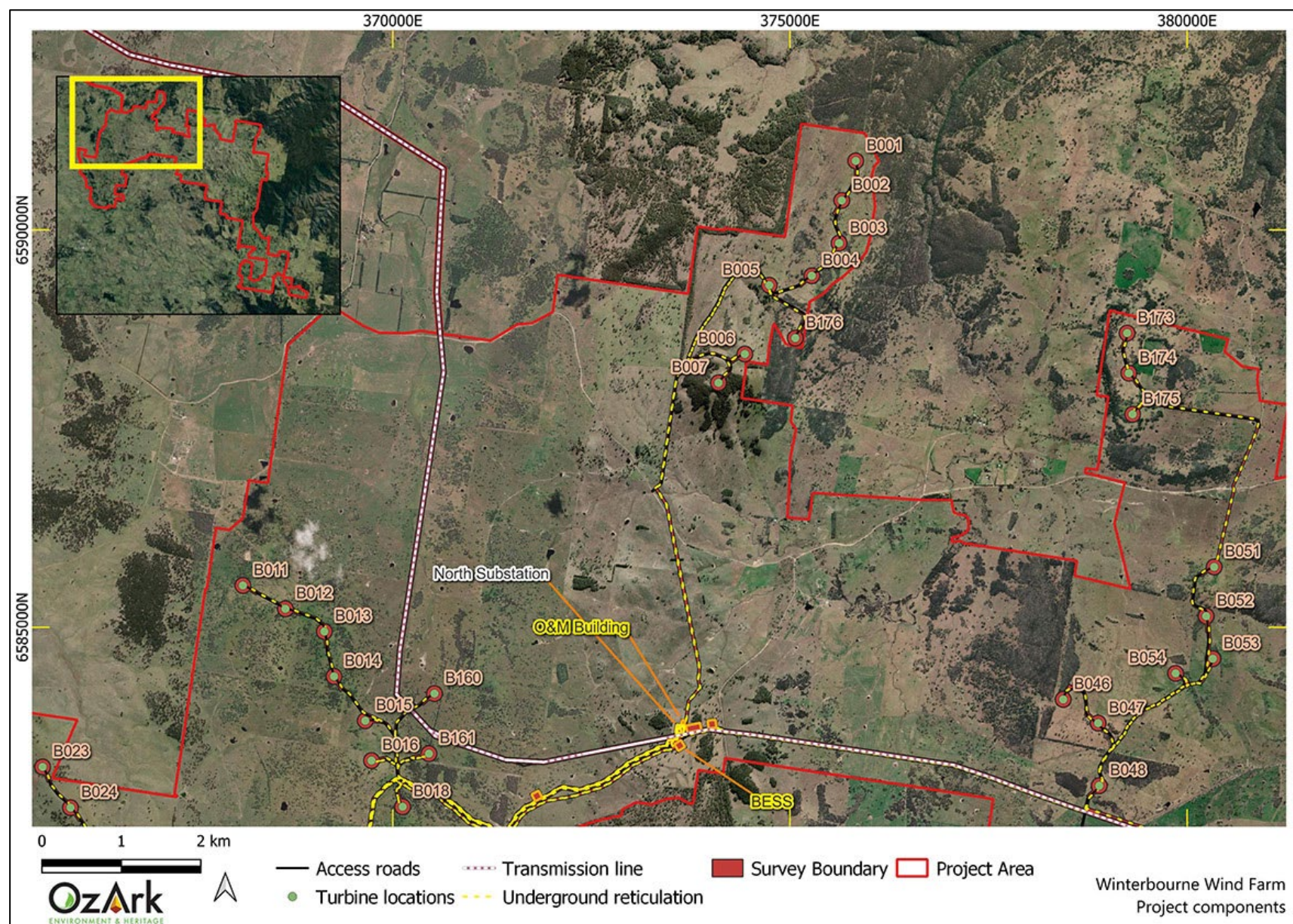


Figure 1-6: Aerial showing the main project components in the Project Area (northeast).

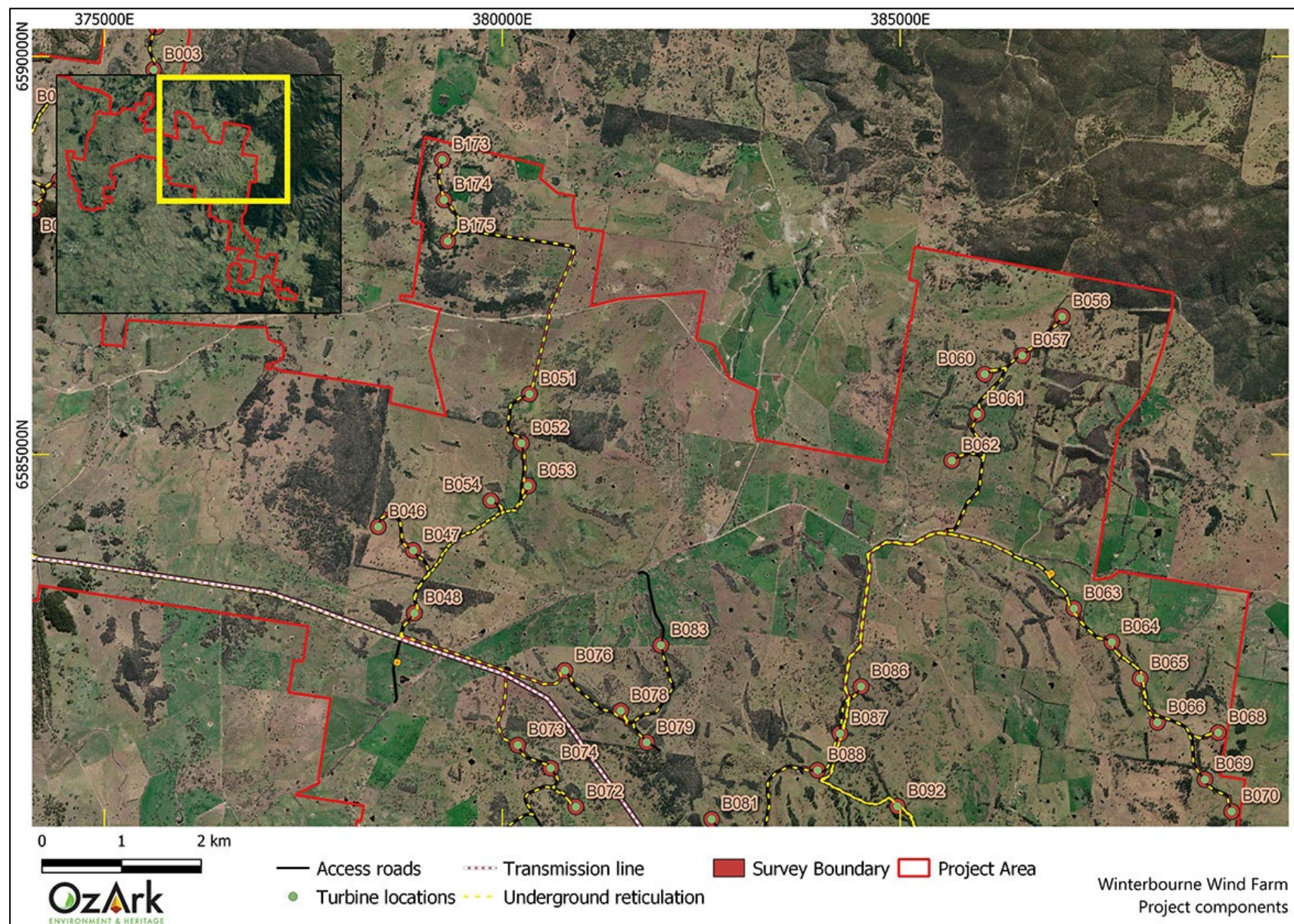


Figure 1-7: Aerial showing the main project components in the Project Area (east).

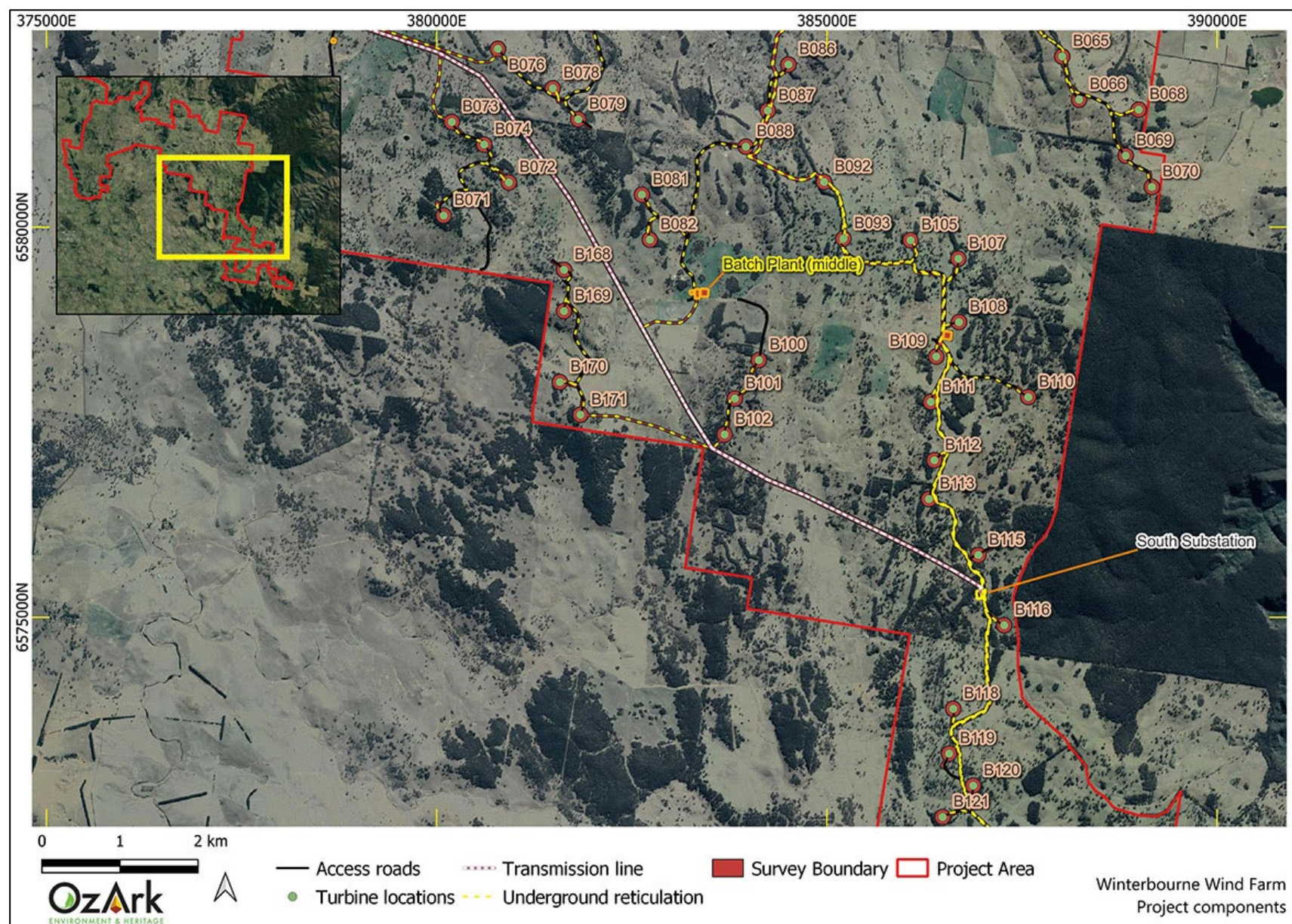
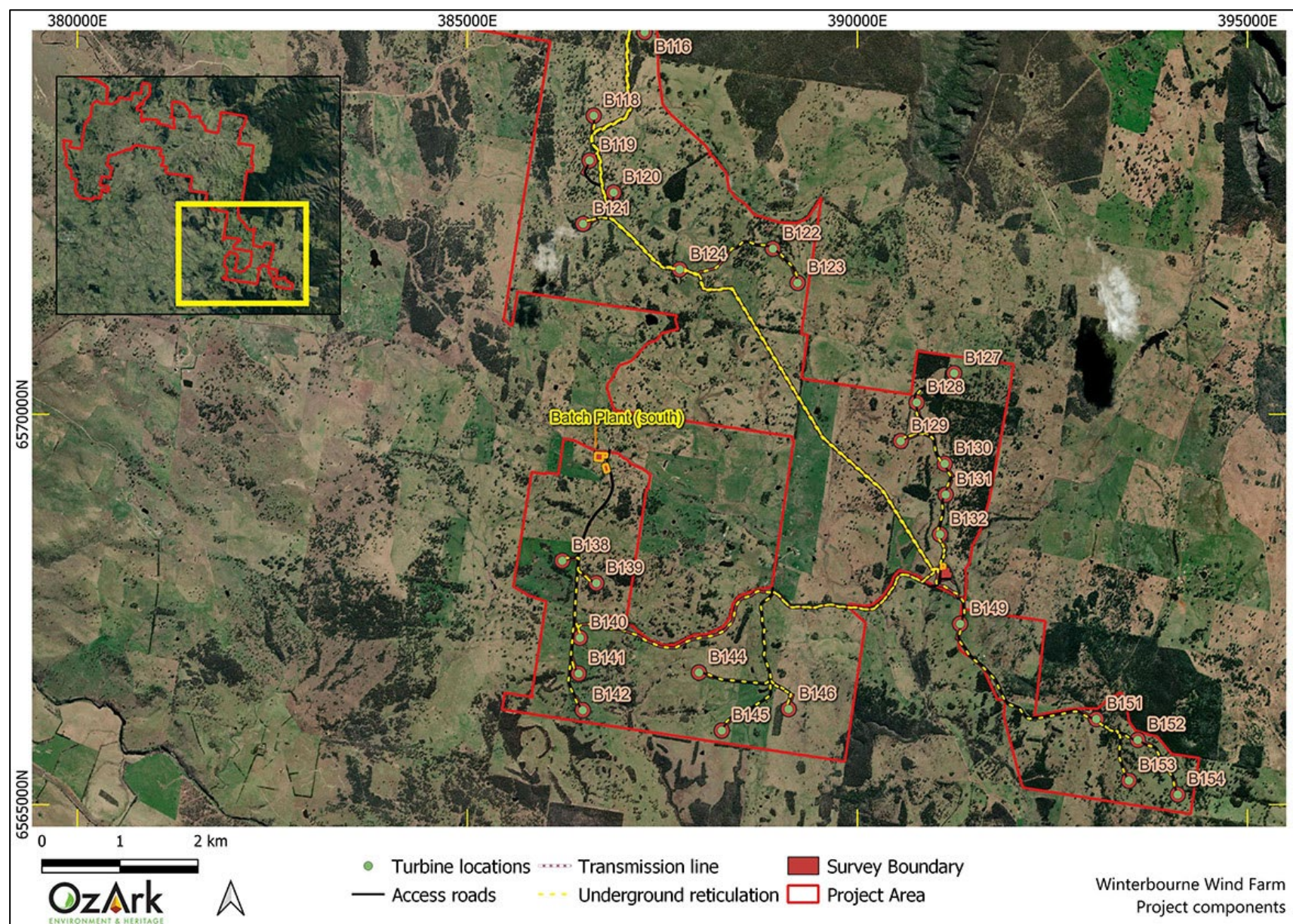


Figure 1-8: Aerial showing the main project components in the Project Area (southeast).



## 2 LANDSCAPE CONTEXT

An understanding of the environmental context of a study area is requisite in any archaeological investigation (DECCW 2010). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as human-activated landscape processes, influence the degree to which the remains of material culture are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

### 2.1 TOPOGRAPHY

The topography of the Project Area is characterised as rolling pastoral hills, open flat valleys, and ridgelines with scattered vegetation. The elevated hill slopes typically have a gentle to moderate gradient and are predominantly cleared of vegetation, except for vegetation situated upon steeper terrain. Hill slopes with steeper gradients are present, although these are limited in their extent.

Digital elevation models (DEMs) of the Project Area provide an indication of the characteristic terrain of rolling hills with variable gradient (**Figure 2-1 to Figure 2-3**).

**Figure 2-1: DEM of the central portion of the Project Area.**

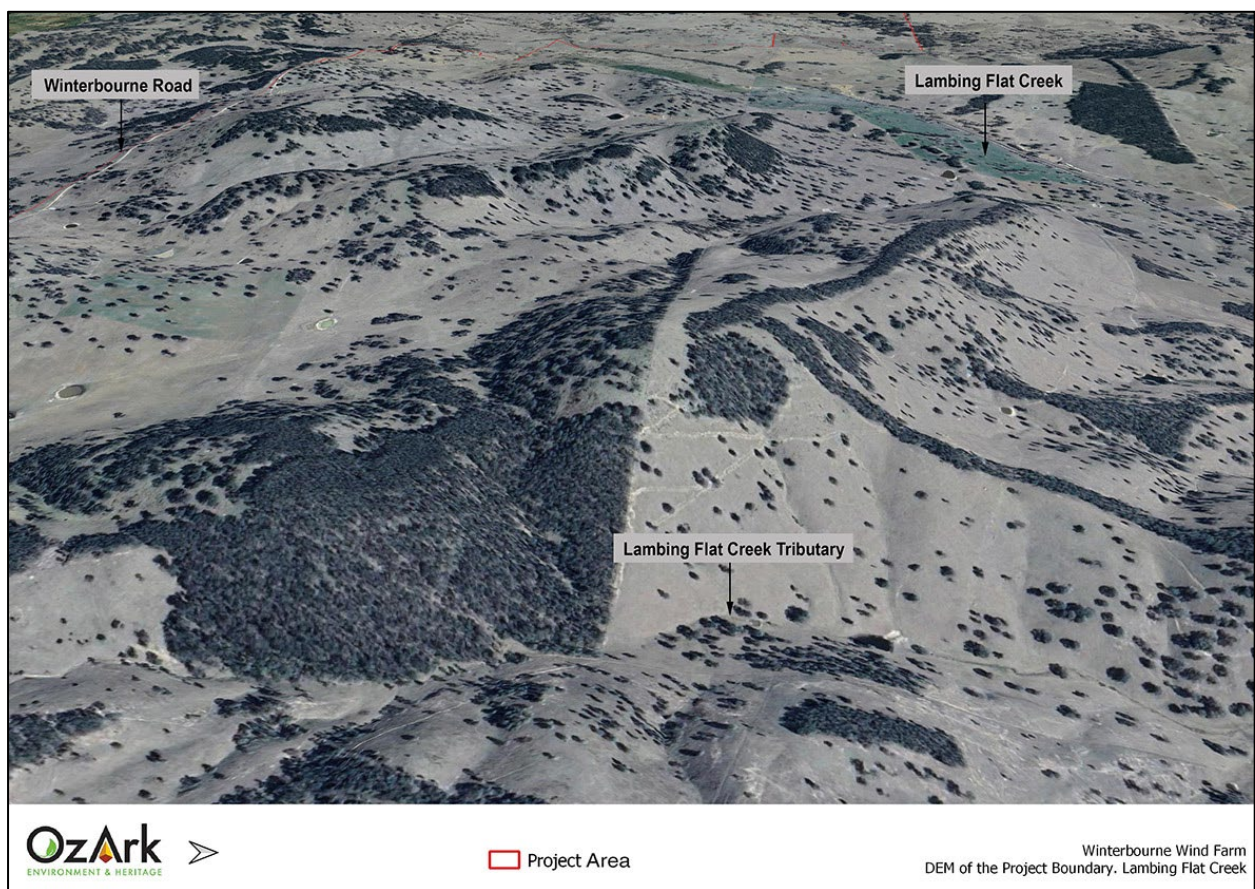


Figure 2-2: DEM of the south-western portion of the Project Area.

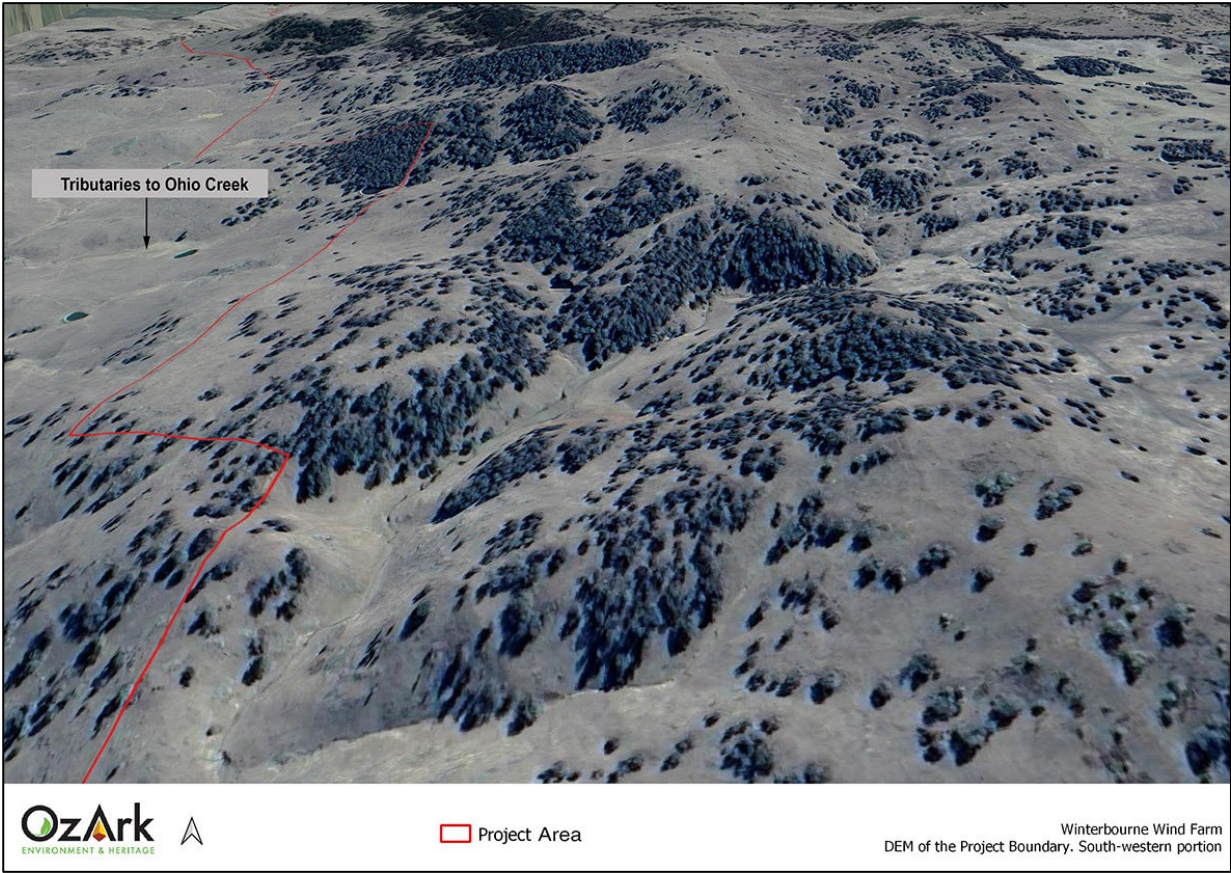


Figure 2-3: DEM of the south-eastern portion of the Project Area.



Although outside of the Project Area, the Survey Boundary includes the ETL alignment that links the Project Area to the proposed switchyard for interconnection to the existing grid to the northwest. Landforms in this portion of the Survey Boundary are generally flat, although there are some gentle slopes in the north of the alignment near the proposed switchyard. A DEM of this portion of the Survey Boundary shows the flat nature of the terrain which contrasts to the elevated, rolling terrain of the Project Area (**Figure 2-4**).

**Figure 2-4: DEM of the Survey Boundary associated with the ETL alignment.**



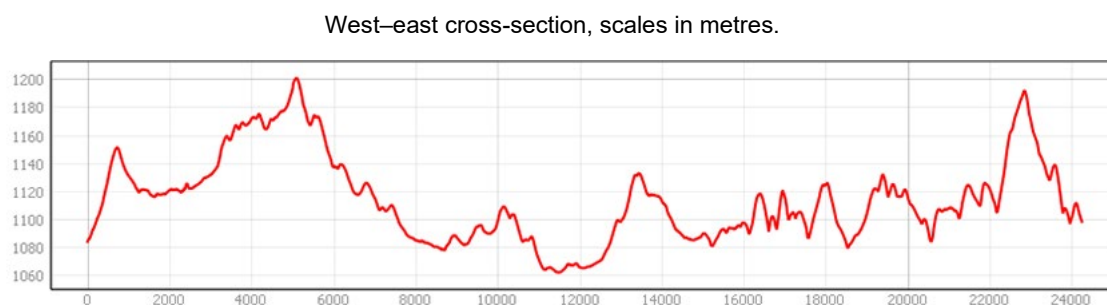
Landform profiles of the Project Area show that there are few extensive areas of flat landforms and that the landscape is characterised by frequent ridge lines separated by U-shaped and V-shaped valleys.

**Figure 2-5** shows that the central-northern portion of the Project Area is more undulating than the eastern portion (see **Figure 2-6**) and has a smaller range of altitudes ranging from around 1060 m above sea level (asl) to 1200 m asl. The central-northern portion of the Project Area has a greater variability in degree of slope, although generally the gradient is within 10 degrees of level.

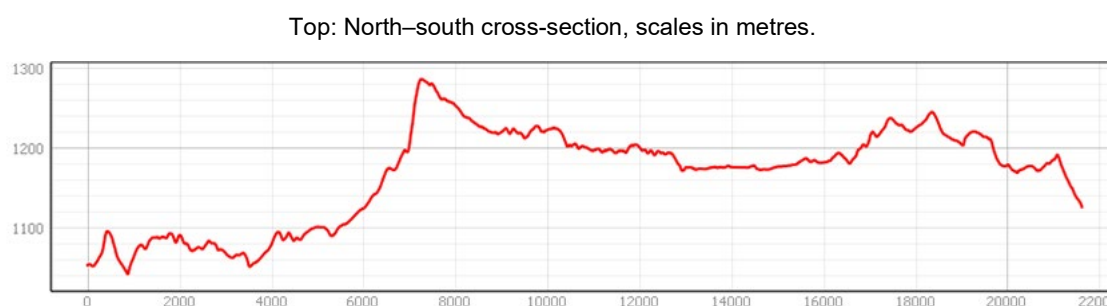
**Figure 2-6** shows that the eastern portion of the Project Area is more elevated in its southern portions and less undulating than the central-northern portion (see **Figure 2-5**) and has a greater range of altitudes ranging from around 1040 m above sea level (asl) to 1280 m asl. The eastern

portion of the Project Area has less variability in degree of slope, although generally the gradient is within 10 degrees of level. As can be seen in **Figure 2-6**, the eastern portion of the Project Area displays an undulating plateau landform in the south-east of the Project Area. This elevated landform is not present in the northern portions of the Project Area.

**Figure 2-5: Profile and degree of slope. West–east section across the northern portion of the Project Area.**



**Figure 2-6: Profile and degree of slope. North-south section across the eastern portion of the Project Area.**



The Project Area can be divided into three landform units that will be used as Survey Units for this assessment:

- Survey Unit 1. Ridgelines and crest landforms (**Figure 2-9: Image 1**)
- Survey Unit 2. Slopes (**Figure 2-9: image 2 & 3**)
- Survey Unit 3. Low gradient/undulating landforms (**Figure 2-9: images 4, 5 & 6**)

The Survey Units are detailed in **Table 2-2**.

**Table 2-1: Survey Units within the Project Area.**

Survey Unit	Landform type	Definition	Total area within Project Area (ha)	Percentage of landform within Project Area
1	Ridgelines and crest landforms	Characterised by a either a single crest (the top of a mountain or hill) or a chain of mountains or hills that form a continuous elevated crest (ridgeline)	587.2	2.5%
2	Slope landforms greater than 10 degrees	Landforms with steeper gradients	8104.9	34.7%
3	Low gradient/undulating landforms	Characterised by sloping landforms with gentle gradients (less than 10 degrees slope). In the Project Area, these landforms are elevated and often distant to water.	14673.4	62.7%

Most of the Project Area is characterised by low gradient/undulating landforms. These areas can be described as undulating tableland landscapes where a generally elevated landscape contains identifiable hills and ridges, but these do not rise steeply from the surrounding landscape. In places the slopes are steeper, and these have been defined as Survey Unit 2 landforms. These steep slopes are often treed, although most have been cleared in the past. Survey Unit 2 landforms are more common in the east of the Project Area closer to the steep gorge country of the Oxley Wild Rivers National Park. Ridgelines and crest landforms, while comparatively rare, are still present within the Project Area, although they tend to be isolated and do not form extensive ridge lines of the type that could have been used as traditional pathways by Aboriginal people. The extent of these landform units within the Project Area is mapped on **Figure 2-7**.

In terms of the Survey Boundary, the extent of the Survey Units within the Project Area is detailed in **Table 2-2**. The figures in **Table 2-2** do not include the ETL alignment outside of the Project Area that was also subject to survey.

**Figure 2-8** shows the Survey Boundary in relation to the defined landform types to provide an indication of the landform types in which the proposed works will occur and **Figure 2-9** shows views of the Survey Units within the Survey Boundary. As can be seen, most impacts are confined to Survey Unit 1 and Survey Unit 2 landforms as would be expected for a wind farm. Most turbine locations are within Survey Unit 1 and Survey Unit 2 landforms, although some turbine locations are in adjacent Survey Unit 3 landforms. The impacts in Survey Unit 3 landforms are generally limited to linear impacts such as reticulation lines and access tracks.

**Table 2-2: Survey Units and landforms within Survey Boundary.**

Survey Unit	Landform type	Definition	Total area within Survey Boundary (ha)	Percentage of landform within Survey Boundary
1	Ridgelines and crest landforms	Characterised by a either a single crest (the top of a mountain or hill) or a chain of mountains or hills that form a continuous elevated crest (ridgeline)	108.2	6.3
2	Slope landforms greater than 10 degrees	Landforms with steeper gradients	434.3	40.3
3	Low gradient/undulating landforms	Characterised by sloping landforms with gentle gradients (less than 10 degrees slope). In the Project Area, these landforms are elevated and often distant to water.	562.9	53.6

Figure 2-7: Landforms within the Project Area.

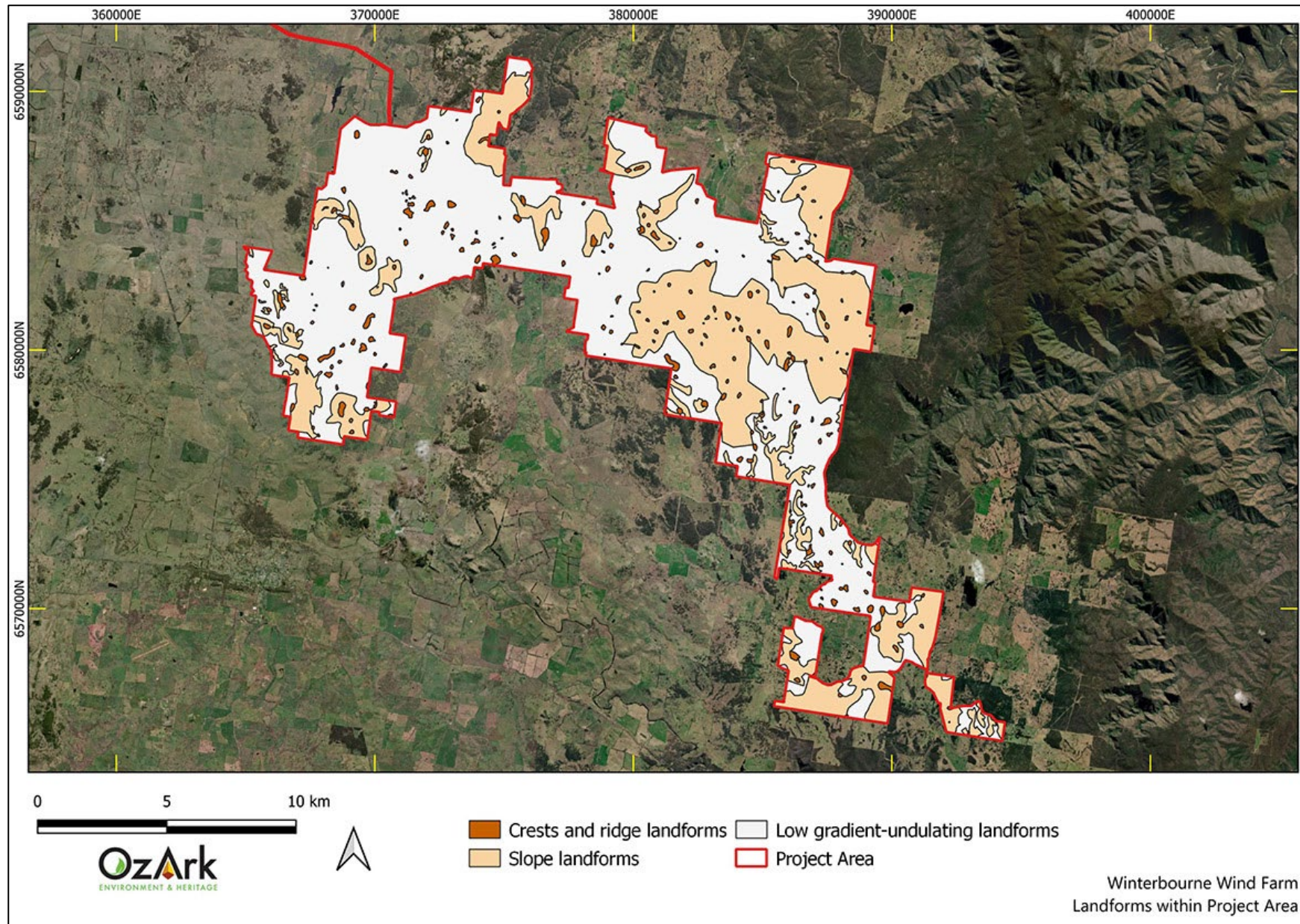
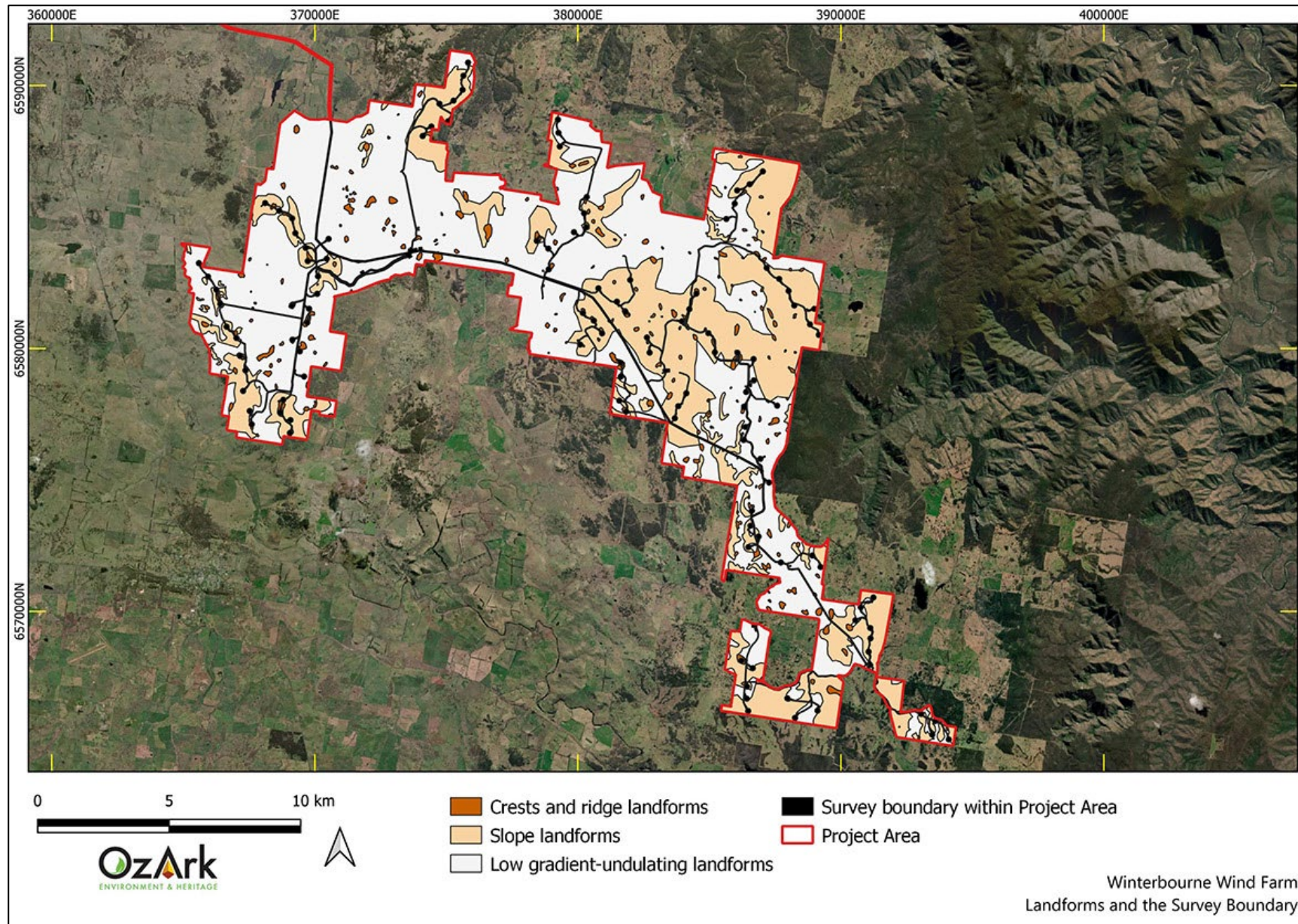








Figure 2-8: Landforms in relation to the Survey Boundary within the Project Area.



**Figure 2-9: Topography of the Project Area.**

	
<p>1. Example of Survey Unit 1. View of the crest of a ridgeline.</p>	<p>2. Example of Survey Unit 2. View of a steep slope landform.</p>
	
<p>3. Example of Survey Unit 2. View of a steep slope landform.</p>	<p>4. Example of Survey Unit 3. View of a moderate slope landform.</p>
	
<p>5. Example of Survey Unit 3. View of rolling hills with gentle slopes.</p>	<p>6. Example of Survey Unit 3. View of a moderate slope landform.</p>

## 2.2 GEOLOGY AND SOILS

The Project Area is within the Uralla Basalts and Sands, Niangala Plateau and Slopes, Moonbi-Walcha Granites, and Tia Tops (Mitchell 2011). These landscapes are characterised by undulating hilly plateaus with rocky outcropping, and low-lying flat valleys.

The Project Area is located within the New England fold belt, which is composed of sedimentary rocks of the carboniferous and Permian age (360–250 million years ago). These rocks were extensively faulted during a period of rapid continental plate movement associated with granite intrusions in the late Carboniferous (c. 300 million years ago). Much of this bedrock is now superimposed by tertiary basalt flows that rarely exceed 100 m in thickness.

The geology of the region has a significant influence on topography. The Oxley Wild Rivers National Park is located to the east and south of the Project Area. This area is located at the eastern edge of the New England Tableland Bioregion. Coastal streams have cut deep gorges below the plateau and the granite country (on the eastern edge of the Project Area) is steep with abundant boulder outcrops and rounded tors. The basalt country (predominant in the Project Area) is more planar, except for areas around former eruption centres that formed high peaks and the individual basalt flows are seen as distinct levels across the plains. It is these basalt outcrops that were utilised in the past as quarries by the local Aboriginal populations. Later, the fertility of the ballast country meant that these landscapes have been farmed, while the steeper landscapes to the east of the flat to undulating New England Tablelands were used for timber harvesting and, in places, gold mining.

Due to the underlying geology, most of the Project Area is currently farmed and there are few areas unaffected by long-term vegetation clearing and grazing. The Project Area abuts the Great Escarpment to the east. The Great Escarpment is a spectacular landform feature along the eastern edge of the tablelands that extends from northern Queensland to southern Victoria. Most of these landscapes are currently protected in various national parks.

The Project Area contains several soil types. However, the dominant soils, according to the Australian Soil Classification, are Yellow Earths and Soloths. Yellow Earths are typically associated with older land surfaces, and have a red brown, grey or brown surface horizon that merges into a yellow subsoil. These soils have low fertility due to low phosphorous levels. Soloths are developed from saline material and have a brown surface horizon colour, whereby the sub-surface horizons are lighter coloured.

- In the Project Area the dominant soil type, Yellow Earths, are typically associated with the more elevated landscape on the southern areas of the Project Area. Generally, the soils were thinner on slopes, where rock outcropping was most common
- Soloths in the Project Area are mostly associated within the valleys or low lying plains, particularly in the north-eastern areas of the Project Area. Soils in these areas tend to be

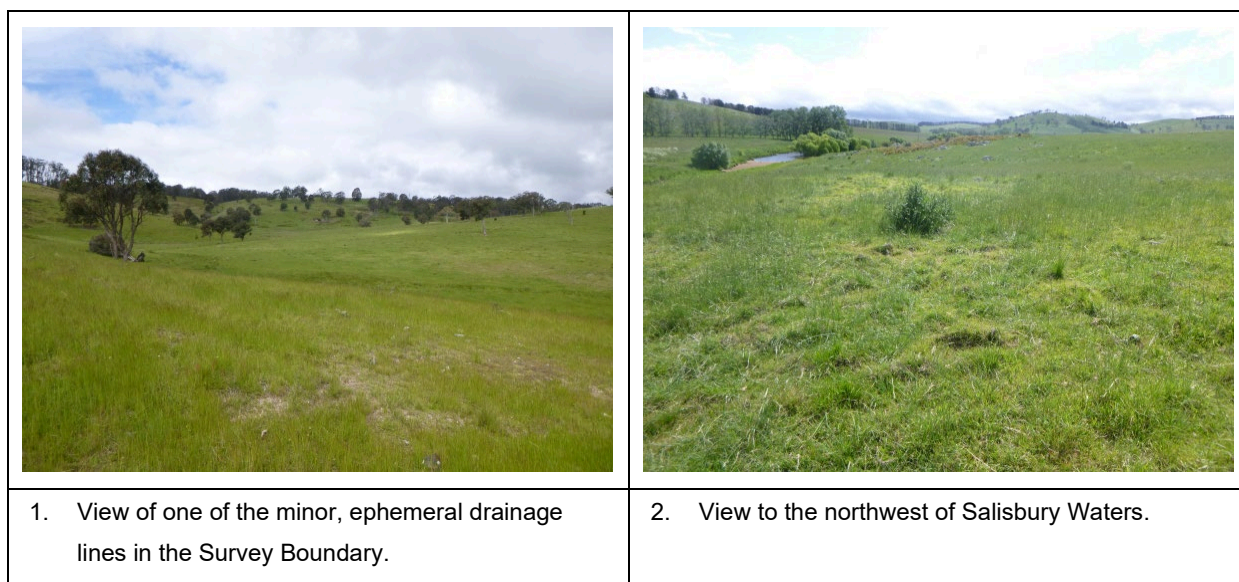
the ideal areas for cropping due to the lower frequency of outcropping rock and deeper soil profile.

## 2.3 HYDROLOGY

Multiple tributaries and creek lines occur within open pasture, valleys and gullies across the Project Area. There are no major waterways with the Apsley River 2 km to the south of the Project Area being the closest major water source. Salisbury Waters, another major waterway located approximately 14 km northwest of the Project Area, is crossed by the ETL alignment (**Figure 2-10**). Notwithstanding, there are several named creeks within the Project Area that hold permanent or semi-permanent water currently and probably would have held water more permanently before the hydrological changes brought about by historical agricultural activity. Creeks located in the Project Area include Mihi Creek, Winterbourne Creek, and Brookmount Creek (**Figure 2-13**).

**Figure 2-13** shows that most of the impacts associated with the construction and use of the WWF are at a distance to major waterways, except for the ETL crossing Salisbury Waters. As the turbine locations are confined to crests and ridges they do also not impact minor named waterways, however, other project components, such as reticulation lines and access tracks, cross some minor waterways. As such, impacts to named waterways is relatively minimal within the Survey Boundary.

**Figure 2-10: Hydrology of the Survey Boundary.**



DEMs of the Project Area illustrate the topography of the region's waterways (**Figure 2-11** and **Figure 2-12**). Generally, creek topographies are similar to that illustrated by Winterbourne Creek in that the waterway is within a V-shaped valley without any associated creek flats (**Figure 2-11**). Lambing Flat Creek, by contrast, does contain creek flats, although little of this landform is within the Survey Boundary (**Figure 2-12**).

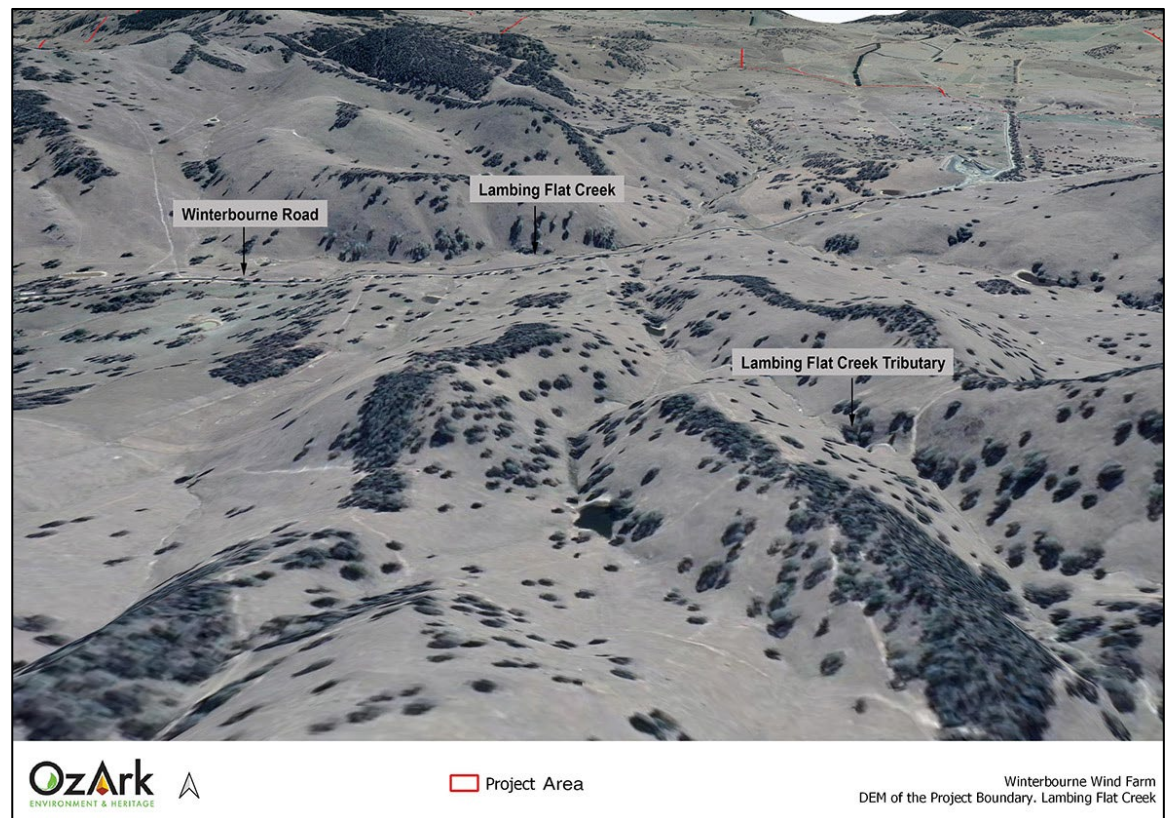
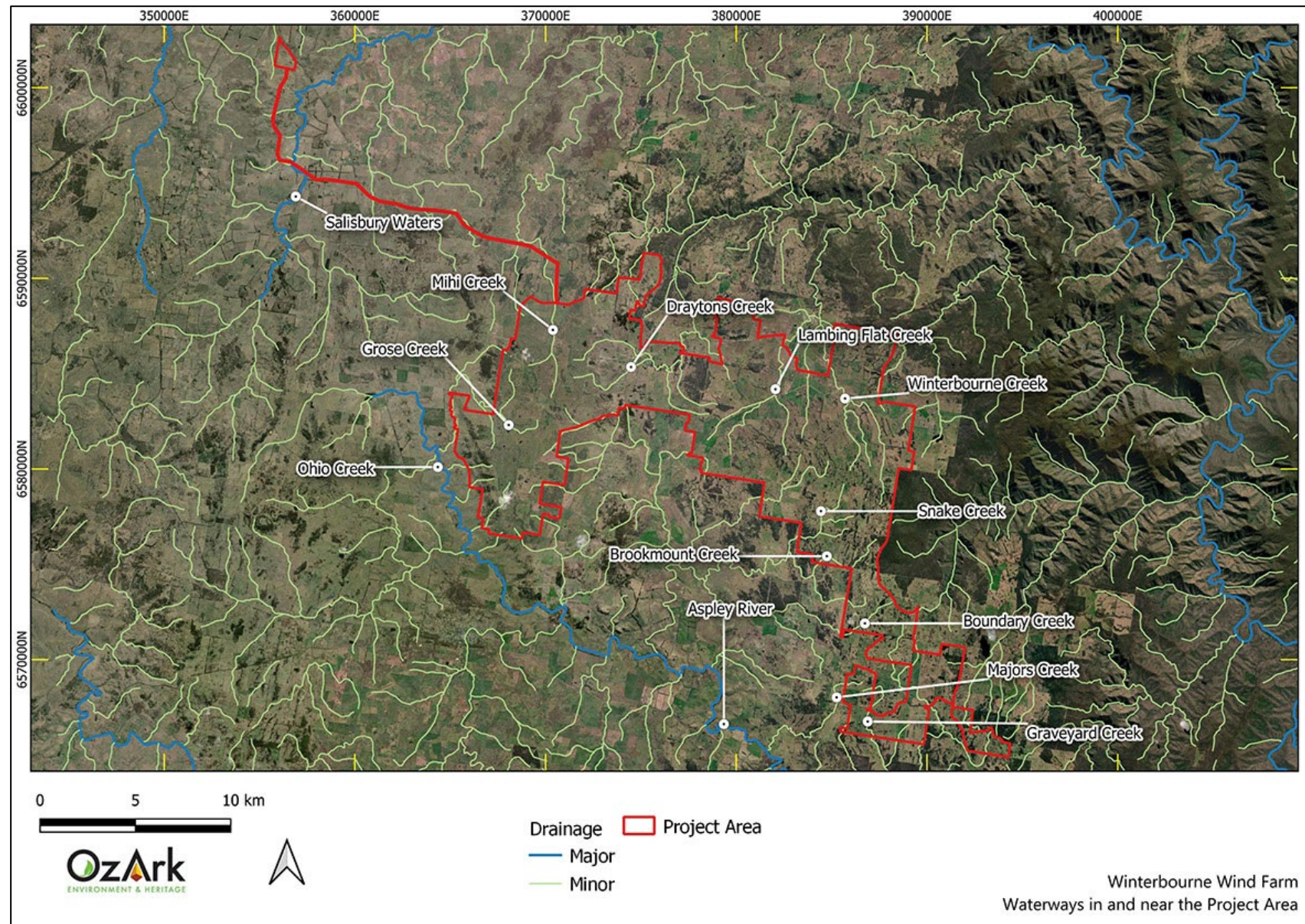
**Figure 2-11: DEM of the topography near Winterbourne Creek.****Figure 2-12: DEM of the topography near Lambing Flat Creek.**

Figure 2-13: Named watercourses in relation to the Project Area.



## 2.4 FLORA AND FAUNA

The New England Tableland originally supported vast open forests and woodlands that were comprised of stringybark (*Eucalyptus laevopinea*), red gum (*Eucalyptus blakelyi*), yellow box (*Eucalyptus melliodora*), rough-barked apple (*Angophora floribunda*), snow gum (*Eucalyptus pauciflora*), and cypress pine (*Callitris endlicheri*). The native eucalyptus species would occur in different areas throughout the tableland depending on the soil types and elevation.

Snow gum forests typically resided in the higher elevated regions closer to the Great Dividing Range, where the dominant temperatures were cold. The stringybark woodlands would occur in moist areas that also contained rolling or undulating hills, whereas open forests of yellow box and red gum occur on tertiary sands.

The Walcha Plateau subregion in which the Project Area is located supports diverse vegetation, which varies with landform and elevation. Vegetation includes Snow Gum, Black Sallee, Mountain Gum, Silver-top Stringybark, and New England Blackbutt. Cool temperate rainforest elements are noted in moist, sheltered gullies.

The original vegetation of the Survey Boundary has been substantially cleared for agricultural and pastoral purposes; however, some areas remain treed although these areas have probably been cleared or at least thinned for timber-getting in the past. More recently, the prolonged drought through early 2020 resulted in significant impacts to forested areas, with numerous trees observed to have fallen because of drought and high winds. Stands of native vegetation are mostly confined to the gorge country to the east of the Project Area.

The fauna of the New England Tableland is rather diverse, but also has a considerable number of endangered species. Ninety-two fauna species have been recorded in the Bioregion (NSW NPWS 2001) that are classified as vulnerable or worse, where 18 of these are endangered and 72 are vulnerable. The decline in fauna is most likely due to the environmental changes caused by agriculture in the area. The tablelands have a great diversity of fauna with thousands of bird, mammalian, insect, reptilian, and amphibian species. Most of these species occur in areas with a permanent water supply and steady availability of resources. Ideal areas for this include the wetlands and lagoons, such as Dangars Lagoon located to the south of Uralla.

The Walcha Plateau subregion supports a number of fauna species suitable for subsistence by Aboriginal people in the past, such as wallabies, possums, various species of river fish, and many native birds. The region is home to several threatened native fauna species, including the regent honeyeater.

## 2.5 CLIMATE

The climate in the New England Tableland is cool-moderate. The mean annual temperatures range from 9–17°C with a minimal average monthly temperature of -3.6–6°C and a maximum

monthly temperature of 20.8–31.6°C. The region has a mean annual rainfall of around 653 to 1765 millimetres (mm) (Stern et al. 2000).

## 2.6 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

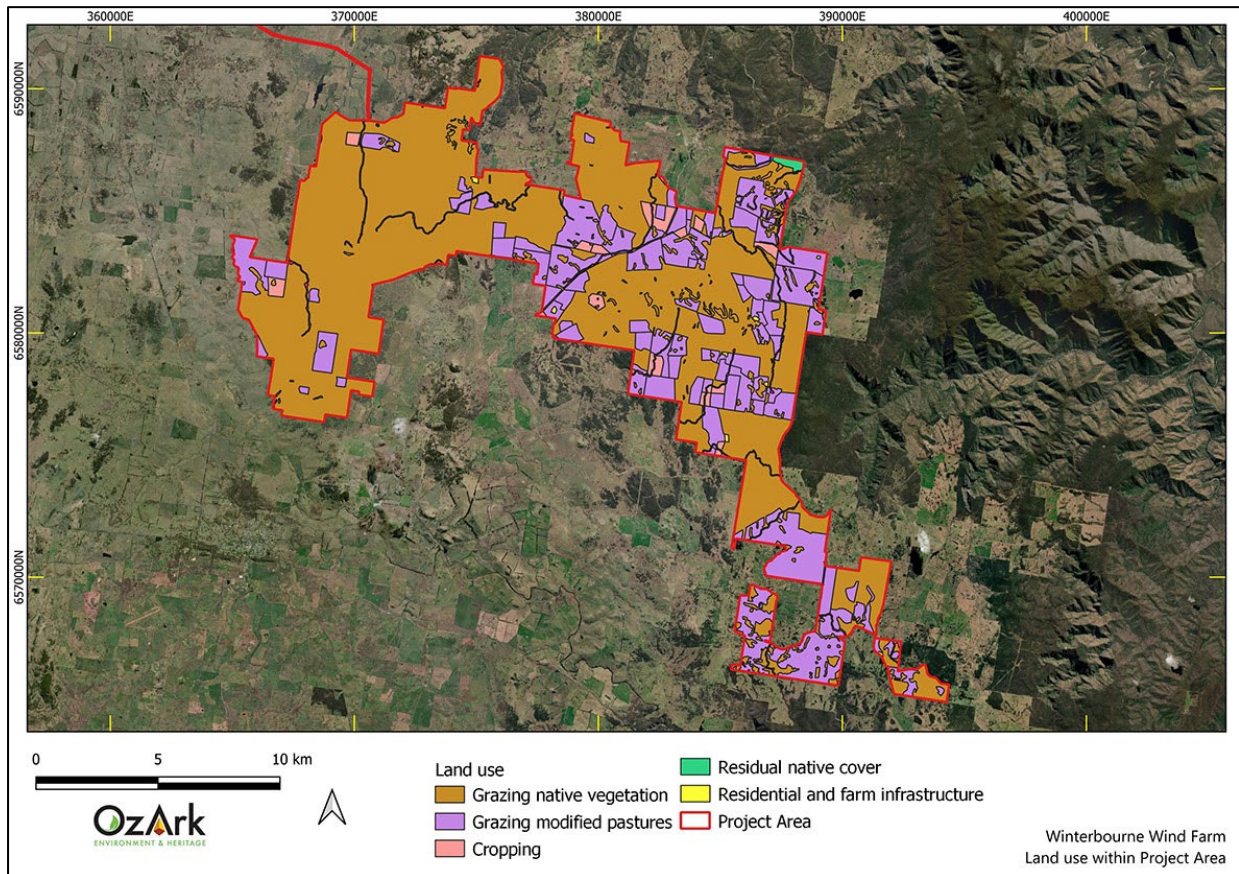
Since colonial occupation in the New England Tablelands from the 1800s, the land within the Project Area has been subject to sheep and cattle grazing (RPS 2008). The Walcha area was the first area to be known to colonial settlers in the New England region as it was on the route surveyed by John Oxley. Oxley arrived in the area in 1818 and named the nearby river, the Apsley River. However, it was not until 1832 that Walcha received its first settler, Hamilton Collins Sempill. Various industrial buildings were erected in the following years as the population continued to grow. By 1900 the population of Walcha and its surrounding districts into the Project Area was approximately 1600 and much of the surrounding land had been cleared for agricultural purposes.

Most of the Project Area has been modified by historical land use practices and past disturbances associated with land clearing, manual and machine rock-picking, cropping, and intensive livestock grazing. Although the entire Project Area has been subject to widespread clearing, there are a number of mature trees that have survived since colonial settlement for use as shade for livestock. The properties that make up the Project Area are currently primarily used for sheep grazing for production of wool and lambs, with some cattle grazing for beef production. These paddocks are still subject to cropping for pasture improvement and can be seen in their various stages of crop rotation.

Areas with significant outcropping bedrock have also been historically cleared of vegetation; however, depending on the nature and extent of bedrock, are likely to have been avoided from repeated cropping due to inaccessibility for farming machinery.

Disturbed land in the Project Area includes residential dwellings, road corridors, farm tracks, farm infrastructure (fences, dams, stockyards, sheds, etc.), and communications aerials. There are some areas where mature trees appear to be present within the Project Area, although most areas appear to have been cleared for grazing purposes.

Most land use within the Project Area consists of grazing, mostly on unmodified pastures (**Figure 2-14**). While a large portion of the Project Area is identified as grazing on modified pasture, there are also small areas of cropping and farming infrastructure. There is a small area of residual native vegetation in the northeast of the Project Area. Implicit in these forms of land use is widespread clearing in the past. This, in conjunction with grazing by hard-hoofed animals, promotes soil loss from elevated and sloping areas and the accumulation of soils in valley landforms. These erosive processes have had a profound impact in the Project Area and the landscapes that are present today are much altered from their pre-modern forms.

**Figure 2-14: Land use within the Project Area.**

## 2.7 CONCLUSION

The review of the environmental factors associated with the Project Area allows conclusions to be formulated in terms of past occupation by both Aboriginal people and colonial settlers.

**Topography:** The Survey Boundary predominantly consists of crested landforms, slopes, and low gradient, undulating landforms. Flat plains within the Survey Boundary are primarily restricted to the northwest in areas associated with the ETL alignment to the proposed connection switchyard. Sloping landforms typically occur in greater density in the east of the Project Area nearer the Great Dividing Range. Occupation by traditional Aboriginal people will likely be more associated with the larger waterways and flatter topography around Salisbury Waters. While crests may have been utilised for certain activities, primarily ceremonial or transit, their exposed nature makes them unlikely to be the location of occupation camps. Regarding historical archaeological deposits, due the sloping and elevated nature of the Survey Boundary, if historical sites are present, they are more likely to be vernacular items associated with agriculture/pastoralism. Larger settlements, like in the case of Aboriginal occupation, are likely to be associated with flatter, more well-watered landforms that are not well represented in the Survey Boundary.

**Geology and soils:** The predominant geology of the Walcha region is basalt and granite, and while granite had little use for the traditional Aboriginal people, basalt was a raw material sourced for

the manufacturing of artefacts. Thus, areas with outcropping basalt could contain evidence of past Aboriginal quarrying activity.

The fertile soils of the region would have supported various resources that attracted Aboriginal groups to the area. However, it is this fertility of the soils that also attracted colonial interest in the area, which signified the beginning of long-term impacts to the environment. These included the clearing of vegetation to provide open spaces for intensive grazing. These impacts may have caused the removal of certain site types (such as culturally modified trees) or the disturbance of sites such as artefact scatters through ploughing and/or stock trampling.

Hydrology: As elsewhere in New South Wales, there is a close association between the recording of Aboriginal sites and the presence of waterways. The Survey Boundary contains numerous unnamed ephemeral creeks, and a few named creeks such as Mihi and Winterbourne Creeks. The only permanent waterway in the Survey Boundary is Salisbury Waters that runs from the south to the north across a small section of ETL alignment. The restricted areas associated with waterways within the Survey Boundary are unlikely to have attracted long-term Aboriginal occupation when compared to nearby areas such as Dangars Lagoon or the Apsley River.

Following European colonisation in the area, these minor waterways within the Survey Boundary were impacted through vegetation clearing, erosion, and stock trampling and this may have disturbed the primary context of any remaining archaeological evidence.

Regarding historic heritage, the same association with permanent water and occupation is also noted. Hence, similar conclusions can be drawn in terms of the presence of historical archaeological deposits and the hydrological features present within the Survey Boundary are unlikely to have attracted large-scale occupation. However, the presence of an individual structure, such as an early settler hut or a shepherd's hut, cannot be discounted.

Flora and Fauna: The region would have provided resources for short-term occupation by Aboriginal people. The high altitude and sloping terrain of the Survey Boundary indicates that obtaining resources would have been more difficult when compared to other nearby environments (i.e. lagoons or rivers). As these areas were more abundant with flora and fauna resources, it is in these areas outside of the Survey Boundary where longer-term occupation would have been located.

The colonial use of the flora and fauna was limited in the region as native vegetation was not sought after for the forestry industry. However, the fertile soils encouraged colonists to settle in the area and this has led to long-term impacts from vegetation clearing and the introduction of exotic species such as the rabbit. The impact of vegetation clearing and introduced animals has disrupted soil profiles across the area and may have removed or dispersed archaeological deposits had they been present.

Climate: The cold climatic conditions of the Survey Boundary may have limited permanent occupation by Aboriginal people, particularly in the exposed terrain of ridges and crests where most of the impacts associated with the WWF are proposed. If occupation sites exist in the Survey Boundary, they would be located on flat landforms elevated above areas where cool air pools. This would mean that occupation would not be directly adjacent to creeks but on nearby ridges and spurs.

As the name of the New England Tableland implies, the cool climate of Australia was welcomed by the early colonials due to its similarities to the known environment of Britain. However, like traditional Aboriginal people, settlement locations along the ridges and crests within the Survey Boundary would have been limited due to the exposure of these landforms to the elements.

Land use: The substantial amount of vegetation clearing to obtain open land for agriculture and farming most likely removed many Aboriginal sites such as culturally modified trees or dispersed sites such as artefact scatters through the soil loss that followed vegetation clearing. Sites such as stone arrangements or Bora grounds are likely to have been disturbed by stock trampling or the clearing of fields of loose stone. Areas where farming and agriculture is less intensive, such as hill slopes, have become degraded through slope wash and any Aboriginal objects in these landforms are likely to be in a secondary context.

The negative impacts of historic land use mostly affect Aboriginal sites, however, the long-term farming that has taken place in the historic period indicates that items of historic heritage significance may be present.

## **ABORIGINAL CULTURAL HERITAGE ASSESSMENT**

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### **3 ASSESSMENT INTRODUCTION**

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#### **3.1 DATE OF ARCHAEOLOGICAL ASSESSMENT**

The fieldwork component of this assessment was undertaken by OzArk in three stages:

Stage 1 – Monday 20 July 2020 to Friday 31 July 2020

Stage 2 – Monday 2 November 2020 to Friday 6 November 2020

Stage 3 – Tuesday 23 February 2021 to Wednesday 24 February 2021.

#### **3.2 OZARK INVOLVEMENT**

##### **3.2.1 Field assessment**

Fieldwork Stage 1 consisted of two teams of two OzArk archaeologists in each team. Fieldwork for Stage 2 and Stage 3 consisted of one team of two OzArk archaeologists.

- Fieldwork Stage 1
  - Fieldwork Director: Ben Churcher (OzArk Principal Archaeologist; BA [Hons], Dip Ed).
  - Lead Archaeologist: Dr Jodie Benton (OzArk Director, BA [Hons] and PhD [Archaeology] University of Sydney)
  - Archaeologist: Dr Alyce Cameron (OzArk Senior Archaeologist, BA [Hons] and PhD [Archaeology & palaeoanthropology] Australian National University.
  - Archaeologist: Stephanie Rusden (OzArk Senior Archaeologist, BS University of Wollongong, BA University of New England)
  - Heritage Officer: Harrison Rochford (OzArk Heritage Specialist, Masters Philosophy (Ancient History) and Bachelor of Liberal Studies [Hons], University of Sydney).
- Fieldwork Stage 2
  - Fieldwork Director: Dr Jodie Benton
  - Archaeologist: Brendan Fisher (OzArk Project Archaeologist, BA Archaeology, The University of Sydney).
- Fieldwork Stage 3
  - Fieldwork Director: Dr Jodie Benton
  - Archaeologist: Brendan Fisher

##### **3.2.2 Reporting**

The reporting component of the heritage assessment was undertaken by:

- Report Author: Ben Churcher

- Contributors: Taylor Foster (OzArk Project Archaeologist) and Brendan Fisher
- Reviewer: Dr Jodie Benton.

### 3.3 RELEVANT LEGISLATION

Cultural heritage is managed by several state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Burra Charter 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

Several Acts of parliament provide for the protection of heritage at various levels of government.

#### 3.3.1 State legislation

##### ***Environmental Planning and Assessment Act 1979*** (EP&A Act)

This Act established requirements relating to land use and planning. The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- Part 4: Local government development assessments, including heritage. May include schedules of heritage items
  - Division 4.7: Approvals process for state significant development.

##### ***National Parks and Wildlife Act 1974*** (NPW Act)

The NPW Act provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under the Act (Part 6), an Aboriginal object is defined as: any deposit, object, or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

It is an offence under Section 86 of the NPW Act to 'harm or desecrate an object the person knows is an Aboriginal object'. It is also a strict liability offence to 'harm an Aboriginal object' or to 'harm or desecrate an Aboriginal place', whether knowingly or unknowingly. Section 87 of the Act provides a series of defences against the offences listed in Section 86, such as:

- The harm was authorised by and conducted in accordance with the requirements of an *Aboriginal Heritage Impact Permit* (AHIP) under Section 90 of the Act
- The defendant exercised 'due diligence' to determine whether the action would harm an Aboriginal object
- The harm to the Aboriginal object occurred during the undertaking of a 'low impact activity' (as defined in the regulations).

Under Section 89A of the Act, it is a requirement to notify the Secretary of the Department of Premier and Cabinet (DPC) of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS) that is administered by Heritage NSW.

### **Planning Secretary's Environmental Assessment Requirement (SEARs)**

The SEARs for the project were issued on 17 September 2020.

In relation to heritage, the SEARs state:

- Assess the impact to Aboriginal cultural heritage items (archaeological and cultural) in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) and the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010)
- Provide evidence of consultation with Aboriginal communities in determining and assessing impacts, developing options and selecting options and mitigation measures (including the final proposed measures), having regard to the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010b)
- Assess the impact to historic heritage having regard to the NSW Heritage Manual.

There does not appear to be a specific submission from Heritage NSW to the SEARs. Generally, this submission relating to heritage would include the requirements outlined above.

### **3.3.2 Commonwealth legislation**

#### ***Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

The EPBC Act, administered by the Commonwealth Department of Agriculture, Water and the Environment, provides a framework to protect nationally significant flora, fauna, ecological communities, and heritage places. The EPBC Act establishes both a National Heritage List and Commonwealth Heritage List of protected places. These lists may include Aboriginal cultural sites or sites in which Aboriginal people have interests. The assessment and permitting processes of the EPBC Act are triggered when a proposed activity or development could potentially have an impact on one of the matters of national environment significance listed by the Act. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to National/Commonwealth heritage places.

On 31 August 2020, a delegate of the Federal Minister for the Department of Agriculture, Water and the Environment determined that the WWF project was a controlled action under Section 75 of the EPBC Act. The EPBC Act controlling provisions for the proposed actions are:

- World Heritage properties
- National Heritage places
- Listed threatened species and communities
- Listed migratory species.

The Oxley Wild Rivers National Park is part of the Gondwana Rainforest of Australia property, World Heritage Area. Over 81,000 ha of Oxley Wild Rivers National Park has also been declared 'wilderness' under the NSW *Wilderness Act 1987*. Wilderness areas are large natural areas of land that, together with their native plant and animal communities, are essentially unchanged by human activity.

The Oxley Wild Rivers National Park forms part of a "matter of national environmental significance" protected under the EPBC Act. A key component of the Act is to protect world heritage properties from impacts that originate outside the property.

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

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* is aimed at the protection from injury and desecration of areas and objects that are of significance to Aboriginal Australians. This legislation has usually been invoked in emergency and conflicted situations.

### **3.3.3 Applicability to the project**

The current project will be assessed as an SSD (SSD-10471), under Division 4.7 of the NSW EP&A Act 1979.

As the project is a SSD, if approved, Section 4.41 of the EP&A Act would apply and therefore an AHIP under section 90 of the NPW Act to harm Aboriginal objects would not be required. Instead, all management related to Aboriginal cultural heritage within the Survey Boundary would be governed by the policies within an approved *Aboriginal Cultural Heritage Management Plan* (ACHMP).

Any Aboriginal sites within the Project Area are afforded legislative protection under the NPW Act.

Under Section 89A of the NPW Act, it is a requirement to notify the Secretary of the DPC of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on AHIMS.

There are no Commonwealth or National heritage places listed within the study area, and the carrying out of the project is not likely to have any significant impact on Commonwealth land or a Commonwealth heritage place.

The submission provided to the SEARs from the Biodiversity and Conservation Division (BCD) notes that the proposal may change the visitor experience for those engaging in wilderness activities across the Oxley Wild Rivers National Park. BCD notes that the Green Gully Track is an important multi-day wilderness bushwalking experience offered within Oxley Wild Rivers National Park. The focus of the experience is to promote natural systems, cultural heritage, biodiversity, and the value of wilderness areas. However the BCD require WWPL to consider the impact of the WWF on fire management and pest and weed control rather than any impact to the cultural heritage values of the Oxley Wild Rivers National Park. This indicates that heritage impacts to values in the Oxley Wild Rivers National Park are seen as unlikely.

### **3.4 ASSESSMENT APPROACH**

The current assessment follows the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010).

Field assessment and reporting followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (The Guide; OEH 2011).

Aboriginal community consultation will follow the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs; DECCW 2010b).

### **3.5 PURPOSE AND OBJECTIVES**

The purpose of the current study is to identify and assess heritage constraints relevant to the proposed works.

#### **3.5.1 Aboriginal archaeological assessment objectives**

The current assessment will apply the Code of Practice in the completion of an Aboriginal archaeological assessment to meet the following objectives:

**Objective One:** Undertake background research on the Project Area to formulate a predictive model for site location within the Survey Boundary

**Objective Two:** Identify and record objects or sites of Aboriginal heritage significance within the Survey Boundary, as well as any landforms likely to contain further archaeological deposits

**Objective Three:** Identify items of Aboriginal cultural heritage significance that should be conserved

**Objective Four:** Assess the likely impacts of the project to Aboriginal cultural heritage and provide management recommendations.

### 3.6 REPORT COMPLIANCE WITH THE CODE OF PRACTICE

The Code of Practice establishes requirements that should be followed by all archaeological investigations where harm to Aboriginal objects may be possible. **Table 3-1** tabulates the compliance of this report with the requirements established by the Code of Practice.

**Table 3-1: Report compliance with the Code of Practice.**

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 1a	Review Previous archaeological work	<b>Section 5</b>
Requirement 1b	Review AHIMS searches	<b>Section 5.4.1</b>
Requirement 2	Review the landscape context	<b>Section 2</b>
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	<b>Section 5.5</b>
Requirement 4a	Develop a predictive model	<b>Section 5.5</b>
Requirement 4b	Present the predictive model results	<b>Section 5.5.6</b>
Requirement 5a	Survey sampling strategy	<b>Section 6.1</b>
Requirement 5b	Survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Survey units	<b>Section 2.1 and Section 6.7.2</b>
Requirement 6	Site definition	<b>Section 5.5.6</b>
Requirement 7a	Site information to be recorded	All sites were recorded in accordance with this Requirement.
Requirement 7b	Scales for photography	All artefact photographs employed a centimetre scale bar.
Requirement 8a	Geospatial information	All artefact locations were logged using a non-differential handheld GPS.
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 56.
Requirement 9	Record survey coverage data	<b>Section 6.1</b>
Requirement 10	Analyse survey coverage	<b>Section 6.3</b>
Requirement 11	Archaeological Report content and format	This report adheres to this Requirement.
Requirement 12	Records	OzArk undertakes to maintain all survey records for at least five years.
Requirement 13a	Notification to Heritage NSW of breaches	Not applicable
Requirement 13b	Provision of information to Heritage NSW	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	Test excavation did not take place
Requirement 15a	Consultation as a precursor to test excavation	Test excavation was not undertaken
Requirement 15b	Test excavation sampling strategy	Not applicable
Requirement 15c	Notification	Not applicable
Requirement 16a	Test excavations to be carried out in accordance with the Code of Practice	Not applicable

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 16b	Objects recovered during test excavations	Not applicable
Requirement 17	When to stop test excavations	Not applicable

## 4 ABORIGINAL COMMUNITY CONSULTATION

### 4.1 ABORIGINAL COMMUNITY CONSULTATION

The Aboriginal cultural heritage assessment of the project has followed the ACHCRs (DECCW 2010b). A log and copies of correspondence with Aboriginal community stakeholders is presented in **Appendix 1 Figure 1**.

The ACHCRs include four main stages, and these will be detailed in the following sections.

#### 4.1.1 ACHCRs Stage 1

The aim of Stage 1 is to identify the Registered Aboriginal Parties (RAPs) who wish to be consulted about the project.

Consultation for this project has followed the guidelines established in the ACHCRs (DECCW 2010b) whereby an advertisement was placed in the local press and relevant agencies were contacted to ascertain if they were aware of groups or individuals who may have cultural knowledge of the region containing the project.

On 28 April 2020, an advertisement was placed in the '*Daily Leader*' requesting expressions of interest in being consulted about the project (see **Appendix 1 Figure 2**). In addition, the following agencies were contacted to identify potential stakeholders for the area (**Appendix 1 Figure 3**):

- The Department of Planning, Industry and Environment: Biodiversity and Conservation Division (BCD), now Heritage NSW
- Amaroo Local Aboriginal Land Council (LALC)
- Armidale LALC
- Office of The Registrar, ALRA
- National Native Title Tribunal
- NTSCORP
- Walcha Council
- Uralla Shire Council
- Northern Tablelands Local Land Services.

Letters were then sent to all potential stakeholders asking if they wished to be consulted about the project (**Appendix 1 Figure 4**).

Initially only the LALCs were included on the RAP list as OzArk did not receive any other expressions of interest to be consulted. However, as shown in the consultation log (**Appendix 1 Figure 1**), other groups and individuals registered to be consulted following the close of Stage 1 and were included in the RAP list for the project.

As a result, the following individuals/groups registered to be consulted about the project:

- Amaroo LALC
- Armidale LALC
- Nunawanna Aboriginal Corporation
- Larissa Ahoy
- Iwatta Aboriginal Corporation.

These individuals/groups constitute the RAPs for the project.

#### **4.1.2 ACHCRs Stages 2 & 3**

The aim of Stages 2 and 3 is to provide information about the project to the RAPs and to acquire information regarding Aboriginal cultural values associated with the project either through consultation and/or field work. Often these two stages are run together, and the detailed project information is provided in the assessment methodology that is issued to all RAPs for their consideration.

The Stage 2/3 document was sent to the RAPS on 18 June 2020 with a closing period of 17 July 2020. The cover letter that was attached to the assessment methodology invited RAPs to identify whether any Aboriginal cultural values exist in the Project Area that should be incorporated into the assessment methodology (**Appendix 1 Figure 5**). Those RAPs that registered later were also sent the assessment methodology for their consideration.

The assessment methodology sent to all RAPs is presented in **Appendix 1 Figure 6**.

No amendments or comments concerning the assessment methodology were provided by the RAPs following their review of the documentation.

On 4 February 2021, a project update letter was sent to all RAPs to inform them of the progress of the assessment regarding the WWF. The update letter sent to all RAPs is presented in **Appendix 1 Figure 7**.

#### **4.1.3 ACHCRs Stage 4**

Stage 4 involves the production of a draft ACHAR that is issued to all RAPs for their consideration. The ACHAR will document the results of the assessment, outline opportunities for the conservation of Aboriginal cultural values, and suggest recommendations for the management of Aboriginal objects should impacts to these objects be unavoidable.

The draft ACHAR was sent to RAPS on 19 November 2021 with a closing period of 17 December 2021. The letter was attached to the draft ACHAR inviting RAPs to review the ACHAR and to provide any comments on the cultural values of the sites recorded, as well as for the broader Project Area (**Appendix 1 Figure 8**).

No comments were received from the RAPs on the draft ACHAR.

## 4.2 ABORIGINAL COMMUNITY INVOLVEMENT IN THE ASSESSMENT

The field survey was undertaken in three stages. The first took place from 20–31 July 2020. The following RAPs or representatives of RAPs participated in Stage 1 of the fieldwork:

- Armidale LALC
- Amaroo LALC
- Nunawanna Aboriginal Corporation.

The second stage of field work took place from 2–6 November 2020. The following RAPs or representatives of RAPs participated in Stage 2 of the fieldwork:

- Armidale LALC
- Amaroo LALC
- Nunawanna Aboriginal Corporation
- Larrisa Ahoy
- Iwatta Aboriginal Corporation.

The third stage of field work took place from 23–24 February 2021. The following RAPs or representatives of RAPs participated in Stage 3 of the fieldwork:

- Armidale LALC
- Amaroo LALC
- Nunawanna Aboriginal Corporation
- Iwatta Aboriginal Corporation.

In total, there were 27 days of fieldwork (Stage 1: 20 days comprising two independent teams over 10 days, Stage 2: five days, Stage 3: two days) consisting of 79 person days of survey (including both OzArk archaeologists and RAPs).

### 4.2.1 Comments arising from the assessment

The following are summaries of comments provided by the RAP site representatives during the survey:

- Colin Ahoy (Nunawanna Aboriginal Corporation) presented copies of the Clayton-Dixon book *Surviving New England. A History of Aboriginal Resistance and Resilience through the first forty years of the Colonial Apocalypse* (2019) to the survey team. This book was valuable in assisting the survey team to appreciate the recent history of colonisation in the New England Tablelands and forms the basis of discussion in **Section 5.2**
- Colin Ahoy also provided a lot of information during the survey on previous archaeological assessments in the area, particularly in relation to the nearby New England Solar Farm assessment (**Section 5.3.3**) in which he was closely involved

- Prior to the assessment Colin Ahoy also provided some information of the interaction of tribes in the area of the Project Area. However, at his request, this information has been kept private and has been redacted from this report
- Steven Ahoy (Iwatta Aboriginal Corporation) mentioned during the survey that he held cultural knowledge concerning the Project Area. Following the survey, OzArk attempted to follow this up with Steven (see **Appendix 1 Figure 1**) but were unsuccessful
- In general, the RAPs were aware that sites had been previously recorded in a wide range of landforms and were conscientious to ensure that large portions of the Survey Boundary were carefully surveyed.

## 5 ABORIGINAL ARCHAEOLOGY BACKGROUND

### 5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

The Project Area is situated within the traditional lands of the Anaiwan, Amaroo, and Dunghutti peoples, who have lived in the region for more than 6,000 years.

Most of the Survey Boundary falls within the Aboriginal language group boundary of the *Nganyaywana*; also known as the *Anaiwan*. Norman Tindale (1974) recorded the location of the Anaiwan as “*New England tableland from Guyra and Ben Lomond south to Uralla and Moombie Range; northwest to Tingha; at Bendemeer and Armidale*”. *The Encyclopaedia of Aboriginal Australia* (AIATSIS) follows Tindale’s boundary but classifies the language spoken as *Nganyaywana* which was coined by linguist Terry Crowley (EMM 2018: 27). Crowley identified that the *Nganyaywana* had two dialects: *Himberong* spoken to the south in the Walcha district and *Iuwon* spoken in the areas of Armidale, Uralla and Bundarra. As the Survey Boundary extends through both these areas, it is likely that people in the Survey Boundary spoke both dialects of the *Nganyaywana*.

Further to the southwest of the Project Area the *Dunghutti* language is still spoken in the area, and is being revitalised by the Amaroo LALC, who are conducting language classes in Walcha and the surrounding areas.

### 5.2 COLONISATION OF THE NEW ENGLAND TABLELAND

Clayton-Dixon (2019: 28–30) demonstrates the rapid colonisation of the district that began in the late 1830s. In September 1839, government records show that there were 37 stations across the Tablelands supporting 422 colonists. By 1841 the colonial population had tripled to 1,052. Considered by Governor Gipps to be “*one of the best grazing districts in the colony*”, the Tableland saw rapid growth in the number of stations. By 1848 there were 132 stations, and the New England district quickly became the epicentre of colonial expansion. In 1846 a Sydney newspaper, *The Spectator*, reported that “*there is perhaps not another district in New South Wales that can equal New England in its rapid rise in importance, in population, in wealth*”. Despite colonial settlement starting later than other neighbouring districts, the New England district colonial population soon outnumbered those of its neighbours. By 1860 there were over 7,000 colonists in the district with a population density of over 100 colonists for every 1,000 square kilometres.

By contrast, the estimates of the Aboriginal population in the early colonial period are more fraught with inaccuracies. Commissioner Macdonald, for example, estimated in 1842 that the population did not exceed 500–600, however, he noted the following caveat:

*It is at all times a matter of much difficulty to determine the number of Natives frequenting particular districts of country with any certainty in consequence of their*

*wandering and unsettled habits of life, a tribe remaining in any one encampment for more than a week or 10 days at a time, except when they congregate in force at certain seasons of their religious ceremony.*

Clayton-Dixon (2019: 32)

In 1851, Doctor Thomas Markham, Medical Superintendent to the New England Aborigines (sic), noted:

*If I were to take the statement of every settler as to the number of Blacks on his run, I am positive the number would amount to 600.*

Clayton-Dixon (2019: 34)

As Clayton-Dixon (2019: 34) notes, this figure does not include Aboriginal people living away from settlements and perhaps failed to note a further 100 people who continued to live in the more remote parts of the district; particularly in the rugged eastern escarpment country.

The Reverend W.B. Clarke, while conducting an extensive geological survey of the Tablelands in 1853, estimated the Aboriginal population at 800 (Clayton-Dixon 2019: 35). Shortly afterwards with the launch of the gold rushes further south, the white population was diminished with the withdrawal of people to the various gold fields. This labour shortage saw the beginning of an immigration of Aboriginal people from other districts to the Tablelands, perhaps accounting for the higher population noted by Clarke in 1853 (Clayton-Dixon: 2019: 35).

By the close of the 1850s, a serious decline in the Aboriginal population was noted brought about by the spread of disease (measles, influenza, venereal disease, and dysentery), the cold weather of the Tablelands, and the loss of traditional sources of food. The *Armidale Express* in 1860 noted:

*It must be apparent to every observer how very sensibly the means of the aboriginals are diminishing when camping near Armidale. A sheet of bark that would protect them from the rain and cold cannot be procured, and the green wood of the white gum has frequently to serve them for fuel. The opossum no longer furnishes a meal, which has now generally to be supplied from the offal of the slaughter-yard. Every year renders the aboriginals more and more dependent on the white population. In some of the settlements before many years, they will either die off or have to work for their subsistence.*

Clayton-Dixon (2019: 37–38)

Using information available from the primary sources, Clayton-Dixon (2019: 39) concludes that there was a 20% decrease in the Aboriginal population between 1842 and 1852. As colonial settlement in the Tablelands had begun 10 years prior to 1842 when a similar 20% decline can be assumed, Clayton-Dixon estimates that the region's precolonial Aboriginal population was approximately between 1,100 and 1,200 individuals.

Even at 1,200 individuals, this represents a low population density<sup>1</sup>; a fact noted by the *Sydney Morning Herald* in 1844:

*It appears that the aboriginies have never been numerous in New England ; and it is thought that this is owing partly to there being no rivers from which they could be supplied with fish, and partly from the coldness of the climate.*

Clayton-Dixon (2019: 40)

The Aboriginal population continued to dwindle through the nineteenth century and by the 1890s a census collected by the NSW Aborigines Protection Board revealed that less than 400 Aboriginal people remained in the district (Clayton-Dixon 2019: 41).

The rapid and comprehensive colonisation of the New England Tablelands was not accepted passively by the Aboriginal population but was resisted, often in armed combat, from the first colonial incursions in the 1830s through to the crushing of resistance in the 1860s (for example see Clayton-Dixon [2019: 135–140] for a catalogue of more than 40 documented incidents of frontier conflict across the southern parts of the New England Tableland).

The weight of colonial domination by the 1960s irrevocably crushed the armed resistance leaving the way open for assimilation to proceed with little hinderance. With assimilation came the shattering of culture, language, tradition, and social cohesion. Yet as a mark of the resilience of the Aboriginal people, against overwhelming odds they survived the ‘apocalypse’, some as workers on stations, some in fringe camps. Now in the modern era, with many hurdles still in place, the pride and spirit of this once shattered society is being revived through language programs and the reconnection of people to their ancestral culture.

## **5.3 REGIONAL ARCHAEOLOGICAL CONTEXT**

### **5.3.1 Aboriginal occupation of the New England Tablelands**

Academic-based archaeological investigations in the New England Tablelands dating back to the 1960s have provided a wealth of high-level information that has attempted to link large datasets of sites together and create meaningful Aboriginal occupational models. As such, information about the regional archaeological character of the Tablelands has an advantage over other parts of NSW in areas where there are numerous consultancy reports but no overarching studies tying the data together.

These archaeological studies of the Tablelands are closely associated with the University of New England (UNE) along with archaeological consultancy investigations in response to proposed

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<sup>1</sup> In terms of the archaeological signature created by this low population density, it must be remembered that this would represent approximately six million person years, even if only the past 5,000 years are considered. As such, the incidence of sites is greatly increased when one considers the long period of occupation.

developments across the region. The academic studies in particular have led to the development of regional Aboriginal occupation models particularly from the mid-Holocene onwards.

Initial archaeological research by UNE indicated that Aboriginal occupation of the Tablelands was seasonal and transitory. This was argued to be because of the cold climate during winter and the associated lack of resources for subsistence (Bowdler 1981). In the 1970s, McBryde emphasised the harshness of the Tablelands, suggesting that it would have been a major obstacle to year-round occupation, resulting in a sparse distribution of sites in this zone compared with other more temperate climates. Some argued that instead, the Tablelands were mainly used for ceremonial purposes which was supported by the rich archaeological record of Bora rings, art sites, stone arrangements, and carved trees along with Aboriginal knowledge of intangible sites (Flood 2010: 238–239).

The initial hypotheses of seasonal occupation in the Tablelands were challenged as a result of further research at UNE. In a major study, Luke Godwin argued that the Tablelands were not abandoned in winter at all but occupied all year round by small mobile groups. His evidence, based on ethno-history, climate, and surface archaeology, suggests that the cold winter climate of the Tablelands was not a barrier to year-round settlement (EMM 2018: 35). Goodwin identified that the Tablelands had varying resources zones of woodland, grassland, and wetlands.

A recent study by Beck, Haworth and Appleton published in 2015 built upon the theory of year-round settlement, with a specific focus on the resources of lagoons in the upland wetlands (EMM 2018: 36). The researchers found that during the later Holocene, Aboriginal occupation in this area became more visible, including a high number of ceremonial sites in association with areas of greatest lagoon concentration. They hypothesise that the drier, more uncertain climate of the late Holocene would have concentrated game around larger lagoons which became the focus of consumption and exchange for Aboriginal people. They argue that the concentration of resources would have supported larger numbers of people often associated with ceremonial activity.

By distinguishing certain features of stone tools that are common to all sites, the dating of Aboriginal occupation in the Tablelands can be achieved within a rough estimate. The heavy core and flake scrapers (40,000–10,000 years ago) of the ‘Australian Core Tool and Scraper Tradition’ have been associated with making wooden tools such as boomerangs, spears, clubs and throwing sticks. Tools of the newer industries (10,000–5,000 years ago) are relatively small and are defined by shape as points, adzes and backed (blunted) blades and are known as the ‘Small Tool and Scraper Tradition’. These smaller tools are found in conjunction with chisels and axes. The oldest examples of these stone tools come from the New England region (Binns and McBryde 1972, McBryde 1974). There was a further change in technology (1,000–400 years ago) with a loss of some items from the range (backed blades and finely retouched [re-sharpened] blades)

were replaced with simple flakes, bipolar pieces and ground edge axes and a greater use of shell, bone and glass for tool making.

From the available evidence of stone tool typology, therefore, it would appear that the Tablelands were increasingly occupied during the Holocene but that earlier dates are infrequent and often unreliable. Archaeological and linguistic evidence suggests that the Tablelands were most intensively occupied from around 4,000 years ago (EMM 2018: 36). This is based on the finds of surface or near-surface artefacts, with very little found at greater depth. The oldest known Aboriginal site (c 4,300 years old) is near Bendemeer on the southern edge of the Tablelands (EMM 2018: 36).

### **5.3.2 Site types in the New England Tablelands**

A reasonable amount of archaeological work has been undertaken in the Tablelands and consequently only a brief regional archaeological context that focuses on work in similar landforms to the Project Area is provided here. The results of these investigations provide an archaeological context for the current assessment.

Carved trees, ceremonial Bora grounds and art sites have all been identified within the Tablelands and indicate the original inhabitants' important spiritual and physical connection to the landscape. Other surviving material remains include seed grinding and axe grinding grooves in rock slabs, cooking areas and stone artefact scatters representing open camp sites. Studies identify that Aboriginal occupation was patterned, not random. Activities in the landscape were focused at places where people lived and worked (quarries, camp sites and ceremonial sites), with a preference for areas with clustered resources, such as lagoons, and also along tracks and pathways which were followed for ritual and secular purposes. Transitory areas feature fewer archaeological traces, sometimes only marked by isolated or low-density stone artefact scatters.

Stone quarry and grinding groove sites are site types that represent more utilitarian, even industrial practices. Stone quarries are relatively common in the Tablelands and range from significant quarries such as that at Moore Creek, to smaller but significant working areas on isolated outcrops such as the Salisbury Court axe quarry site (AHIMS 21-4-0004, 1.2 km east of the ETL alignment). The Moore Creek quarry site is in the Tamworth LGA approximately 62 km south-southwest of the Project Area on a ridge approximately 300 m above a valley and features a large outcrop of andesitic greywacke.

McBryde noted in her 1974 publication that suitable rock for grinding grooves is rare across the Tablelands, and therefore grinding groove sites often comprise small portable sandstone blocks (McBryde 1974: 159). She noted that the closest grooves were near Walcha at the time. However, since then, a number of grinding groove sites have been identified in the local area. A number of these sites are noted to be on outcropping granite bedrock, but there is some ambiguity in the

geological terminology. EMM 2018 postulate that areas of suitably coarse outcropping silcrete have been used for grinding grooves which may sometimes be mistaken for granite.

In the later Holocene, Aboriginal occupation in upland areas became more visible in the archaeological record, including a number of ceremonial sites in conjunction with lagoons.

Stone arrangements in various groupings such as cairns, circles, lines and corridors have also been identified although little is known about them. McBryde identified stone cairn sites at a number of locations across north-eastern NSW, which were often grouped along crests, ridges, and knolls (McBryde 1974: 31–33). The study noted that stone arrangements on the Tablelands did not reveal any significant landscape patterning “*apart perhaps from the preference for elevated sites with a good outlook*”. One site at Black Mountain (approximately 56 km north of the Project Area) was known as part of a Bora ground and featured 17 large heaps of stones on a “*slight hollow on the top of a peak, one of the highest points in the area*” (McBryde 1974: 41).

Bora rings in the Tablelands have been identified as circular cleared areas (typically 10–15 m in diameter) edged with a low bank of earth up to 1 m in height and nearly 2 m wide (McBryde 1974: 52). Literary accounts suggest that Bora grounds often comprised two circles joined by a pathway, often flanked by ground drawings of human and animal figures, and carvings of geometric designs in nearby trees. McBryde listed 26 Bora sites known at the time in the Tablelands (McBryde 1974: 59–62).

Archaeological evidence of burials has been identified in rock shelters, but also as open sites marked by earth mounds, piles of stones and nearby carved trees (McBryde 1974: 136–153).

### 5.3.3 EMM 2018 New England Solar Farm

A recent investigation in landforms like those of the ETL alignment between the Project Area and the proposed connection point to the existing grid near Uralla was conducted for the New England Solar Farm by EMM Consulting (EMM) in 2018. This investigation was conducted approximately 25 km northwest of the Project Area but close to the ETL alignment closer to Uralla.

Through background research and landscape analysis, EMM predicted that the study area had the potential to feature a range of Aboriginal sites including stone artefacts, scarred trees, quarries and grinding grooves. Based on a search of the AHIMS register, no Aboriginal sites had previously been recorded in the EMM study area.

EMM conducted a targeted archaeological survey over 19 days in mid-2018 with the support of RAP representatives.

The survey focused on the proposed development footprint (i.e. where project infrastructure was proposed) and on areas likely to feature Aboriginal sites, but also extensively sampled areas and landscapes less likely to feature sites to test the survey predictions. The EMM survey coverage

results indicated that the ground surface visibility conditions during the survey were generally effective to characterise the distribution of archaeological sites across their survey area.

The EMM survey identified 95 Aboriginal sites during the 19 days of archaeological field survey. Site recordings from EMM 2018 are shown in **Table 5-1**. As demonstrated by this table, most of the sites recorded by EMM were artefact sites, with artefact scatters and isolated finds (with and without PAD) comprising 74% of the recordings

**Table 5-1. Sites recorded by EMM 2018.**

Site type	Number of sites recorded	Percentage of total
Isolated find	43	45
Artefact scatter	16	17
Scarred tree	13	14
Artefact scatter with potential archaeological deposit (PAD)	9	9
Quarry, artefact scatter, PAD	5	5
Grinding groove, artefact scatter, PAD	4	4
Isolated find, PAD	3	3
Grinding groove	1	1
Grinding groove, PAD	1	1

EMM identified Aboriginal sites in each of the landform classes defined for the survey. The highest frequency of sites was identified on crests (57%), followed by hill slopes (30%), flats (6%) and watercourses (6%). Notably, all site type features are represented on crest landforms and contain the most archaeologically significant sites, including all the stone quarry sites, all open stone artefact sites attributed with PAD and the most significant grinding groove site (NE09). It should be noted, however, that the crest landforms in the EMM study area are of a lower relative altitude than the crests defined in Survey Unit 1 for the WWF. The EMM 'crests' find their best parallel in the lower gradient, undulating landforms of Survey Unit 3.

Sites were identified an average of approximately 218 m from 1st or 2nd order streams, 960 m from 3rd order streams and 1,750 m from 4th order and above streams, with the minimum distance being 3 m and the maximum distance being 764 m. The median distance from mapped watercourses was 166 m. The considerable average distance from higher order streams indicates that lower order streams (particularly 2nd order) could support low intensity camping and resource gathering activities.

Approximately half of the sites identified on hill slope landforms were isolated artefacts which are largely attributed to 'background scatter' caused by isolated events or accidental discard. Over half of the scarred trees identified were on hill slope landforms.

Three of the six grinding groove sites identified were on hill slope landforms in areas with outcropping silcrete bedrock. Most of the sites identified on flats and watercourses were isolated artefacts but also included isolated incidences of scarred trees and artefact scatters.

Stone artefact scatters (including those with PAD) were mostly identified on crest landforms (n=19, or 76%). The remaining artefact scatters were rare and occurred on hill slopes (n=5) and on a watercourse in one instance (NE44). Isolated finds were more widely distributed throughout the landscape, whereby only half occurred on crests (n=23), followed by hill slopes (n=14), flats (n=5) and watercourses (n=4). The wider representation of isolated finds suggests they are generally a product of more transitory occupation, except where on a crest considered to have PAD. The artefact scatters (n=9) and isolated artefacts (n=3) associated with PAD are mainly on crests defined by outcropping granite and/or silcrete boulders which has acted to protect these sites from considerable disturbance. Artefacts were commonly identified amongst the outcropping boulders and noticeably discontinued outside of the crest areas, even if ground surface visibility levels remained favourable for artefact detection.

A total of 238 surface artefacts were recorded during the survey. Artefact frequencies ranged from 1 to 19 across the sites that featured stone artefacts. The average artefact frequency per site was low at only 2.6, which is noted by EMM as being not surprising considering that 46 of the 80 sites that featured stone artefacts were isolated finds.

The largest percentage of artefacts is classed as complete flakes (42%). Fragments of broken flakes including proximal, medial, and distal portions, as well as flaked pieces and longitudinally split flakes make up a further 14% of the assemblage. Notably, a total of 75 cores were identified, making up 31% of the assemblage. EMM notes that this is a very high proportion when compared to typical artefact assemblages and is a strong indicator that much of the raw material for stone tool manufacture was sourced locally.

A total of 12 retouched flakes were identified (8%), eight of which were classed as retouched axe blanks. Five of the axe blanks were identified as basalt and three were identified as metamorphosed greywacke. Notably, none of the axes showed evidence of grinding and all were bifacially flaked. The remaining four retouched flakes were all of silcrete and included two scrapers and two flakes with retouch along their lateral margins.

Silcrete was the predominant artefact raw material (n=112). A total of 52 chert artefacts were identified, and over half of these were flakes (n=31). Material labelled as 'volcanic' included basalts and metabasalts. Quartzite made up only 5% of the assemblage.

Six grinding groove sites were identified during the survey. All of the grinding groove sites were identified in areas of outcropping coarse silcrete bedrock resembling granular quartzite.

Grinding groove sites were identified within an elevation range between 1,030-1,080 m above sea level. This closely correlates with Appleton's observation of silcrete outcropping at 1030 m above sea level throughout the Tablelands (EMM 2018: 77).

The most significant and extensive grinding groove site was identified on a prominent hill crest along the southern boundary of the northern array area (NE09). The survey team counted

approximately 100 grooves made up of concentrations across the width of the crest on outcropping silcrete bedrock. EMM postulated that further grinding grooves are likely to occur on the site where soil and vegetation debris are obscuring the bedrock surface.

NE09 is relatively far from a waterway, being over 220 m from a 1st order stream and over 850 m from the nearest 3rd order stream. EMM note that grinding activities typically require the aid of water to assist stone abrasion and it is assumed that the bedrock pavements at NE09 easily captured water in rock pools. The grooves observed were elongated and oval in shape typical of the axe grinding process. Additionally, stone artefacts including basalt, silcrete and chert flakes and a basalt hammerstone were identified within 20 m of the outcropping silcrete at the periphery of the site. Despite concentrated survey effort further from the site, surface artefacts did not appear to extend past this distance.

Dating of sediments abutting buried grooves indicates that some of the grooves are at least 2,225 years old; if the association of surrounding sediment to the grooves can be firmly established (Colin Ahoy, pers comm).

A total of 13 scarred trees were recorded across the EMM study area. All the examples were on dead trees and typically scars were small and round to oval in shape, starting from around 350–400 mm but up to 100 mm from the base of the tree. Such scars may have been used for containers (such as coolamons) or shields, but the ambiguity of bark regrowth makes it difficult to determine their original forms. Larger, more elongated scars were rarer, with one scar (N39) extending over 2 m which could possibly represent bark removal for a single-person canoe or bark for shelter.

The survey team identified five open stone artefact sites which are considered to be Aboriginal stone quarries. Stone quarries were defined by the presence of outcropping stone material with adjacent evidence of the same material type used in stone tool manufacture process. Stone quarries of a variety of material were identified in the survey area, comprising silcrete (NE14 and NE22), basalt (NE21 and NE33) and greywacke. However, EMM note that quarry sites were rarely identified considering the high amount of outcropping material, including basalt, silcrete, greywacke, chert, and jasper, observed on crests and slopes during the survey.

In their significance assessment, EMM ranked assessed four sites, all grinding groove sites, as having high scientific significance. 31 sites are assessed as having moderate scientific significance and 60 are assessed as having low scientific significance.

The sites assessed as having high scientific significance demonstrated rare and unique features, high educational potential as evidenced by their easily distinguishable characteristics and aesthetic qualities, and high research potential. Moderate scientific significance was frequently attributed to sites with some research potential for their predicted subsurface archaeological material. The 60 sites (62%) assessed to be of low scientific significance do not have the same

capacity as the other sites to inform about past Aboriginal life. Notwithstanding the limited information potential, EMM noted that each site is of cultural significance to the Aboriginal community.

#### **5.3.4 Other studies in similar landforms**

In 2020, OzArk conducted archaeological investigation approximately 80 km north of the Project Area for the proposed Rangoon Wind Farm, located at Ben Lomond (OzArk 2021).

The impact area at the proposed Rangoon Wind Farm contained identical landforms to those in the Project Area and the results of OzArk 2021 can reasonably be used to examine the potential for landforms in the Project Area.

The impact area at the Rangoon Wind Farm of approximately 1,089 ha was surveyed over five days. No Aboriginal cultural heritage values were identified within the OzArk study area during field survey or through consultation with the Aboriginal community, and no previously unidentified significant historic items were identified in the study area. Most of the study area was situated in gentle to steeply sloping landforms such as those located in the Project Area.

The Rangoon survey confirmed the paradigm established by other studies in the area that slope landforms are poor preservers of archaeological evidence. It also agreed with other studies in the area in that ridge and crest landforms were either infrequently used for camping or have been subjected to greater impacts from soil loss and the subsequent dispersal of sites. Landforms with a greater probability to record Aboriginal sites were assessed to be present north along Marowan Creek, outside the study area, where the flats adjacent to the creek contain elevated terraces or benches.

Regarding the Project Area, the results of OzArk 2021 indicate that few, if any, sites will be recorded in Survey Unit 1 or Survey Unit 2 landforms and that Survey Unit 3 landforms, when close to waterways, have the greatest opportunity to contain Aboriginal objects.

#### **5.3.5 Conclusions**

Utilising data that has been collected both regionally and locally, broad statements about archaeological sites that have the potential to occur within the Project Area can be made. These predictions are:

- Aboriginal sites appear to be most prominent on crest landforms. Sites are relatively common on slope landforms where there is the presence of outcropping bedrock, particularly silcrete bedrock. Other sites on slopes occur within a secondary context
- Sites are also identified on flat landforms in relation to water. All orders of watercourses have a higher potential to record archaeological sites
- The predominant site type in the region are stone artefact sites

- All site types have the potential to be present, with relatively high numbers of grinding groove sites, quarries, scarred trees, and ceremonial sites identified in the area
- The predominant material utilised for artefact manufacture is silcrete. A relatively large number of artefacts in the region are also manufactured from chert, and there is the potential for artefact manufactured from volcanics to be present.

## 5.4 LOCAL ARCHAEOLOGICAL CONTEXT

### 5.4.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously recorded heritage within the Project Area. The results of this search are summarised in **Table 5-2** and presented in detail in **Appendix 2**.

**Table 5-2: Aboriginal cultural heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	03/06/2020	Walcha and Uralla LGA	No places listed on either the National or Commonwealth heritage lists are located within the Project Area
National Native Title Claims Search	03/06/2020	NSW	No Native Title Claims cover the Project Area.
Heritage AHIMS	03/06/2020	10 x 10 km centred on the Project Area	106 sites returned. AHIMS site 21-4-0041 is within the search area.
Local Environmental Plan (LEP)	03/06/2020	Walcha LEP of 2011 and Uralla LEP of 2012	None of the Aboriginal places noted occur near the Project Area.

A search of the Heritage NSW administered AHIMS database returned 106 records for Aboriginal heritage sites within the designated search area (GDA Zone 56: Eastings: 350000–410000, Northings: 6540270–6600270 with no buffer).

**Figure 5-1** shows the location of the AHIMS sites that have been recorded near the Project Area and **Table 5-3** summarises the site types that have been recorded.

**Table 5-3: Site types and frequencies of AHIMS sites near the Project Area.**

Site Type	Number	% Frequency
Artefact scatter	21	19.8
Restricted	19	17.9
Isolated find	10	9.4
Modified tree (carved or scarred)	9	8.5
Grinding grooves	9	8.5
Habitation structure	7	6.6
Ceremonial ring (stone or earth)	5	4.7
Stone quarry and artefact scatter	5	4.7
Aboriginal ceremony and dreaming	3	2.8
Burial and Aboriginal ceremony and dreaming	3	2.8

Site Type	Number	% Frequency
Artefact and modified tree	3	2.8
Conflict	2	1.9
Ochre quarry	2	1.9
Water hole	2	1.9
Art (pigment or engraved)	1	0.9
Artefact (quantity unspecified)	1	0.9
Artefact and grinding grooves	1	0.9
Ceremonial ring and modified tree	1	0.9
Ceremonial ring and stone arrangement	1	0.9
Stone arrangement and burial	1	0.9
<b>Total</b>	<b>106</b>	<b>100</b>

The AHIMS data shows artefact sites are the dominant site category near the Project Area. Artefact sites are a relatively stable indicator of past Aboriginal occupation. Sites in this category are less ambiguous to recognise and can remain close to their original deposition context despite disturbances. Conversely modified trees, which are a much less frequently recorded site type, are more sensitive to common disturbances in the area, such as historic land clearing. As such, the distribution of modified tree sites may be more a reflection of areas of uncleared land rather than something specific to Aboriginal land use strategies. Grinding grooves are another site type recorded in the area, and much like artefact sites, are a relatively stable indicator of past Aboriginal occupation.

There is a relationship between all site types and named watercourses in the area. If a buffer of 200 m is applied around all major waterways (rivers) and a buffer of 100 m applied around all minor waterways (named creeks) 36 of the 106 sites returned in the AHIMS search are located within these buffers (34%). If a buffer of 200 m is applied to all named waterways (major and minor), 53 AHIMS sites are within the buffer (50%). In addition, there are a number of sites just outside of the 200 m buffer allowing the observation to be made that over half the AHIMS sites are within approximately 200 m of named waterways. Therefore, sites are largely grouped along the named rivers and creeks and become less frequent with distance to water.

A site located outside but near the Project Area is AHIMS site 21-4-0044, 'Boozers Massacre'. The massacre occurred in retaliation to the kidnapping of Pearl Dufety from Towel Creek station by a group of Aboriginal people. A punitive party was sent in response, and while Pearl was tracked and found after three weeks, the party went on to massacre many Aboriginal men, women, and children. The AHIMS site for the massacre is located on the property Moona Plains, approximately 30 km east of Walcha. The exact location of the massacre is unknown; however, it is thought to be located at least 2 km east of the Project Area based on previous descriptions of the site. This does not negate the possibility that such events occurred within the Project Area, although there is no evidence to support this.

The distribution of sites near the Project Area conforms to some expected patterns which are outlined below:

- Most sites are associated with watercourses of varying degrees
- The highest densities of sites are located along Apsley River, the closest major waterway.

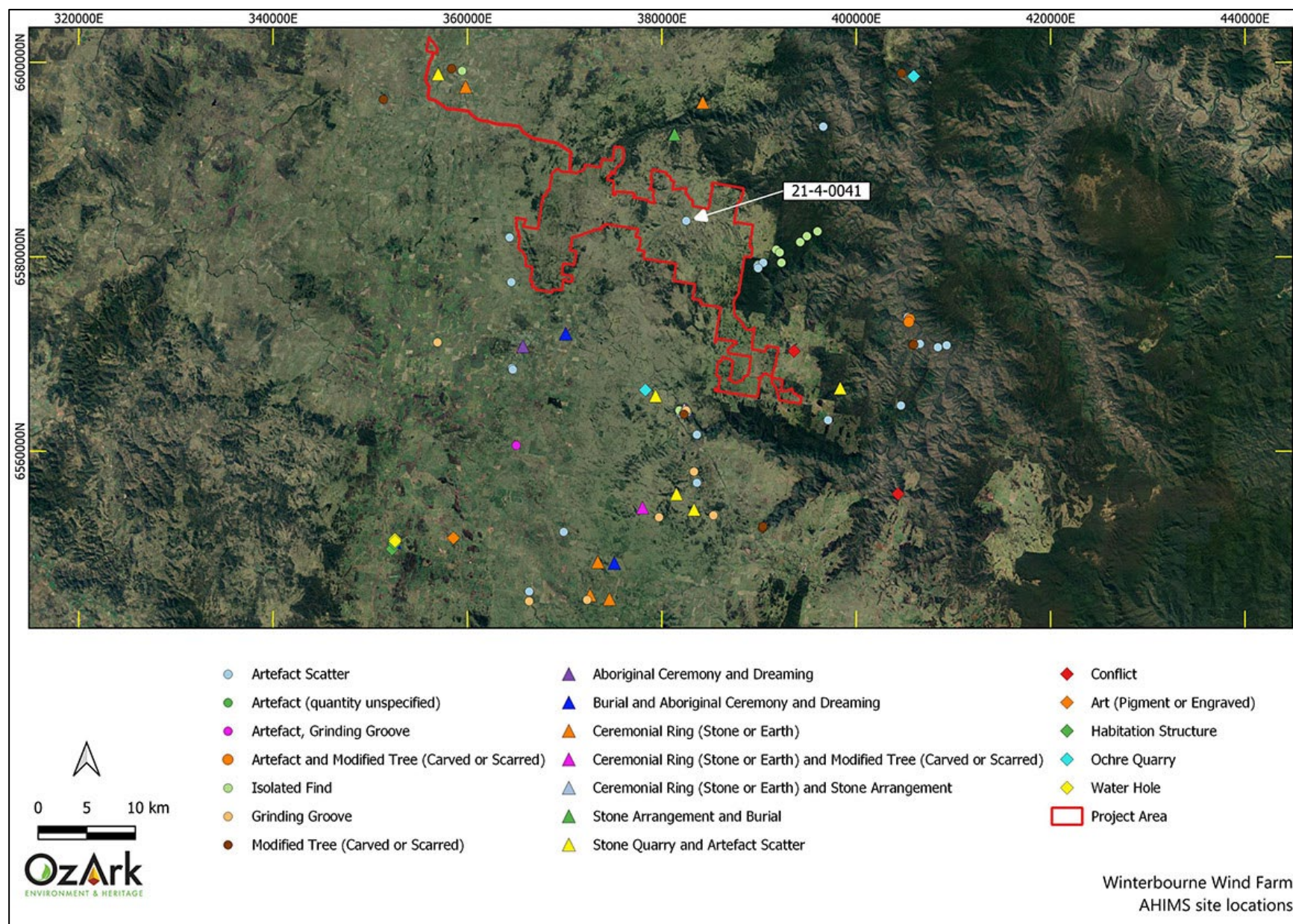
It is noted that AHIMS data is not the result of large scale or systematic methods of identifying Aboriginal archaeological sites and therefore cannot be taken independently as a reflection of past Aboriginal occupation patterns. The distribution of sites above can only be used to formulate a predictive model in conjunction with other methods.

Certain characteristics of AHIMS recordings further limit confidence in the accuracy of the data:

- AHIMS registrations can be made by any individual and, therefore, their reliability as a record of archaeological features can be questionable
- The 'dots on a map' approach is not informative as one dot may represent a single stone artefact, and another may represent a cluster of one hundred artefacts
- The location of sites is more driven by development proposals rather than systematic research. Therefore, the data tends to skew towards population centres and public land while private land, where no development has ever been proposed, remain as 'blanks' on the map.

As a result, while further data is normally available to interrogate the AHIMS site distribution pattern more fully, at face value it is often of limited use.

Figure 5-1: Location of previously recorded AHIMS sites in relation to the Project Area.



One previously recorded site is located within the Project Area. The details of the site are shown in **Table 5-4**.

**Table 5-4: Known site within the Project Area.**

Site ID	Site name	GDA Zone 55 Easting	GDA Zone 55 Northing	Site features	Site types	Recorders
21-4-0041	Lambine Flat (this is as the name appears on the AHIMS register but it is a typological error for Lambing Flat)	382400	6583683	Artefact Scatter	Open Camp Site	Tom Griffiths

AHIMS site 21-4-0041 is an open artefact scatter within a creek flat landform identified during an assessment for the Winterbourne Telecom Optical Fibre route. According to the site card produced in 1995, the site is located on the southern side of Winterbourne Road within a 'travelling stock reserve' (TSR). However, from the information available to OzArk, the AHIMS coordinates locate the site within the 'Green Range' property.

The site consists of four artefacts:

- A broken, unmodified, greywacke flake
- Two complete, unmodified, greywacke flakes
- A large, complete, coarse grained white silcrete flake.

According to the site card, the 'isolated' artefacts are located within an extent measuring 150 m x 20 m, within a disturbed context, with previous land use consisting of grazing and road construction. However, the AHIMS coordinates place the site approximately 200 m south of Winterbourne Road and well outside of any road construction impacts. The site card states that Lambing Flat Creek is the closest water source, located 250 m from the site. However, the AHIMS coordinates (which agree with the coordinates on the site card) locate the site over 600 m from Lambing Flat Creek.

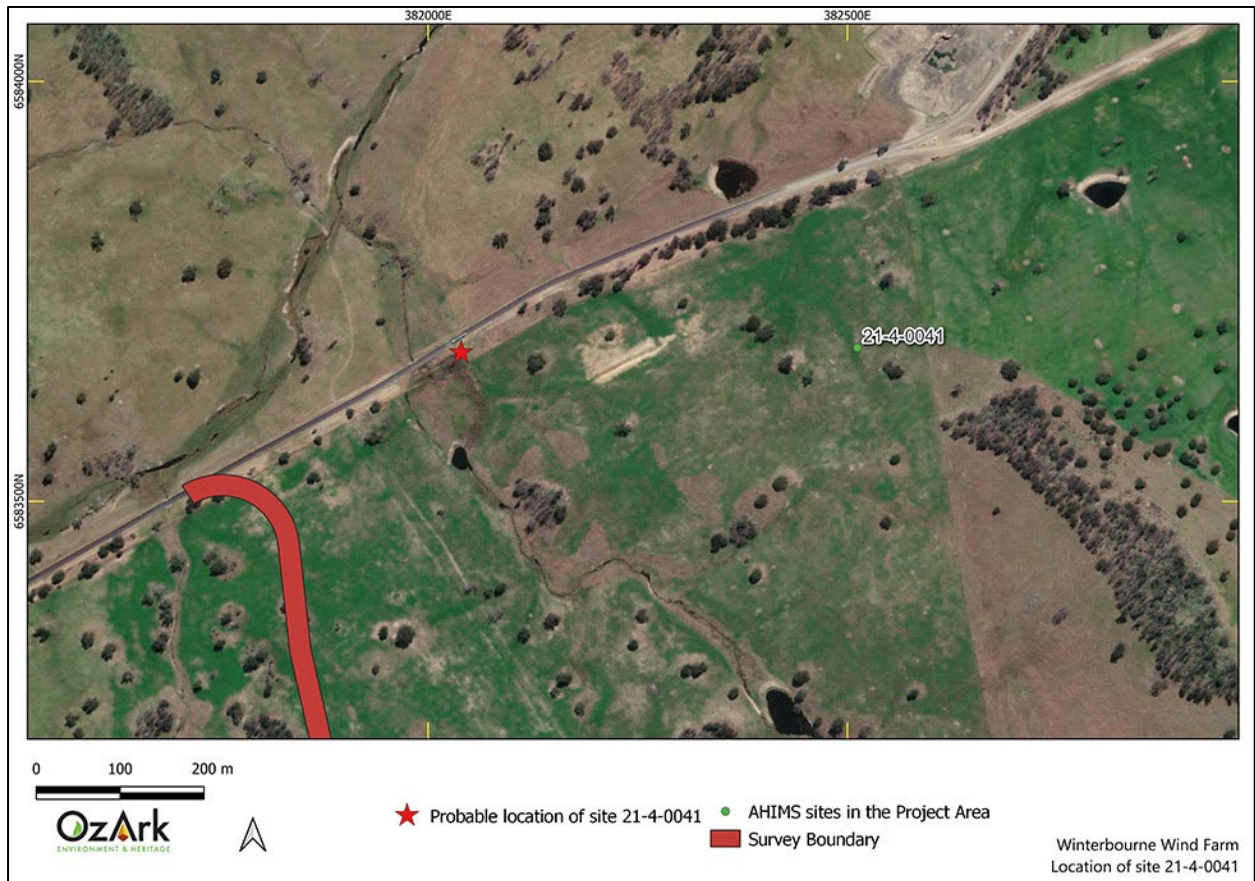
Given the discrepancies noted between the site card description and the AHIMS location, particularly that the site is in a TSR, is impacted by road construction, and is located 250 m from Lambing Flat Creek, it is suspected that the site is actually located closer to Winterbourne Road (**Figure 5-2**).

The site (AHIMS location and suspected actual location) is located within the Project Area, although it is outside the Survey Boundary and will not be impacted by the proposed works. The site is located adjacent to the proposed transport route between Walcha and the eastern site entry; however, the assessment of the transport route does not indicate that works will be required near the probable location of the site.

Although not within the Survey Boundary, the location of the site in the AHIMS register was visited during the survey and no artefacts were visible at the AHIMS location.

All other previously recorded AHIMS sites are not within the Project Area and are therefore not at risk of impact from the proposed works.

**Figure 5-2: AHIMS and probable location of site 21-4-0041.**



## 5.5 PREDICTIVE MODEL FOR SITE LOCATION

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including plant and animal foods, stone and ochre resources and rock shelters, as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such

as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these, however, may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport, both over short- and long-time scales, or (b) the historical impacts associated with the introduction of European farming practices including grazing and cropping, land degradation, and farm related infrastructure. Scarred trees, due to their nature, may survive for up to several hundred years but rarely beyond.

### **5.5.1 Settlement strategies**

The number of archaeological studies undertaken within the vicinity of the Survey Boundary provides sufficient information to obtain an understanding of the distribution of sites and site types within the area. The typical pattern observed is that the most obvious indicator of potential sites is the presence of workable stone material near a natural fresh water source. The upland areas were usually associated with seasonal occupation, as the climate and resources did not tend to be ideal throughout the year.

Landscapes that provided ideal site locations typically included crests or terraces that were associated with, or near, a reliable water source. EMM (2018) stated that minor waterways that were in association with crested landforms also record sites. It was suggested that these ephemeral waterways would have supported a chain of ponds morphology which retained water longer than what is witnessed today. In addition, EMM also noted that sites located on slopes were usually in secondary contexts, as erosional processes disturbed the primary contexts. Exceptions were noted in areas with outcropping rock, as this feature may have supported occupation or use.

### **5.5.2 Past land use**

The preservation of archaeological sites and deposits is vitally dependent on past land use. The Project Area and adjacent land has been mainly used for agricultural purposes such as grazing and farming. These activities involve ploughing the ground surface, or the constant trampling of hoofed-livestock, which significantly shuffles or compacts the ground surface, ultimately accelerating soil loss. Further, most of the Survey Boundary comprises sloping landforms, and because of past vegetation clearing, erosional processes are intensified.

### **5.5.3 Previously recorded sites**

Previous archaeological studies near the Survey Boundary or in similar landforms have provided information on the likely site types to be recorded. The predominant site type is stone artefact sites such as artefact scatters and isolated finds, followed closely by modified trees. Other possible site types include habitation structures, grinding grooves, stone quarries, and ceremonial (Bora) rings. It is also important to note that multiple site types can be recorded in the same

location, as various site types are also recorded in the AHIMS register in conjunction with artefact scatters.

#### 5.5.4 Landform modelling

A consideration of the landforms within the Project and Survey Boundary enables a prediction regarding the type and distribution of sites to be made. See **Section 2.1** for details of landforms within the Project and Survey Boundaries. Most landforms within both the Survey and Project Area comprise low gradient/undulating landforms and slopes with a gradient greater than 10 degrees. Previous studies in the district (EMM 2018) indicate that sloping landforms are not likely to contain intact sites and any finds in this environment would be in a secondary context because of erosion. Rather, sites are expected along elevated ridges and crests within reasonable proximity to a water source. Such landforms are rare in the Survey Boundary.

#### 5.5.5 Previous studies

Previous archaeological studies indicate that sites will not be commonly associated with the landforms present within the Survey Boundary. Studies, such as OzArk 2021, indicate that exposed ridges and crests distant to water will not contain sites, probably due to climatic conditions. Other studies, such as RPS 2008 and EMM 2018, indicate that toe slopes and creek terraces were preferred occupation site locations, and it is noted that landforms of this type are rare in the Survey Boundary. Sites in the area are also more commonly recorded in lower elevation landforms areas and not upon ridge lines, as these were more commonly used as gathering locations or travel routes (RPS 2008, EMM 2018).

#### 5.5.6 Conclusion

Based on knowledge of the environmental contexts of the Project Area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded within the Survey Boundary:

Isolated finds may be indicative of random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.

- Applicability to the Survey Boundary: As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Survey Boundary.

Open artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone

tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of a background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Applicability to the Survey Boundary: Artefact scatters of differing densities are the most common site type within the surrounding region and there is a general correlation between landform type and the nature of the evidence of past Aboriginal occupation. The higher density artefact scatters are situated on elevated landforms adjacent to waterways. The moderate to steep slope landforms that dominate the Project Area are unlikely to have been used as occupational locations, but rather as the travel routes or resource gathering areas. It is noted that the only previously recorded site in the Project Area is in a creek flat landform and not within ridge or crest landforms.

Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels, and commodities such as string, water containers, roofing for shelters, shields, and canoes. Bark was also removed because of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.

- Applicability to the Survey Boundary: Although large portions of the Survey Boundary have been cleared for agricultural and farming purposes, mature tree clusters remain

scattered throughout the Survey Boundary. Due to modified trees being the third most common site type within the surrounding area, there is potential to record this site type within the Survey Boundary.

Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.

- Applicability to the Survey Boundary: The surrounding area has recorded multiple quarry sites, as the region contains suitable outcropping rock for stone tool manufacture. The aerial imagery of the Survey Boundary shows numerous areas of outcropping rock, therefore this site type could be recorded.

Grinding grooves are most likely to occur on flat outcrops of coarse-grained sandstone in the vicinity of water sources, however, grinding grooves have been recorded on fine-grained granite outcrops.

- Applicability to the Survey Boundary: Where there is suitable outcropping rock (such as silcrete or sandstone), there is the possibility for there to be grinding grooves. Multiple grinding grooves have been previously recorded in the surrounding area, and if any suitable outcropping rock is present within the Survey Boundary, this site type could be possible. Results from EMM 2018 indicate that grinding grooves can be recorded at a distance to waterways.

Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.

- Applicability to the Survey Boundary: Studies have emphasised that the Tablelands have a high number of ceremonial sites including Bora grounds, stone arrangements, carved trees, and rock art sites (McBryde 1974, Bowdler 1981). The distribution of ceremonial sites and Bora grounds across the landscape is somewhat unpredictable as the choice of their location appears to be based on spiritual reasons rather than simply landscape features and resources. Notwithstanding, sites such as stone arrangements have been noted to be commonly on hill crests, spurs, and ridges (McBryde 1974). As site types such as modified trees and art sites have been recorded in the district, their presence in the Survey Boundary cannot be discounted.

Burials are generally found in soft sediments such as aeolian sand, alluvial silts, and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also known to have occurred on rocky hilltops in some limited areas.

- Applicability to the Survey Boundary: Although it is possible that this site type could be found within the Survey Boundary, it is considered a rare site type especially given the agricultural disturbances that have occurred. However, it is noted that a historical

massacre of Aboriginal people, 'Boozers Massacre', occurred at Moona Plains to the east of the Project Area. While all indications are that this event occurred outside of the Project Area, it is possible that material evidence of this massacre could exist within the Project Area.

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## 6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

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### 6.1 SAMPLING STRATEGY AND FIELD METHODS

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004).

The survey team consisted of two archaeologists and two members of the Aboriginal community each day. In total, there were 27 days of fieldwork (Stage 1: 20 days comprising two independent teams over 10 days, Stage 2: five days, Stage 3: two days) consisting of 79 person days of survey (including both OzArk archaeologists and RAPs).

Survey consisted of assessing all turbine locations and sampling other project components such as access tracks, underground reticulation and ETL alignments, ancillary infrastructure locations, and substation locations. **Figure 6-2** shows the areas surveyed; however, this figure only shows areas assessed by pedestrian transects. Large portions of the Survey Boundary were also driven and the landform potential to contain Aboriginal objects was assessed. The portions driven often consisted of sloping landforms or undifferentiated flat landforms distant to water (associated with the ETL alignment outside of the Project Area) which were assessed as having low archaeological potential. An example of the relationship between pedestrian and vehicle transects in the Survey Boundary is shown on **Figure 6-1**. In addition, following the survey, some clusters of turbines were removed from the project. This accounts for the pedestrian transects located away from the current Survey Boundary.

All turbine and facility locations were surveyed on foot. Where the access tracks and reticulation and ETL alignments were situated on high gradient slope landforms, the team walked to the impact areas from the closest access to undertake sample survey. Areas where the ETL or underground reticulation alignments are near waterways were also surveyed on foot as these are landforms with higher archaeological potential.

The surveying of turbine locations required that many slopes, ridges, and crest landforms within the Survey Boundary were surveyed. Flat landforms were also inspected, as the ETL alignment extends beyond the Project Area towards the proposed grid connection point to the northwest.

At the conclusion of the survey, it was considered that a large and representative sample of the landforms within the Survey Boundary had been appropriately surveyed and assessed.

Figure 6-1: Example of pedestrian and vehicle transects in the Survey Boundary.

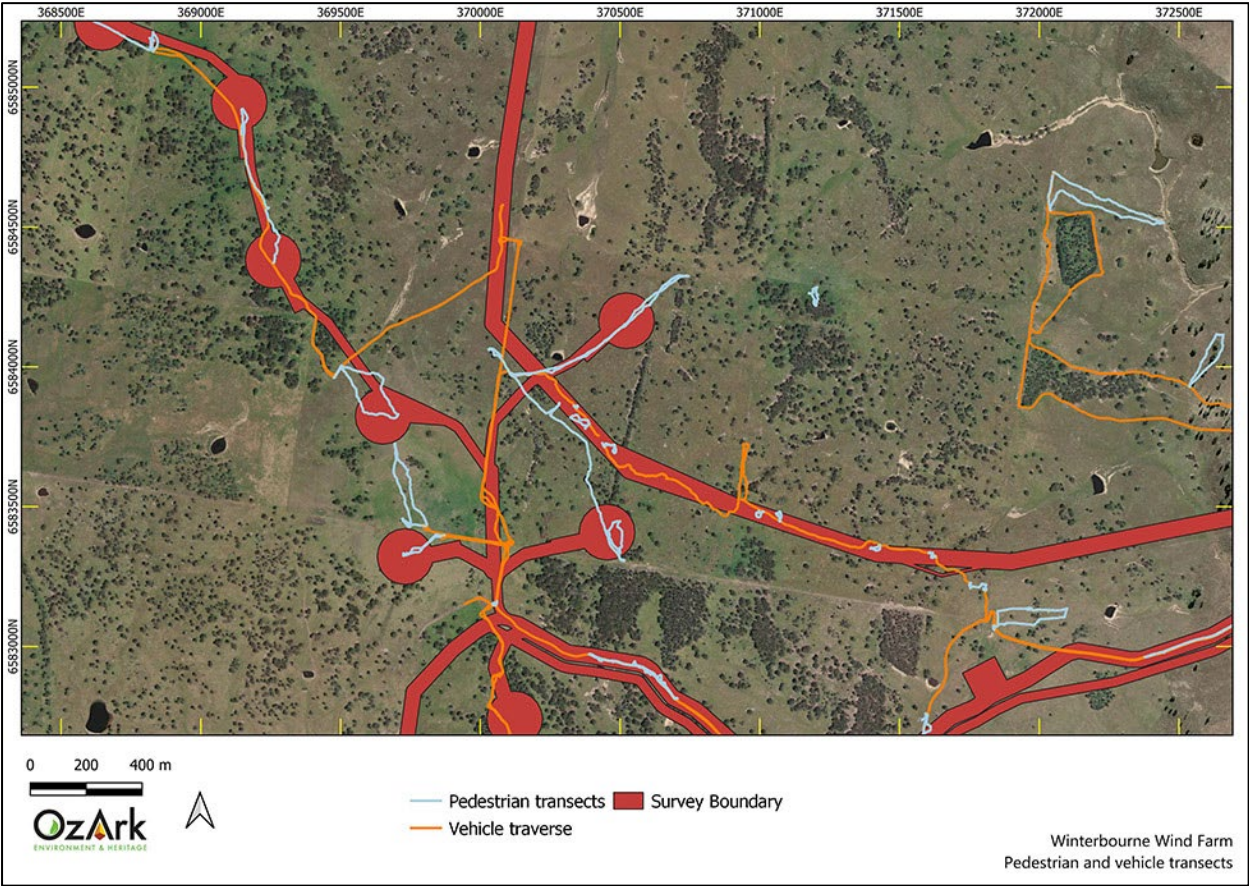
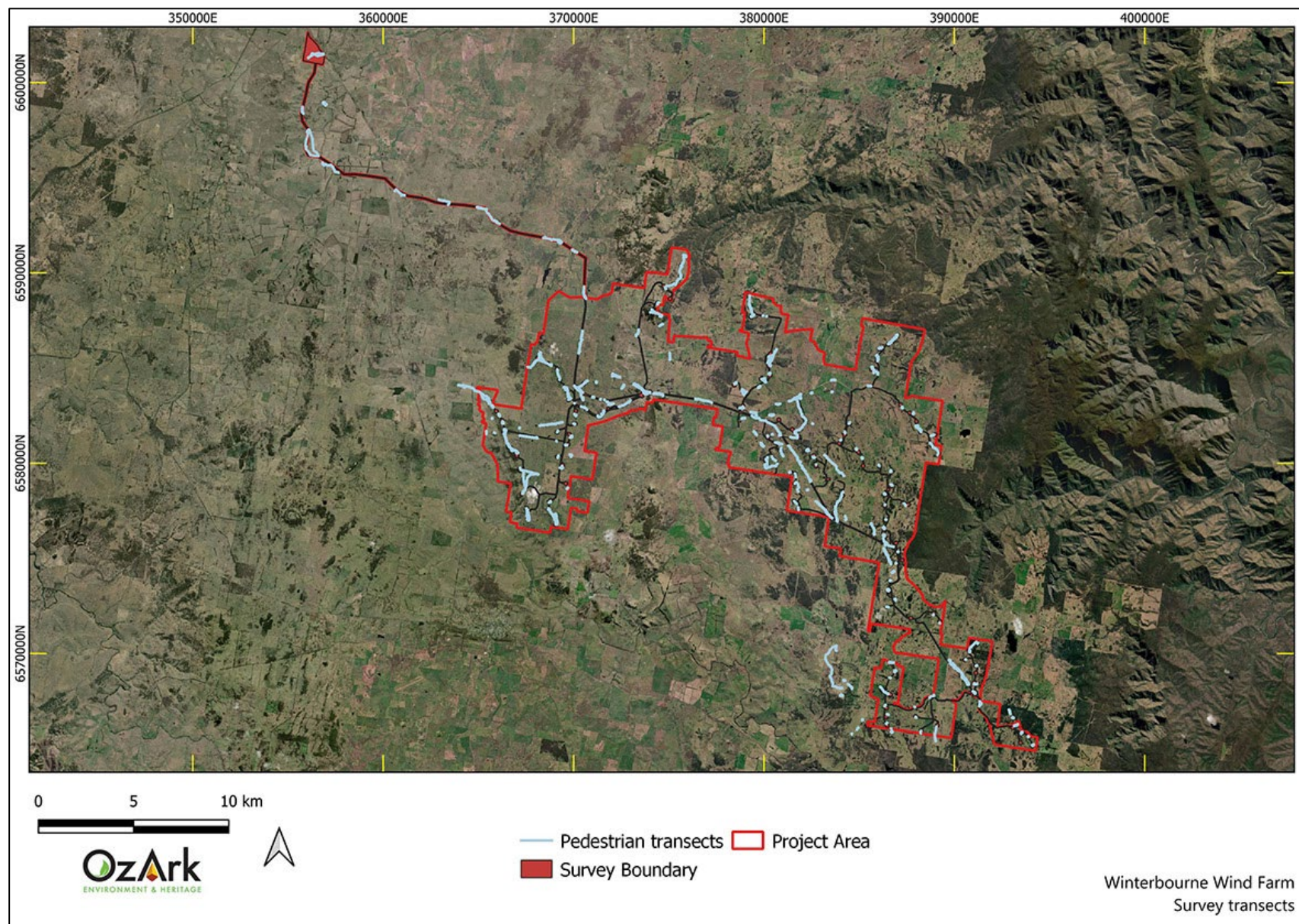


Figure 6-2: Aerial showing the areas of pedestrian survey.

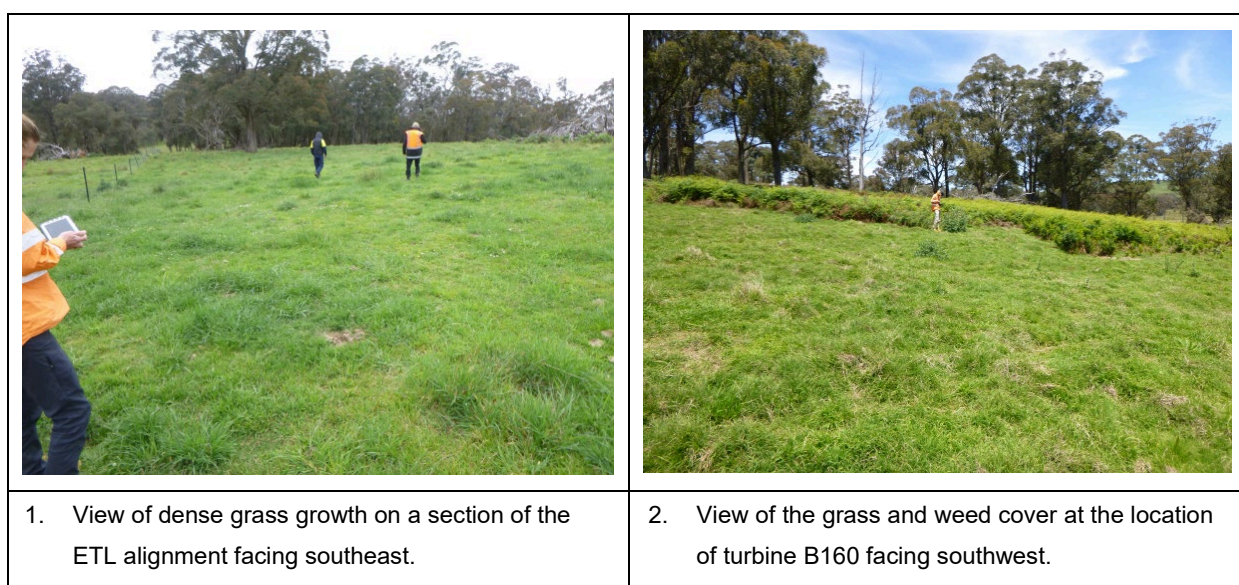




## 6.2 PROJECT CONSTRAINTS

The main constraint during all three stages of the fieldwork was poor ground surface visibility (GSV), as this was an issue across most survey units. The dense ground cover could be explained by the large amount of rainfall that the New England Tableland has experienced throughout 2020 ending a long drought. Further, particular areas of the Survey Boundary contained topographies that were deemed either inaccessible or too dangerous to walk or drive. The aerial photography does not effectively convey the nature of the terrain and the difficulty manoeuvring through it to assess. Some portions of the Survey Boundary contain extremely dense weed and grass cover, meaning that access was not possible, and that visibility was zero per cent. In some areas where proposed access tracks or reticulation and ETL alignments are located, the sloping landforms were too steep to survey safely. Within these areas sample surveys were conducted within more accessible areas and the surveyors were able to extrapolate the data to areas that were too steep to assess.

**Figure 6-3** shows photographs illustrating the general ground cover present throughout the Survey Boundary. Landforms with archaeological potential were extensively assessed as a compensation for the low GSV in some areas of the Survey Boundary.

**Figure 6-3: Examples of GSV within the Survey Boundary.**



	
<p>3. View of the dense grass growth on a section of ETL alignment facing north.</p>	<p>4. View to the southwest of rock outcropping at the proposed location for turbine B169.</p>

### 6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are GSV and ground surface exposure (GSE). These factors are quantified to ensure that the survey data provides adequate evidence for the evaluation of the archaeological materials across the landscape. For the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice.

GSV is defined as:

*... the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stone ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals' (DECCW 2010: 39).*

GSE is defined as:

*... different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals' (DECCW 2010: 37).*

**Table 6-1** calculates the effective survey coverage within the Survey Boundary including the ELT alignment outside of the Project Area (1,250 ha in total). In general, **Table 6-1** presents an approximation of the amount of ground surface able to be seen at any location within particular landform units. For example, at any one location within the ridge and crest landforms of the Survey Boundary approximately 15% of the ground surface could be seen. Exposures in these

landforms were generally confined to naturally bare spots under trees, along farm tracks and around rock outcrops. The amount of visible ground decreased across the slope landforms as these were generally covered with thick groundcovers. Visibility in the low gradient, undulating landforms was approximately 16% as exposures were afforded by farm and animal tracks, and around fences and gates that were more common in these landforms when compared to sloping landforms. Visibility was very low in the flat landforms associated with the ETL alignment outside of the Project Area. Visibility in these landforms was hampered by thick ground covers with very few available exposures.

**Table 6-1: Effective survey coverage within the Survey Boundary.**

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)
1	Ridgelines and crest landforms	1,082,000	15	10	16,230	15%
2	Slope landforms greater than 10 degrees	4,343,000	30	30	390,870	9%
3	Low gradient/undulating landforms	5,629,000	35	45	886,568	16%
ETL alignment outside Project Area (145 ha)	Flat	1,450,000	10	10	14,500	1%

**Table 6-2** demonstrates that although the survey efficacy within the flat, agricultural landforms of the ETL alignment outside the Project Area was low at 1%, this did not hinder the recording of five sites with a combined total of 26 artefacts (it is noted that one of these sites, Queenlee OS-1 with PAD, only had a sample of the visible artefacts recorded and if a full recording had been undertaken then the artefact count in flat landforms would be greater). The landforms comprising Survey Unit 3 (gentle gradient, undulating landforms) had a relatively low survey efficacy of 16%. However, the greatest number of sites (n=9) were recorded in these landforms with a total artefact count of over 140 (it is noted that one of these sites, Green Range OS-3 with PAD, only had a sample of the visible artefacts recorded and if a full recording had been undertaken then the artefact count in the gentle gradient, undulating landforms would be greater). Conversely, although ridge and crest landforms had a similar survey efficacy at 15%, only one site was recorded consisting of a single artefact.

As a result, it is concluded that the GSV limitations did not significantly hamper the ability of the survey to characterise the landforms of the Survey Boundary with the conclusion that sites will

be rarely recorded in slope or crest landforms and will be much more commonly recorded in low gradient or flat landforms.

**Table 6-2: Effective survey coverage and incidences of site recording.**

Landform	Landform area (sq m)	Area Effectively Surveyed (sq m) (= Effective Coverage Area)	% of Landform Effectively Surveyed (= Area Effectively Surveyed / Landform x 100)	Number of Sites	Number of Artefacts or Features
Ridgelines and crest landforms	1,082,000	16,230	15%	1	1
Slope landforms greater than 10 degrees	4,343,000	390,870	9%	1	1
Low gradient/undulating landforms	5,629,000	886,568	16%	9	141
ETL alignment outside Project Area (145 ha). Flat landforms	1,450,000	14,500	1%	5	26

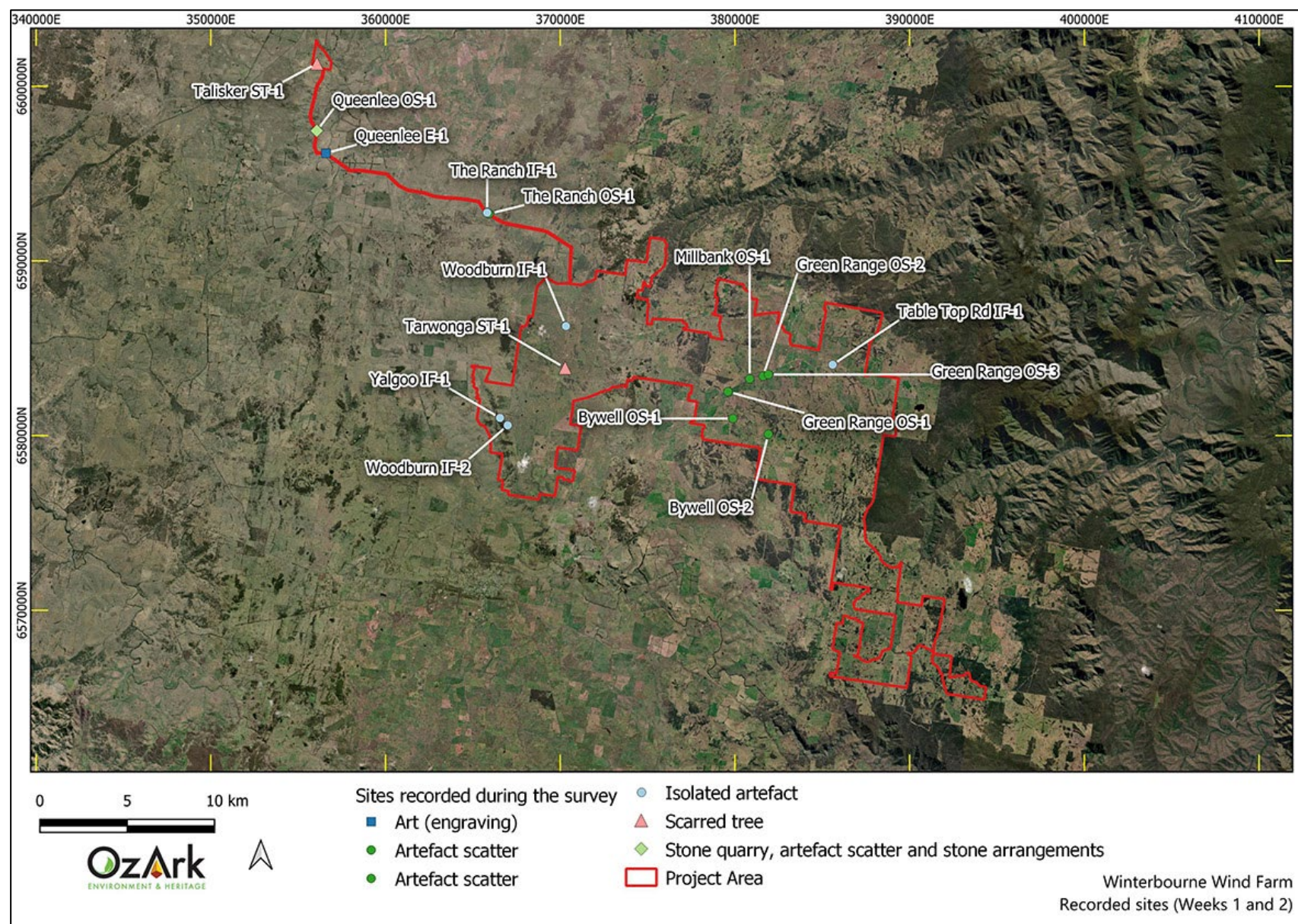
## 6.4 ABORIGINAL SITES RECORDED

**Table 6-3** summarises the Aboriginal cultural heritage sites recorded during the assessment of the Survey Boundary. **Figure 6-4** shows the location of all the Aboriginal cultural heritage sites recorded during the survey and details on each site is presented in **Table 6-3**.

**Table 6-3: Aboriginal cultural heritage sites recorded during the survey.**

Site Name	AHIMS ID	Feature(s)	GDA Easting	GDA Northing	Survey Unit
Woodburn IF-2	21-4-0383	Isolated artefact	366997	6580582	1
Yalgoo IF-1	21-4-0382	Isolated artefact	366555	6581007	2
Bywell OS-1	21-4-0381	Artefact scatter	379890	6580970	3
Bywell OS-2	21-4-0380	Artefact scatter	381919	6580072	3
Green Range OS-1	21-4-0393	Artefact scatter	379606	6582509	3
Green Range OS-2 with PAD	21-4-0392	Artefact scatter	381615	6583396	3
Green Range OS-3 with PAD	21-4-0391	Artefact scatter	381917	6583491	3
Millbank OS-1	21-4-0384	Artefact scatter	380847	6583243	3
Table Top Rd IF-1	21-4-0394	Isolated artefact	385597	6584050	3
Woodburn IF-1	21-4-0395	Isolated artefact	370328	6586262	3
Tarwonga ST-1	21-4-0397	Scarred tree	370282	6583869	3
The Ranch OS-1 with PAD	21-4-0385	Artefact scatter	365932	6592699	ETL alignment
The Ranch IF-1	21-4-0386	Isolated artefact	365820	6592755	ETL alignment
Queenlee OS-1 with PAD	20-6-0080	Stone quarry, artefact scatter and stone arrangements	356066	6597447	ETL alignment
Queenlee E-1	21-4-0387	Art (engraving)	356589	6596159	ETL alignment
Talisker ST-1	20-6-0079	Scarred tree	356071	6601298	ETL alignment

Figure 6-4: Aboriginal cultural heritage sites recorded during the survey.



## Woodburn IF-2 (21-4-0383)

**Site type:** Isolated find

**GPS coordinates:** 366997E / 6580582N (GDA 2020 / MGA Zone 56)

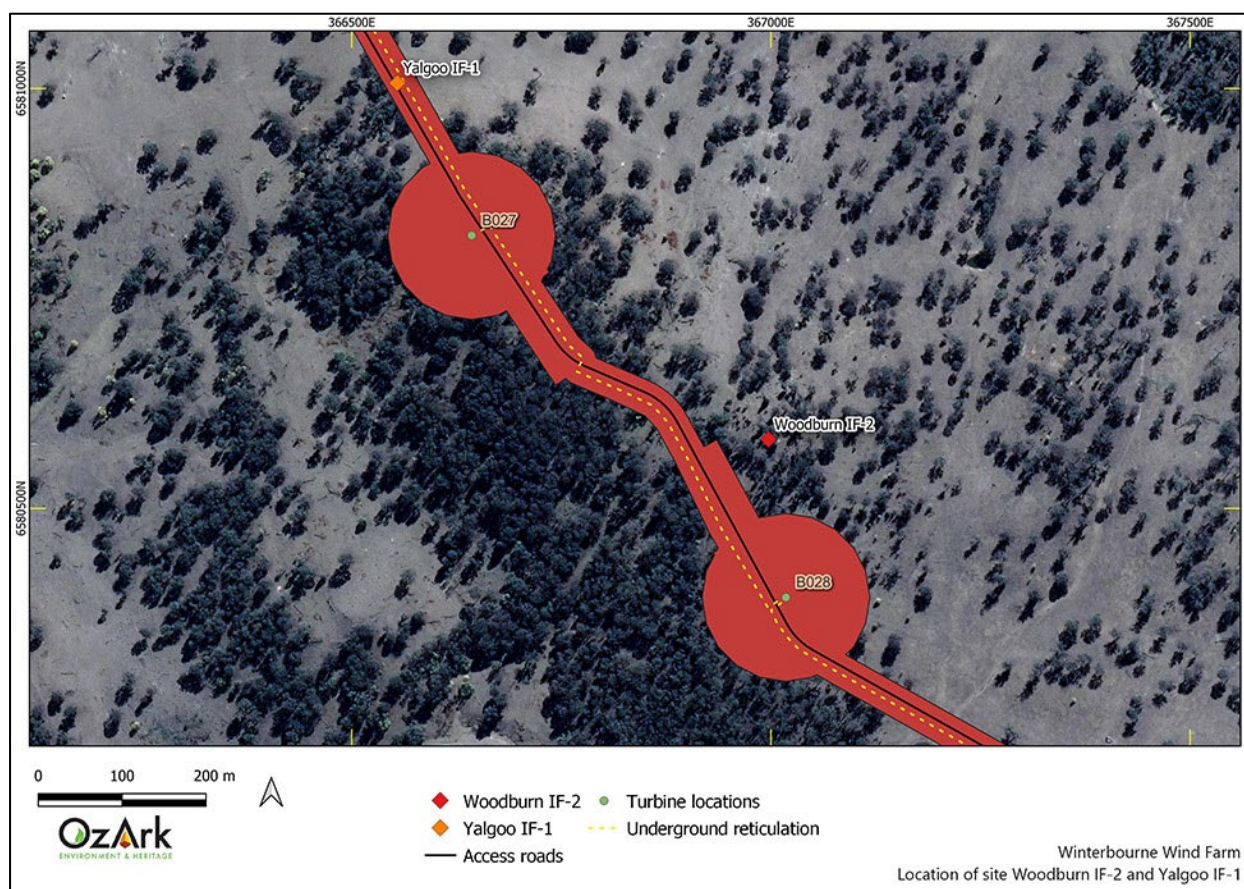
**Location of site:** The site is located 4.8 km east of the Thunderbolts Way and Moonganna Road intersection, and 5.4 km northeast of the Thunderbolts Way and Bergen Road intersection. The site is 380 m northwest of the nearest water source (**Figure 6-5**).

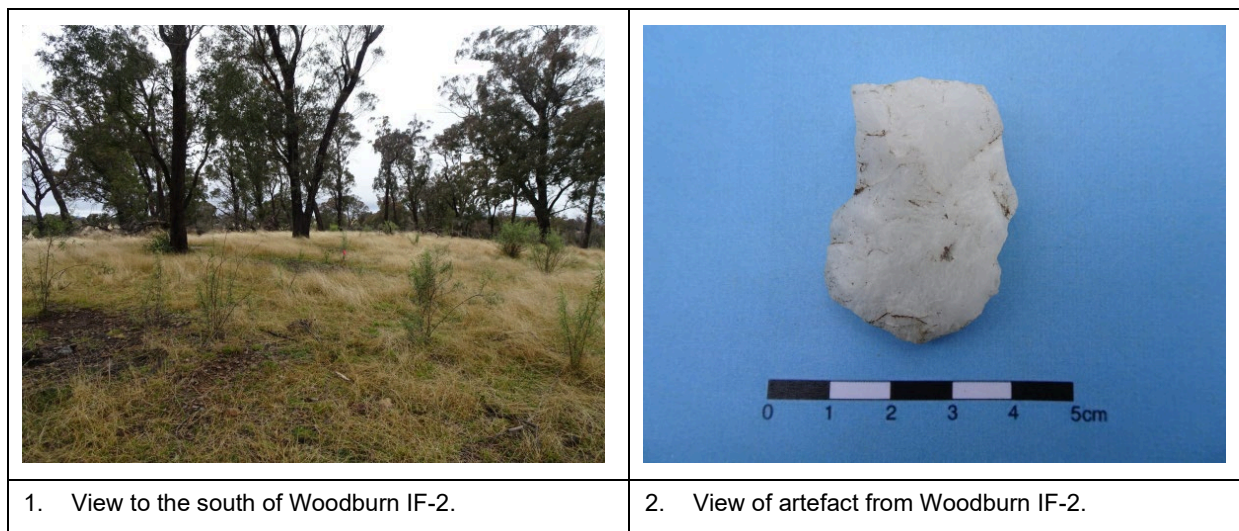
**Description of site:** The site consists of a single quartz artefact located on a flat crest at the top of a ridgeline (**Table 6-4**). The surrounding area was heavily grassed, with mature trees nearby. Patches of erosion were also evident, and the soil contained angular gravels (**Figure 6-6**). There is low potential for *in situ* subsurface deposits at the site.

**Table 6-4: Artefact Attributes: Woodburn IF-2.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Quartz	Complete	Tertiary	35x28x12

**Figure 6-5: Aerial showing the location of Woodburn IF-2 and Yalgoo IF-1 in relation to the Survey Boundary.**



**Figure 6-6: Woodburn IF-2. View of site and the recorded artefact.****Yalgoo IF-1 (21-4-0382)**

**Site type:** Isolated find

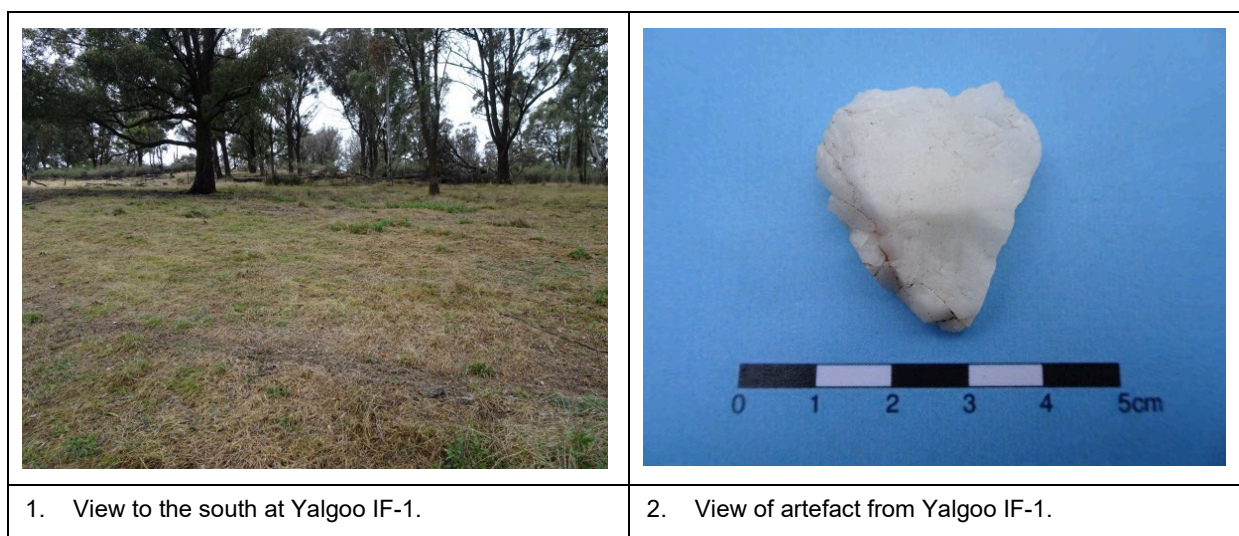
**GPS coordinates:** 366555E / 6581007N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located 4.3 km east of the Thunderbolts Way and Moonganna Road intersection, and 5.6 km northeast of the Thunderbolts Way and Bergen Road intersection. The site is 1.6 km west of Grosse Creek. There is an unnamed creek 400 m to the northwest (**Figure 6-5**).

**Description of site:** The site is a single quartz artefact located on an undulating ridgeline with mature trees in the immediate area (**Table 6-5**). The soil at the site is a brown loam with small gravel inclusions. The site is in a gentle mid-slope that descends from south (higher) to north along the ridge (**Figure 6-7**). There is low potential for *in situ* subsurface deposits at the site.

**Table 6-5: Artefact attributes: Yalgoo IF-1.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Quartz	Complete	Tertiary	30x27x8

**Figure 6-7: Yalgoo IF-1. View of site and the recorded artefact.****Bywell OS-1 (21-4-0381)**

**Site type:** Open artefact scatter

**GPS coordinates:** 379890E / 6580970N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located 3.3 km southwest of the Winterbourne Road and Bark Hut Road intersection. The centre of the site is 75 m southwest of an unnamed creek (Figure 6-8).

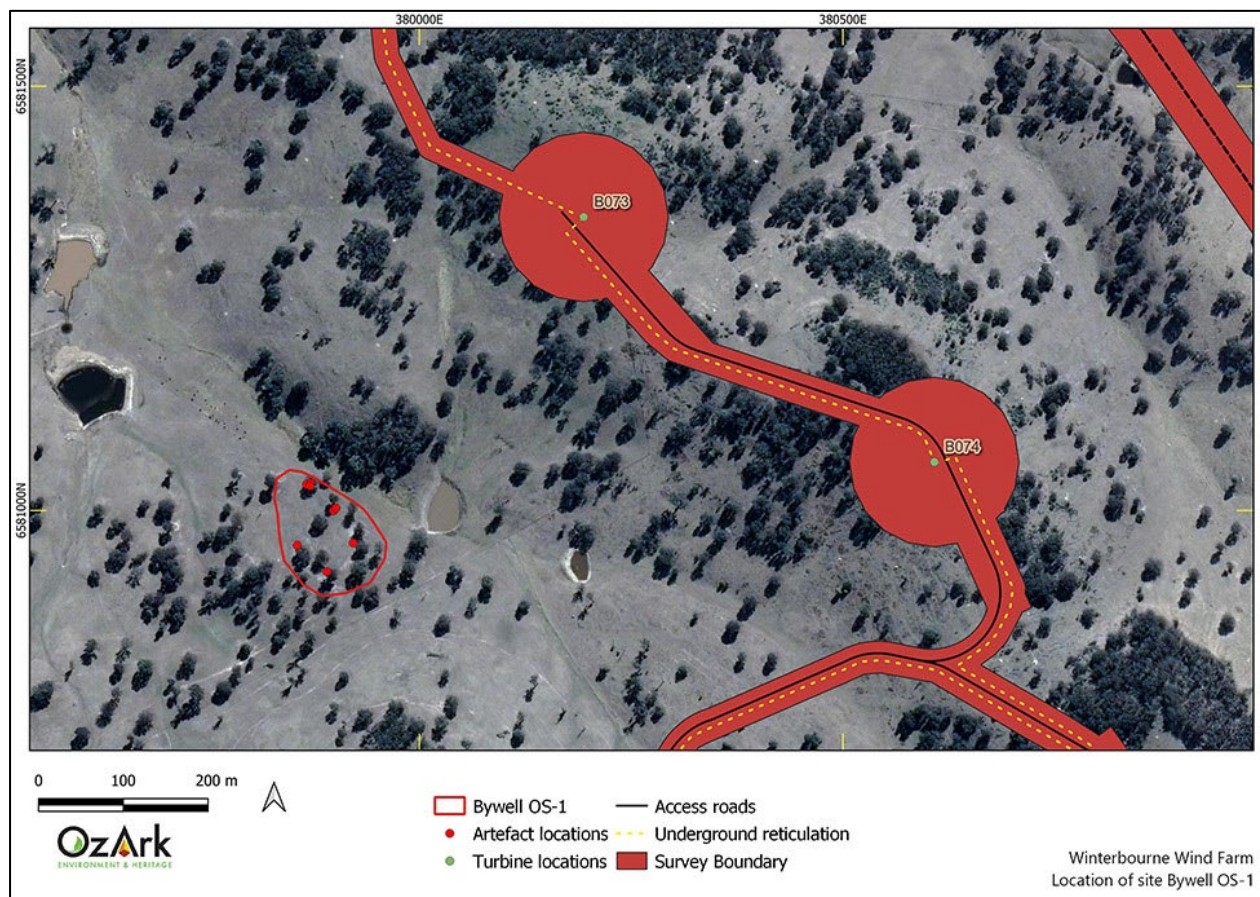
**Description of site:** The site is an open artefact scatter located on a low spur / gentle slope immediately adjacent to a valley floor (Figure 6-9). The gully which is adjacent to the site is not a creek but would hold water during rain periods. The site contained multiple broken flakes and one complete flake, dispersed across a relatively large area. Artefacts were recorded in areas of exposure and it is likely that further artefacts will be present. The artefact raw materials included greywacke and silcrete (Table 6-6). The soil is a silty light brown soil with gravels and small rock inclusions. Disturbance at the site primarily consisted of water wash erosion, ploughing, and livestock trampling. There is overall low potential for *in situ* subsurface deposits, although further surface artefacts are likely.

**Table 6-6: Artefact Attributes: Bywell OS-1.**

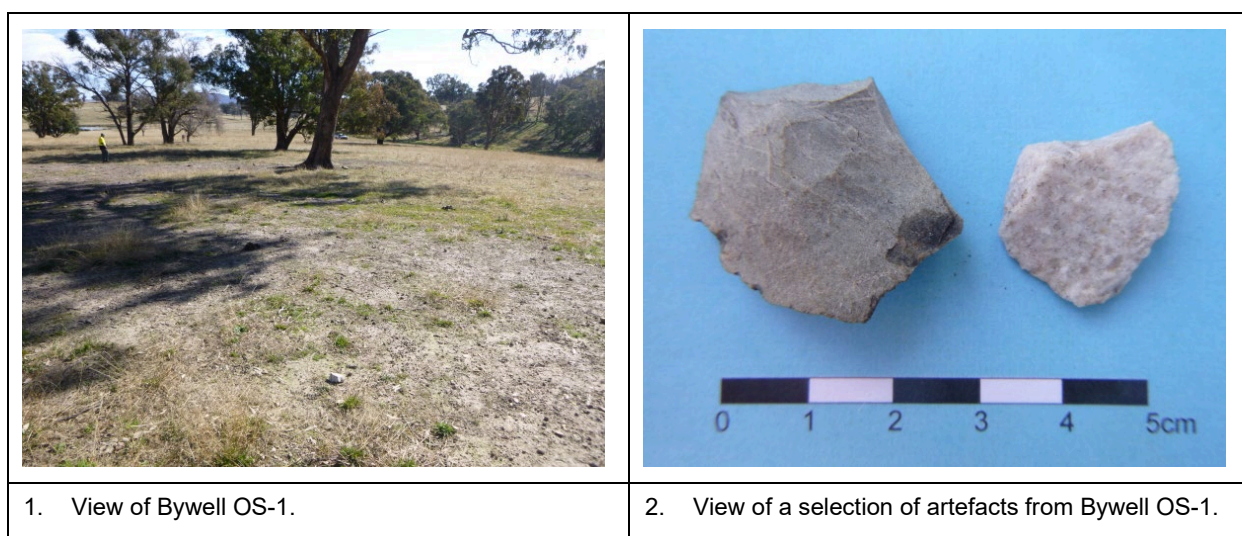
Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Greywacke	Proximal fragment	Tertiary	42x33x10
2	Flake	Silcrete	Distal fragment	Tertiary	18x22x4
3	Flake	Greywacke	Proximal fragment	Tertiary	25x29x5
4	Flake	Greywacke	Distal fragment	Tertiary	10x8x3
5	Flake	Greywacke	Complete	Tertiary	27x25x5
6	Flake	Greywacke	Proximal fragment	Tertiary	17x12x3

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
7	Flake	Silcrete	Proximal fragment	Tertiary	40x20x7

**Figure 6-8: Aerial showing the site extent of Bywell OS-1.**



**Figure 6-9: Bywell OS-1. View of site and selection of recorded artefacts.**



1. View of Bywell OS-1.

2. View of a selection of artefacts from Bywell OS-1.

**Bywell OS-2 (21-4-0380)**

**Site type:** Open artefact scatter

**GPS coordinates:** 381919E / 6580072N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located on private property approximately 5.3 km to the northeast of the Winterbourne Road and 730 m north of Bark Hut Road intersection. Three farm dams are in the vicinity and the site is within an erosion scald 30 m to the southeast of the middle dam (**Figure 6-10**).

**Description of site:** The site is an open artefact scatter located on an erosion scald immediately adjacent to a small ephemeral creek (**Figure 6-11**). The site contained several complete flakes and two broken flakes, dispersed across 20 m. The artefact raw materials included silcrete, greywacke, and chert (**Table 6-7**). The soil is a very light brown silty soil with gravels and small rock inclusions. Disturbance at the site consisted of water wash erosion, dam construction, and livestock trampling. There is low potential for *in situ* subsurface deposits at the site.

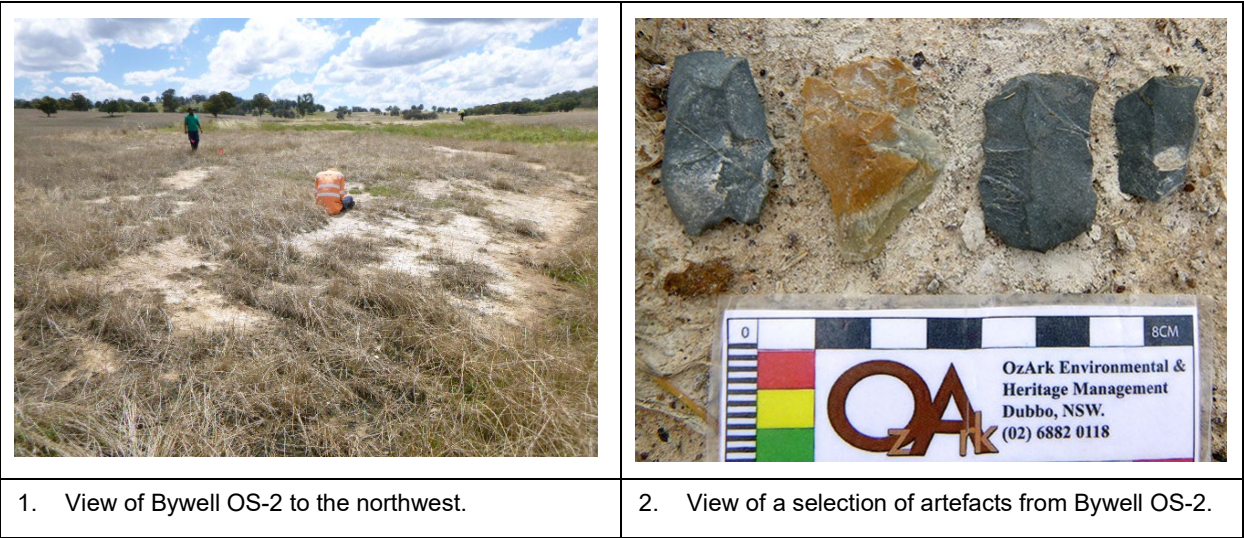
**Table 6-7: Artefact Attributes: Bywell OS-2.**

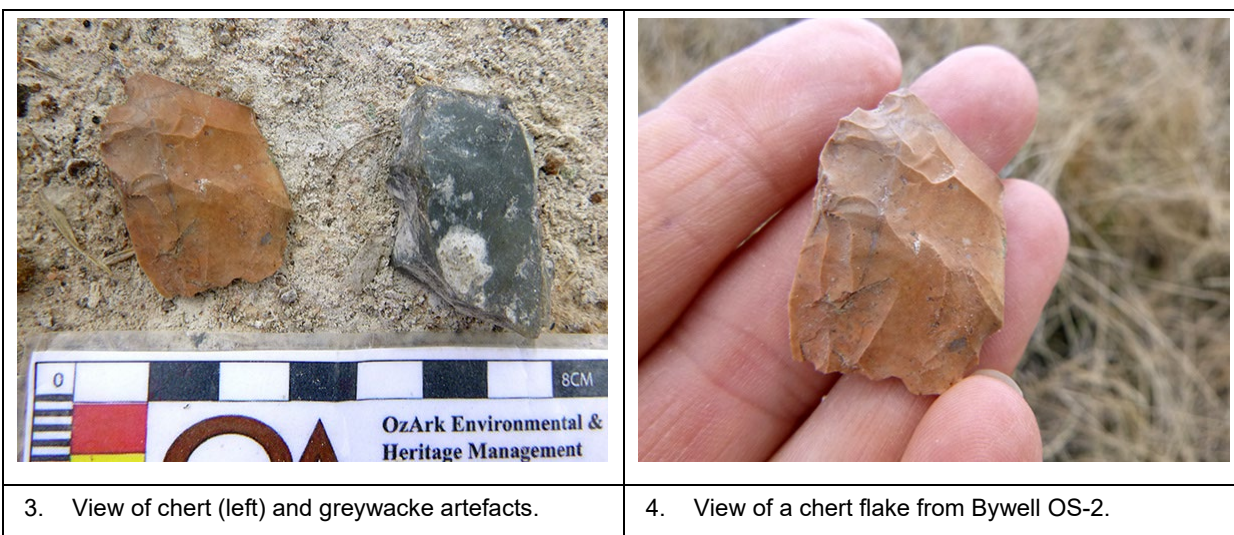
Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Greywacke	Proximal fragment	Tertiary	30x20x5
2	Flake	Silcrete	Complete	Tertiary	33x27x8
3	Flake	Greywacke	Medial fracture	Tertiary	23x18x5
4	Flake	Greywacke	Complete	Tertiary	33x22x6
5	Flake	Silcrete	Complete	Tertiary	32x20x7
6	Flake	Chert	Complete	Secondary	40x22x10

Figure 6-10: Aerial showing the site extent of Bywell OS-2.



Figure 6-11: Bywell OS-2. View of site and selection of recorded artefacts.





3. View of chert (left) and greywacke artefacts.

4. View of a chert flake from Bywell OS-2.

### **Green Range OS-1 (21-4-0393)**

**Site type:** Open artefact scatter

**GPS coordinates:** 379606E / 6582509N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located 100 m south of Winterbourne Road and 2.8 km north of Bark Hut Road within the Green Range property. Lambing Flat Creek is 184 m to the north (across Winterbourne Road). The site is situated in an agricultural field on a flat plain (**Figure 6-12**).

**Description of site:** The site consists of five artefacts located in an exposure within an agricultural paddock. The artefacts are situated on a very gentle slope landform that has primarily been disturbed by livestock and possibly ploughing, as well as sheet wash erosion (**Figure 6-13**). Recorded artefacts include complete and fragmented flakes made of greywacke, silcrete, mudstone, and quartz (**Table 6-8**). Soil at the site is a light brown loam with gravels and small rock inclusions. Due to the disturbance at the site, there is low potential for *in situ* subsurface deposits.

**Table 6-8: Artefact Attributes: Green Range OS-1.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Greywacke	Proximal fragment	Secondary	25x25x7
2	Flake	Greywacke	Complete	Tertiary	45x29x10
3	Flake	Silcrete	Distal fragment	Tertiary	17x19x5
4	Shatter	Mudstone			42x29x7
5	Shatter	Quartz	Complete	Tertiary	4x4x2

Figure 6-12: Aerial of Green Range OS-1 site extent.

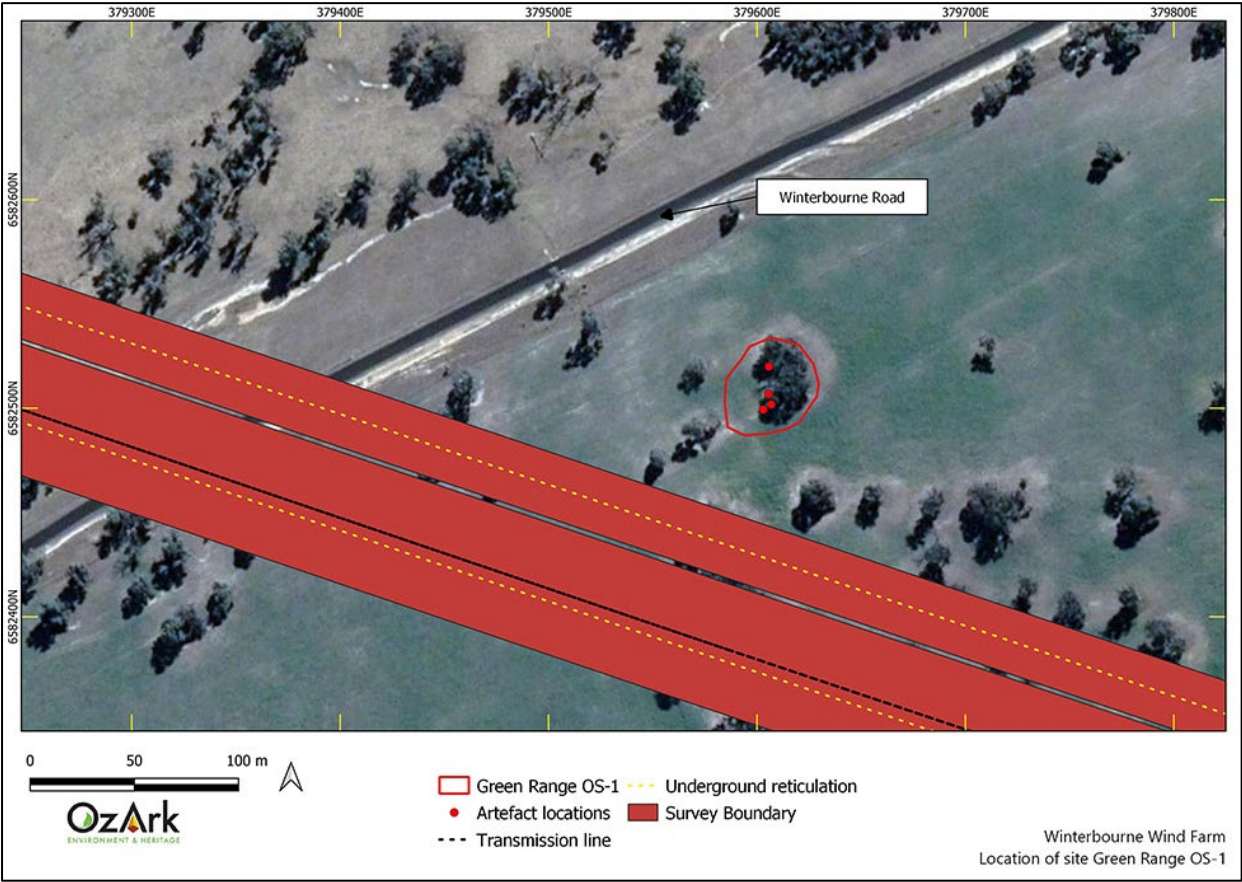
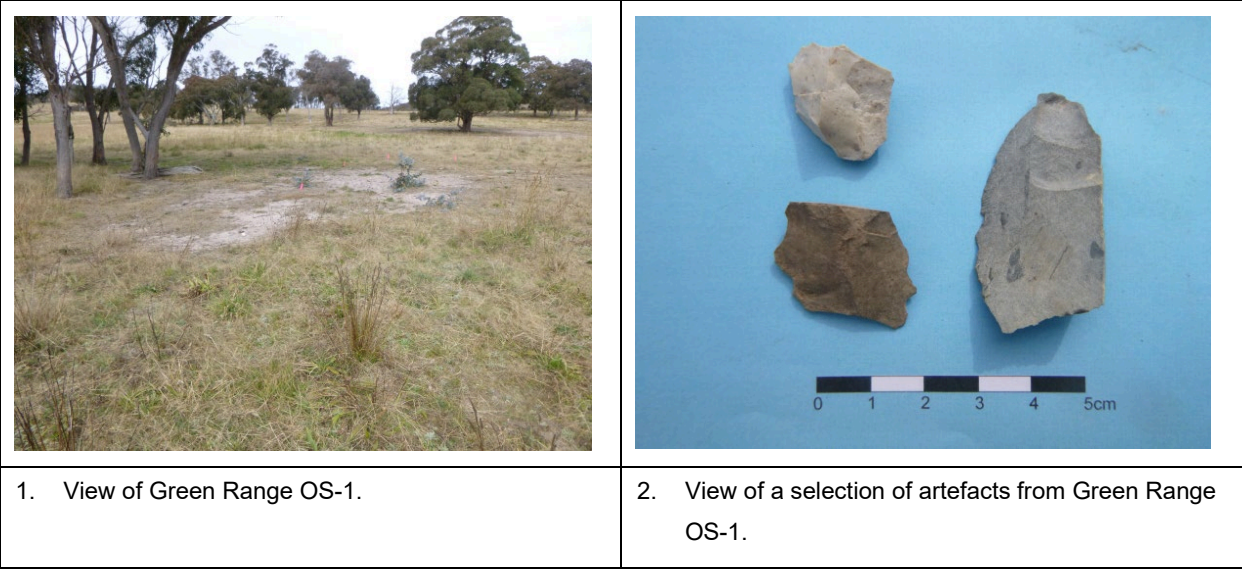


Figure 6-13: Green Range OS-1. View of site and selection of recorded artefacts.



**Green Range OS-2 with PAD (21-4-0392)**

**Site type:** Open artefact scatter

**GPS coordinates:** 381615E / 6583396N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is in private property, 26 m south of Winterbourne Road. Winterbourne Road and Table Top Road intersection is 1 km northeast of the site. The centre of the site is located 88 m south of Lambing Flat Creek, and approximately 320 m southwest of the centre of Green Range OS-3 (**Figure 6-14**).

**Description of site:** The site is an open artefact scatter consisting of complete and broken flakes. Materials include silcrete and greywacke (**Table 6-9**). The artefacts were distributed from the edge of the southern side of the road corridor of Winterbourne Road, extending further south into the private property (**Figure 6-15**). Soil at the site consists of a brown loam with pebble and small rock inclusions. Although the site has been disturbed from both road construction and agricultural ploughing, there remains a potential for archaeological deposits. Notwithstanding that these deposits have been previously being disturbed, subsurface material is most likely present, albeit with limited potential for *in situ* material.

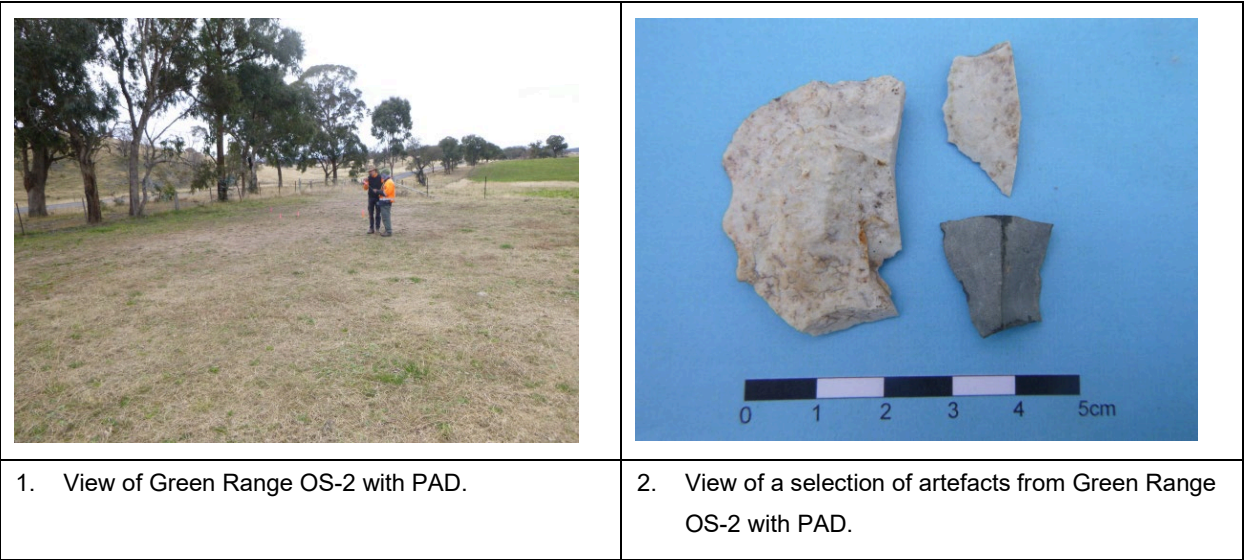
**Table 6-9: Artefact Attributes: Green Range OS-2 with PAD.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Greywacke	Proximal fragment	Tertiary	22x17x5
2	Flake	Silcrete	Longitudinal break	Tertiary	23x12x3
3	Flake	Silcrete	Complete	Tertiary	40x28x8
4	Flake	Silcrete	Complete		19x12x2
5	Flake	Silcrete	Complete		10x9x2
6	Shatter	Greywacke		Tertiary	22x15x4
7	Flake	Silcrete	Complete	Tertiary	22x15x7
8	Shatter	Silcrete			9x7x1
9	Flake	Silcrete	Distal fragment	Tertiary	16x9x8
10	Flake	Silcrete	Distal fragment		8x11x1
11	Flake	Silcrete	Proximal fragment		17x12x5

Figure 6-14: Aerial showing the extent of Green Range OS-2 with PAD.



Figure 6-15: Green Range OS-2. View of site and selection of recorded artefacts.



**Green Range OS-3 with PAD (21-4-0391)**

**Site type:** Open artefact scatter with PAD

**GPS coordinates:** 381917E / 6583491N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located on the southern side of the road corridor of Winterbourne Road and continues into the private property to the south. The centre of the site is located 170 m southeast of Lambing Flat Creek, and 120 m southwest of an unnamed tributary (**Figure 6-16**).

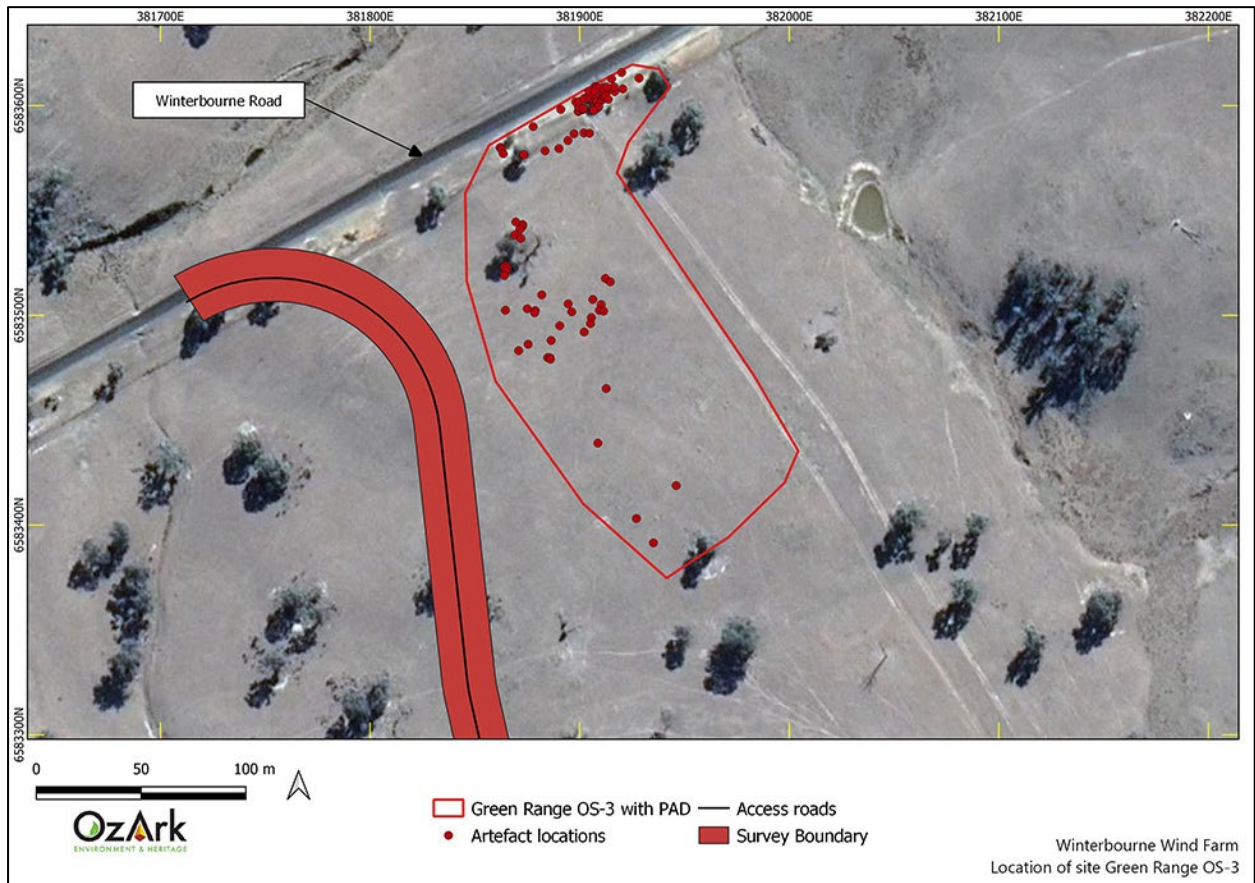
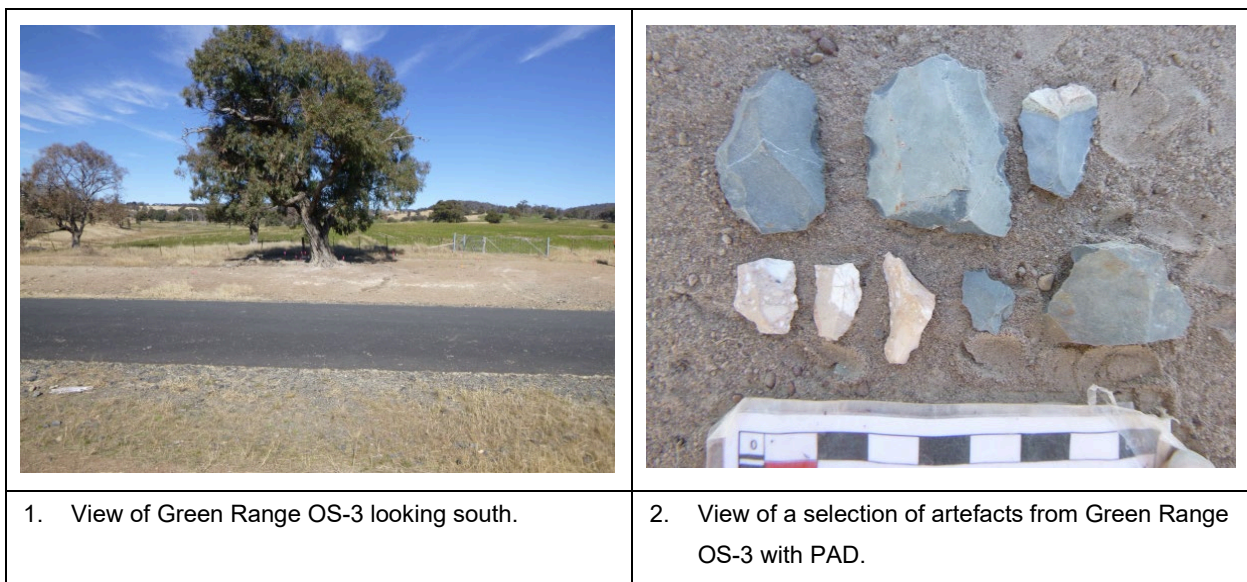
**Description of site:** The site is an extensive open artefact scatter adjacent to the confluence of two creeks, to the northwest and northeast. There were over 100 artefacts recorded, and although this was a relatively comprehensive sample of the surface material, there were undoubtedly more artefacts present (**Table 6-10**). The assemblage comprises primarily flakes, both complete and broken. Materials include greywacke, silcrete, mudstone, quartzite, chalcedony, chert, and other siliceous material, as well as a good example of a knapped glass artefact (**Figure 6-17**). The artefacts are mostly present in the road corridor of Winterbourne Road (on the southern side), and then continue into the paddock to the south, however, with less artefact density. Soil at the site consists of a brown loam with pebble and small rock inclusions. Although the site has been subject to disturbance from road construction and ploughing, there is a potential for subsurface archaeological material in areas of the site outside of the road corridor. These deposits will most likely be disturbed, however, intact archaeological material may be present at depth. The identified PAD covers the current site extent outside the road corridor, although it may continue beyond this boundary, both on the northern side of Winterbourne Rd and northeast towards the unnamed creek. The extent of the site in these areas remains unknown as these areas lay outside the Survey Boundary.

**Table 6-10: Artefact Attributes: Green Range OS-3.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm)
1	Core	Mudstone		Tertiary	
2	Flake	Chert	Complete	Tertiary	18x20x5
3	Axe Blank	Volcanics		Secondary	70x45x38
4	Flake	Greywacke	Complete	Tertiary	19x11x3
5	Flake	Greywacke	Complete	Tertiary	20x12x3
6	Flake	Silcrete	Proximal Fragment	Tertiary	12x13x4
7	Shatter	Chert	Complete	Tertiary	15x9x5
8	Flake	Greywacke	Proximal Fragment	Tertiary	16x19x4
9	Flake	Chert	Complete	Tertiary	13x8x10
10	Flake	Greywacke	Proximal Fragment	Secondary	65x45x12
11	Flake	Greywacke	Complete	Tertiary	12x15x4
12	Flake	Greywacke	Complete	Tertiary	12x10x3
13	Flake	Silcrete	Proximal Fragment	Tertiary	12x7x2

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm)
14	Flake	Greywacke	Complete	Tertiary	33x25x8
15	Flake	Greywacke	Proximal Fragment	Tertiary	13x11x3
16	Shatter	Silcrete		Tertiary	22x12x8
17	Flake	Silcrete	Complete	Tertiary	15x12x3
18	Flake	Greywacke	Complete	Secondary	23x17x4
19	Flake	Greywacke			32x12x8
20	Flake	Greywacke	Proximal Fragment	Tertiary	30x12x8
21	Flake	Greywacke	Complete	Tertiary	32x8x5
22	Flake	Greywacke	Complete	Tertiary	33x22x11
23	Flake	Greywacke	Distal Fragment	Tertiary	24x12x7
24	Flake	Greywacke	Distal Fragment	Tertiary	18x11x6
25	Flake	Greywacke	Distal Fragment		30x22x10
26	Flake	Silcrete	Complete	Tertiary	30x12x8
27	Flake	Silcrete	Distal Fragment	Tertiary	23x16x6
28	Flake	Silcrete	Longitudinal Break	Tertiary	
29	Flake	Silcrete	Complete	Tertiary	26x20x6
30	Flake	Silcrete	Complete	Tertiary	20x14x7
31	Flake	Quartz	Complete	Tertiary	10x6x3
32	Shatter	Quartz	Complete	Tertiary	29x10x9
33	Flake	Quartzite	Complete	Tertiary	21x28x8
34	Flake	Silcrete	Complete	Tertiary	18x13x8
35	Core	Silcrete	Complete	Tertiary	40x20x20
36	Flake	Greywacke	Complete	Primary	130x78x22
37	Blade	Greywacke	Complete	Tertiary	50x12x8
38	Flake	Quartzite	Distal Fragment	Tertiary	23x18x4
39	Flake	Greywacke	Complete	Tertiary	23x16x6
40	Flake	Greywacke	Complete	Tertiary	60x23x12
41	Flake	Chert	Complete	Secondary	35x35x10
42	Shatter	Greywacke	Complete	Tertiary	27x20x8
43	Flake	Greywacke	Complete	Tertiary	32x15x5
44	Flake	Greywacke	Complete	Tertiary	29x31x8
45	Flake	Silcrete	Distal Fragment	Tertiary	25x25x6
46	Blade	Greywacke	Complete	Tertiary	64x20x12
47	Flake	Greywacke	Complete	Tertiary	35x17x5
48	Flake	Mudstone	Complete		32x22x8
49	Flake	Chalcedony	Complete	Tertiary	23x20x6
50	Flake	Greywacke	Complete	Tertiary	32x42x10
51	Shatter				17x13x5
52	Flake	Chalcedony	Longitudinal Break	Tertiary	40x23x8
53	Flake	Mudstone	Complete	Tertiary	20x30x5
54	Flake	Greywacke	Complete	Tertiary	45x32x13
55	Flake	Greywacke	Complete	Secondary	36x20x10
56	Flake	Mudstone	Distal Fragment	Tertiary	28x20x8
57	Flake	Glass			22x12x7
58	Flake	Mudstone	Complete	Tertiary	25x20x9
59	Flake	Silcrete	Complete	Tertiary	30x21x12
60	Flake	Greywacke	Distal Fragment	Tertiary	25x33x3
61	Flake	Greywacke	Distal Fragment	Tertiary	23x18x4
62	Flake	Other	Distal Fragment	Tertiary	11x8x3
63	Flake	Greywacke	Complete	Tertiary	12x27x6

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm)
64	Blade	Greywacke	Complete	Tertiary	53x23x11
65	Flake	Silcrete	Complete	Primary	20x17x8
66	Flake	Greywacke	Complete	Primary	39x23x12
67	Flake	Chert	Complete	Secondary	13x20x8
68	Flake	Silcrete	Complete	Tertiary	25x12x4
69	Grindstone	Sandstone	Complete		150x18x60
70	Flake	Silcrete	Distal Fragment	Tertiary	11x9x3
71	Flake	Greywacke	Complete	Tertiary	40x32x10
72	Flake	Greywacke	Proximal Fragment	Tertiary	11x10x3
73	Flake	Greywacke	Distal Fragment	Tertiary	32x41x11
74	Flake	Chert	Complete	Tertiary	21x27x10
75	Flake	Chert	Proximal Fragment	Tertiary	22x25x5
76	Flake	Chert	Distal Fragment		22x12x5
77	Flake	Greywacke	Distal Fragment	Secondary	15x10x3
78	Flake	Greywacke	Distal Fragment		28x15x3
79	Flake	Greywacke			43x60x8
80	Flake	Chert	Complete	Tertiary	32x23x9
81	Flake	Chert	Complete	Secondary	29x18x6
82	Other	Quartzite	Complete		170x80x30
83	Flake	Chert	Complete	Tertiary	32x22x6
84	Core	Silcrete	Complete		70x55x45
85	Flake	Chert	Complete	Tertiary	43x23x11
86	Anvil/Hammerstone	Quartzite			105x90x48
87	Flake	Chert	Complete	Tertiary	38x20x5
88	Flake	Chert	Distal Fragment	Tertiary	24x24x9
89	Flake	Chert	Complete	Secondary	50x38x10
90	Flake	Chert	Proximal Fragment	Tertiary	20x17x5
91	Flake	Chert	Complete	Secondary	30x67x12
92	Flake	Chert	Distal Fragment	Tertiary	22x22x10
93	Flake	Mudstone	Complete	Secondary	50x31x11
94	Flake	Greywacke	Complete	Tertiary	27x19x3
95	Flake	Silcrete	Complete	Tertiary	12x15x2
96	Flake	Greywacke	Complete	Tertiary	27x30x5
97	Flake	Chert	Proximal Fragment	Tertiary	22x20x4
98	Flake	Greywacke	Complete	Tertiary	49x35x15
99	Flake	Greywacke	Complete	Tertiary	21x12x6
100	Anvil/Hammerstone	Quartzite	Complete		75x80x32

**Figure 6-16: Aerial showing the extent of Green Range OS-3 with PAD.****Figure 6-17: Green Range OS-3. View of site and selection of recorded artefacts.**



3. View of the site to the east, showing the portion of Green Range OS-3 in the Winterbourne Road corridor.



4. View of a selection of artefacts from Green Range OS-3 with PAD.



5. View of Green Range OS-3 to the southwest.



6. View of sandstone grindstone with striations from Green Range OS-3 with PAD.



7. View of Green Range to the southwest from Winterbourne Road.



8. View of the knapped glass artefact from Green Range OS-3 with PAD.

**Millbank OS-1 (21-4-0384)****Site type:** Artefact scatter**GPS coordinates:** 380847E / 6583243N (GDA 2020 / MGA Zone 56)

**Location of site:** Millbank OS-1 is located along Winterbourne Road, 1.8 km west of the Winterbourne Road and Table Top Road intersection. The site is situated largely on the boundary of the “Millbank” property and extends into the northern side of the road corridor of Winterbourne Road (**Figure 6-18**). The site is 80 m south of Lambing Flat Creek and 150 m east of a dam.

**Description of site:** The site consists of a low-density artefact scatter located on a generally flat, raised landform overlooking Lambing Flat Creek and an associated swampy area (**Figure 6-19**). 18 artefacts were identified at the site location consisting largely of unmodified flakes (n=17) and one backed blade. Most artefacts were manufactured from greywacke (n=15). Additional materials present include quartz, silcrete, and mudstone (**Table 6-11**). Ground surface visibility at the site was very high at 90%. The site has been affected by erosion and water wash. There is low potential for *in situ* subsurface deposits at the site because of the construction of Winterbourne Road and the unsealed road into the property.

**Table 6-11: Artefact attributes: Millbank OS-1.**





Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Silcrete	Longitudinal break	Tertiary	23x23x5
2	Flake	Greywacke	Complete	Tertiary	48x25x8
3	Flake	Greywacke	Distal fragment	Tertiary	22x18x3
4	Flake	Greywacke	Complete	Secondary	25x30x8
5	Backed blade	Greywacke	Proximal fragment	Secondary	30x15x5
6	Flake	Quartz	Complete	Tertiary	15x11x4
7	Flake	Greywacke	Complete	Tertiary	32x5x8
8	Flake	Greywacke	Complete	Tertiary	32x45x10
9	Flake	Greywacke	Complete	Tertiary	20x25x8
10	Flake	Greywacke	Proximal fragment	Tertiary	15x15x4
11	Flake	Greywacke	Complete	Tertiary	20x20x4
12	Flake	Greywacke	Complete	Tertiary	30x28x6
13	Flake	Greywacke	Proximal fragment	Tertiary	25x24x5
14	Flake	Greywacke	Complete	Tertiary	30x35x10
15	Flake	Mudstone	Complete	Tertiary	48x32x10

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
16	Flake	Greywacke	Complete	Tertiary	20x18x5
17	Flake	Greywacke	Complete	Tertiary	32x18x8
18	Flake	Greywacke	Complete	Tertiary	83x22x25

**Figure 6-18: Aerial showing the extent of Millbank OS-1.**



**Figure 6-19: Millbank OS-1. View of site and selection of recorded artefacts.**

	
<p>1. View north to Millbank OS-1 site location within the road corridor of Winterbourne Road and the entrance to the Millbank property.</p>	<p>2. View northeast to Millbank OS-1 site location.</p>
	
<p>3. Selection of greywacke (left and top) and a mudstone artefact from Millbank OS-1.</p>	<p>4. View of retouch along margin of the backed blade.</p>

**Table Top Rd IF-1 (21-4-0394)**

**Site type:** Isolated find

**GPS coordinates:** 385597E / 6584050N (GDA 2020 / MGA Zone 56)

**Location of site:** Table Top Rd IF-1 is located along Table Top Road, 965 m east of the intersection of Florida Road and Table Top Road. The site is located 65 m east of Winterbourne Creek and is on the southern side of the road corridor of Table Top Road (**Figure 6-20**).

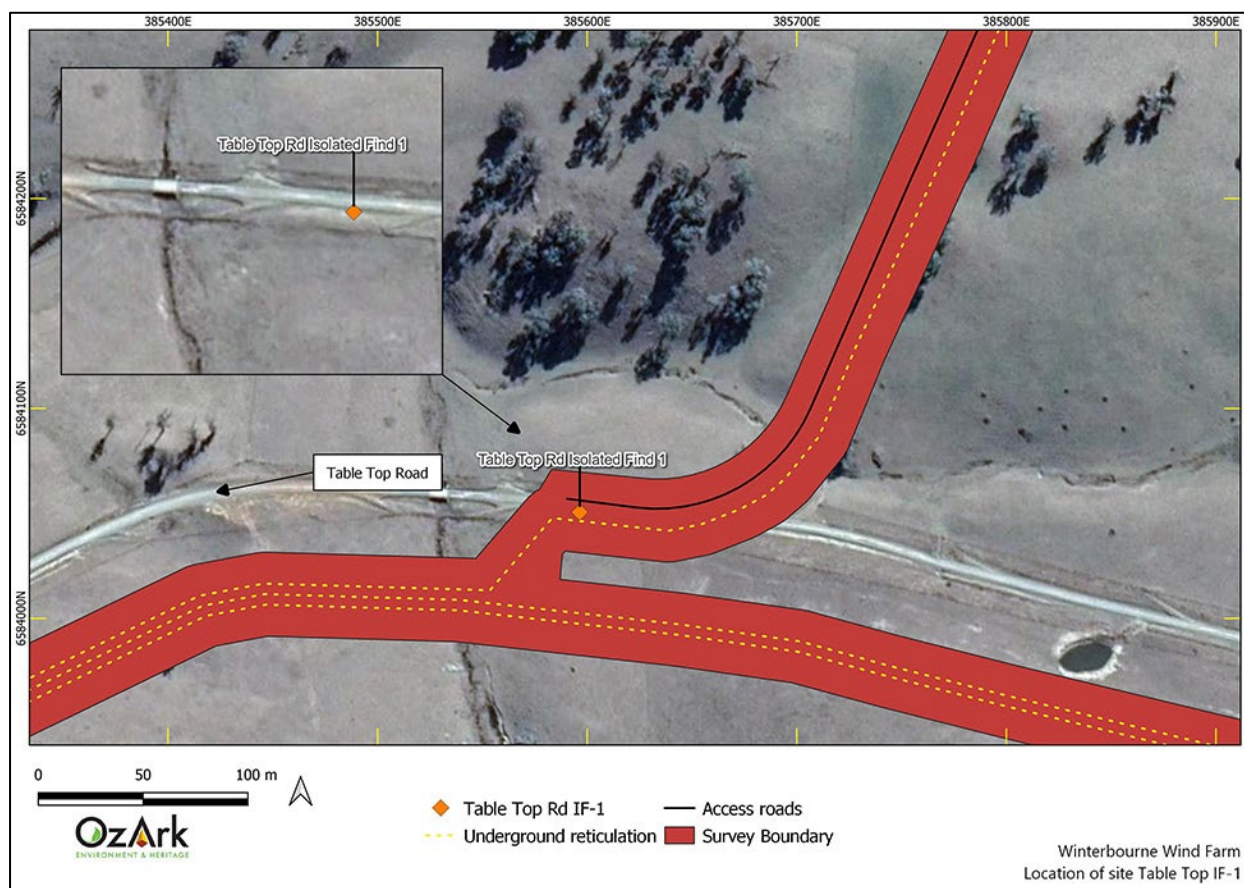
**Description of site:** Table Top Rd IF-1 consists of an isolated crystal quartz flake located on a gentle slope descending west towards Winterbourne Creek (**Figure 6-21**). The artefact has potential retouch along one margin (**Table 6-12**). The soil at the site was a light brown silty loam with gravel and small rock inclusions. There is low potential for *in*

*situ* subsurface deposits at the site given the high levels of disturbance associated within the construction of Winterbourne Road.



**Table 6-12: Artefact Attributes: Table Top Rd IF-1.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Quartz	Complete	Tertiary	32x15x8

**Figure 6-20: Aerial showing the location of Table Top IF-1.**



**Figure 6-21: Table Top Rd IF-1. View of site and recorded artefact.**

	
<p>1. View west to Table Top Rd IF-1 site location on the southern side of the road corridor for Winterbourne Road.</p>	<p>2. Table Top Rd IF-1 artefact: a crystal quartz flake.</p>

### **Woodburn IF-1 (21-4-0395)**

**Site type:** Isolated find

**GPS coordinates:** 370328E / 6586262N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located on private property approximately 2.4 km south of Blue Mountain Road, 10 km east of Thunderbolts Way, and 3.4 km south east of the Hillview Road and Mirani Road intersection. Mihi Creek is 80 m to the west, adjacent to the gentle slope on which the artefact is situated (**Figure 6-22**).

**Description of site:** The site is an isolated silcrete artefact located in an area of erosion at the base of a tree on a gentle slope above a valley floor with an associated wetland (**Figure 6-23**). It is noteworthy that this paddock afforded few areas of ground surface visibility, except around isolated trees and outcropping stone. The recorded artefact is possibly a core fragment, and a manuport, as silcrete does not occur around this area naturally (**Table 6-13**). Soil at the location consists of light brown silt with pebble and small to medium rock inclusions.

**Table 6-13: Artefact Attributes: Woodburn IF-1.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Manuport/core	Silcrete	Complete	Tertiary	50x30x20

Figure 6-22: Aerial showing the location of Woodburn IF-1.

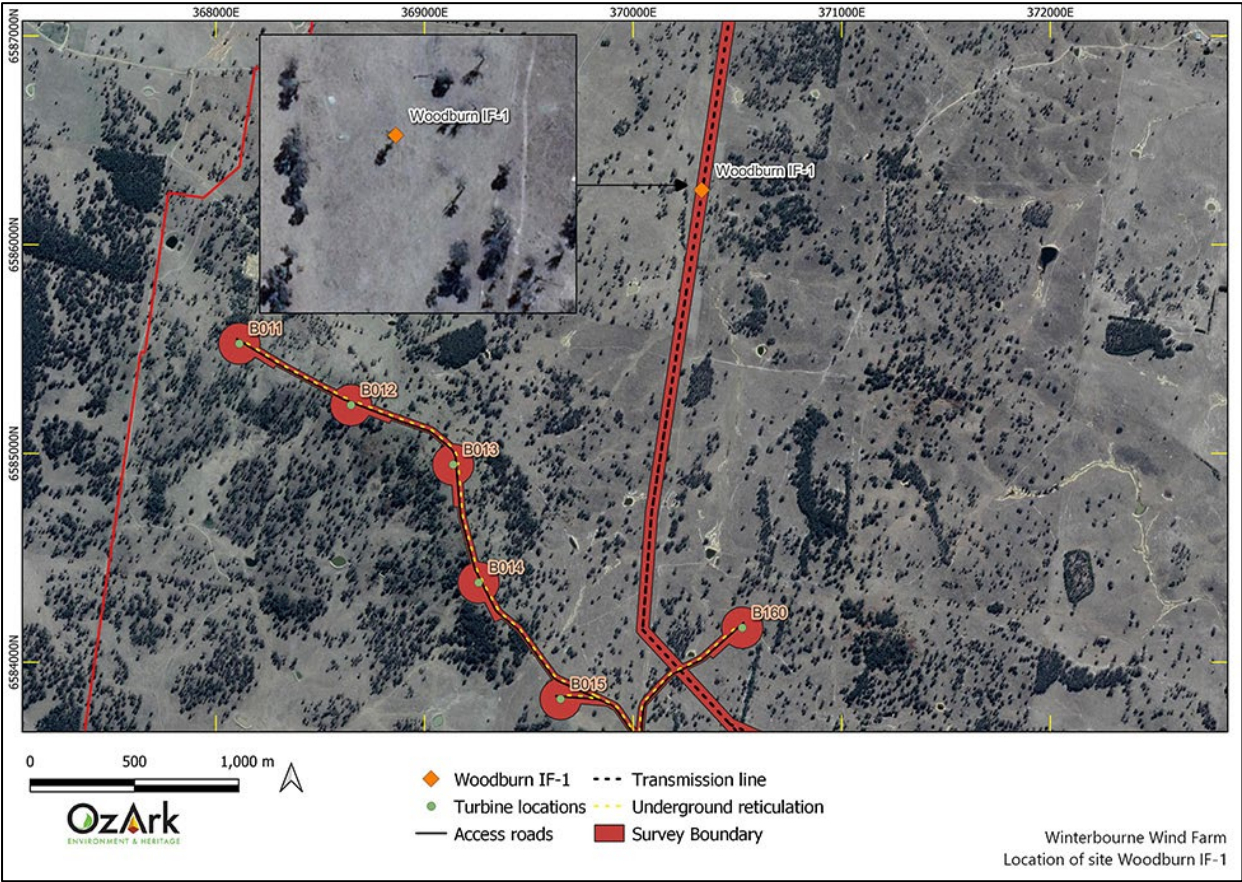
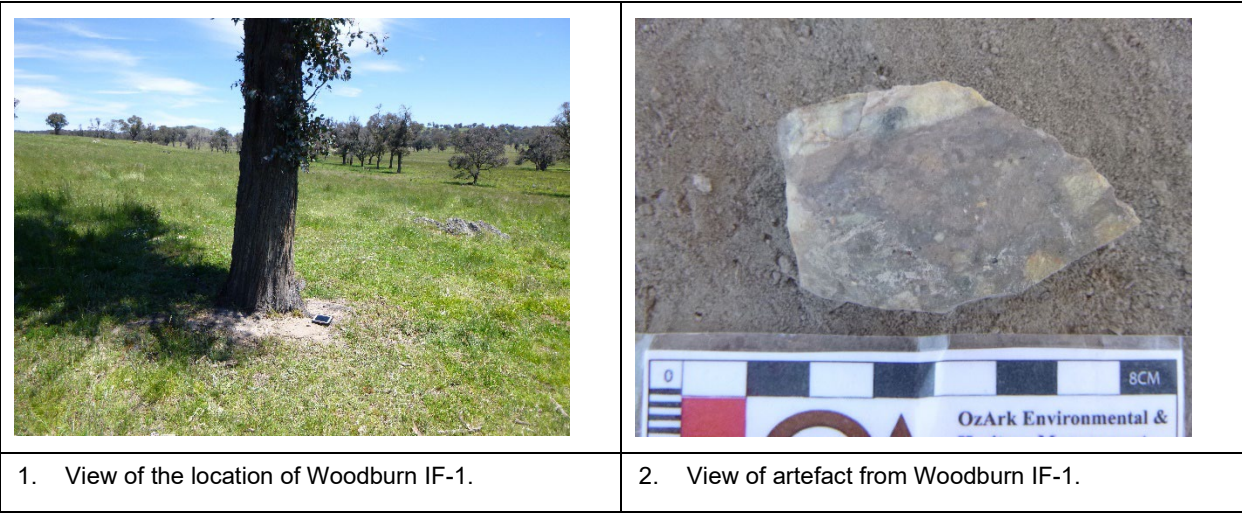


Figure 6-23: Woodburn IF-1. View of site and the recorded artefact.



## Tarwonga ST-1 (21-4-0397)

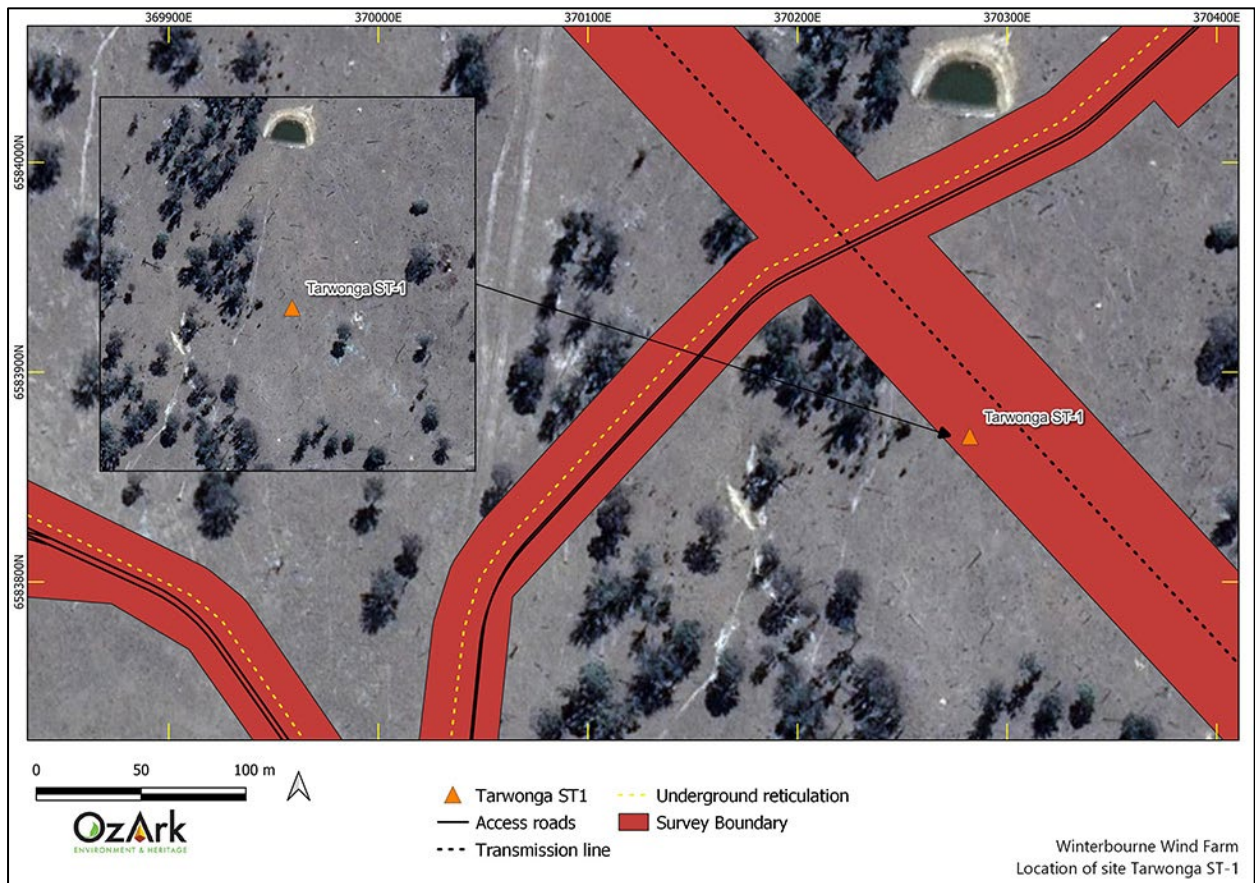
**Site type:** Scarred tree

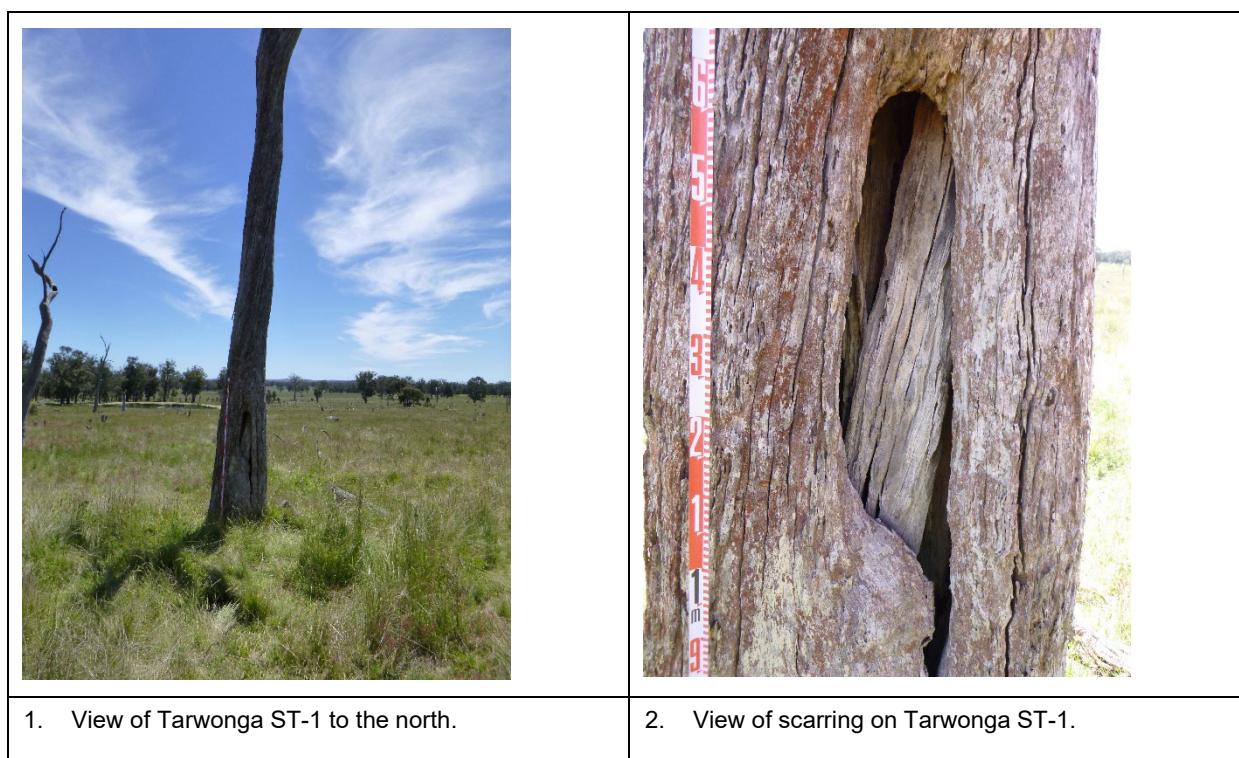
**GPS coordinates:** 370282E / 6583869N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located on private property approximately 3.9 km west of Blue Mountain Road, 9.2 km east of Thunderbolts Way, and 5.2 km southwest of the Blue Mountain Road and Hazeldean Road intersection. Mihi Creek is 64 m west of the site and Draytons Creek is 715 m to the northeast (**Figure 6-24**).

**Description of site:** The site is a dead tree with single scar located within 100 m of Mihi Creek, a minor waterway, and at the base of a low-lying hill. The tree is 12 m tall with a 1.88 m trunk circumference. The southward facing scar is 61 cm long and 16 cm wide. The base of the scar is 1.1 m above the ground (**Figure 6-25**).

**Figure 6-24: Aerial showing the location of Tarwonga ST-1.**



**Figure 6-25: Tarwonga ST-1. View of site and scar.****The Ranch OS-1 with PAD (21-4-0385)**

**Site type:** Open artefact scatter

**GPS coordinates:** 365932E / 6592699N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located on private property approximately 5 km northwest of the Hillview Road and Mirani Road intersection. A farm dam is located 430 m to the southeast (**Figure 6-26**).

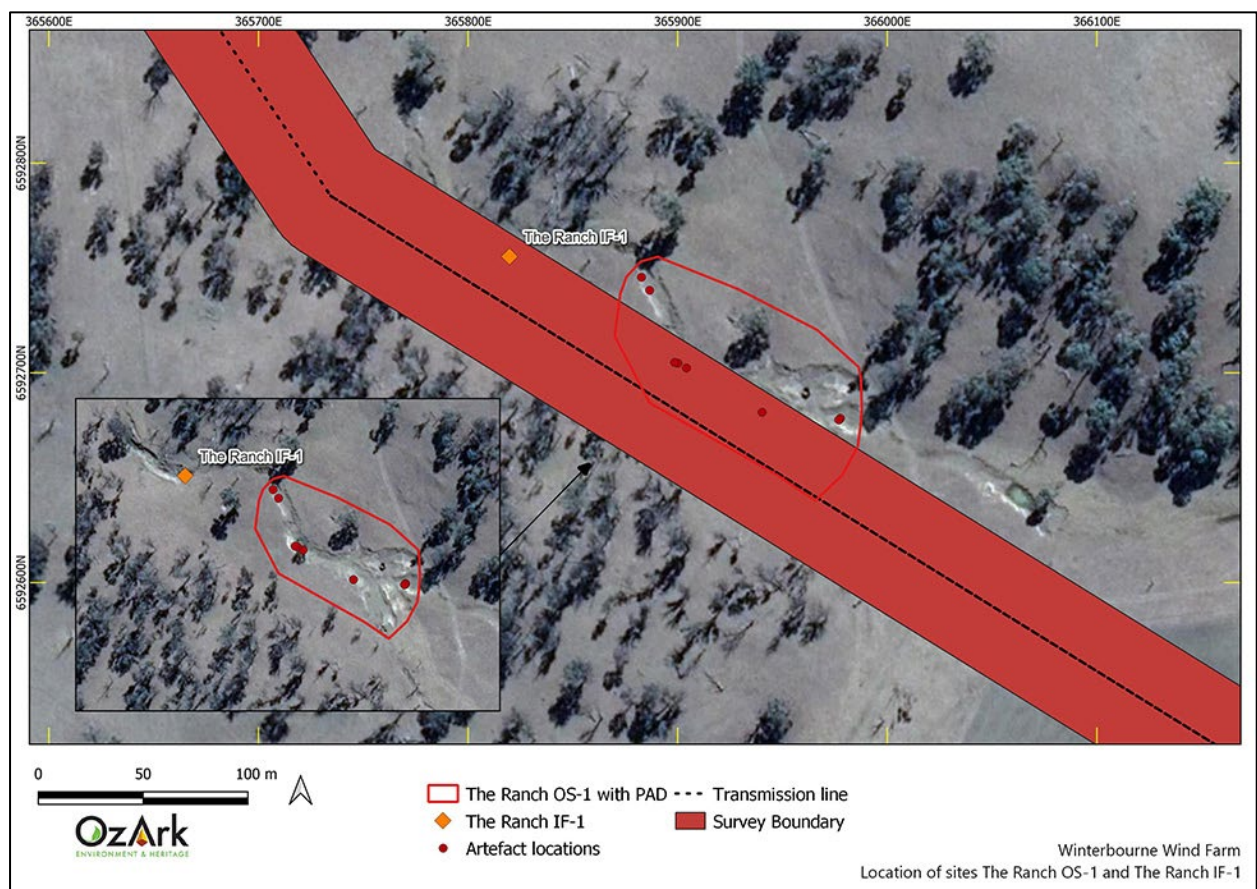
**Description of site:** The site is in a dry creek bed surrounded by three low lying hills to the south, northwest and north, where the eastern side opens into a larger valley. The site is a dispersed artefact scatter located within the creek bed and its surrounding eroded / gullied banks. The recorded artefacts consist of flakes, a core, and a blade. Materials include silcrete of several colours, basalt, and quartzite (**Table 6-14**). The artefacts are mostly present around the edges of the creek, particularly on the southern side, with some scattered along the eastern bank and in the creek bed (**Figure 6-27**). Soil at the location consists of light brown silt/clay with significant amounts of small pebble and rock inclusions. The PAD is defined by the current site extent, as this includes the potential archaeologically sensitive landforms surrounding the creek. The PAD does not include areas within the creek channel. In this case, the primary sensitive landform is the gentle creek terrace on the south-western side of the creek. The PAD also extends across the rest of the creek, regardless of the severe erosion and agricultural disturbance. This is

because, although the subsurface may be disturbed, there is a high likelihood of archaeological material being present beneath the surface.

**Table 6-14: Artefact Attributes: The Ranch OS-1 with PAD.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Flake	Silcrete	Complete	Tertiary	19x12x7
2	Shatter	Silcrete		Tertiary	13x8x6
3	Flake	Silcrete	Complete	Tertiary	18x12x3
4	Blade	Quartzite	Proximal fragment	Tertiary	74x41x15
5	Flake	Basalt	Distal fragment	Tertiary	42x28x1
6	Flake	Silcrete	Distal fragment	Tertiary	33x20x12
7	Flake	Chert	Proximal fragment	Tertiary	21x19x8
8	Flake	Chert	Complete	Tertiary	32x20x10
9	Flak	Chert	Distal fragment	Tertiary	33x19x9

**Figure 6-26: Aerial showing the extent of The Ranch OS-1 with PAD and The Ranch IF-1.**



**Figure 6-27: The Ranch OS-1. View of site and selection of recorded artefacts.**

1. View of The Ranch OS-1 with PAD to the west.



2. View of an artefact from The Ranch OS-1 with PAD.



3. View of The Ranch OS-1 with PAD to the northwest.



4. View of The Ranch OS-1 with PAD to the west.



5. View of a selection of artefacts from The Ranch OS-1 with PAD.



6. View of a selection of artefacts from The Ranch OS-1 with PAD.

## **The Ranch IF-1 (21-4-0386)**

**Site Type:** Isolated find

**GPS Coordinates:** 365820E / 6592755N (GDA 2020 / MGA Zone 56)

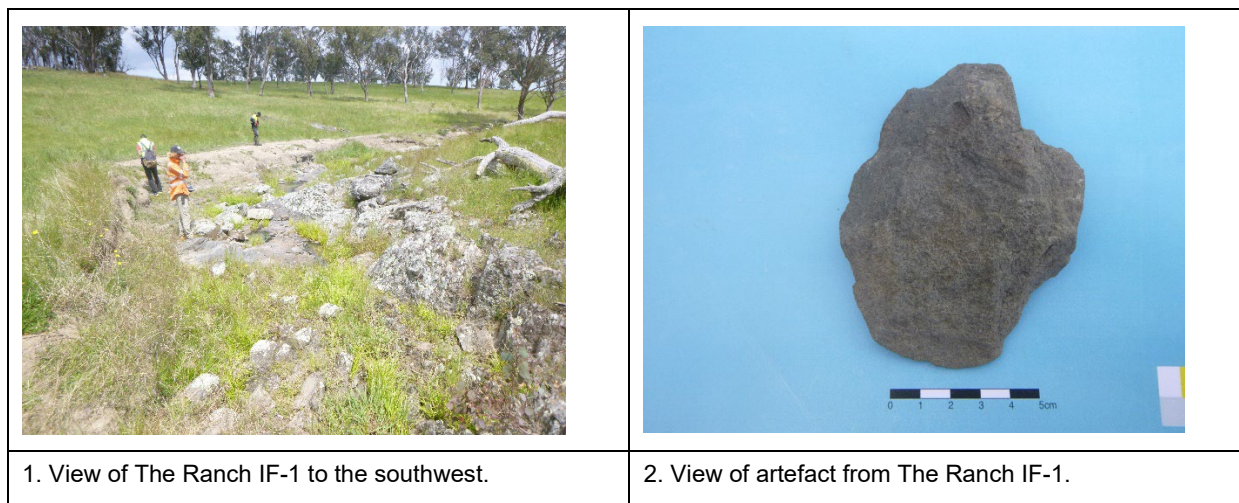
**Location of Site:** The site is located on private property approximately 5.1 km northwest of Hillview Road and Mirani Road intersection. It is located within a rocky portion of a creek with hills to the north and south. It is also located 60 m west of The Ranch OS-1 with PAD site boundary (**Figure 6-26**).

**Description of Site:** The site is a single axe blank, or scraper blank, located within a rocky crevice of an unnamed creek bed (**Figure 6-28**). The creek had slow, running water at the time of the survey. The artefact is manufactured from greywacke (**Table 6-15**). At this section of the creek bed, there are no intact soils. As a result, the area was subject to substantial water wash and erosion, hence, there is low potential for *in situ* subsurface deposits.

**Table 6-15: Artefact Attributes: The Ranch IF-1.**

Artefact ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Axe blank/scraper blank	Greywacke	Complete	Tertiary	90x75x28

**Figure 6-28: The Ranch IF-1. View of site and the recorded artefact.**



## **Queenlee OS-1 with PAD (20-6-0080)**

**Site type:** Stone quarry and stone arrangements

**GPS coordinates:** 356066E / 6597447N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located on private property 830 m west of Salisbury Waters, 2.4 km south of Talisker Road, and 3.9 km northeast of Terrible Vale Rd. The site

is also 3.1 km southwest of the Talisker Road and Thunderbolts Way intersection. It is located on a small crest overlooking Salisbury Waters to the east and an unnamed creek 10 m (at its closest point) to the south. AHIMS site #21-4-0004 is located 1.6 km northeast, which is a very similar stone quarry. The site is also south of a regrowth corridor between Bareena and Queenlee properties, and north of a small erosion gully of the unnamed creek (**Figure 6-29**).

**Description of site:** The site is an extensive area of rock outcrop, where there is significant evidence of Aboriginal stone quarrying. The nature of the stone material is uncertain, although it can be described as a fine-grained grey to black stone, probably basalt (**Figure 6-30**). Members of the Aboriginal community believe it to be a fine-grained basalt, however, when conducting research into AHIMS site 21-4-0004, also a stone quarry of the same material, the site card states that the stone is siltstone. The OzArk survey team also visited site #21-4-0004, confirming that the material at Queenlee OS-1 is identical.

A range of stone artefacts were recorded including axe blanks, blades, flakes, cores, hammerstones and anvils, all of the same grey fine-grained material (**Table 6-16**). Other site features included locations, recorded as *activity areas*, where there was clear evidence of stone quarrying, often in the form of clear Hertzian cones. At least one, and possibly more, stone arrangements were also recorded. Soil at the site consists of a dark brown loam with large outcropping stone (basalt?) across the crest. It is also important to note that the density of artefacts and knapping zones is higher on the eastern side of the crest and decreases across to the western side. This could possibly be the result of the outcropping stone quality being poorer on the western side, as although it was the same stone, it was significantly more brittle.

There is little evidence of significant disturbance to the site other than its agricultural land use and modification through erosion of the adjacent unnamed creek. Consequently, it is assessed that there is potential for archaeological deposits at Queenlee OS-1. The PAD is defined by the current site extent; however, it may continue to the west (outside of the Queenlee property). This section was not surveyed, as it was outside the Survey Boundary, and no permission was given to access this adjacent property. Consequently, the western boundary of the PAD and site extent ends at the Queenlee boundary fence, which is likely an artificial boundary.

The following subsections described in more detail the site features:

#### **Stone arrangements (Figure 6-31)**

**Stone Arrangement 1:** This most predominant stone arrangement within Queenlee OS-1, as it is situated on a large flat outcropping rock at the highest point of the site and roughly

at the centre. The arrangement comprises eight stones in a pyramidal arrangement. The lichen over the surface of the stones being continuous from one to the other in the arrangement demonstrate the length of time the stones have been in place.

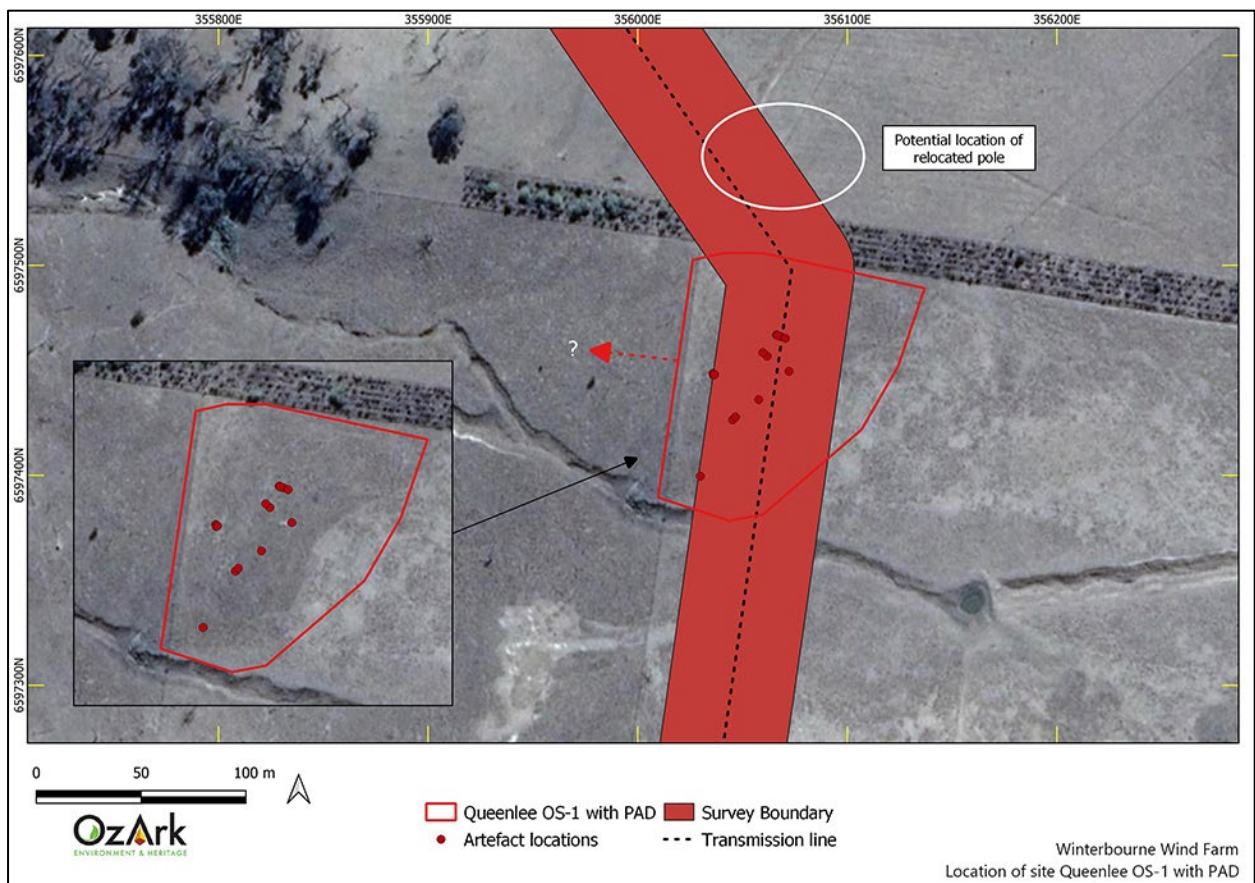
*Stone Arrangement 2:* (possible): Possible cultural cairn of stones on southern side of site and measures 140x120x50 cm (length x width x height).

*Stone Arrangement 3:* (possible): Located in the north-eastern corner of the site, this possible stone arrangement measures 117x100x55 cm.

#### Activity areas (Table 6-17)

The activity areas present at Queenlee OS-1 are areas of focussed quarrying activity. The ten recorded 'areas' were located around large outcropping stones on the eastern side of the crested landform where there was clear evince of quarrying. They comprise a dense accumulation of stone material in a basin or apron-like area surrounding the outcropping stone, typically containing primary and secondary flakes, axe blanks, blades, and sometimes hammerstones. In addition to the numerous artefacts, the outcropping stone also contained evidence of the quarrying in the form of Hertzian cones. These Hertzian cones are cone-shaped scars in the primary rock where smaller chunks were knapped off to produce stone tools, in this case, predominantly axe blanks.

**Figure 6-29: Aerial showing the extent of Queenlee OS-1 with PAD.**









**Table 6-16: Artefact Attributes: Queenlee OS-1 with PAD.**

ID	Art. Type	Material	Integrity	Reduction	Length x width x thickness (mm) or size class
1	Axe blank	Basalt?	Complete	Secondary	170x120x70
2	Axe blank	Basalt?	Complete	Secondary	134x98x50
3	Axe blank	Basalt?	Complete	Tertiary	122x80x40
4	Core	Basalt?		Tertiary	272x101x90
5	Axe blank	Basalt?	Complete	Tertiary	130x76x28
6	Core	Basalt?		Secondary	76x148x105
7	Blade	Basalt?	Complete	Tertiary	140x56x16
8	Axe blank	Basalt?	Complete	Tertiary	125x85x48
9	Flake	Basalt?	Complete	Tertiary	118x89x42
10	Flake	Basalt?	Complete	Tertiary	90x60x25
11	Flake	Basalt?	Complete	Tertiary	45x32x5
12	Flake	Basalt?	Complete	Tertiary	60x22x6
13	Hammerstone	Basalt?	Complete	Secondary	120x90x58
14	Anvil	Basalt?		Secondary	145x105x54

**Table 6-17: Site features: Queenlee OS-1 with PAD.**

ID	Feature	Notes
1	Activity area (Hertzian cone)	Two primary outcrops within 2 m <sup>2</sup> , showing clear quarrying evidence with artefact and material scatter surrounding outcrop (apron shaped).
2	Activity area	4x7 m – Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks.
3	Activity area	10x5 m - Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks.
4	Activity area (Hertzian cones)	8x6 m - Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks (apron shaped).
5	Activity area (Hertzian cones)	4x7 m - Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks (apron shaped).
6	Double activity area (Hertzian cones)	10x7 m – Two areas with overlapping boundaries. Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks (apron shaped).
7	Activity area	7x5 m - Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks.
8	Activity area (Hertzian cones)	8x18 m – Dozens of basalt? boulders with scars, primary flakes and secondary flakes, and axe blanks.
9	Activity area	7x5 m - Dozens of basalt? boulders with scars, primary flakes and secondary flakes, axe blanks, and large cores.
10	Activity area	10 x 11 m – Loose stone (no outcropping). Two hammer stones, primary and secondary flakes, and axe blanks.

**Figure 6-30: Queenlee OS-1. View of site and selection of recorded artefacts.**

	
<p>1. View of Queenlee OS-1 with PAD to the southeast.</p>	<p>2. View of a selection of artefacts from Queenlee OS-1 with PAD.</p>
	
<p>3. View of Activity Area 2 to the east.</p>	<p>4. View of a blade from Queenlee OS-1 with PAD.</p>
	
<p>5. View of section of the rock type quarried at Queenlee OS-1 with PAD.</p>	<p>6. View of an activity area from Queenlee OS-1 with PAD.</p>



7. View of an activity area to the north at Queenlee OS-1 with PAD.



8. View of a large core from Queenlee OS-1 with PAD.



9. View of Hertzian cones in outcropping rock in Queenlee OS-1 with PAD.



10. View of an axe blank from Queenlee OS-1 with PAD.






11. View of an activity area at Queenlee OS-1 with PAD.



12. View of a hammerstone from Queenlee OS-1 with PAD.

**Figure 6-31: Queenlee OS-1. View of stone arrangements.**

	
1. View of Stone Arrangement 1 viewed to the south.	2. Top down view of Stone Arrangement 1.
	
3. View northeast of Stone Arrangement 2 (possible).	4. Top down view of Stone Arrangement 2 (possible).
	
5. View west of Stone Arrangement 3 (possible).	6. Overhead view of Stone Arrangement 3 (possible).

## Queenlee E-1 (21-4-0387)

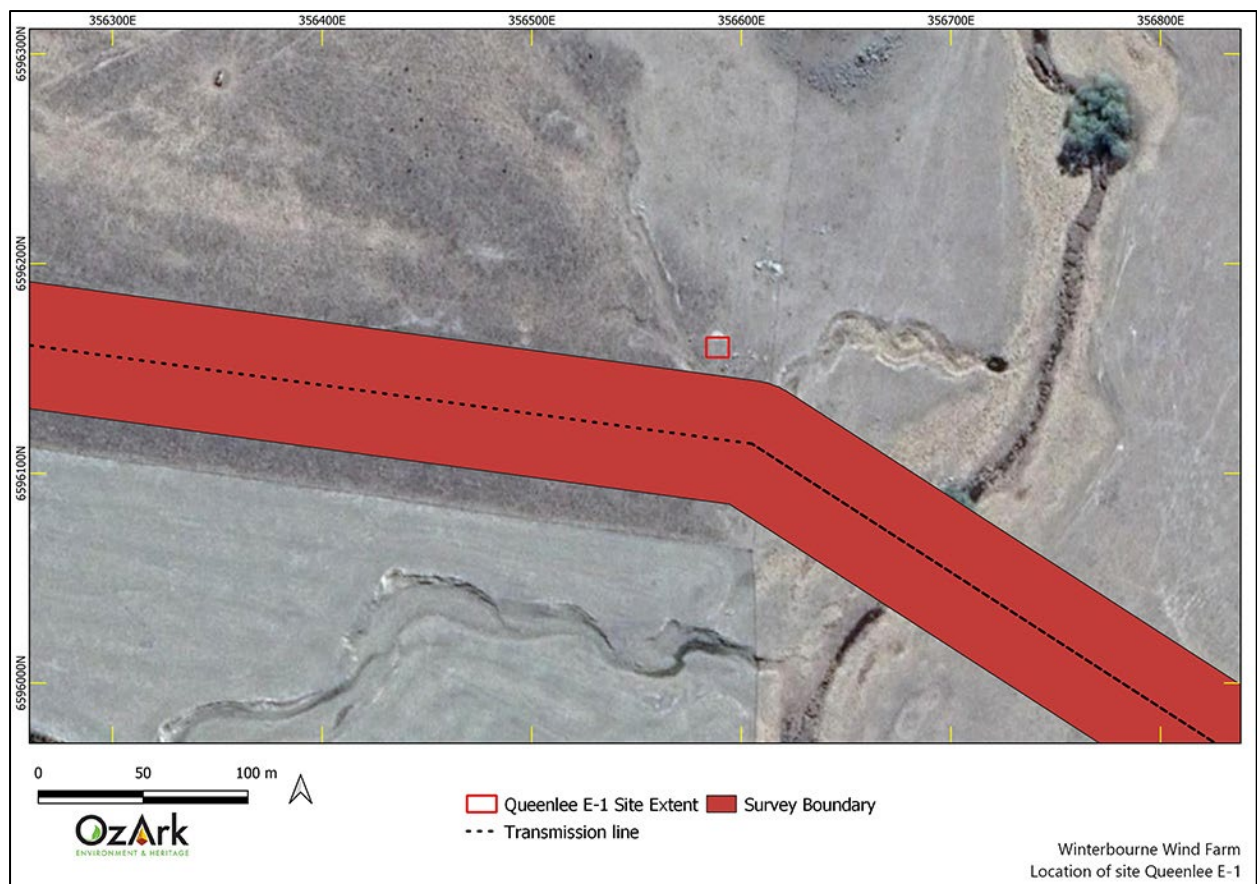
**Site type:** Rock engraving

**GPS coordinates:** 356589E / 6596159N (GDA 2020 / MGA Zone 56)







**Location of site:** The site is located on private property 150 m west of Salisbury Waters and approximately 4.9 km northwest of the Terrible Vale Road and Thunderbolts Way intersection. It is located in a large low and flat plain surrounded by high hills on the south, west, north and Salisbury Waters to the east (**Figure 6-32**). The site is also 14 m northwest of a large rock outcropping from the ground surface that stands approximately 2.5 m tall.

**Description of site:** The site is a rock engraving on a large flat rock bedded horizontally within the ground. It is unclear what this rock type is although it is likely to be volcanic. The engraving is the only one present despite a large area of exposed rock. It also comprises the best surface of the available platforms from surrounding outcropping rock. The engraving is pecked and is indistinct, although concentric circles and straight lines can be discerned. It is likely the engraving is a geometric design, rather than pictorial. Soil at the location consists of a brown loam with pebble and rock inclusions. The surrounding area contains disturbance primarily from agricultural land use (**Figure 6-33**).

**Figure 6-32: Aerial showing the location of Queenlee E-1.**



**Figure 6-33: Queenlee E-1. View of site and the recorded engraving.**

	
1. View of Queenlee E-1 to the east.	2. View of engraving at Queenlee E-1.
	
3. View of engraving at Queenlee E-1.	4. View of engraving at Queenlee E-1.
	
5. View of engraving at Queenlee E-1.	6. View of engraving at Queenlee E-1 (after wetting).

## **Talisker ST-1 (20-6-0079)**

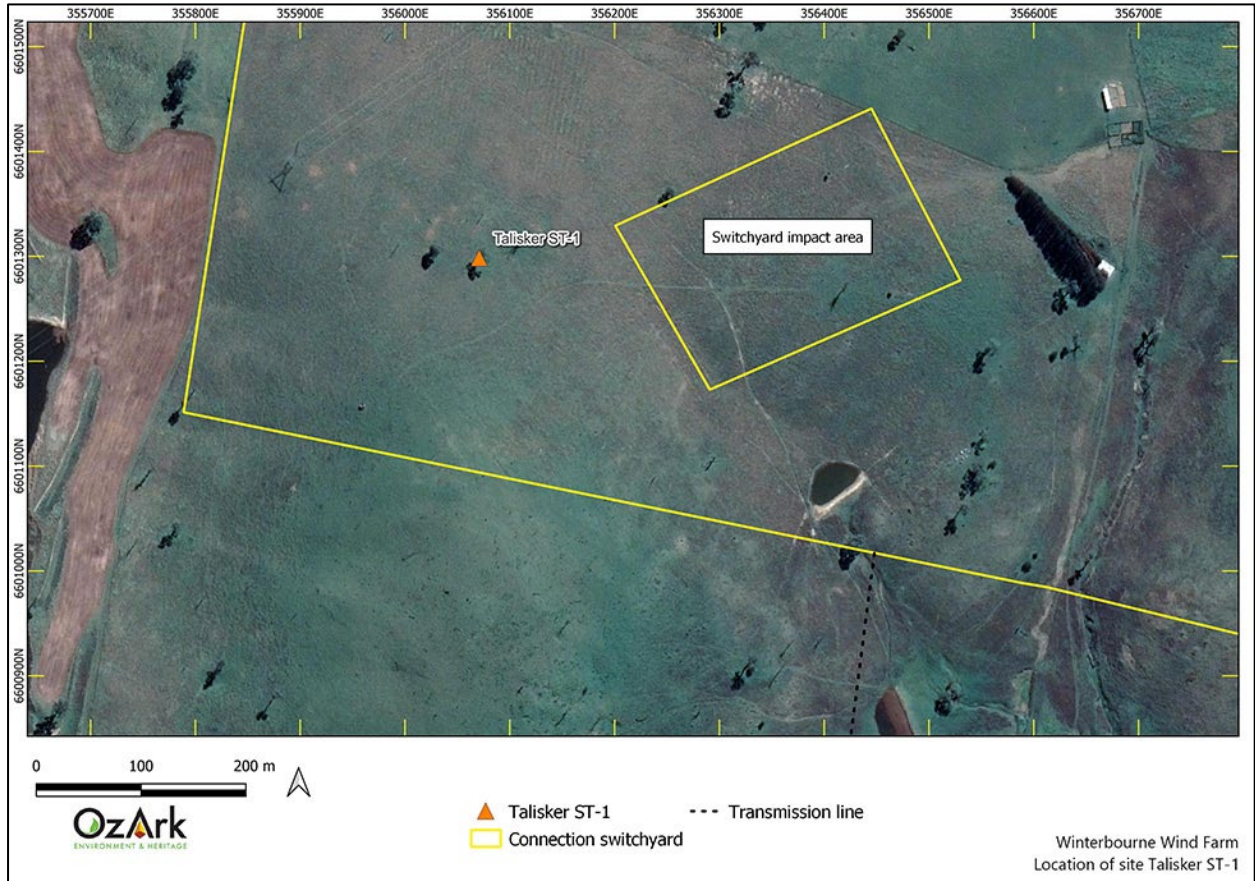
**Site type:** Scarred tree

**GPS coordinates:** 356071E / 6601298N (GDA 2020 / MGA Zone 56)

**Location of site:** The site is located in private property approximately 926 m west of Thunderbolts Way and 3.4 km east of the New England Highway. The Thunderbolt Way and Talisker Road intersection is 2 km to the southeast. It is located on the upper slope of a large hill that overlooks the proposed connection switchyard area to the northeast (Figure 6-34).

**Description of site:** The site is a single scarred tree located in an area where there is no nearby natural water source. The tree is currently dying, with the bottom half of the tree already dead. The tree stands approximately 15 m tall with a circumference of 3.2 m. The northeast facing scar is 1.6 m long and 92 cm wide (outer width). The scar has approximately 60 cm of regrowth and its base is 62 cm from the ground surface (Figure 6-35). It must also be noted that the team at OzArk were not completely positive of the tree being listed as a culturally scarred tree, however, using the criteria for scarred tree identification used in both NSW and Victoria, five of the nine criteria are evident.

**Figure 6-34: Aerial showing the location of Talisker ST-1.**



**Figure 6-35: Talisker ST-1. View of site and scar.**

	
1. View to the northeast of Talisker ST-1.	2. View to the southwest of Talisker ST-1.
	
3. View of the scar at Talisker ST-1.	4. View of the scar at Talisker ST-1.

## 6.5 PREVIOUSLY RECORDED ABORIGINAL SITES LOCATED

AHIMS site 21-4-0041 is an open artefact scatter that is recorded within the Project Area. The site card notes that the scatter was identified during an assessment for the Winterbourne Telecom Optical Fibre route and that it is within a creek flat landform.

However, there are considerable discrepancies between where the site is located in the AHIMS register and the description of the site's location on the site card (see **Section 5.4.1**) and that the site is actually located closer to Winterbourne Road (see **Figure 5-2**).

The AHIMS location was surveyed during the assessment and the location is within gentle slopes above the creek flats for Lambing Flat Creek. The location is cleared and has been subjected to long-term grazing. No artefacts were visible at the AHIMS location.

Areas along Winterbourne Road were inspected to determine if the site was in this area and the only visible artefacts were those associated with Green Range OS-3 with PAD. It is possible that 21-4-0041 is an earlier recording of Green Range OS-3 with PAD.

Another previously recorded site, 21-4-0004, was visited during the survey when traversing towards a section of the ETL alignment that required survey. The site is well outside the Survey Boundary, but as it is a stone quarry and artefact scatter site, it was visited to assist with the interpretation of the similar site type, Queenlee OS-1 with PAD.

## 6.6 TEST EXCAVATION

No test excavation was undertaken for the assessment. In most cases the results of the survey did not indicate that test excavation was required as the sites comprise either isolated finds or low-density artefact scatters. In addition, no landforms of archaeological potential, such as terraces associated with permanent waterways, where the archaeological potential could not be determined during the survey are within the Survey Boundary.

Three sites of higher scientific significance were also not tested. Queenlee OS-1 with PAD and Queenlee E-1 have high scientific and cultural significance but will be avoided by the project making impact from test excavation unwarranted.

The third site, Green Range OS-3, has moderate scientific significance, however, it is in an area where there has been considerable disturbance from ploughing and the site extent has been avoided by project redesign. Consequentially, test excavation was not considered warranted as it would be an unnecessary impact to the site.

## 6.7 DISCUSSION OF SURVEY RESULTS

### 6.7.1 Summary of survey results

Sixteen sites were recorded during the assessment representing a range of site types. Twelve of the sites are artefact sites (artefact scatters [n=7] and isolated finds [n=5]), two are culturally modified trees, and single incidences of a quarry site (also incorporating an artefact scatter) and an engraving site were recorded.

No evidence of human burials or skeletal material were recorded. While it has been noted that events associated with the 'Boozers Massacre' (see **Section 5.4.1**) may have occurred in or near the Survey Boundary, no evidence to support this was recorded.

### 6.7.2 Discussion

With only two exceptions, all sites were either recorded in low gradient undulating landforms (Survey Unit 3) or flat landforms (ETL alignment). Two isolated finds were recorded in either sloping landforms (Survey Unit 2) or crest/ridgeline landforms (Survey Unit 1).

This result agrees with the predictive model that sites would be most commonly recorded in lower gradient and lower elevation landforms given that elevated landforms would have made unsuitable occupation areas due to their exposure to the elements. While elevated landforms were predicted to potentially contain ceremonial sites, the locations where elevated landforms are included in the Survey Boundary have been cleared and subjected to long-term grazing. It is therefore possible that if ceremonial sites existed in these landforms that this past land use may have removed evidence of such sites (such as stone arrangements, earthen mounds etc.).

When the recorded sites are plotted against all landforms within 200 m of named waterways, only five are located within 200 m of waterways. Additionally, these five sites (The Ranch OS-1, Millbank OS-1, Table Top Rd IF-1, Tarwonga ST-1, and Woodburn IF-1) are generally low-density artefact scatters or isolated finds, apart from Millbank OS-1 that has a low-moderate artefact density. The site that recorded the highest artefact density, Green Range OS-3 with PAD, is close to the waterway buffer but technically outside of it. However, the site occupies a low, elevated landform overlooking the creek flats of Lambing Flat Creek which is identified in the predictive modelling as an optimum landform for site location.

The only recorded sites that are distant to waterways are Bywell OS-2 (six artefacts recorded), and two isolated finds, Yalgoo IF-1 and Woodburn IF-2. Therefore, the general correlation noted in the predictive model of sites being in association with water generally holds true and that sites of greater heritage significance are more likely to be associated with water rather than being at a distance to water.

The results of the survey confirm the pattern of past Aboriginal occupation established in the predictive model that is based on previous archaeological studies in the district. With reference

to the recent results of EMM 2018, the current study agrees with the EMM observations that sites will be recorded near minor waterways that were in association with crested or elevated landforms. While the predictive model concluded that such landforms will be rare in the Survey Boundary, it has been noted that the artefact scatter with the greatest artefact density, Green Range OS-3 with PAD, was recorded in such a landform.

EMM also noted that sites located on slopes were usually in secondary contexts, as erosional processes disturbed the primary contexts. This is supported by the current study as only an isolated find was recorded in these landforms.

The recording of two culturally modified trees (Tarwonga ST-1 and Talisker ST-1) was seen as possible in the predictive model as modified trees are the third most common site type within the surrounding area. However, as most of the Survey Boundary has been cleared in the past, the results indicate that this site type would once have been far more common and that recording such site types in the area is more to do with the vagaries of land clearing rather than being an accurate indication of the former representativeness of this site type.

The results of the survey therefore confirm the predictive model both in terms of settlement patterns for past Aboriginal settlement in the New England Tablelands, as well as the results of previous archaeological assessments in the district. Since most of the Survey Boundary consists of landforms with low archaeological potential (slopes, crests/ridgelines), the fact that a relatively low number of sites (given the extent of the Survey Boundary) were recorded is unsurprising. However, the incidence of high-density artefact scatters such as Green Range OS-3 with PAD, as well as significant sites such as the quarry at Queenlee OS-1 with PAD and the engraving site at Queenlee E-1, indicates that lower gradient landforms were a focus of occupation, ceremonial, and 'industrial' activities in the district. While this does preclude the use of the steeper, higher elevation landforms by Aboriginal people in the past, the archaeological evidence suggests that these landforms were used for non-occupation purposes, primarily resource gathering.

## **6.8 ASSESSMENT OF THE TRANSPORT ROUTE**

This assessment includes a number of locations associated with the transport route where modifications are required to allow project components such as wind turbine blades to be transported to the Project Area. The transport route extends from the Port of Newcastle to the Project Area, a distance of approximately 332 km. The modifications mostly include the construction of hardstands to provide a wider turning circle or clear turbine blade sweep paths at corners too tight to allow required truck and trailer manoeuvres. At a few locations, existing vegetation must be cleared to achieve this purpose, however, at most locations the modifications are occurring within the cleared road corridor.

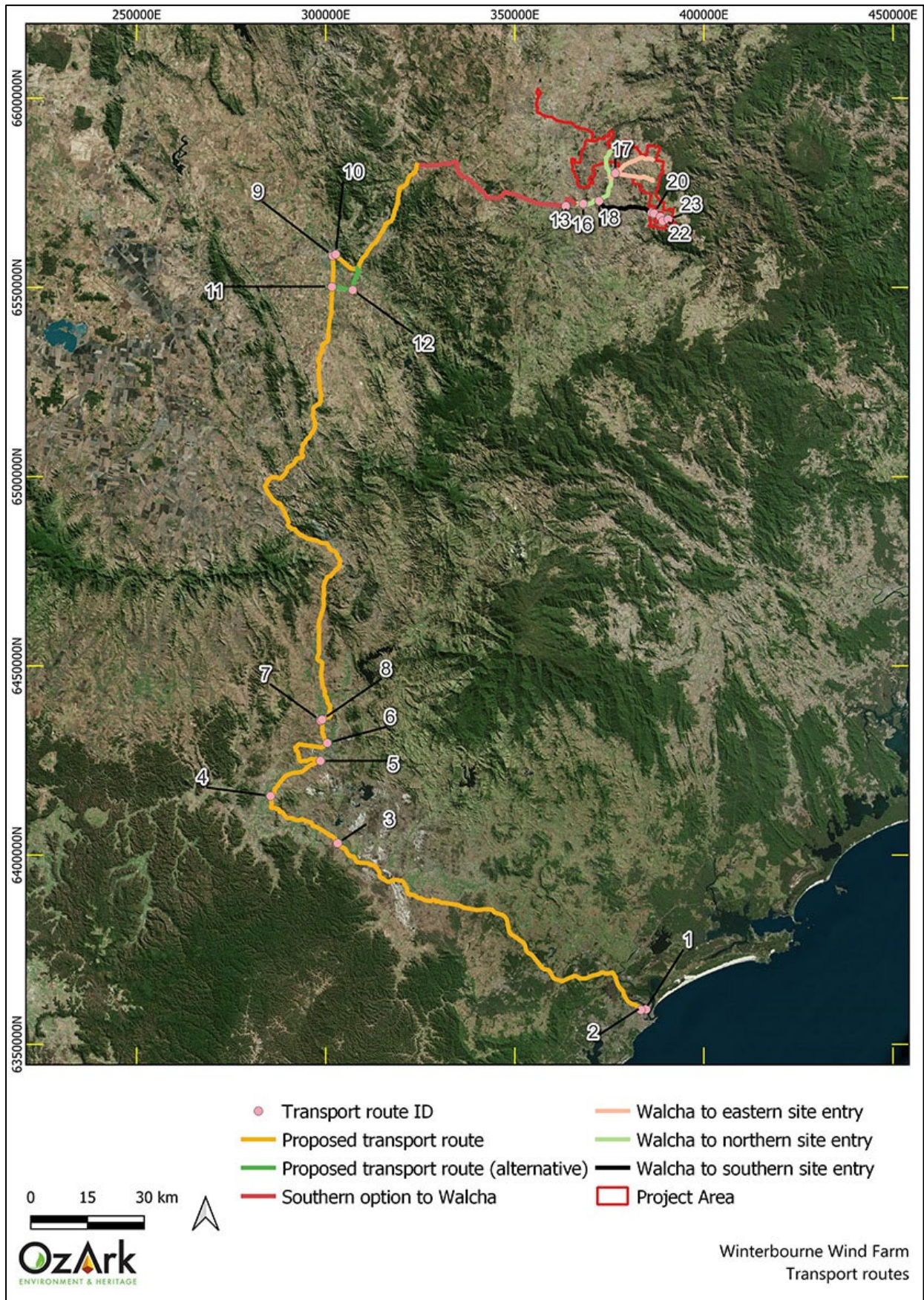
Given the limited nature of the disturbances associated with the transport route modifications, the assessment of the heritage constraints outside of the Survey Boundary was undertaken at a desktop level assisted by aerial photography.

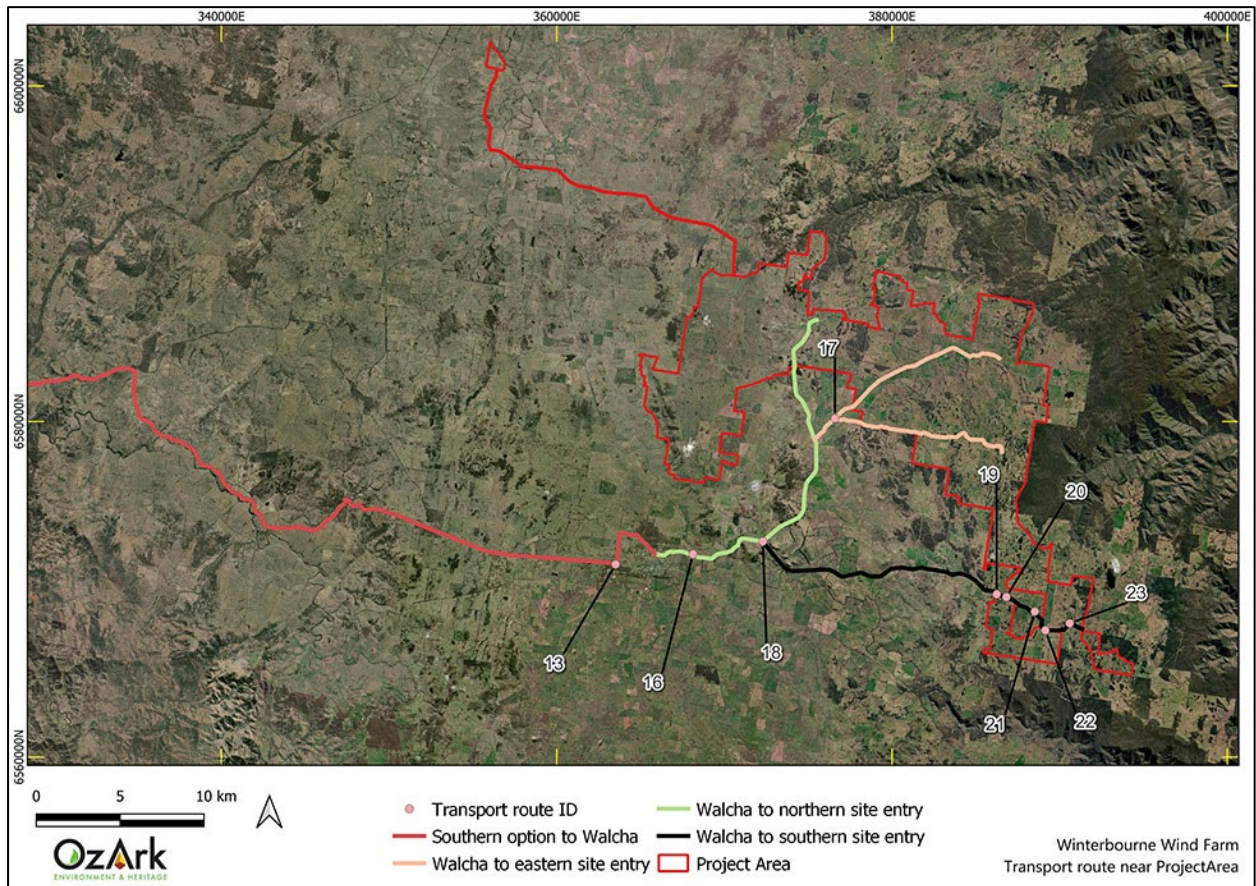
### **6.8.1 Transport route modifications**

There are 24 proposed route locations from Newcastle to the Project Area where there are potential ground disturbing impacts associated with the required modifications. A description of each location is provided in **Table 6-18**. For ease of reference each proposed transport route modification has been given a corresponding ID number.

Transport location IDs 1–11 are associated with the proposed transport route (**Figure 6-36**). Transport location ID 12 is associated with the proposed alternative transport route (**Figure 6-36**). Transport location ID 13 is associated with the southern option from New England Highway to Jamieson Street, Walcha (**Figure 6-36**). Transport location IDs 16 and 17 are associated with the northern and eastern site entry options (**Figure 6-36**). Transport location IDs 18–24 are associated with the southern site entry option (**Figure 6-36**).

Figure 6-36: Assessed locations associated with the transport route.



**Figure 6-37: Assessed locations near the Project Area associated with the transport route.**

An AHIMS search was undertaken for each location with a significant impact to the ground surface and only one previously recorded site was identified near one of the locations. The site, AHIMS #37-2-0881 (Village 2) is an isolated find located near the proposed impact footprint at the intersection of Ivermein Street and Stair Street, Muswellbrook (ID 7) (**Figure 6-38**). Generally, all locations are in areas of previous disturbance, mostly from road and drain construction, but also from vegetation clearing and grazing.

**Figure 6-38: Location of previously recorded sites in relation to the transport route.**

Based on the landform containing the proposed works, and the nature of previous disturbances at the proposed locations, the proposed works were assessed as unlikely to harm Aboriginal objects at the other locations (**Table 6-18**).

**Table 6-18: Assessment of archaeological potential at locations associated with the transport route modifications outside the Survey Boundary.**

ID	Location	Landform description	Comments on archaeological potential
1	Mayfield #4 berth onto Selwyn Street, Mayfield.	150 m west of South Channel Hunter River. Generally flat to undulating.	The impact area is within a highly modified landform associated with the developed area of Mayfield and the likelihood that the area contains Aboriginal objects is extremely low.
2	George Street onto Industrial Drive, Mayfield	Over 1 km west of South Channel Hunter River. Flat landform.	The impact area is within a highly modified landform associated with the developed area of Mayfield and the likelihood that the area contains Aboriginal objects is extremely low.
3	Golden Highway through Jerrys Plains village, Jerrys Plains	Approximately 1 km southwest of the Hunter River on flat cleared landform.	The impact area is within a highly modified landform associated with the construction of the Golden Highway and the likelihood that the area contains Aboriginal objects is extremely low.
4	Golden Highway onto Denman Road, Denman	Approximately 150 m south of the Hunter River on flat/gently undulating cleared landform.	The impact area is within a highly modified landform associated with the construction of the Golden Highway and the likelihood that the area contains Aboriginal objects is extremely low.
5	Denman Road onto Bengalla Road, Muswellbrook	Approximately 1.4 km southeast of the Hunter River on gently undulating landform.	The impact area is within a highly modified landform associated with a developed area of Muswellbrook and the likelihood that the area contains Aboriginal objects is extremely low.
6	Wybong Road onto Kayuga Road, Muswellbrook	Approximately 500 m northwest of the Hunter River on flat landform.	The impact area is over 200 m from the Hunter River in a floodplain landform which are generally poor preservers of archaeological deposits due both to disturbances from flooding

ID	Location	Landform description	Comments on archaeological potential
			and channel migration, as well as historic land use which tend to be intensive in such landforms. Very low potential to contain Aboriginal objects.
7	Invermein Street onto Stair Street, Muswellbrook	1.5 km south of Peel River, low gradient undulating landscape.	Previous assessments have recorded an archaeological site within proximity to the impact area. Site 37-2-0881 has been recorded 64 m southwest of the intersection. As this site is 64 m southwest of the intersection where the proposed works are located the site will not be impacted. As the works are occurring in a cleared road corridor, it is assessed that there is a low likelihood of subsurface deposits being present.
8	Stair Street onto Dartbrook Road access, Muswellbrook	1.4 km south of Peel River, low gradient undulating landscape.	Previous assessments have recorded sites in the near vicinity of the impact area, although no site will be harmed by the proposed works. As the works are occurring in a cleared road corridor distant to permanent water, it is assessed that there is a low likelihood of the works harming Aboriginal objects.
9	New England Highway onto the heavy vehicle bypass at Scott Road, Tamworth.	Approximately 5.5 km west of Goonoo Goonoo Creek on flat landform.	The impact area is within a highly modified landform associated with the construction of the New England Highway and the likelihood that the area contains Aboriginal objects is extremely low.
10	Murray Street onto New England Highway, Tamworth	Approximately 300 m east of Peel River on flat landform.	The impact area is within a highly modified landform associated with the construction of the New England Highway and the likelihood that the area contains Aboriginal objects is extremely low.
11	New England Highway onto Whitehouse, Kingswood	Approximately 600 m west of Goonoo Goonoo Creek on flat landform.	The proposed works are occurring in a cleared paddock that has been used for cropping. The impact area is within an undifferentiated, flat landscape. It is assessed that there is a low likelihood of the works harming Aboriginal objects.
12	Whitehouse Lane onto Marsden Park Road, Kingswood	Approximately 200 m west of Calala Creek on flat landform.	The proposed works are occurring in a cleared paddock that has been used for long-term grazing. The impact area is within an undifferentiated, flat landscape. It is assessed that there is a low likelihood of the works harming Aboriginal objects.
13	Oxley Highway onto Saleyard Road, Walcha	Within west Walcha on gently undulating landform.	The impact area is within a highly modified landform associated with the construction of the Oxley Highway and the likelihood that the area contains Aboriginal objects is extremely low.
16	Right hand Curve on Emu Creek Road, Walcha	Approximately 600 m north of the Apsley River. On gently undulating landform.	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.
17	Winterbourne Road onto Bark Hut Road, Walcha	Approximately 14 km northeast of Walcha on gently undulating landform.	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.
18	Intersection Emu Creek Road and Moona Plains Road, Walcha	Approximately 1.2 km east of Ohio Creek within undulating landform.	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.
19	Left hand curve on Moona Plains Road, Walcha	Gently undulating landform approximately 7 km east of Apsley Creek.	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.
20	Intersection of Moona Plains Road and Rowleys Creek Road	Approximately 8 km east of Apsley Creek within undulating landform.	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.
21	Right hand curve on Moona Plains Road	Approximately 250 m south of Stockyard Creek within undulating landform	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.
22	Left hand curve on Moona Plains Road, Walcha	Approximately 500 m southwest of Stockyard Creek within gently undulating landform.	The impact area is within a low-moderately modified landform associated with road construction and farming. The vegetation clearance at this location will not harm culturally modified trees.
23	Right hand curve on Moona Plains Road	Approximately 400 m east of Stockyard Creek within gently undulating landform.	The impact area is within a highly modified landform associated within a cleared road corridor and the likelihood that the area contains Aboriginal objects is extremely low.

## **Conclusion**

One AHIMS site was recorded near an impact area. AHIMS site 37-2-0881 is located approximately 67 m southwest of transport route at the intersection of Invermein Street and Stair Street, Muswellbrook (ID 7). The site is not within the immediate impact footprint and therefore will not be harmed by the proposed works. All other locations proposed for impacts associated with the transport route are within modified landforms and no archaeological sites has been previously identified. The likelihood that these areas contain Aboriginal objects is extremely low.

## 7 SIGNIFICANCE AND IMPACT ASSESSMENT

### 7.1 IDENTIFYING CULTURAL SIGNIFICANCE

The concept of cultural significance is used in Australian heritage practice and legislation to encompass all the cultural values and meanings that might be recognised in a place. The *Burra Charter*'s definition of cultural significance is broad and encompasses places that are significant to Indigenous cultures (Burra Charter 2013).

The *Burra Charter* definition of 'place' is also broad and encompasses Indigenous places of cultural significance. 'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all these things or may embody all these values at the same time.

In some cases, the find-spot of a single artefact may constitute a 'place'. Equally, a suite of related locations may together comprise a single 'place', such as the many individual elements that make up a Songline. These more complex places are sometimes called a cultural landscape or cultural route.

The Guide (OEH 2011: 8–9) notes that cultural significance comprises an assessment of social values, scientific values, aesthetic values, and historic values. These values are described as:

#### Social or cultural value

Social or cultural value refers to the spiritual, traditional, historical, or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them.

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always consensus about a place's social or cultural value. Because people experience places and events differently, expressions of social or cultural value do vary and, in some instances, will be in direct conflict. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural value can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival documentation, and specific information provided by Aboriginal people specifically for the investigation.

Cultural value involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

#### Scientific (archaeological) value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information (Burra Charter 2013).

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to Heritage NSW's Code of Practice (DECCW 2010).

Often scientific values are informed by social values that allow a contemporary understanding of the archaeological data to be understood.

#### Aesthetic value

This refers to the sensory, scenic, architectural, and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Burra Charter 2013).

#### Historic value

Historic value refers to the associations of a place with a historically important person, event, phase, or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

## **7.2 STATEMENT OF HERITAGE SIGNIFICANCE**

The intangible Aboriginal cultural values across the wider district relate to a number of important places and themes associated with non-archaeological cultural values. These places mainly relate to spiritual and ceremonial connections across the broader landscape that may encompass areas of culturally significant geographical features.

There may be places with intangible cultural significance within the Survey Boundary, although no specific locations have so far been identified by the Aboriginal community.

The scientific value of some areas within the Survey Boundary is moderate–high and some sites have considerable potential to provide further information on the traditional Aboriginal use of the Tableland region.

Generally, however, the scientific values are lower as the Survey Boundary is confined to areas away from optimal occupation locations such as along the region's major waterways. In relation to identifying areas where the proposed works can take place while conserving cultural values, the primary development constraint identified during the assessment relates to archaeological values which are managed through the existing statutory process under the NPW Act. It is noted that the Aboriginal representatives responded very strongly to the number of artefacts and the types of artefacts at Green Range OS-3 with PAD and expressed the desire that the site be studied further.

Apart from the general understanding of the aesthetic qualities of the Survey Boundary, there are no known places with identified aesthetic values. The only exception to this was at Queenlee OS-1 with PAD and Queenlee E-1 where the Aboriginal representatives were engaged in the visual and landscape aspects of the sites.

There is considerable historic value in the Project Area, both pre- and post-contact (for example, Clayton-Dixon 2019). This includes the interactions at the start of the region's colonisation that included a massacre at the nearby property of Moona Plains. This shared history is important in the context of the Project Area and places the region in the more unfortunate events of the past 200 years.

### 7.3 ASSESSED SIGNIFICANCE OF THE RECORDED SITES

**Table 7-1** presents a summary of the significance assessment of Aboriginal cultural heritage sites recorded during this assessment. Further details of each of the assessment criteria are provided below.

#### Social or Cultural Value

The Aboriginal community who accompanied the survey noted the cultural significance of all sites as being reminders of the traditional use of the area by Aboriginal people and as a tangible link to their ancestors. Sites such as Green Range OS-3 with PAD, and especially Queenlee OS-1 with PAD and Queenlee E-1, were seen as highly significant due to their ability to inform the Aboriginal community about their ancestors' use of the region.

#### Archaeological/Scientific Value

The sites recorded during the survey range from having low scientific significance (isolated finds, low density artefact scatters) through to moderate scientific significance (Green Range OS-3 with PAD) and high archaeological significance (Queenlee OS-1 with PAD and Queenlee E-1).

Green Range OS-3 with PAD is an exemplar of an occupation site located on an elevated landform near a waterway. The recording of the knapped glass artefact indicates that the site was used into the colonial period and the general array of artefact types indicates that the site was a base camp rather than a transit or hunting camp. However, the past land use, principally

ploughing and road construction, has disturbed the site's integrity and lowers its significance to moderate rather than high.

Queenlee OS-1 with PAD and Queenlee E-1 are rare site types in good current condition. Both sites can provide further information about the region's ceremonial and 'industrial' uses. In particular, the recordings at Queenlee OS-1 with PAD suggest further research at this site would be of benefit in understanding procurement of stone for Aboriginal stone tool manufacture.

### *Aesthetic Value*

Apart from Queenlee OS-1 with PAD and Queenlee E-1, all other sites do not manifest themselves obviously in the landscape and are difficult for the layperson to appreciate. The exception to this is the two recordings of culturally modified trees (Tarwonga ST-1 and Talisker ST-1) that are a site type that can be appreciated by the layperson.

Queenlee OS-1 with PAD and Queenlee E-1 are both sites with high aesthetic significance as they can be easily interpreted by the layperson and their position in the landscape adds to their overall significance.

The Aboriginal representatives on the survey remarked on the general aesthetic characteristics of the Survey Boundary embodied in aspects such as the landforms, the weather and wildlife sounds. No aesthetic values were related to a specific archaeological site (apart from those already mentioned), but the location of all sites recorded during the survey in an area of generalised aesthetic value is noted.

### *Historic Value*

No site recorded during the survey has specific historical significance as there are no known associations to specific people or events. It has been noted that no evidence related to the 'Boozers Massacre' was recorded in the Survey Boundary.

A knapped glass artefact was recorded at Green Range OS-3 with PAD, and this indicates that the site was used into the colonial period. This affords the site low historic significance, not because of identifiable historic associations, but because it is a relatively rare exemplar of a contact period site.

**Table 7-1: Aboriginal cultural heritage: significance assessment.**

Site Name	AHIMD ID	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
Woodburn IF-2	21-4-0383	High	Low	Low	Nil
Yalgoo IF-1	21-4-0382	High	Low	Low	Nil
Bywell OS-1	21-4-0381	High	Low	Low	Nil
Bywell OS-2	21-4-0380	High	Low	Low	Nil
Green Range OS-1	21-4-0393	High	Low	Low	Nil
Green Range OS-2 with PAD	21-4-0392	High	Low	Low	Nil

Site Name	AHIMD ID	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
Green Range OS-3 with PAD	21-4-0391	High	Moderate	Low	Low
Millbank OS-1	21-4-0384	High	Low	Low	Nil
Table Top Rd IF-1	21-4-0394	High	Low	Low	Nil
Woodburn IF-1	21-4-0395	High	Low	Low	Nil
Tarwonga ST-1	21-4-0397	High	Low	Low-Moderate	Nil
The Ranch OS-1 with PAD	21-4-0385	High	Low	Low	Nil
The Ranch IF-1	21-4-0386	High	Low	Low	Nil
Queenlee OS-1 with PAD	20-6-0080	High	High	High	Nil
Queenlee E-1	21-4-0387	High	High	High	Nil
Talisker ST-1	20-6-0079	High	Low	Low-Moderate	Nil

## 7.4 AVOIDING AND MINIMISING HARM

### 7.4.1 Likely impacts to Aboriginal heritage from the project

**Table 7-2** presents a summary of potential impacts to Aboriginal cultural heritage associated with the project. Of the sixteen sites recorded in the Survey Boundary, six will be directly impacted, five totally and one partially. Five sites are outside of any project impact and will not be harmed.

However, several of the impacted sites are in the Survey Boundary associated with the ETL alignment. As it is possible to design the components of the ETL alignment (electricity towers and access roads) to avoid known sites, the 'potential for avoidance' column notes the possibility that these sites will be avoided when the project design is finalised. Those sites marked as having 'high' potential for avoidance are associated with the ETL alignment where the positioning of electricity towers and access roads should be able to avoid the sites. The site marked as having 'moderate' potential for avoidance is a scarred tree within the easement for the ETL. It will be recommended that the tree is lopped above the scar to provide suitable vertical clearance for the electricity wires, if required, thereby keeping the significant portion of the site in situ. The sites marked as having 'low' potential for avoidance are likely to be harmed by the project.

However, assuming the precautionary principle, it will be assumed here that all sites within the Survey Boundary, including 30 m either side of the ETL alignment, will be impacted. Under this scenario six sites will be impacted or 55 per cent of all sites recorded. These sites consist of four isolated finds, a low-density artefact scatter, and a scarred tree.

The only previously recorded site in the Project Area, AHIMS site 21-4-0041, is outside of the Survey Boundary and will not be harmed.

**Table 7-2: Aboriginal cultural heritage: impact assessment.**

Site Name	AHIMS ID	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)	Potential for avoidance
Woodburn IF-2	21-4-0383	None	None	No loss of value	N/A
Yalgoo IF-1	21-4-0382	Direct	Total	Total	Low
Bywell OS-1	21-4-0381	None	None	No loss of value	N/A
Bywell OS-2	21-4-0380	None	None	No loss of value	Requires management
Green Range OS-1	21-4-0393	None	None	No loss of value	Requires management
Green Range OS-2 with PAD	21-4-0392	None	None	No loss of value	N/A
Green Range OS-3 with PAD	21-4-0391	None	None	No loss of value	Requires management
Millbank OS-1	21-4-0384	None	None	No loss of value	N/A
Table Top Rd IF-1	21-4-0394	Direct	Total	Total	Low
Woodburn IF-1	21-4-0395	Direct	Total	Total	High
Tarwonga ST-1	21-4-0397	Direct	Total	Total	Moderate
The Ranch OS-1 with PAD	21-4-0385	Direct	Partial	Partial	High
The Ranch IF-1	21-4-0386	Direct	Total	Total	High
Queenlee OS-1 with PAD	20-6-0080	None	None	No loss of value	Requires management
Queenlee E-1	21-4-0387	None	None	No loss of value	Requires management
Talisker ST-1	20-6-0079	None	None	No loss of value	Requires management

#### 7.4.2 Conserving significant Aboriginal cultural heritage

An object of the NPW Act is the '*conservation of objects places and features... of cultural value within the landscape, including... places, objects and features of significance to Aboriginal people*' (s.2A(1(b)(i))).

As heritage professionals, OzArk, strives for good conservation outcomes. In particular, OzArk is primarily concerned with the conservation and protection of Aboriginal cultural heritage that is of significance to Aboriginal people.

Two primary objectives when managing harm to an Aboriginal object are:

- Impacts to significant Aboriginal objects and places should always be avoided wherever possible
- Where impacts to Aboriginal objects and places cannot be avoided, proposals should be amended to reduce the extent and severity of impacts to significant Aboriginal objects and places using reasonable and feasible measures.

### 7.4.3 Opportunities to conserve Aboriginal cultural heritage values

#### 7.4.3.1 Project design

The most significant Aboriginal sites, Queenlee OS-1 with PAD and Queenlee E-1, are within or near the ETL alignment of the Survey Boundary. WWPL has undertaken to ensure that the final positioning of electricity tower at Queenlee OS-1 with PAD is located outside of the site extent. A suggested location for the structure is shown on **Figure 6-29**. Associated access tracks will be designed to avoid both Queenlee OS-1 with PAD and Queenlee E-1 and recommendations will be made to conserve Queenlee E-1 during works associated with the project.

WWPL has altered project design to avoid the artefact scatter Green Range OS-3 with PAD. However, for several reasons, recommendations will be made to manage this site that is in danger of continued non-project related impacts.

Tarwonga ST-1, Woodburn IF-1, The Ranch OS-1, and The Ranch IF-1, are within areas potentially impacted by the ETL alignment. Therefore, it is recommended that project design will ensure that all, or most, of these sites will be avoided by the proposed works.

Talisker ST-1 is located within the area for the proposed grid connection switchyard and WWPL has sited the switchyard to ensure that this site is avoided.

These recommendations will be further elaborated in **Section 8.2.2.1**.

#### 7.4.3.2 Conservation measures

WWPL has agreed to a range of measures that will conserve and enhance Aboriginal cultural heritage values.

Although Queenlee OS-1 with PAD will be avoided by the project through appropriate management, it is recommended in this report that the site be subjected to further research, provided the landowner agrees. This would include non-invasive recording of the site so as much information as possible is available for future research in the region.

Queenlee E-1 will also be avoided by the project but should also be subject to a full recording, provided the landowner agrees, given the cultural and scientific significance of the site. This would include non-invasive recording of the site so as much information as possible is available for future research in the region.

These recommendations will be further elaborated in **Section 8.2.3.1**.

#### 7.4.3.3 Measures to protect Aboriginal cultural heritage

The project will not impact Green Range OS-3 with PAD or Millbank OS-1. However, both sites are in areas that are vulnerable to non-project impacts. To protect the Aboriginal objects at these

sites, it is recommended that management be undertaken to record, collect and relocate Aboriginal objects that are likely to be harmed by vehicle traffic and road maintenance.

Further, at Green Range OS-3 with PAD, the site extends into a paddock that is regularly ploughed by the landowner. As it is the surface artefacts that are liable to be harmed by this activity, it is recommended that management be undertaken to record, collect and relocate Aboriginal objects from the surface of the ploughed paddock that are likely to be harmed by continued ploughing.

These measures will be further elaborated in **Section 8.2.3.4**.

#### **7.4.4 Ecologically sustainable development principles**

Ecologically sustainable development principles (ESD) (defined in s.6 of the *Protection of the Environment Administration Act 1991*) requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. In regard to Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

##### **7.4.4.1 Intergenerational equity**

Intergenerational equity is the principle whereby the present generation should ensure the health, diversity, and productivity of the environment for the benefit of future generations.

In terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous permits), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.

Information about the integrity, rarity or representativeness of the Aboriginal objects and places proposed to be impacted, and how they illustrate the occupation and use of land by Aboriginal people across the region, will be relevant to the consideration of intergenerational equity and the understanding of the cumulative impacts of the project.

Where there is uncertainty, the precautionary principle should also be followed.

##### **7.4.4.2 The precautionary principle**

The precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In relation to Aboriginal cultural values, the precautionary principle should be guided by:

- The project involves a risk of serious or irreversible damage to Aboriginal objects or places or to the value of those objects or places
- There is uncertainty about the Aboriginal cultural heritage values or scientific or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

#### 7.4.4.3 Principle of Integration

The Plan of Implementation of the World Summit on Sustainable Development held in Johannesburg, 2002, noted the need to “*promote the integration of the three components of sustainable development- economic development, social development and environmental protection- as interdependent and mutually reinforcing pillars*”.

The principle of integration ensures mutual respect and reciprocity between economic and environmental considerations:

- Environmental considerations are to be integrated into economic and other development plans, programs, and projects
- Development needs are to be considered in applying environmental objectives.

#### 7.4.4.4 Applicability to the project

The loss of any Aboriginal cultural values, be they physical sites or intangible values, is to be avoided as much as is possible to ensure that the environmental impacts of the project are as acceptable as is possible. The project offers an opportunity to achieve this as many of the identified sites are in areas where they may potentially be avoided. While it is assumed that six sites may potentially be harmed, it may be, with careful management, that only two sites, both isolated finds, may be harmed. If as many sites as is possible are conserved in the landscape the project will adhere to the ESD principles of ensuring that impacts are minimised and that the Aboriginal cultural heritage values within the Project Area are maintained or enhanced.

**Table 7-3** examines the application of ESD principles to the project.

**Table 7-3: Application of ESD principles to the project.**

ESD principle	Response
Avoiding and minimising harm	Due to their cultural and scientific significance, WWPL has changed project design changes to avoid Green Range OS-3 with PAD and will ensure that Queenlee OS-1 with PAD will be avoided by the project. An attempt to avoid other sites, such as Tarwonga ST-1, Woodburn IF-1, The Ranch OS-1 with PAD, and The Ranch IF-1, will be made during the design of the ETL alignment to ensure that they are avoided by electricity towers and associated access roads.
The integration principle	The WWF has environmental benefits as a project and the development of the project has considered the environmental context of the Project Area. Wherever possible, Aboriginal cultural heritage values will be conserved in the landscape. These values will be enhanced by the project as it is recommended that two sites are subject to further research even though they will not be harmed by the project.
The precautionary principle	The undertaking of an extensive archaeological survey ensures that the impacts of the proposed works are adequately understood. For any landforms not physically surveyed, a precautionary approach was undertaken in determining the cultural heritage values that may exist in those landforms. In the assessment of project impacts

ESD principle	Response
	to Aboriginal cultural heritage, the precautionary principle has been applied and it is assumed that all sites within the Survey Boundary and within 30 m of the ETL alignment will be impacted, although, with considered design of project components, many of these sites will avoid being harmed.
The intergenerational equity principle	<p>The most significant sites recorded within the Survey Boundary, Queenlee OS-1 with PAD and Queenlee E-1, will be conserved in the landscape and it is hoped that further research will be undertaken so that further information regarding the sites will be available to the broader community.</p> <p>If WWPL can avoid many of the recorded sites through project design, it may mean that only two sites, both isolated finds, will be harmed.</p> <p>Green Range OS-3 with PAD and Millbank OS-1 are in danger of being harmed by non-project impacts. WWPL has agreed to manage these sites so that Aboriginal objects are removed from harm allowing information on the sites to be available for future generations.</p> <p>In the worst-case scenario, six sites will be harmed by the project. These sites include artefact scatters, isolated finds, and a culturally modified tree. The loss of these sites will diminish intergenerational equity as their loss will contribute to the cumulative loss of Aboriginal cultural heritage values across the Tablelands. However, as stated above, it is envisioned that the cumulative loss will be less once the final project components are designed, and that the intergenerational equity will not be as diminished as it might otherwise have been.</p>

## 8 MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE SITES

### 8.1 GENERAL MANAGEMENT PRINCIPLES

Appropriate management of cultural heritage items is primarily determined based on their assessed significance as well as the likely impacts of the proposed development. **Section 7.3** and **Section 7.4.1** describe, respectively, the significance / potential of the recorded sites and the likely impacts of the project. The following management options are general principles, in terms of best practice and desired outcomes, rather than mitigation measures against individual site disturbance.

- Avoid impact by altering the development project or in this case by avoiding impact to a recorded Aboriginal site. If this can be done, then a suitable curtilage around the site must be provided to ensure its protection both during the short-term construction phase of development and in the long-term use of the area. If plans are altered, care must be taken to ensure that impacts do not occur to areas not previously assessed.
- If impact is unavoidable then approval to disturb sites under the authority of an ACHMP must be sought from The Department of Planning and Environment (DPE). The recommendations for site management in this ACHAR will normally be carried over into the ACHMP. Aboriginal community can assess the management recommendations within this ACHAR and the ACHMP when it is developed and offer their comments. The ACHMP procedures will often stipulate that the Aboriginal community should be involved in any salvage activities and will dictate the fate of any salvaged Aboriginal objects.

### 8.2 MANAGEMENT AND MITIGATION OF RECORDED ABORIGINAL SITES

#### 8.2.1 Sites where no management is required

As the following sites are located at a distance to the proposed works and unlikely to be inadvertently harmed, no further management is required:

- Woodburn IF-1
- Bywell OS-1
- Green Range OS-2
- Millbank OS-1 (although further potential management of this site is recommended, see **Section 8.2.3.2**).

## 8.2.2 Management of potentially impacted Aboriginal sites

### 8.2.2.1 Site avoidance

#### Queenlee OS-1 with PAD (20-6-0080)

Every effort should be made to avoid impact to site Queenlee OS-1 with PAD that is located within the ETL alignment. Under current designs, there is an electricity pole located within the site extent, the construction of which would likely harm the values of the site. WWPL has agreed to move this pole to the north to the approximate area shown on **Figure 6-29**. Further, there should be no access tracks or the storage of materials/equipment within the site boundary that will be temporarily fenced (see **Section 8.2.2.2**) for the duration of works in the area to ensure that it is not inadvertently impacted.

In addition, as noted in **Section 6.4**, landforms to the west of the property fence (as shown on **Figure 6-29**) have not been surveyed as access was not possible. However, as it is likely that the site extends into these landforms, impacts within 100 m of the western site extent as shown on **Figure 6-29** should be avoided.

#### Queenlee E-1 (21-4-0387)

Queenlee E-1 is located outside of project impacts but its location should be noted, and the site avoided from any inadvertent impact (see **Section 8.2.2.2**). The site has high cultural and scientific values that require the conservation of the site in the landscape.

#### Tarwonga ST-1 (21-4-0397)

The scarred tree Tarwonga ST-1 is 22 m west of the centre line for the ETL. As such pieces of infrastructure require a cleared easement, it may be necessary to remove the tree. However, WWPL should investigate whether it is possible to cut the tree at least 60 cm above the scar to provide any required vertical clearances, if required. If this is possible, the significant portion of the tree will be conserved in the landscape. The top of the cut tree should be protected by an affixed metal (tin) cap to prevent water egress into the tree's heartwood to assist its preservation.

#### Talisker ST-1 (20-6-0079)

The site is 130 m west of the proposed location for the connection switchyard and should be avoided by the proposed works. Project design of the connection switchyard should ensure that impact to the tree is avoided.

#### Sites that should be avoided through project design

In addition, the location of the following sites should be considered when designing the final project layout to ensure that all, or most, are avoided. The sites that may be able to be avoided through project design are listed below:

- Tarwonga ST-1

- Woodburn IF-1
- The Ranch OS-1 with PAD
- The Ranch IF-1.

#### **8.2.2.2 Fencing of sites**

To conserve significant sites in the landscape, temporary, high-visibility fencing should be erected around the site perimeter of the following sites to ensure that the sites are not accessed during construction. WWPL should negotiate with the landowner as to whether the sites could be permanently fenced. It would be permissible to crash graze the area within permanent fencing to ensure that it does not become overgrown.

- Queenlee OS-1 with PAD
- Queenlee E-1.

To ensure that the site is not inadvertently impacted during construction, the perimeter of the following site should be fenced with hi-visibility fencing for the duration of the construction phase. There is no requirement to permanently fence these sites.

- Bywell OS-2: temporarily fence the eastern boundary of the ETL easement from the dam wall for 50 m to the south. A sign attached to the fence should clearly show that areas to the east of the fence are a no-go zone. All impacts in this area, such as tracks used for construction, should be confined to the Survey Boundary
- Green Range OS-1: temporarily fence the northern boundary of the works easement in the vicinity of the site (suggest 50 m either side of the site extent). A sign attached to the fence should clearly show that areas to the north of the fence are a no-go zone. All impacts in this area, such as tracks used for construction, should be confined to the Survey Boundary
- Green Range OS-3: Although further management is recommended for this site (see **Section 8.2.3.2**) at a minimum the eastern boundary of the work area for the access track near the site should be temporarily fenced. It is suggested that the fence extend from the Winterbourne Road corridor for 200 m along the eastern works boundary. A sign attached to the fence should clearly show that areas to the east of the fence are a no-go zone. All impacts in this area should be confined to the Survey Boundary
- Talisker ST-1: The site is currently 130 m west of the proposed location for the connection switchyard. To ensure that the site is not impacted during works, the site should be fenced and signed.
- Tarwonga ST-1: if it is possible to retain the scarred portion of the tree in place (see **Section 8.2.2.1**), the tree should be temporarily fenced for the duration of works in the area.

If the following sites can be avoided through considered design of the ETL components (poles and tracks), the perimeter of the following sites should be fenced with hi-visibility fencing for the duration of the construction phase. There is no requirement to permanently fence these sites.

- Woodburn IF-1
- The Ranch OS-1
- The Ranch IF-1.

### **8.2.3 Mitigation of project impacts**

This report recommends that specific project components be designed to avoid sites. However, as precise details of which sites may be avoided is not known at this time, the full methodology relating to actions at impacted sites will be contained in the ACHMP that will be prepared in consultation with Heritage NSW and RAPs.

#### **8.2.3.1 Further research**

It is recommended that further research, with landowner consent, should take place at sites Queenlee OS-1 with PAD and Queenlee E-1. This research will be non-invasive and include a detailed recording of each site. The recording would include a photographic record and a detailed site plan of each site. In the case of Queenlee E-1, a detailed recording of the engraving should be undertaken.

#### **8.2.3.2 Further surface archaeological investigation**

Any artefact site that will be impacted by the project, should have all surface artefacts recorded and collected. The methodology of any surface artefact collection would be contained in the ACHMP and would be reviewed by RAPs.

As five surface artefact sites (Yalgoo IF-1, Table Top Rd IF-1, Woodburn IF-1, The Ranch OS-1 with PAD, and The Ranch IF-1<sup>2</sup>) could potentially be harmed by the project, it is recommended that these surface artefact sites, if they are to be impacted, be salvaged through the recording and collection of the surface artefacts, prior to construction works proceeding.

The recommended methodology for the salvage will be finalised after the approvals process as part of the ACHMP, but will include the following measures:

- All visible surface artefacts at a site should be flagged in the field
- The site should be photographed after flagging and before recording
- All artefacts should have the following artefact information recorded:

<sup>2</sup> Although it is within the Survey Boundary, it is assumed that Queenlee OS-1 with PAD will be avoided by the project and will be conserved in the landscape.

- Location
  - Artefact class
  - Artefact type
  - Size
  - Reduction level
  - Raw material
  - Notes
- A selection of indicative and / or unusual artefacts from each site will be photographed
  - Once all recording is complete, the artefacts will be collected according to site with artefacts from each site being kept separate
  - Should the collection team encounter a human burial, all work should cease in the area and advice from authorities and RAPs (should the remains be Aboriginal) sought
  - The recording of the artefacts recovered will largely be completed in the field and this data would be incorporated into a report
  - The salvaged artefacts should be reburied at an agreed upon location. This will take place in accordance with Requirement 26 “Stone artefact deposition and storage” in the Code of Practice. The location chosen for reburial will require landowner approval, be in an area where future developments will not occur and be as close as possible to their original location. A site card will be submitted to AHIMS to record the relocation area and an Aboriginal Site Impact Recording Form (ASIRF) will be submitted by the archaeologist detailing the salvage process and results of the sites.

#### **8.2.3.3 *Preserving scarred portions of modified trees***

Although it is recommended in **Section 8.2.2.1** that both scarred trees, or at least the significant portions of them, be retained in the landscape, if Tarwonga ST-1 and Talisker ST-1 cannot be retained due to clearance or other issues, the ACHMP will consider how the scarred portion of the trees can be removed to a place of safe-keeping. This would normally involve cutting above and below the scar to retain the scarred portion, rather than trying to preserve the whole tree. The ACHMP would nominate a suitable place for the relocation that can be considered by the RAPs in their review of the document.

#### **8.2.3.4 *Measures to protect Aboriginal objects***

Green Range OS-3 and Millbank OS-1 will not be impacted by the project, and they are listed in **Table 7-2** among the 10 sites that will be avoided by the project. However, both sites are located (either wholly or partially) within the Winterbourne Road corridor, and around gates used to access the Millbank and Green Range properties. As the surface artefacts that were recorded during the survey are at risk from continued impacts from vehicle traffic and/or road maintenance,

it is recommended that the sites be managed through a collection of surface artefacts from within the road corridor at both sites following the methodology set out in **Section 8.2.3.2**. As these areas are within the road corridor it is assessed that Millbank OS-1 is a surface manifestation only and a collection of visible surface artefacts will destroy the site as there are no associated subsurface deposits.

While the portion of Green Range OS-3 within the road corridor is without associated subsurface deposits, the site extends south into the agricultural paddock where subsurface deposits are likely. Therefore the actions described above will 'partially destroy' Green Range OS-3.

Further, the portion of Green Range OS-3 that is within the agricultural paddock beyond the Winterbourne Road corridor is within an area that has been repeatedly ploughed. As this activity is likely to continue, it is also recommended that visible surface artefacts within the paddock be recorded, collected, and removed to a place of safekeeping following the methodology set out in **Section 8.2.3.2**. This action would only prevent further damage to Aboriginal objects that have been displaced by ploughing. The subsurface component of the site would remain, and should the surface artefacts be collected, the site would still be partially in place with potential subsurface deposits remaining below the plough zone.

## 8.2.4 Summary of management and mitigation measures

**Table 8-1** summarises the management and mitigation measures for all sites recorded during the survey.

**Table 8-1: Management of sites recorded during the survey.**

Site Name	AHIMS ID	Type of Harm (Direct / Partial / None)	Potential for avoidance	Management
Woodburn IF-2	21-4-0383	None	N/A	The site is distant to proposed works and no further management is required.
Yalgoo IF-1	21-4-0382	Direct	Low	The site is likely to be harmed through the construction of an access road and an underground electrical reticulation line. The site will be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b> .
Bywell OS-1	21-4-0381	None	N/A	The site is distant to proposed works and no further management is required.
Bywell OS-2	21-4-0380	None	Requires management	The site is out of impact but within 6 m of the ETL easement. The site will be protected from inadvertent harm through the installation of temporary fencing as set out in <b>Section 8.2.2.2</b> .
Green Range OS-1	21-4-0393	None	Requires management	The site is out of impact but within 36 m of the proposed works. The site will be protected from inadvertent harm through the installation of temporary fencing as set out in <b>Section 8.2.2.2</b> .
Green Range OS-2 with PAD	21-4-0392	None	N/A	The site is distant to proposed works and no further management is required.

Site Name	AHIMS ID	Type of Harm (Direct / Partial / None)	Potential for avoidance	Management
Green Range OS-3 with PAD	21-4-0391	None	Requires management	<p>The site is out of impact but within 16 m of the proposed works. The site will be protected from inadvertent harm through the installation of temporary fencing as set out in <b>Section 8.2.2.2</b>.</p> <p>To protect visible Aboriginal objects from on-going harm from road use and maintenance, as well as ploughing in the south, a collection of surface artefacts will take place from within the Winterbourne Road corridor and from within the ploughed paddock to the south as is explained in <b>Section 8.2.3.4</b>.</p>
Millbank OS-1	21-4-0384	None	N/A	<p>To stop on-going harm from the use of Winterbourne Road and the property access gate around which the site was recorded, all surface artefacts at the site be collected to remove them from on-going, non-project impacts as is explained in <b>Section 8.2.3.4</b>.</p>
Table Top Rd IF-1	21-4-0394	Direct	Low	<p>The site is likely to be harmed through the road construction and an underground electrical reticulation line. The site will be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b>.</p>
Woodburn IF-1	21-4-0395	Direct	High	<p>The site is located within the middle of the ETL easement. The site will be avoided by locating any impacts including electricity poles and access tracks away from the site by providing at least a 5 m buffer.</p> <p>If it is not possible to avoid the site should be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b>.</p>
Tarwonga ST-1	21-4-0397	Direct	Moderate	<p>The design of the overhead ETL will ensure that the site is spanned and that any associated access tracks avoid the site. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as set out in <b>Section 8.2.2.2</b>.</p> <p>If there are clearance issues for the ETL, WWPL will trim the tree 60 centimetres above the scarred portion and retain the scarred portion of the tree in place as set out in <b>Section 8.2.2</b>. The top of the cut tree should be protected by an affixed metal (tin) cap to prevent water egress into the tree's heartwood to assist its preservation.</p> <p>If, for whatever reason, the scarred portion of the tree cannot be retained in place, it should be removed to a place of safe-keeping as set out in <b>Section 8.2.3.3</b>.</p>
The Ranch OS-1 with PAD	21-4-0385	Partial	High	<p>The design of the overhead ETL will ensure that the site is spanned and that any associated access tracks avoid the site. The site should be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as set out in <b>Section 8.2.2.2</b>.</p> <p>If the site cannot be avoided, the portion of the site in the ETL easement should be salvaged through a collection of the surface artefacts following the procedure set out in <b>Section 8.2.3.2</b>.</p>

Site Name	AHIMS ID	Type of Harm (Direct / Partial / None)	Potential for avoidance	Management
The Ranch IF-1	21-4-0386	Direct	High	<p>The design of the overhead ETL will ensure that the site is spanned and that any associated access tracks avoid the site. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as set out in <b>Section 8.2.2.2</b>.</p> <p>If the site cannot be avoided, the site should be salvaged through a collection of the surface artefact following the procedure set out in <b>Section 8.2.3.2</b>.</p>
Queenlee OS-1 with PAD	20-6-0080	None	Requires management	<p>This site has high cultural and scientific values and will be avoided by the project. This will involve designing the overhead ETL to ensure that the site is spanned and that any associated access tracks avoid the site. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as is set out in <b>Sections 8.2.2.1 and 8.2.2.2</b>.</p> <p>With the landowner's permission, WWPL will consider funding a non-invasive study of the site including mapping and photography as is set out in <b>Section 8.2.3.1</b>.</p> <p>WWPL will consult with the landowner about the possibility of permanently fencing the site. Managed crash grazing of the site area would be permissible to keep grass and weed growth under control (see <b>Section 8.2.2.2</b>).</p>
Queenlee E-1	21-4-0387	None	Requires management	<p>This site has high cultural and scientific values and will be avoided by the project. However, the site should be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as is set out in <b>Section 8.2.2.2</b>.</p> <p>With the landowner's permission, WWPL will fund a non-invasive study of the site including mapping and photography as set out in <b>Section 8.2.3.1</b>.</p> <p>WWPL will consult with the landowner about the possibility of permanently fencing the site. Managed crash grazing of the site area would be permissible to keep grass and weed growth under control (see <b>Section 8.2.2.2</b>).</p>
Talisker ST-1	20-6-0079	None	Requires management	<p>The design of the connection switchyard will ensure that the site is avoided. The site will be temporarily fenced with hi-visibility fencing during the construction phase of the project to avoid inadvertent harm to the site as is set out in <b>Section 8.2.2.2</b>.</p> <p>If the site is likely to be harmed, WWPL will consult with the Aboriginal community to determine if the scarred portion of the tree should be moved to a place of safe-keeping (see <b>Section 8.2.3.3</b>).</p>

### 8.2.5 Unanticipated finds protocol

Should consent for the project be gained, an ACHMP will be developed in consultation with RAPs and DPE. The ACHMP will contain procedures should a new discovery of Aboriginal artefacts be

made during construction or operation of the project. The procedure in **Section 8.2.5.1** is an example of an unanticipated finds protocol that could be incorporated into the ACHMP.

### **8.2.5.1 Unanticipated finds protocol example**

An Aboriginal artefact is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification, i.e. smoothing, use). Human bone (skeletal) remains may also be uncovered while on site.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may also consider scientific and educational value.

Protocol to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, WWPL must:
  - a. Not further harm the object
  - b. Immediately cease all work at the particular location
  - c. Secure the area to avoid further harm to the Aboriginal object
  - d. Notify Heritage NSW as soon as practical on (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au), providing any details of the Aboriginal object and its location
  - e. Not recommence any work at the particular location unless authorised in writing by Heritage NSW.
2. If Aboriginal burials are unexpectedly encountered during the activity, work must stop immediately, the area secured to prevent unauthorised access and NSW Police and Heritage NSW contacted.
3. Cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
  - a. The recording and assessment of the find(s)
  - b. The fulfilment of any legal constraints arising from the find(s), including complying with Heritage NSW directions
  - c. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
4. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from Heritage NSW (normally an Aboriginal Heritage Impact Permit or an approved ACHMP).

### **8.2.6 Unanticipated skeletal remains protocol**

Should consent for the project be gained, an ACHMP will be developed in consultation with RAPs and DPE. The ACHMP will contain procedures should a new discovery of human skeletal remains be made during construction or operation of the project. The procedure below is an example of a human skeletal remains protocol that could be incorporated into the ACHMP.

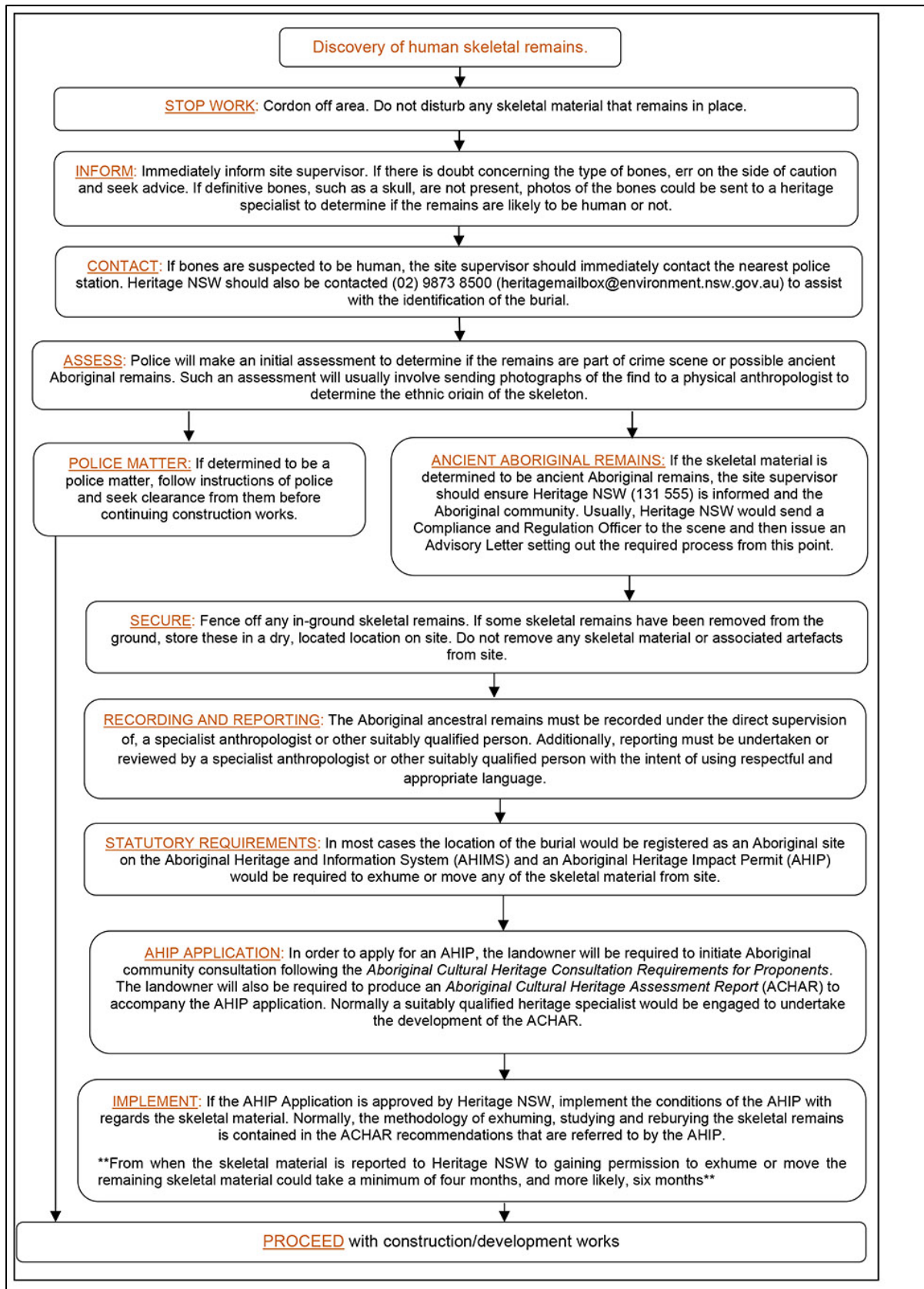
#### **8.2.6.1 *Human skeletal remains protocol example***

A potential flow-chart relating to the discovery of human skeletal remains is shown on **Figure 8-1**.

### **8.2.7 Long-term management of Aboriginal objects**

The fate of the artefacts salvaged under an approved ACHMP would be determined in consultation with the RAPs and the details provided in the ACHMP. It would normally be a recommendation that the artefacts be reburied close to where they originated. The location would require landowner agreement and the location would be registered with the AHIMS register. The manner and location of any artefact reburial would be set out in the ACHMP. The draft of the ACHMP will be made available to RAPs for comment before being submitted to DPE for approval.

The ACHMP will also include protocols for the long-term management of any Aboriginal objects discovered during the construction or operation of the project.

**Figure 8-1: Example of a human skeletal remains procedure.**

## **HISTORIC HERITAGE ASSESSMENT**

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## 9 HISTORIC HERITAGE ASSESSMENT: INTRODUCTION

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### 9.1 BRIEF DESCRIPTION OF THE PROJECT

Please refer to **Sections 1 and 2** for a description of the project and the environmental context of the Project Area.

### 9.2 RELEVANT LEGISLATION

#### 9.2.1 State legislation

##### ***Environmental Planning and Assessment Act 1979*** (EP&A Act)

Please refer to **Section 3.3.1** for a description of the EP&A Act.

##### ***Heritage Act 1977*** (Heritage Act)

The *Heritage Act 1977* (Heritage Act) is applicable to the current assessment. This Act established the Heritage Council of NSW. The Heritage Council's role is to advise the government on the protection of heritage assets, make listing recommendations to the Minister in relation to the State Heritage Register (SHR), and assess/approve/decline proposals involving modification to heritage items or places listed on the SHR. Most proposals involving modification are assessed under Section 60 of the Heritage Act.

Automatic protection is afforded to 'relics', defined as 'any deposit or material evidence relating to the settlement of the area that comprised New South Wales, not being Aboriginal settlement, and which holds state or local significance' (note: formerly the Act protected any 'relic' that was more than 50 years old. Now the age determination has been dropped from the Act and relics are protected according to their heritage significance assessment rather than purely on their age). Excavation of land on which it is known or where there is reasonable cause to suspect that 'relics' will be exposed, moved, destroyed, discovered or damaged is prohibited unless ordered under an excavation permit.

#### 9.2.2 Commonwealth legislation

##### ***Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act)

Please refer to **Section 3.3.2** for a description of the EPBC Act.

#### 9.2.3 Applicability to the project

The project will be assessed under Division 4.7 of the EP&A Act.

As the project is a SSD, if approved, Section 4.41 of the EP&A Act would apply and therefore an excavation permit under Section 139 of the Heritage Act would not be required. Instead, all management related to historic cultural heritage within the Survey Boundary would be governed by the policies within an approved *Historic Heritage Management Plan* (HHMP).

Any items of local or state historical heritage significance within the Survey Boundary are afforded legislative protection under the Heritage Act.

It is noted there are no Commonwealth or National heritage listed places within the Survey Boundary, and as such, the heritage provisions of the EPBC Act do not apply.

### **9.3 HISTORIC HERITAGE ASSESSMENT OBJECTIVES**

The current assessment will apply the Heritage Council's *Historical Archaeology Code of Practice* (Heritage Council 2006) in the completion of a historical heritage assessment, including field investigations, to meet the following objectives:

- Objective One:** To identify whether historical heritage items or areas are, or are likely to be, present within the Survey Boundary
- Objective Two:** To assess the significance of any recorded historical heritage items or areas
- Objective Three:** Determine whether the project is likely to cause harm to recorded historical heritage items or areas
- Objective Four:** Provide management recommendations and options for mitigating impacts.

### **9.4 DATE OF HISTORIC HERITAGE ASSESSMENT**

The historic heritage assessment took place at the same time as the Aboriginal heritage assessment. Please refer to **Section 3.1** for the dates of the fieldwork.

### **9.5 OZARK INVOLVEMENT**

The fieldwork and reporting of the historic heritage assessment are the same personnel involved with the Aboriginal heritage assessment. Please see **Section 3.2** for details.

## 10 HISTORIC HERITAGE ASSESSMENT: BACKGROUND

### 10.1 BRIEF HISTORY OF THE PROJECT AREA

The Project Area is located across two Local Government Areas, Walcha LGA and Uralla LGA. Walcha was initially settled post-colonially through the explorations of John Oxley in 1818. Later, more settlers started arriving in Walcha from the 1830s to the 1840s and the town began to take form. During the 1850s and 1860s early squatters started purchasing runs and Walcha established its first school and church. With small gold rushes in the 1870s, the town started expanding (Walcha Council 2020). By 1900 the town had almost a thousand people and the surrounding districts another 1600. In Walcha there were four hotels, four blacksmiths, two flour mills and a tannery, as well as over thirty shops. After floods in the 1860s there was an attempt to move the town centre up the hill to the west, however, this was not successful. The region has strong wool and pastoral industries (Walcha Council 2020). Much like Walcha, Uralla was settled as a town during post-colonial gold rushes. Occupied by squatters in the 1830s and 1840s, Uralla reached town status in 1855, spurred by a gold rush three years earlier which grew the population to over 5000. In 1856 another gold rush took place but did not lead to any lasting growth.

### 10.2 LOCAL CONTEXT

#### 10.2.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any previously recorded heritage within the Survey Boundary. The results of this search are summarised in **Table 10-1**.

**Table 10-1: Historic heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
National and Commonwealth Heritage Listings	19/03/21	Walcha, Uralla and Clarence Valley LGA	Search returned no native title claims within the Project Area; however the Gondwana Rainforest heritage curtilage is at its closest approximately 85 m from the Project Area.
State Heritage Listings	19/03/21	Walcha, Uralla and Clarence Valley LGA	Search returned no state heritage listings within the Project Area; however, two items are directly adjacent to the Survey Boundary.
Local Environmental Plan (LEP)	19/03/21	Walcha LEP 2011 & Uralla LEP 2012	Search returned no LEP listed sites within the Project Area, however, there are three items relatively close to the Project Area.

A search of the Heritage Council of NSW administered heritage databases and the Walcha LEP 2011 and the Uralla LEP 2012 returned 113 records for historical heritage sites within the applicable LGAs for the Project Area. It was noted that a national heritage item is located adjacent to the Project Area but within the Clarence Valley LGA. While no listed sites are located within the Project Area, nearby sites can provide context for the historic heritage in the area (**Figure 10-1**).

The Gondwana Rainforests of Australia are located directly east of the Project Area (National Heritage listing S99, State Heritage listing SHR 01002). At its closest the state heritage curtilage is approximately 85 m east of the Project Area.

In 1986, a number of rainforest reserves located on the Great Escarpment of eastern New South Wales were inscribed on the World Heritage list for their outstanding natural universal values. The listing notes that the geological features displayed around shield volcanic craters and the high number of rare and threatened rainforest species are of international significance for science and conservation. The forest represents major stages of the earth's evolutionary history and contains important and significant habitats for the in-situ conservation of biodiversity.

While the heritage curtilage of the site is located relatively close to the Project Area, the proposed impacts of the project will not extend beyond the Project Area and any cultural heritage values associated with the listing will not be impacted.

At a state heritage level, Ohio Homestead (SHR 00463, I019 on Walcha LEP 2011) is located approximately 3 km from the Project Area. The homestead is Walcha's oldest surviving house in northern New South Wales, and with 'Salisbury Court' at Uralla, is one of the few New England homes surviving from the 1840s. Ohio is a significant rural homestead that is representative of the development of pastoral industry at Walcha. The site is largely representative of the agricultural industry, settlement, and ecology in the region. As the site is approximately 3 km from the Project Area there will be no impacts to the cultural heritage values of this item.

Salisbury Court, located approximately 1 km east of the ETL corridor, is listed on the Uralla LEP 2012 as Item I14. Salisbury Court is the earliest stone homestead still standing in the New England Tablelands. The building complex is a fine example of an early Australian building with its verandah, its architectural balance, French doors, gun-barrel doorway and use of stone. It is representative of the English families who established a sense of English place through the names given to the property such as 'Salisbury Court' and the planting of introduced English trees to an Australian setting. The homestead and garden have landmark, historical association, aesthetic, social, research and representative significance. As the item is approximately 1 km from the ETL corridor there will be no loss of cultural heritage values associated with this item.

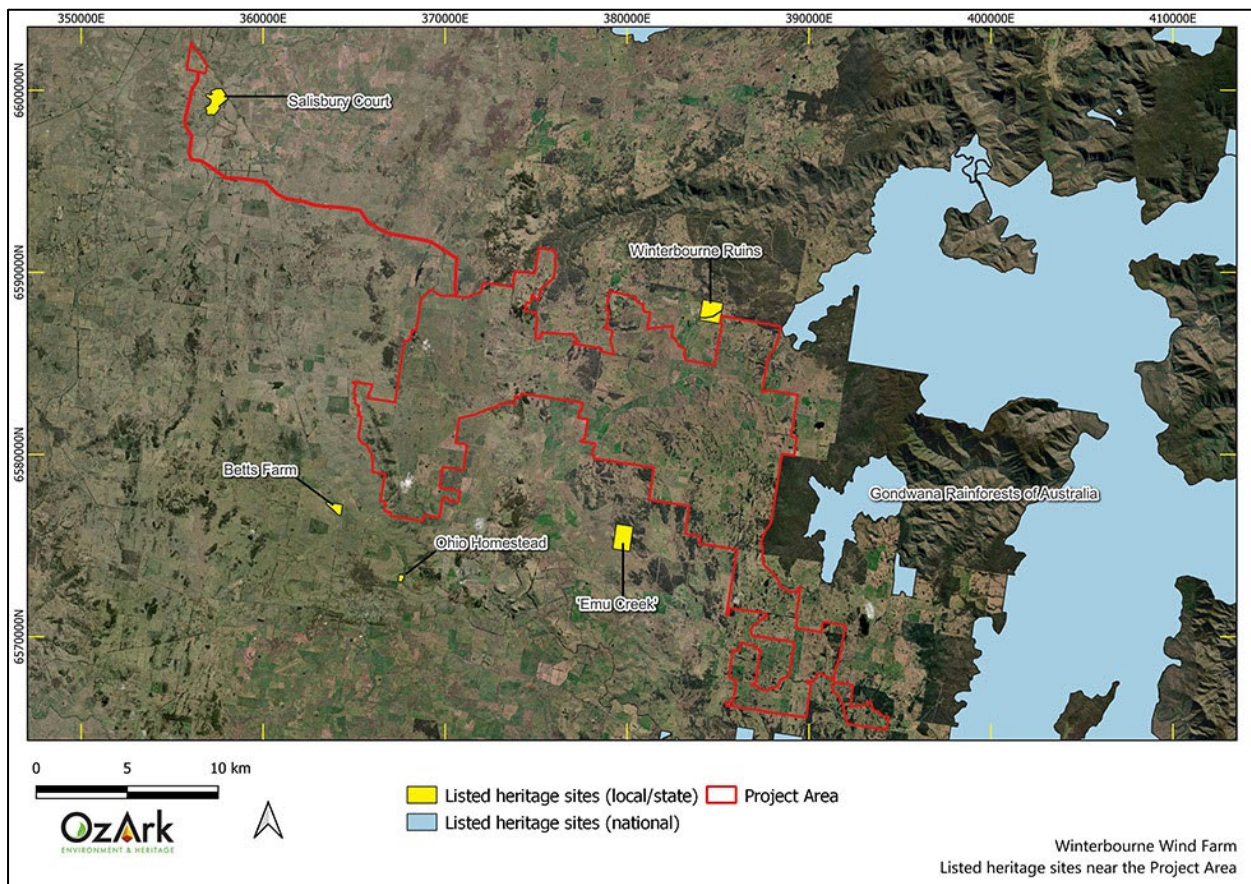
Three sites listed on the Walcha LEP 2011 are also listed relatively close to the Project Area. The closest LEP listed site, located directly adjacent to the Project Area is the Winterbourne Ruins (A001). The homestead, which is now ruins, was constructed in 1845. The Winterbourne Ruins have historical, cultural and research significance. The Winterbourne homestead ruins provide evidence of building construction and lifestyles associated with the early development of the pastoral industry within the New England Tablelands. While the site is located close to the Project

Area, project impacts will not harm this item as the location of proposed work that will impact the ground surface is approximately 1.5 km from the item.

Also located relatively near the Project Area is “Emu Creek” homestead (Item I005 on the Walcha LEP 2011), located approximately 1.6 km from the Project Area. Emu Creek has historical significance being taken up as a squatting run in the 1830s. The Emu Creek homestead has aesthetic and technical significance being a prominent building within the landscape. As the item is over 1 km from the Project Area there will be no loss of cultural heritage values associated with this item.

“Betts Farm – Irish Town, Homeleigh” (Item I023 on the Walcha LEP 2011) is also located near the proposed works, approximately 2.1 km from the Project Area. The buildings, made of slab and weatherboard, are located approximately 5 km north of Walcha. They are examples from a typical selector's farm of the nineteenth century. Betts Farm is historically and culturally significant as it is a rare and substantially intact survivor of an Irish enclave, known colloquially in the district as 'Irishtown'. As the site is approximately 2 km from the Project Area there will be no loss of cultural heritage values associated with this item.

**Figure 10-1: Historic heritage sites in relation to the Project Area.**



### **10.3 SURVEY METHODOLOGY**

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004). The survey was conducted concurrently with the Aboriginal Heritage Survey. See **Section 3.2.1** for details.

### **10.4 PROJECT CONSTRAINTS**

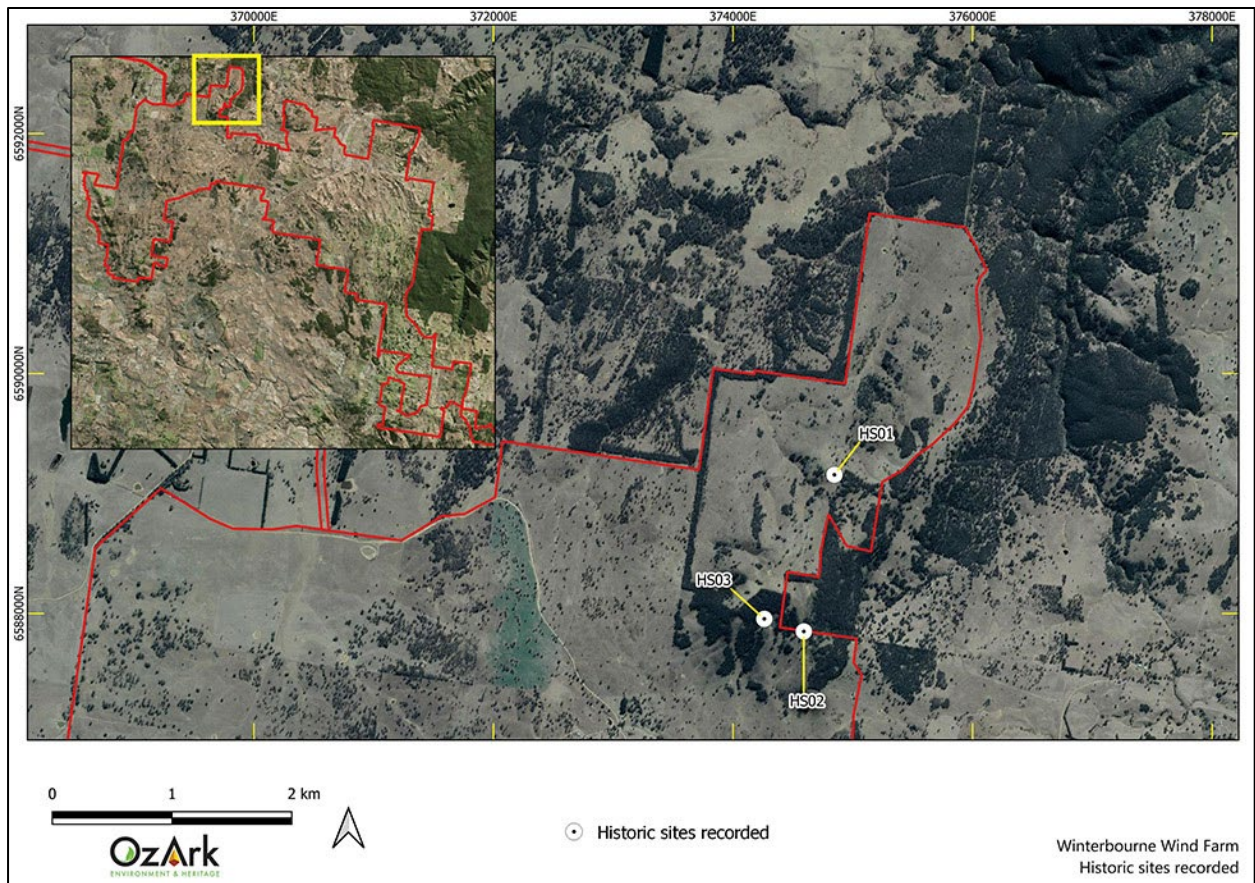
See **Section 6.2** for project constraints during the field survey. The same constraints of low ground surface visibility also affected the historic heritage survey, but not to the extent as was noted with Aboriginal heritage as historic heritage items tend to be more manifest in the landscape.

## 11 RESULTS OF HISTORIC HERITAGE ASSESSMENT

### 11.1 HISTORIC HERITAGE SITES

Three historic sites were identified during the field survey (**Figure 11-1**). The features of these historic sites will be detailed below.

**Figure 11-1: Location of historic sites recorded during the survey.**



#### **HS01**

**Site type**: Cattle yards and hut

**GPS coordinates**: GDA Zone 56: 374846E 6589153N

**Location of site**: The site is located on a sloping landform approximately 1.4 km west of Blue Mountain Creek.

**Description of site**: The site consists of cattle yards and a loading ramp with stone and brick used as foundation courses. It is adjacent to a shed. These were most likely constructed by the previous landowner Billie Hamel (**Figure 11-2, Figure 11-3**).

Figure 11-2: Location of HS01.



Figure 11-3: Images of HS01.



	
3. View of HS01.	4. View of HS01.

## **HS02**

**Site type:** Memorial marker

**GPS coordinates:** GDA Zone 56: 374591E 6587849N

**Location of site:** The site is located on a sloping landform approximately 1.4 km west of Blue Mountain Creek. The site is on the Blue Mountain property.

**Description of site:** The site consists of a memorial marker for Rhonda Holstein (died 1998) whose ashes were scattered at this location (**Figure 11-4, Figure 11-5**).

Figure 11-4: Location of HS02.

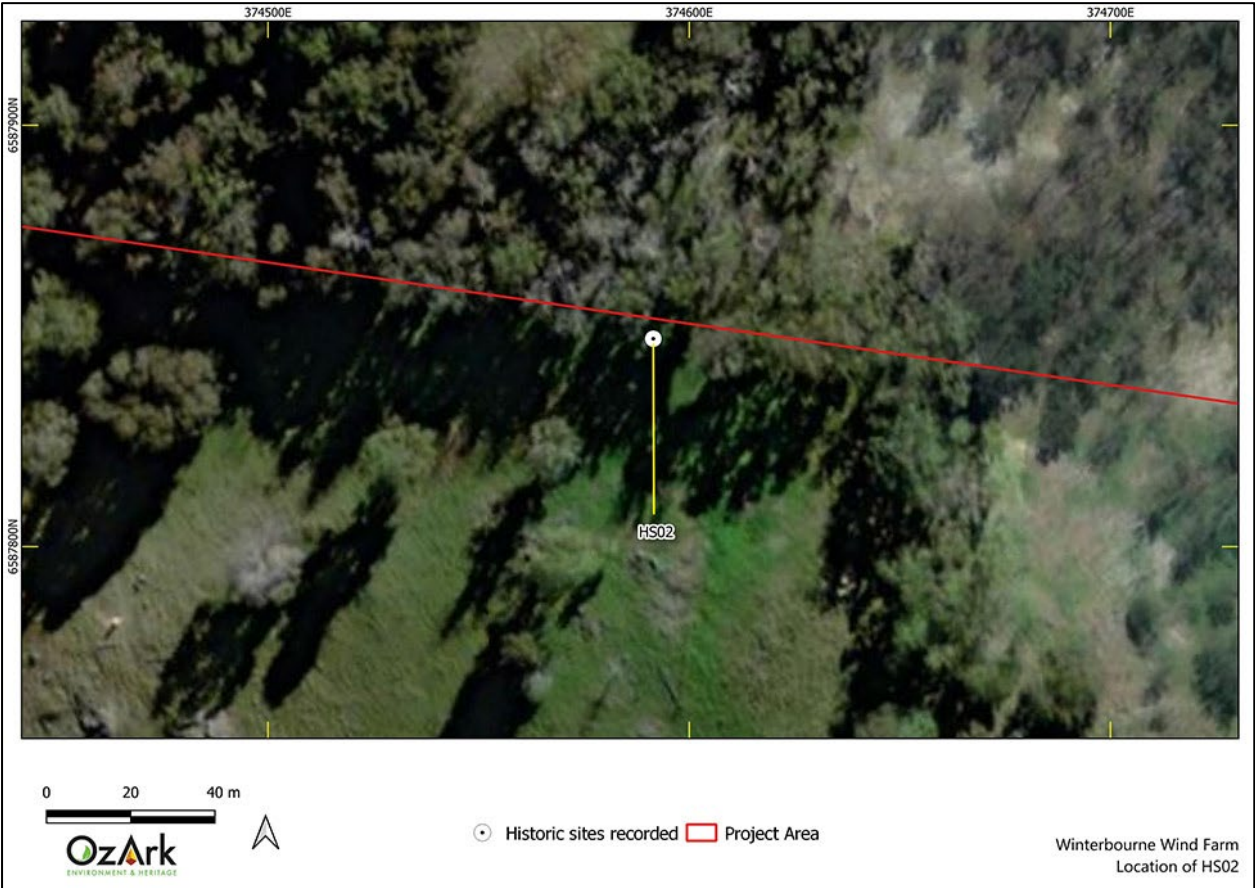


Figure 11-5: Images of HS02.



**HS03**

**Site type:** Potential Burial

**GPS coordinates:** 374261E 6587953N

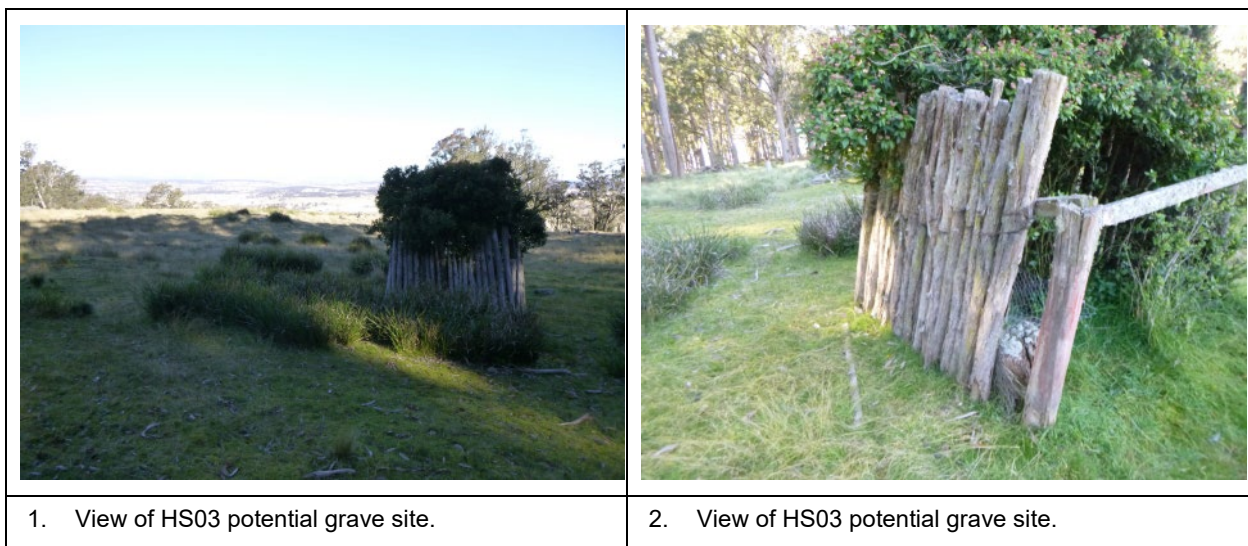
**Location of site:** The site is located on a sloping landform approximately 2 km west of Blue Mountain Creek. The site is on the Blue Mountain property.



**Description of site:** The site consists of wooden fencing around shrubbery. It appears to be a potential location marker of a grave (**Figure 11-6, Figure 11-7**).

**Figure 11-6: Location of HS03.**



**Figure 11-7: Images of HS03.**

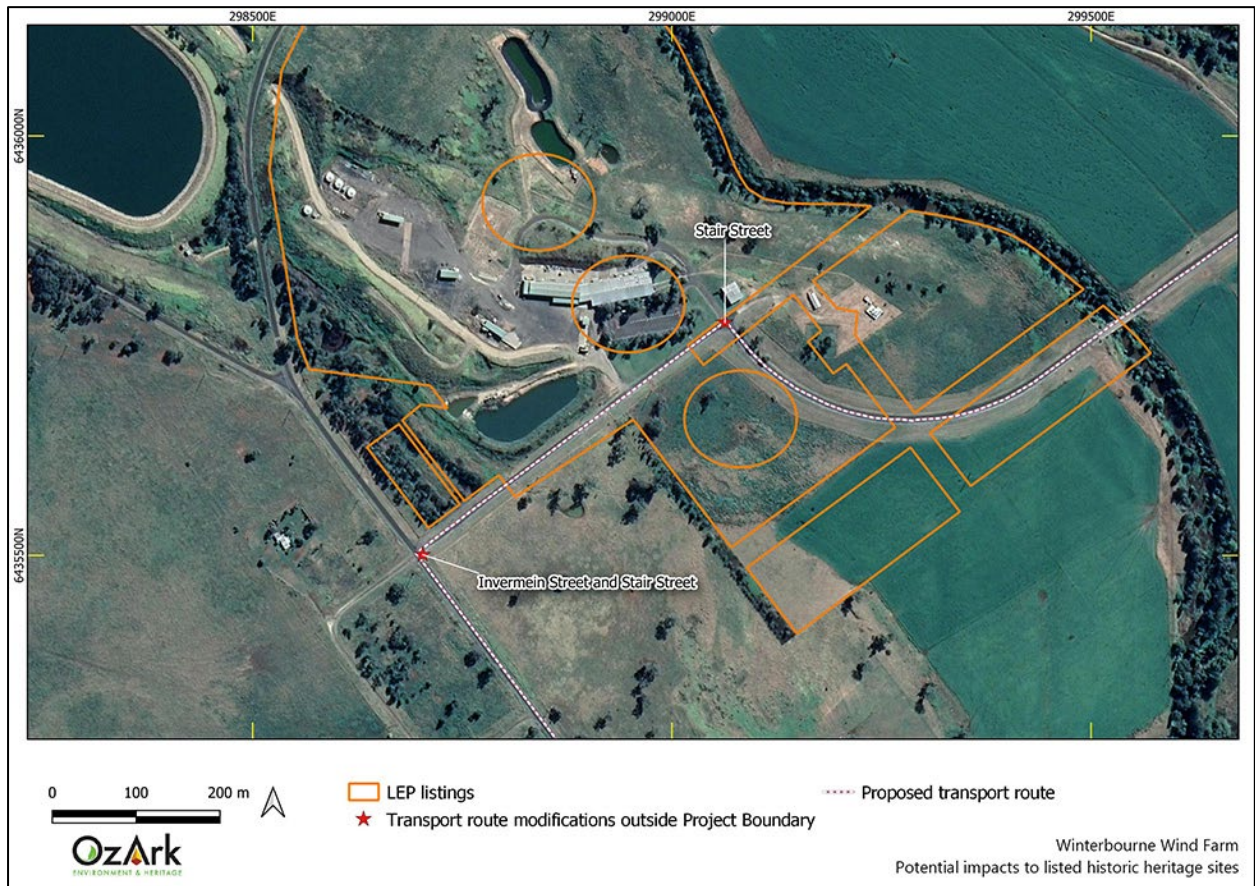


	
<p>3. View of HS03 potential grave site.</p>	<p>4. View of artefacts associated with HS03 potential grave site.</p>

Regarding the transport route modifications outside the Project Area (see **Section 6.8** for details), only one location, Stair Street, Kayuga, is near a listed heritage curtilage. This listing on the Muswellbrook LEP (I43) is for Kayuga Cemetery within Lot 1, DP835733 (**Figure 11-8**).

The cemetery is the oldest in the upper Hunter Valley, being set aside in 1828 to serve the village of Kayuga on the estate of Donald MacIntyre. It has been assessed as having state heritage values due to his historical importance.

While the proposed works are outside of the listed heritage curtilage and on the other side of the road to the cemetery itself, care must be taken to ensure that there are no disturbances within the heritage curtilage for the listed item.

**Figure 11-8: Location of proposed works (Stair St) in regard to listed heritage items.**

## 11.2 ASSESSMENT OF HISTORIC HERITAGE SIGNIFICANCE

### 11.2.1 Assessment of significance—general principles

The current assessment will evaluate the heritage significance of the historic heritage sites identified within the Survey Boundary in accordance with the NSW Heritage Office's publication *Assessing Heritage Significance* (Heritage Office 2001). A historic heritage site must satisfy at minimum one of the following criteria to be assessed as having heritage significance:

**Criterion (a):** *An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)*

**Criterion (b):** *An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)*

**Criterion (c):** *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)*

**Criterion (d):** *An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons*

**Criterion (e):** *An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)*

**Criterion (f):** *An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)*

**Criterion (g):** *An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).*

Significance assessments are carried out on the basis that decisions about the future of heritage items must be informed by an understanding of these items' heritage values. The *Australia ICOMOS Burra Charter* (Burra Charter 2013) recognises four categories of heritage value: historic, aesthetic, scientific, and social significance

Items are categorised as having local or state level, or no significance. The level of significance is assessed in accordance with the geographical extent of the item's value. An item of state significance is one that is important to the people of NSW whilst an item of local significance is one that is principally important to the people of a specific LGA.

### 11.2.2 Assessment of significance of historic items

**Table 11-1** details the assessed significance of recorded historic heritage items in accordance with the NSW Heritage Office guidelines and the *Burra Charter*.

**Table 11-1: Historic heritage: assessment of significance.**

Site Name	Level of Significance
HS01	Nil
HS02	Nil
HS03	Nil

HS01 is a common rural feature that is assessed as having no heritage significance.

HS02 is also noted as having no heritage significance, however, due to its role as a memorial marker it will hold importance to the landowner (should the current landowner be related to Rhonda Holstein).

HS03 has no heritage significance, although, like HS02, it may hold significance to the landowner if the item is a grave site.

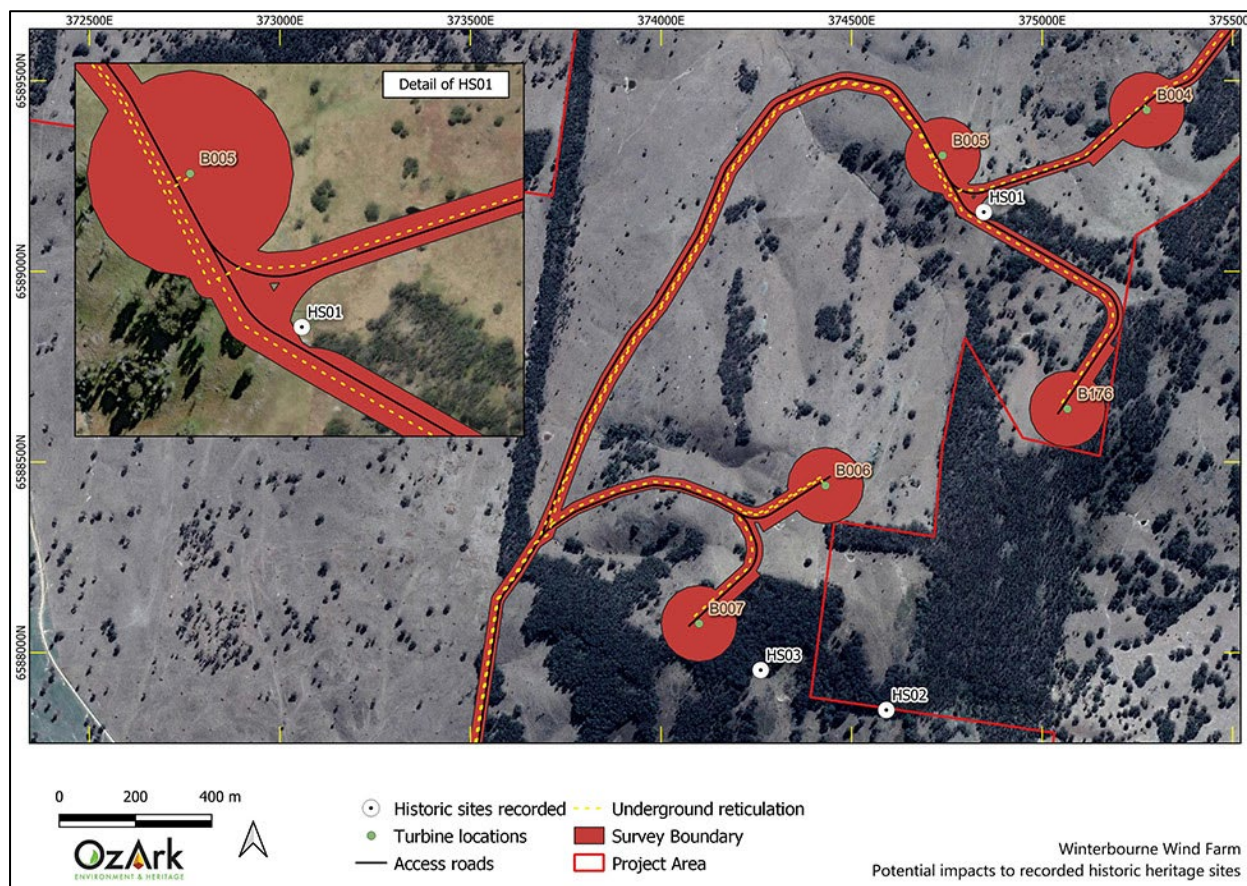
## 11.3 LIKELY IMPACTS TO HISTORIC HERITAGE FROM THE PROJECT

**Figure 11-9** shows the recorded historic heritage sites in relation to proposed project impacts.

Item HS01 is partially impacted by the proposed works but can be avoided by the proposed access track and underground reticulation line that could be located slightly further south to avoid the item. However, it will be assumed that HS01 will be harmed by the works.

Item HS02 and HS03 are at a distance to any proposed project impacts and will not be harmed by the project.

**Figure 11-9: Location of historic heritage sites in relation to proposed impacts.**



## 12 MANAGEMENT AND MITIGATION: HISTORIC HERITAGE

### 12.1 GENERAL PRINCIPLES FOR THE MANAGEMENT OF HISTORIC SITES

Appropriate management of heritage items is primarily determined based on their assessed significance as well as the likely impacts of the proposed development.

In terms of best practice and desired outcomes, avoiding impact to any historical item is a preferred outcome, however, where a historical site has been assessed as having no heritage value, impacts to these items does not require any legislated mitigation.

### 12.2 MANAGEMENT AND MITIGATION OF RECORDED HISTORIC SITES

All historic heritage items have been assessed as having no heritage significance and they are not protected by the Heritage Act.

However, HS01 is located near the alignment for an access track and an underground reticulation line and it is recommended that the access track and reticulation alignment is deviated slightly to the south to avoid impact to this item.

HS02 and HS03 are distant to any project impacts and there are no further management recommendations regarding these items.

In summary, the following management recommendations are made.

HS01: if it is possible to conserve the item in the landscape this would be an acceptable heritage outcome. However, if it is not possible to conserve the site, it may be harmed as it represents a common rural feature without heritage values.

HS02: The item is located away from any potential impacts and there are no further management recommendations.

HS03: The item is located away from any potential impacts and there are no further management recommendations.

**Table 12-1** notes that the location of the Kayuga Cemetery should be noted, and all works confined to the road corridor to avoid impacted to the listed heritage item.

**Table 12-1: Listed historic items requiring management.**

Item Number	Site Name	Level of Significance	Lot and DP	Potential Management Options
I43	Kayuga Cemetery	State	Lot 1 DP835733	The heritage curtilage of this item is outside of proposed impacts; however, care needs to be taken in the design of the transport route that all impacts remain outside of the identified heritage curtilage.

## 12.3 UNANTICIPATED FINDS PROTOCOL

Should consent for the project be gained, a HHMP will be developed in consultation with DPE. The HHMP will contain procedures should a new discovery of significant historic artefacts or items be made during construction or operation of the project. The procedure in **Section 12.3.1** is an example of an unanticipated finds protocol that could be incorporated into the HHMP.

### 12.3.1 Unanticipated finds protocol example

A historic artefact is anything which is the result of past activity not related to the Aboriginal occupation of the area. This includes pottery, wood, glass, and metal objects, as well as the built remains of structures, sometimes heavily ruined.

Heritage significance of historic items is assessed by suitably qualified specialists who place the item or site in context and determine its role in aiding the community's understanding of the local area, or their wider role in being an exemplar of state or even national historic themes.

The following protocol should be followed if previously unrecorded or unanticipated historic objects are encountered:

1. All ground surface disturbance in the area of the finds should cease immediately, then:
  - a) The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted
  - b) The site supervisor will be informed of the find(s).
2. If finds are suspected to be human skeletal remains, then NSW Police must be contacted as a matter of priority.
3. If there is substantial doubt regarding the historic significance for the finds, then gain a qualified opinion from an archaeologist as soon as possible. This can circumvent proceeding further along the protocol for items which turn out not to be significant. If a quick opinion cannot be gained, or the identification is that the item is likely to be significant, then proceed to the next step.
4. Notify Heritage NSW as soon as practical on (02) 9873 8500 (heritagemailbox@environment.nsw.gov.au) providing any details of the historic find and its location.
5. If in the view of the heritage specialist or Heritage NSW that the finds appear not to be significant, work may recommence without further investigation. Keep a copy of all correspondence for future reference.
6. If in the view of the heritage specialist or Heritage NSW that the finds appear to be significant, facilitate the recording and assessment of the finds by a suitably qualified heritage specialist. Such a study should include the development of appropriate management strategies.

If the find(s) are determined to be significant historic items (i.e. of local or state significance), any re-commencement of ground surface disturbance may only resume following compliance with any legal requirements and gaining written approval from Heritage NSW.

## 13 RECOMMENDATIONS

### 13.1 ABORIGINAL CULTURAL HERITAGE

Under Section 89A of the NPW Act it is mandatory that all newly recorded Aboriginal sites be registered with AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that 16 Aboriginal sites were recorded during the survey, and one previously recorded AHIMS sites is inside the Project Area.

The following recommendations are made based on these impacts and with regard to:

- Legal requirements under the terms of the NPW Act whereby it is illegal to damage, deface or destroy an Aboriginal place or object without the prior written consent of Heritage NSW
- The findings of the current investigations undertaken within the Survey Boundary
- The interests of the Aboriginal community.

**Table 8-1** details all management recommended for the sites recorded during this assessment.

Recommendations concerning Aboriginal cultural values within the Survey Boundary are as follows:

1. Following development consent of the project, WWPL will develop an ACHMP which is approved by DPE and which includes consultation with the RAPs. The ACHMP will also include an unanticipated finds protocol, unanticipated skeletal remains protocol and procedures for the long-term management of any artefacts. Examples of these protocols are provided in **Section 8.2.5.1** and **Section 8.2.6.1**.
2. Should development consent for the project be granted, archaeological management strategies to manage and mitigate the impact of the WWF are set out in **Section 8.2** and detailed in **Table 8-1**. Regarding this, the following recommendation is made:
  - a. Every effort should be made to avoid impact to sites listed below through project design. In particular, the project infrastructure should be designed to avoid Queenlee OS-1 with PAD that has high cultural and scientific values:

ETL design. Ensure electricity towers are designed so that sites are spanned and that access tracks avoid sites		
Queenlee OS-1 with PAD	Tarwonga ST-1	Woodburn IF-1
The Ranch OS-1 with PAD	The Ranch IF-1	

3. As five surface artefact sites (Yalgoo IF-1, Table Top Rd IF-1, Woodburn IF-1, The Ranch IF-1, The Ranch OS-1 with PAD [partial impact]) could potentially be harmed by the project, it is recommended that the sites, if they are to be impacted, are salvaged through

the recording and collection of the surface artefacts prior to construction works proceeding.

- a. The recommended methodology for the salvage will be finalised after the approvals process has been completed in the ACHMP but will include the measures outlined in **Section 8.2.3.2**.
  - b. The salvage works will include the mapping, analysis, and collection of the surface artefact at the affected site. Results will be included in a brief report to preserve the data in a useable form and an ASIRF will be submitted to AHIMS.
4. If the scarred portion of site Tarwonga ST-1 cannot be retained in the landscape due to clearance or other issues, the ACHMP should consider how the scarred portion of the tree can be removed to a place of safe-keeping. The ACHMP would nominate a suitable place for the relocation that can be considered by the RAPs in their review of the document.
  5. The project should consider funding additional research to take place at Queenlee OS-1 with PAD and Queenlee E-1 with landowner consent. The study should involve non-invasive recording, mapping, and photography at each site.
  6. Green Range OS-3 with PAD and Millbank OS-1 will not be impacted by the project and they are listed in **Table 7-2** among the 10 sites that will be avoided by the project. However, the sites are located within the Winterbourne Road corridor and around farm gates, and in the case of Green Range OS-3 with PAD, within a regularly ploughed paddock. As the surface artefacts are at risk from continued impacts from vehicle traffic, road maintenance, or ploughing it is recommended that the sites be managed through a collection of surface artefacts (following the methodology set out in **Section 8.2.3.2**; see also **Section 8.2.3.4**).
  7. All land disturbing activities must be confined to within the Survey Boundary. Should the parameters of the proposed work extend beyond this, then further archaeological assessment may be required.

## 13.2 HISTORIC HERITAGE

The following recommendations are made based on the impacts associated with the WWF and regarding:

- Legal requirements under the terms of the Heritage Act
- Guidelines presented in the *Burra Charter* (Australia ICOMOS 2013)
- The findings of the current assessment
- The interests of the local community.

No items of significant historic heritage value are located within the Survey Boundary.

Recommendations concerning the historic values within the Survey Boundary are as follows:

8. HS01: if it is possible to conserve the item in the landscape this would be a desirable heritage outcome. However, if it is not possible to conserve the site, it may be harmed as it represents a common rural feature without heritage values.
9. HS02 and HS03: Both items will not be harmed by the project and there is no further management required.
10. Kayuga Cemetery: The heritage curtilage of this listed item is outside of proposed impacts; however, care needs to be taken in the design of the transport route that all impacts remain outside of the identified heritage curtilage.
11. Following development consent of the project, an Historic Heritage Management Plan (HHMP) will be developed and then used during the construction and ongoing use of the project. If items of historic heritage significance are uncovered during the project, then the unanticipated finds protocols in the HHMP will be enacted. An example is provided in **Section 12.3.1**.
12. To avoid the potential for harm to historic objects on unassessed adjacent landforms, all ground surface disturbing activities must be confined to the Survey Boundary.

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## APPENDIX 1: ABORIGINAL COMMUNITY CONSULTATION

Appendix 1 Figure 1: Aboriginal Community Consultation Log.

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
27.4.20	BCD (now Heritage NSW)	Rebecca Hardman (RH) sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	Amaroo Local Aboriginal Land Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	Armidale Local Aboriginal Land Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	Office of The Registrar, ALRA	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	National Native Title Tribunal	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	NTSCORP	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	Walcha Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	Uralla Shire Council	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
27.4.20	Northern Tablelands Local Land Services	RH sent stage1 agency letter requesting potential stakeholders. Closing date 11.5.20	email
28.4.20	The Armidale Express	RH rang - newspaper is currently suspended in hard copy until July due to COVID 19. The Leader is the only paper being printed in hard copy in the area at the moment, it is printed daily. The cut off is by 3pm the day prior to each	phone
28.4.20	Daily Leader	RH sent for proof and quote	email
28.4.20	Daily Leader	RH received phone call confirming paper	phone
28.4.20	Daily Leader	RH received proof	email
28.4.20	Daily Leader	RH sent back edits	email
28.4.20	Daily Leader	RH received 2nd proof	email
28.4.20	Daily Leader	RH phoned, approved proof, paid and requested receipt and tear sheet	phone
28.4.20	Daily Leader	RH received receipt	email
30.4.20	National Native Title Tribunal	RH received notification <i>Records held by the National Native Title Tribunal as at 28 April 2020 indicate that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area</i>	email
4.5.20	BCD	RH received stakeholder list for Walcha LGA	email
4.5.20	BCD	RH enquired if there are any additional contacts in Uralla LGA	email
4.5.20	BCD	Dimitri requested a new request be submitted	email
4.5.20	BCD	RH sent request for stakeholders	email
6.5.20	BCD	RH received updated stakeholder list	email
12.5.20	Northern Tablelands Local Land Services	RH received response recommending to contact Amaroo LALC	Post
12.5.20	Gomerioi People	RH phoned to get email address	Phone
12.5.20	Mr Craig Archibald	RH sent EOI community letter. RSVP 28.5.20	Post
12.5.20	Aaron Broad	RH sent EOI community letter. RSVP 28.5.20	email
12.5.20	Norm Archibald	RH sent EOI community letter. RSVP 28.5.20	email
12.5.20	Gomerioi People	RH sent EOI community letter. RSVP 28.5.20	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
12.5.20	Amaroo Local Aboriginal Land Council	RH sent EOI community letter. RSVP 28.5.20	email
12.5.20	Armidale Local Aboriginal Land Council	RH sent EOI community letter. RSVP 28.5.20	email
12.5.20	Larissa Ahoy	RH sent EOI community letter. RSVP 28.5.20	email
12.5.20	Amaroo Local Aboriginal Land Council	RH received email undeliverable	email
12.5.20	Amaroo Local Aboriginal Land Council	RH phoned to get updated email address	phone
12.5.20	Amaroo Local Aboriginal Land Council	RH resent EOI	email
11.6.20	Amaroo Local Aboriginal Land Council	RH sent follow up email confirming registration and asking if Mark knows of anyone else who would like to register?	email
12.6.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	email
12.6.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	email
12.6.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	email
18.6.20	Amaroo Local Aboriginal Land Council	Sheridan Baker (SB) sent Stage 2. Feedback ends 17.7.20	email
18.6.20	Armidale Local Aboriginal Land Council	SB sent Stage 2. Feedback ends 17.7.20	email
23.6.20	Amaroo Local Aboriginal Land Council	RH sent notification of RAPs	email
23.6.20	Armidale Local Aboriginal Land Council	RH sent notification of RAPs	email
23.6.20	BCD	RH sent notification of RAPs	email
7.7.20	Armidale Local Aboriginal Land Council	RH phoned to ask if will have RAPs available, confirmed they will. RH to send through formal invite. RH confirmed email addresses	phone
7.7.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	phone
7.7.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	phone
7.7.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	phone
7.7.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	phone
7.7.20	Amaroo Local Aboriginal Land Council	RH phoned mobile for group Mark is a member of and was given marks mobile number	phone
7.7.20	Amaroo Local Aboriginal Land Council	RH phoned Mark's mobile and left message	phone
7.7.20	Amaroo Local Aboriginal Land Council	SB received call back, Mark confirmed will have site officers	phone
8.7.20	Armidale Local Aboriginal Land Council	RH received phone call from CEO Lisa to confirm they are registered and update email address. Discussed fieldwork, RH to send through formal invite asap	phone
8.7.20	Armidale Local Aboriginal Land Council	RH received email from Lisa confirming chat and her email address	email
9.7.20	Amaroo Local Aboriginal Land Council	RH sent invite to fieldwork	email
9.7.20	Armidale Local Aboriginal Land Council	RH sent invite to fieldwork	email
9.7.20	Armidale Local Aboriginal Land Council	RH received confirmation of site officers, contact details and workers comp	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
9.7.20	Armidale Local Aboriginal Land Council	RH thanked Lisa	email
9.7.20	Nunawanna Aboriginal Corporation	<p>RH received email from Colin:  <i>It has come to my attention that the work regarding the development of the Winterbourne Wind Farm site commences on the 20th of July.</i></p> <p><i>As a cultural knowledge holder in the community and someone who has a great deal of experience in this area, I feel it is very important that my organisation, Nunawanna Aboriginal Corporation be involved in the Cultural and Heritage Assessment for this site. Please see attached my resume for details.</i></p> <p><i>Previously before such work is undertaken the Office of Environment &amp; Heritage notify all the registered Aboriginal parties (RAPS) in the area asking each to send in an expression of interest. In this instance I have not been notified and heard about it second hand from the Local Aboriginal Land Council.</i></p> <p><i>It is really important for our local community Elders to see local RAPS involved in this process, because we are the cultural knowledge holders of the New England Tablelands. It also crucial for these Elders to feel as though they are part of the process which is clearly communicated to them.</i></p> <p><i>I'm very interested in discussing this further with you as soon as possible.</i></p>	email
9.7.20	Nunawanna Aboriginal Corporation	RH received copy of Colin's workers' compensation insurance	email
9.7.20	Nunawanna Aboriginal Corporation	<p>RH responded to Colin:  <i>Thanks so much for your email, we are happy to include you in the Winterbourne Windfarm project.</i></p> <p><i>It's great you have got in contact as we have followed the consultation guidelines in full. This included placing an advertisement in the Daily Leader on the 29th of April and also got the stakeholder list from OEH (now Heritage NSW) and contacted everyone on the list. I would recommend giving them a call to find out why you were not on the list as this is our main point of contact. Had you been on the list we would have definitely been in touch. I am assuming the new contact number I was sent is who would be best for you to call to make sure you are on the Heritage NSW stakeholder list: 02 9873 8500.</i></p> <p><i>Currently the Winterbourne project is in Stage 2 with feedback ending on the 17th of July. I have attached a copy of the Stage 2 methodology for you to have a look at and to provide any feedback. It's great you will already be attending fieldwork through the Armidale LALC, we look forward to having you out there.</i></p>	email
9.7.20	Nunawanna Aboriginal Corporation	<p>RH received from Colin:  <i>That's where the misunderstanding is you advertised in the Northern Daily Leader which is a Tamworth (Kamilaroi country) Newspaper. The list of RAPS that you got from OEH May not have been the representatives from the Anaiwan Nation.</i></p> <p><i>The land that is being developed is with in the Anaiwan Boundary and I believe there are going to be issues and I will be speaking with the elders of the Anaiwan Nation as this is unacceptable the local Aboriginal Land Council does not represent the whole Anaiwan Nation.</i></p> <p><i>It is also not culturally appropriate for people from other nations (Amarillo Local Aboriginal Land Council) to be walking on country and making decisions on behalf of the Anaiwan people.</i></p> <p><i>Also with the methodology the land on where this development is taking place is in the Anaiwan Boundary.</i></p> <p><i>I will be taking this matter further with the appropriate department involved.</i></p>	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
9.7.20	Nunawanna Aboriginal Corporation	RH received from Colin: <i>Please accept my apology and dis regard my last email as I was wrong about the Amaroo Land council it is in Walcha. I got it confused with Tamworth.</i>  <i>However, my questions can a representative from Nunawanna Aboriginal Corporation be involved in the Cultural and Heritage Assessment?</i>	email
9.7.20	Nunawanna Aboriginal Corporation	RH received from Colin: <i>Thanks so much for responding to my email and I appreciate the opportunity to be able to share thoughts on this.</i>  <i>My concern is that, as you point out, you advertised this in the Northern Daily Leader. You may not realise, but this newspaper services the Tamworth district, which is part of Kamilaroi country. This is of concern because the site for the proposed windfarm actually falls within the Anaiwan land boundaries – of the Armidale people.</i>  <i>To adequately inform the Armidale community Elders it should have also been advertised in the Armidale Express. This is very important because it is not culturally appropriate for other people from different nations to be walking on country and making decisions on behalf of the Anaiwan people. Local RAPS from Armidale should and must be part of this process.</i>  <i>Often when working with local Aboriginal communities, organisations such as the one you are working for, do not always understand the complex issues at play. Therefore, finding the right people to communicate back to the community Elders is crucial.</i>  <i>I would like to have an opportunity to discuss this further with you.</i>	email
10.7.20	Nunawanna Aboriginal Corporation	Emma Gray (EG) received phone call from Colin requesting call back	email
10.7.20	Nunawanna Aboriginal Corporation	Ben Churcher (BC) phoned Colin. The main points of the conversation were that we did not advertise in the Armidale Express as they were only doing an online version (COVID-19) and that OzArk followed the consultation guidelines and only received expressions of interest from the two LALCs. Colin and BC discussed the fact that they need to get their name on the Heritage NSW stakeholder lists. Colin was unsure why his name is not there and BC said OzArk were very surprised at how few names were on the stakeholder lists. BC said that Colin, and anyone else, can still register as a RAP if they send OzArk an expression of interest. BC sent Colin his email for future correspondence with the invitation to call BC at any time.	email
10.7.20	Nunawanna Aboriginal Corporation	BC emailed colin: <i>Good chatting just now and looking forward to meeting you in a few weeks.</i>	email
10.7.20	Nunawanna Aboriginal Corporation	BC received email from colin: <i>Please find attached a copy of my expression of interest for the Winterbourne Wind Farm.</i>	email
10.7.20	Nunawanna Aboriginal Corporation	BC emailed colin: <i>Received. I've passed this on to our consultation Officer Rebecca to register you as a RAP for the project.</i>	email
10.7.20	Nunawanna Aboriginal Corporation	BC received email from colin: <i>Just so your aware that Tyson Ahoy will be representing Nunawanna Aboriginal Corporation</i>	email
10.7.20	Nunawanna Aboriginal Corporation	BC emailed colin: <i>Do you mean on the fieldwork? We may need to look at the roster and see what is possible here.</i>	email
10.7.20	Larissa Ahoy	BC received registration as a RAP	email
10.7.20	Larissa Ahoy	BC received workers' compensation	email
10.7.20	Larissa Ahoy	BC thanked Larissa	email
13.7.20	Nunawanna Aboriginal Corporation	BC emailed colin: <i>We are a little confused at this end about who is coming out on the fieldwork.</i>	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
		<p>As you know we have offered two positions to the Armidale LALC, one of which you have been appointed to. But then you make it sound like you expect Tyson to be there as well. Is this separate to the two LALC positions?</p> <p>Obviously we have a set budget for the number of fieldworkers we can engage but more importantly we have space limitations as we have two teams and two cars working independently – so we were working on having 2 x archaeologists and 2 x RAPs per vehicle. Any more starts getting a bit tight in the back seat.</p> <p>We have also invited two fieldworkers from the Amaroo LALC and while they have said that they will have two representatives available, we haven't had this confirmed. However, should they not be able to supply two workers, we would then be in a position to take on Tyson, or Larissa (who has also registered), for example.</p> <p>If you could let me know your expectations on this we can take it from there.</p>	
13.7.20	Nunawanna Aboriginal Corporation	<p>BC received response: Yes that is correct, I want Tyson to be involved in the field work as it is only appropriate and for my organisation Nunawanna Aboriginal Corporation to be fully involved in all aspect of the project concerning Cultural and Heritage.</p> <p>As stated previously Nunawanna Aboriginal Corporation has been involved in numerous projects in the Tablelands area.</p>	email
13.7.20	Amaroo Local Aboriginal Land Council	RH phoned and left message asking for call back	Phone
13.7.20	Amaroo Local Aboriginal Land Council	RH phoned and spoke to Mark, he confirmed they will be attending and will email the workers' comp through this afternoon with contact details	Phone
13.7.20	Nunawanna Aboriginal Corporation	<p>BC received email: Thanks for your email and the opportunity to communicate with you about this.</p> <p>I am aware that you followed all the correct procedures in regard to the cultural and heritage assessment for the Winterbourne Wind Farm.</p> <p>However, I want to raise with you that to my knowledge there are 4 other local registered Aboriginal parties who represent the Anaiwan Nation when it comes to Cultural and Heritage assessments who have not been informed about and therefore are not involved in this project.</p> <p>As the field work commences on Monday the 20th of July there is still sufficient time for these parties to be involved. One of the difficulties that arises when community are not given sufficient information and time is that it can cause up-roar and can halt the progress of this development. This has happened before in this area. These organisations hold significant cultural knowledge for this area and there are many in the community who will be extremely disappointed that they do not get the opportunity to provide input and the chance to participate in the field work.</p> <p>I appreciate the fact that you have allowed my organisation Nunawanna Aboriginal Corporation to have the chance to be involved in this project including the field work. However, these other local RAPs that I speak of have the ability and power to delay the process of this assessment until further notice.</p> <p>The land that is being developed was used by the local Anaiwan people long before the squatters decided to erect fences and restrict the Anaiwan people access to their local sites so when we finally get the chance to go on to these places through the development process we take this very seriously.</p> <p>This information was told to my Uncle who spent a lot of time with his Great Great Grandparents and Great Grand Parents (and is inclusive of Allan Mackenzie and his then partner Aunty Dulcie Brown) and was supported by the many conversations he had with my Grandfather who he calls Uncle Warner Saunders, Uncle Mick Saunders and Uncle Herb Ritchie (all Guiwan Clans Men of the Biripi Nation and now deceased). All these people he will refer to as his Elders as he held all with the utmost respect as being initiated cultural knowledge holders.</p>	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
		<p><i>Redacted on RAP request</i></p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p><i>For further information on how significant the area is in cultural and heritage please speak to Ryan Desic or see his report for the New England Solar Farm.</i></p>	
13.7.20	Nunawanna Aboriginal Corporation	<p>BC responded: We are happy to have them as RAPs. The EMM report has the following RAPs apart from your group and the Armidale LALC:</p> <ul style="list-style-type: none"> <li>• Armidale and New England Gumbaynggirr Descendants</li> <li>• Les Townsend</li> <li>• Steven Ahoy Consultants</li> <li>• Culturally Aware Aboriginal Heritage Consultancy</li> <li>• Nyakka Aboriginal Culture Heritage Corporation Archaeological and Cultural Heritage Consultants</li> <li>• Aaron Broad</li> <li>• Nganyawana Clan Group</li> </ul> <p><i>Which ones do you think we should contact? Do you have contact details for any of them?</i></p> <p><i>I'm still waiting on the proponent to agree to take more RAPs on the fieldwork and will let you know as soon as I know.</i></p>	email
14.7.20	Amaroo Local Aboriginal Land Council	RH phoned and spoke to Mark, he will email the workers' comp through this afternoon with contact details. Rh said need finalised today	Phone
14.7.20	Nunawanna Aboriginal Corporation	RH sent invitation to fieldwork	email
14.7.20	Amaroo Local Aboriginal Land Council	RH received sit officer names and copy of workers' compensation	email
14.7.20	Amaroo Local Aboriginal Land Council	RH thanked Mark and requested contact numbers	email
14.7.20	Nunawanna Aboriginal Corporation	<p>RH received email from Colin: <i>Thank you for accepting my organisation Nunawanna Aboriginal Corporation.</i></p> <p><i>Please find attached and a copy of the signed document for Tyson to participate in the field work.</i></p>	email
15.7.20	Nunawanna Aboriginal Corporation	RH thanked Colin and requested contact details for Tyson	email
15.7.20	Nunawanna Aboriginal Corporation	RH received contact details	email
15.7.20	Nunawanna Aboriginal Corporation	RH thanked Colin	email
16.7.20	Amaroo Local Aboriginal Land Council	RH requested contact numbers	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
20.7.20	Amaroo Local Aboriginal Land Council	Jodie Benton (JB) phoned and left message	email
20.7.20	Amaroo Local Aboriginal Land Council	RH phoned - N/A	email
20.7.20	Amaroo Local Aboriginal Land Council	RH received call back, Mark had mixed dates up and told site officers wrong dates. Confirmed attendance for rest of the week. Was given site officers contact details. Mark to drive Cedric to meeting location tomorrow.	email
20.7.20	Amaroo Local Aboriginal Land Council	RH phoned other site office, Zane unable to attend until Wednesday.	email
20.7.20	Amaroo Local Aboriginal Land Council	RH received contact number for site officer	email
20.7.20	Amaroo Local Aboriginal Land Council	RH emailed mark to advise of time change	email
20.7.20	Amaroo Local Aboriginal Land Council	RH phoned mark to advise time change	email
24.7.20	Nunawanna Aboriginal Corporation	RH received Invoice	email
24.7.20	Nunawanna Aboriginal Corporation	RH thanked Colin	email
28.7.20	Amaroo Local Aboriginal Land Council	RH sent updated notification of RAPs	email
28.7.20	Armidale Local Aboriginal Land Council	RH sent updated notification of RAPs	email
28.7.20	BCD	RH sent updated notification of RAPs	email
5.8.20	Nunawanna Aboriginal Corporation	BC received email chasing payment	email
6.8.20	Nunawanna Aboriginal Corporation	RH advised Colin payment will be processed tomorrow	email
7.8.20	Iwatta Aboriginal Corporation	BC received email from proponent passing on an email received from Steven asking about the community consultation to date. BC replied to Steven setting out the consultation to date and inviting him to register as a RAP if he wished. Attached a Stage 1 community letter with a closing date of 21/8/20 for EOI	email
7.8.20	Iwatta Aboriginal Corporation	BC received email: <i>Yes can you add Iwatta Aboriginal Corporation to the Raps list Have you started or completed the ACHA</i>	email
7.8.20	Iwatta Aboriginal Corporation	BC responded: <i>We have done some of the fieldwork (finished last week), but there is more to do. The timing of the next round is not known at present but we will keep everyone in the loop when it's coming. The report is some time off yet! Look forward to working with you on this one Steven.</i>	email
11.8.20	Amaroo Local Aboriginal Land Council	RH received invoice	email
12.8.20	Amaroo Local Aboriginal Land Council	RH thanked and notified passed to accounts	email
12.8.20	Amaroo Local Aboriginal Land Council	Thanks Rebecca for the update That's fine  Many thanks for the opportunity for work	email
13.8.20	Amaroo Local Aboriginal Land Council	RH sent updated notification of RAPs	email
13.8.20	Armidale Local Aboriginal Land Council	RH sent updated notification of RAPs	email
13.8.20	BCD	RH sent updated notification of RAPs	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
16.8.20	Iwatta Aboriginal Corporation	BC received email: <i>Can you highlight the area that has already been surveyed on a map As we would like the opportunity to get up to date with the ACHA, also we will then be able to comment on the study area. The Archaeologist should be able to provide the GPS coordinates of transects completed and possible finds. If you can get me the information ASAP, that would be much appreciated.</i>	email
17.8.20	Iwatta Aboriginal Corporation	BC responded: <i>I have a bit of a killer start to this week but will clear the decks and get the information to you as quickly as I can.</i>	email
21.8.20	Iwatta Aboriginal Corporation	BC sent figures and brief overview of findings and locations surveyed to date. Also asked for any cultural values they would like to pass on	email
21.10.20	Armidale Local Aboriginal Land Council	RH sent invite to fieldwork RSVP 26.10.20	email
21.10.20	Amaroo Local Aboriginal Land Council	RH sent invite to fieldwork RSVP 26.10.20	email
21.10.20	Nunawanna Aboriginal Corporation	RH sent invite to fieldwork RSVP 26.10.20	email
21.10.20	Larissa Ahoy	RH sent invite to fieldwork RSVP 26.10.20	email
21.10.20	Iwatta Aboriginal Corporation	RH sent invite to fieldwork RSVP 26.10.20	email
21.10.20	Nunawanna Aboriginal Corporation	RH received confirmation of fieldwork attendance	email
21.8.20	Iwatta Aboriginal Corporation	RH received confirmation of fieldwork attendance	email
22.10.20	Nunawanna Aboriginal Corporation	RH requested site officer details	email
22.10.20	Nunawanna Aboriginal Corporation	RH received site officer details	email
26.10.20	Amaroo Local Aboriginal Land Council	RH received confirmation attending fieldwork	email
26.10.20	Amaroo Local Aboriginal Land Council	RH requested site officer details	email
26.10.20	Larissa Ahoy	RH received copy of business insurance	email
26.10.20	Larissa Ahoy	RH requested copy of workers' comp and site officer details	email
26.10.20	Larissa Ahoy	RH received workers' comp and site officer name	email
26.10.20	Larissa Ahoy	RH requested site officer number	email
26.10.20	Larissa Ahoy	RH received site officer number	email
26.10.20	Larissa Ahoy	RH requested valid workers' comp, the one sent had expired	email
26.10.20	Larissa Ahoy	RH received workers comp, Larissa noted payment for renewal is due on 31/10/20 and once paid she will send through	email
27.10.20	Larissa Ahoy	Harrison Rochford (HR) called to confirm certificate of currency yet come, LA has spoken to icare - to be sent to OzArk Friday (30.10.20)	email
27.10.20	Armidale Local Aboriginal Land Council	HR rang Lisa to confirm certificate of currency, no answer left message	phone
27.10.20	Armidale Local Aboriginal Land Council	Returned call, certificates of currency being sent tomorrow (28.10.20)	phone
27.10.20	Armidale Local Aboriginal Land Council	LW also returned call and requested fieldwork information be resent. HR resent.	phone
28.10.20	Amaroo Local Aboriginal Land Council	HR phoned Mark to confirm site officer details - Mark will phone back to confirm Eddie's attendance later today	phone

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
29.10.20	Armidale Local Aboriginal Land Council	HR phoned seeking cert. of currency, no answer left message	phone
30.10.20	Armidale Local Aboriginal Land Council	HR phoned seeking cert. of currency, their office is being moved. Will have computers up and running this afternoon.	phone
30.10.20	Amaroo Local Aboriginal Land Council	Mark returned call - Eddie to attend	phone
30.10.20	Larissa Ahoy	Up to date insurances supplied to RH.	email
30.10.20	Armidale Local Aboriginal Land Council	HR phoned Lisa - she updated correct email and will respond with cert. of currency and site officer details	phone
2/11/2020	Iwatta Aboriginal Corporation	Iwatta contacted requesting rostering set up, HR replied	email
6.11.20	Larissa Ahoy	RH received invoice	email
6.11.20	Nunawanna Aboriginal Corporation	RH received invoice	email
9.11.20	Iwatta Aboriginal Corporation	RH received invoice for fieldwork	email
9.11.20	Iwatta Aboriginal Corporation	RH asked for invoice to be revised	email
9.11.20	Iwatta Aboriginal Corporation	RH received email asking for call	email
9.11.20	Iwatta Aboriginal Corporation	RH received email disputing payment amounts and revised invoice	email
10.11.20	Armidale Local Aboriginal Land Council	RH received invoice	email
19.11.20	Armidale Local Aboriginal Land Council	Brendan Fisher (BF) phoned to get banking details for invoice	Phone
20.11.20	Amaroo Local Aboriginal Land Council	RH received invoice	email
24.11.20	Armidale Local Aboriginal Land Council	RH emailed for bank details	email
4.02.21	Amaroo Local Aboriginal Land Council	BF sent project update letter	email
4.02.21	Armidale Local Aboriginal Land Council	BF sent project update letter	email
4.02.21	Nunawanna Aboriginal Corporation	BF sent project update letter	email
4.02.21	Larissa Ahoy	BF sent project update letter	email
4.02.21	Iwatta Aboriginal Corporation	BF sent project update letter	email
4.02.21	Iwatta Aboriginal Corporation	Steven emailed requesting future talks on the cultural significance of the area.	email
5.02.21	Iwatta Aboriginal Corporation	BF thanked Steven for response and said we can talk about the cultural significance of the area.	email
15.2.21	Armidale Local Aboriginal Land Council	RH phoned to see if available for fieldwork next week - Lisa Mobile, N/A	phone
15.2.21	Armidale Local Aboriginal Land Council	RH phoned to see if available for fieldwork next week - landline phone disconnected	phone
15.2.21	Armidale Local Aboriginal Land Council	RH phoned to see if available for fieldwork next week -found alternative landline phone - disconnected	phone
15.2.21	Armidale Local Aboriginal Land Council	RH phoned to see if available for fieldwork next week -found alternative landline phone - wrong number	phone
15.2.21	Armidale Local Aboriginal Land Council	RH phoned to see if available for fieldwork next week - left voice to txt message on Lisa's mobile	phone

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
15.2.21	Amaroo Local Aboriginal Land Council	RH phoned to see if available for fieldwork next week - left voice message on Mark mobile	phone
15.2.21	Amaroo Local Aboriginal Land Council	RH phoned landline to see if available for fieldwork next week - Mark will call back this afternoon. Will go check with site officer. RH told date	phone
15.2.21	Nunawanna Aboriginal Corporation	RH left message for call back re fieldwork next week	phone
15.2.21	Iwatta Aboriginal Corporation	RH spoke to Steven, will have site officer available. RH said will send formal invite out this afternoon.	phone
15.2.21	Nunawanna Aboriginal Corporation	Colin returned call, confirmed attendance. RH said will send invite this afternoon. Asked if has landline number for the LALC, he does not.	phone
15.2.21	Armidale Local Aboriginal Land Council	Taylor Foster (TF) sent Round 3 FW invite	Email
15.2.21	Amaroo Local Aboriginal Land Council	TF sent Round 3 FW invite	Email
15.2.21	Nunawanna Aboriginal Corporation	TF sent Round 3 FW invite	Email
15.2.21	Iwatta Aboriginal Corporation	TF sent Round 3 FW invite	Email
15.2.21	Nunawanna Aboriginal Corporation	RH received covid form	email
16.2.22	Iwatta Aboriginal Corporation	TF received response confirming Round 3 FW attendance <i>"Hello Taylor, Iwatta accepts the invitation and can confirm our availability. Thank You."</i>	Email
16.2.21	Amaroo Local Aboriginal Land Council	TF received response confirming Round 3 FW attendance <i>"Hi Rebecca we have Ernest Green who will be doing this , you should already have his details If you don't please let me know."</i>	Email
16.2.22	Iwatta Aboriginal Corporation	RH sent email asking for site officer details	Email
16.2.21	Nunawanna Aboriginal Corporation	RH thanked Colin for COVID form but advised the form will need to be completed on the morning of fieldwork as well. RH asked for site officer details	email
16.2.22	Iwatta Aboriginal Corporation	RH received site officer details	Email
16.2.21	Nunawanna Aboriginal Corporation	RH received email saying it will be a representative	email
16.2.21	Nunawanna Aboriginal Corporation	RH asked for name and contact number	email
17.2.21	Armidale Local Aboriginal Land Council	TF called regarding response to FW. Lisa asked to send follow up email and she would get back to us.	Phone
17.2.21	Armidale Local Aboriginal Land Council	TF re-sent Round 3 FW invite and request for response to FW	Email
18.2.21	Armidale Local Aboriginal Land Council	TF received response confirming Armidale participation in the fieldwork. <i>"Morning Taylor, Thanks for the call the other day regarding the invitation for the Armidale LALC to participate in the scheduled field work for the Winterbourne Wind Farm, Walcha NSW on Wednesday 24th February 2021 from 8:00am. Please be advised that the Armidale LALC would like to appoint Colin Ahoy Jnr as the sites officer to carry out the fieldwork for this project who I have included in the email."</i>	Email
23.2.21	Iwatta Aboriginal Corporation	Steven updated site officer information	email
24.2.21	Nunawanna Aboriginal Corporation	RH received invoice	email

Aboriginal Consultation Log			
Date	Organisation	Comment	Method
26.2.21	Iwatta Aboriginal Corporation	RH received invoice	email
26.2.21	Nunawanna Aboriginal Corporation	BF sent Colin an emailing regarding cultural values discussion	email
26.2.21	Iwatta Aboriginal Corporation	BF sent email to Steven regarding cultural values discussion	email
1.3.21	Iwatta Aboriginal Corporation	Steven scheduled a 3:30 pm (2-03-21) phone call to discuss cultural values	email
1.3.21	Iwatta Aboriginal Corporation	BF confirmed phone call schedule	email
2.3.21	Nunawanna Aboriginal Corporation	BF phoned to discuss cultural values Colin asked that certain things he had told OzArk be redacted from the public report. OzArk agreed.	Phone
2.3.21	Iwatta Aboriginal Corporation	BF phoned Steven to see if still available for scheduled 3:30pm call. Left msg to see if he wants to reschedule	Phone
4.3.21	Amaroo Local Aboriginal Land Council	RH received invoice	Email
19.11.21	Amaroo Local Aboriginal Land Council	CB emailed Stage 4 Draft report and letter exp 17.12.21	email
19.11.21	Armidale Local Aboriginal Land Council	CB emailed Stage 4 Draft report and letter exp 17.12.21	email
19.11.21	Nunawanna Aboriginal Corporation	CB emailed Stage 4 Draft report and letter exp 17.12.21	email
19.11.21	Larissa Ahoy	CB emailed Stage 4 Draft report and letter exp 17.12.21	email
19.11.21	Iwatta Aboriginal Corporation	CB emailed Stage 4 Draft report and letter exp 17.12.21	email
25.11.21	Amaroo Local Aboriginal Land Council	CB received email requesting hard copy of Stage 4 draft report - sent 25.11.21	email


Appendix 1 Figure 2: Advertisement placed in the *Daily Leader*.

## **Expression of Interest Cultural Heritage Management**

OzArk Environment & Heritage has been engaged by WinterbourneWind Pty Ltd to seek registration of Aboriginal groups or individuals who are interested in being consulted about an Aboriginal Cultural Heritage Assessment and potential Aboriginal Heritage Impact Permit application (AHIP) for the proposed Winterbourne Wind Farm, located to the north and east of Walcha in the Northern Tablelands of New South Wales.

This consultation will assist WinterbourneWind Pty Ltd to prepare an Aboriginal Cultural Heritage Assessment including the potential preparation of an AHIP application, and the Secretary of the Department of Planning, Industry and Environment in their consideration and determination of the project.

If you hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects or places in the proposed Winterbourne Wind Farm study area, please register your interest. We will continue to consult with this group.

**Registrations can be made by **

**OzArk EHM**

**PO Box 2069**

**Dubbo NSW 2830**

 **rebecca@ozarkehm.com.au**

**or by  OzArk on 02 6882 0118.**

**All submissions should be received no later than Wednesday 13th May 2020.**

Appendix 1 Figure 3: Example of Stage 1 agency letter.



**OzArk Environment & Heritage**

<p>Dubbo</p> <p>Queanbeyan</p> <p>Newcastle</p>	<p>T: 02 6882 0118</p> <p><a href="mailto:enquiry@ozarkehm.com.au">enquiry@ozarkehm.com.au</a></p> <p><a href="http://www.ozarkehm.com.au">www.ozarkehm.com.au</a></p>	<p>ABN 59 104 582 354</p> <p>145 Wingewarra St</p> <p>PO Box 2069</p> <p>DUBBO NSW 2830</p>
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27 April 2020

Members  
 Armidale Local Aboriginal Land Council  
 PO Box 1837  
 ARMIDALE NSW 2350  
[ceo@alalc.org.au](mailto:ceo@alalc.org.au)

***ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED  
 WINTERBOURNE WIND FARM, NORTHERN TABLELANDS NSW.***

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Dear Members,

OzArk Environment & Heritage (OzArk) have been engaged by WinterbourneWind Pty Ltd (WinterbourneWind) to undertake Aboriginal community consultation as per the '*Aboriginal cultural heritage consultation requirements for proponents 2010*'.


WinterbourneWind are proposing to construct a wind farm to the north and east of Walcha in the Northern Tablelands of New South Wales (**Figure 1**).

We are therefore seeking Expressions of Interest from relevant Aboriginal groups and individuals in the local area, to form a consultation group. This consultation is to assist OzArk and WinterbourneWind in preparation of the Aboriginal Cultural Heritage Assessment and potential AHIP application, and to assist the Secretary of the Department of Planning, Industry and Environment in their consideration and determination of the Project.

If your organisation can recommend and provide contact details for any known Aboriginal groups or individuals with cultural knowledge relevant to determining the impacts to the cultural significance of the above-mentioned project, please advise our office. We would appreciate it if you could provide any feedback regarding these Aboriginal stakeholder groups by **Monday 11<sup>th</sup> May 2020**, or sooner if possible.

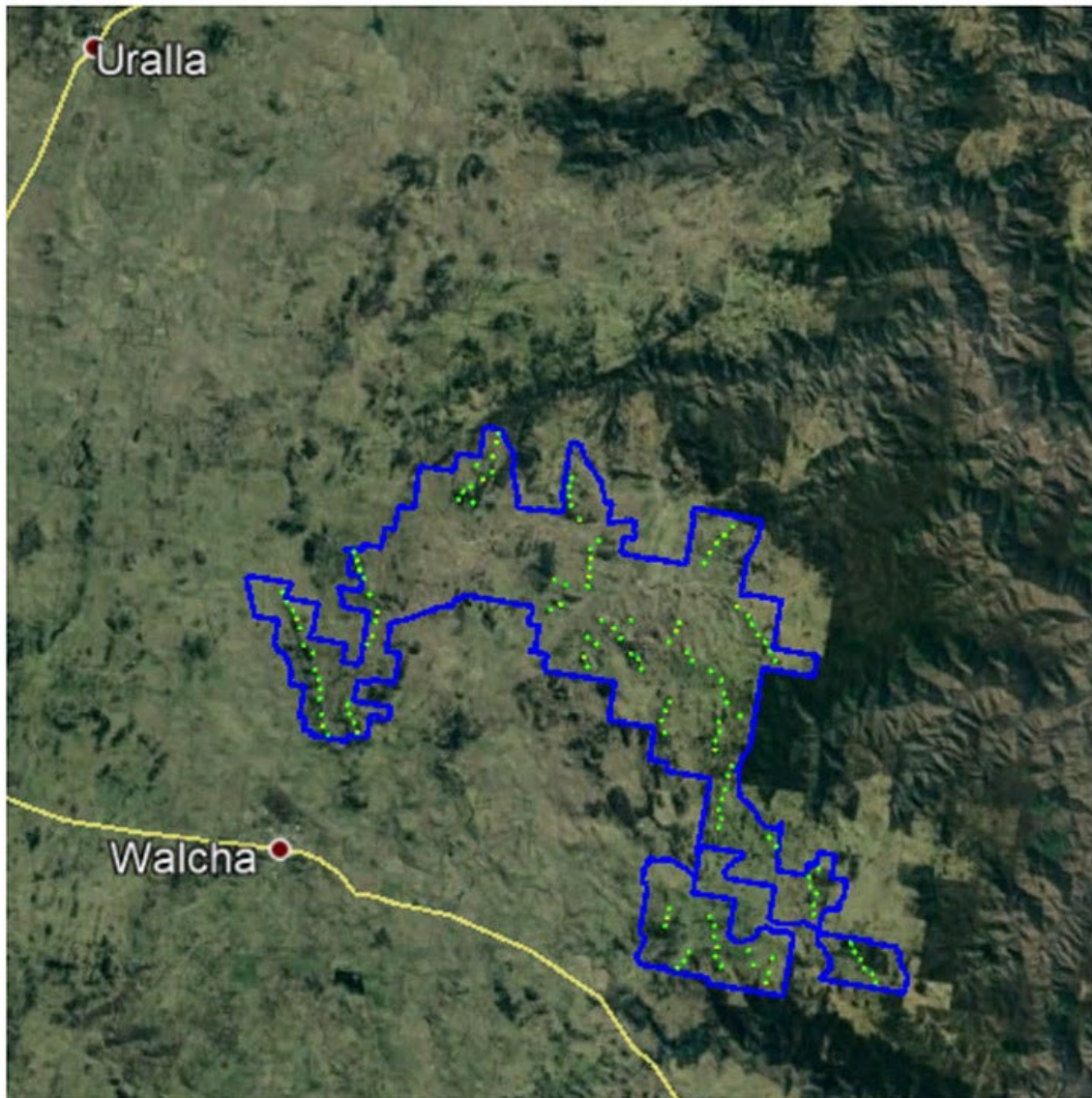
Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the project.

Kind regards,



Rebecca Hardman  
**Community Liaison & Administration**

FIGURE 1. PROJECT AREA (BLUE) AND PROPOSED LOCATION OF WIND TURBINES (GREEN)



Appendix 1 Figure 4: Example of Stage 1 community letter.

	<b>OzArk Environment &amp; Heritage</b> Dubbo T: 02 6882 0118 Queanbeyan enquiry@ozarkehm.com.au Newcastle www.ozarkehm.com.au	ABN 59 104 582 354 145 Wingewarra St PO Box 2069 DUBBO NSW 2830
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12th May 2020

[Redacted]  
 [Redacted]  
 [Redacted]  
 [Redacted]

**ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE PROPOSED WINTERBOURNE WIND FARM, NORTHERN TABLELANDS NSW.**

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[Redacted]  
 [Redacted]

OzArk Environment & Heritage is undertaking Aboriginal community consultation as per the "Aboriginal cultural heritage consultation requirements for proponents 2010", on behalf of the proponent; WinterbourneWind Pty Ltd (WinterbourneWind).

WinterbourneWind intends to seek development consent under Part 4 of the *Environmental Planning and Assessment Act 1979 (EP&A)* to construct a wind farm to the north and east of Walcha located in the Walcha and Uralla local government area, Northern Tablelands of New South Wales (**Figure 1**).

Accordingly, we are seeking Expressions of Interest from relevant Aboriginal groups and individuals in the area, to form a consultation group. This consultation is to assist OzArk and WinterbourneWind in preparation of the Aboriginal Cultural Heritage Assessment and potential AHIP application, and to assist the Secretary of the Department of Planning, Industry and Environment in their consideration and determination of the Project.

If you hold cultural knowledge relevant to determining the impacts to the cultural significance of this project area, please register your interest by contacting our office. The closing date for expressions of interest is **Thursday 28<sup>th</sup> May 2020**.

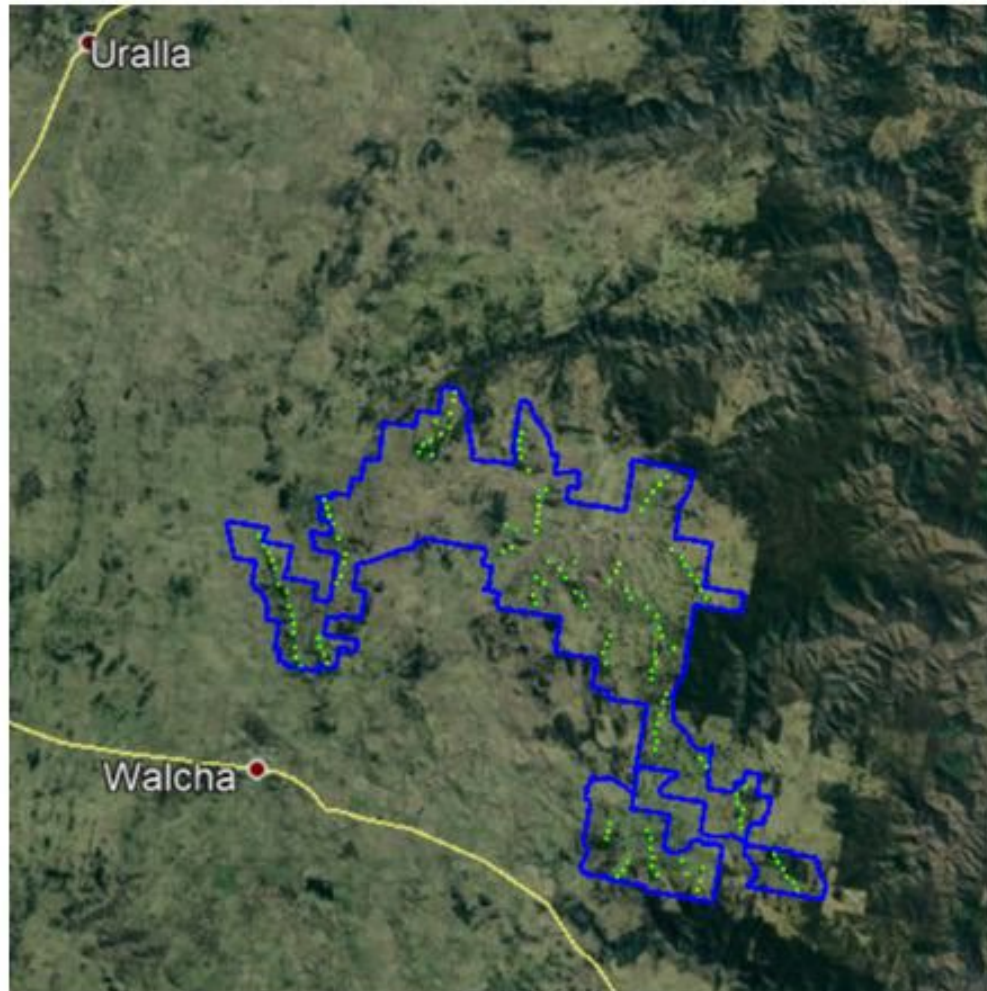
If you wish to register interest it is noteworthy that as per the DPIE guidelines we are required to provide your details to the DPIE unless advised, you do not wish your details to be released.

Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the project.

Kind regards,

  
 Rebecca Hardman  
 Consultation Officer


Figure 1: PROJECT AREA (BLUE) AND PROPOSED LOCATION OF WIND TURBINES (GREEN)

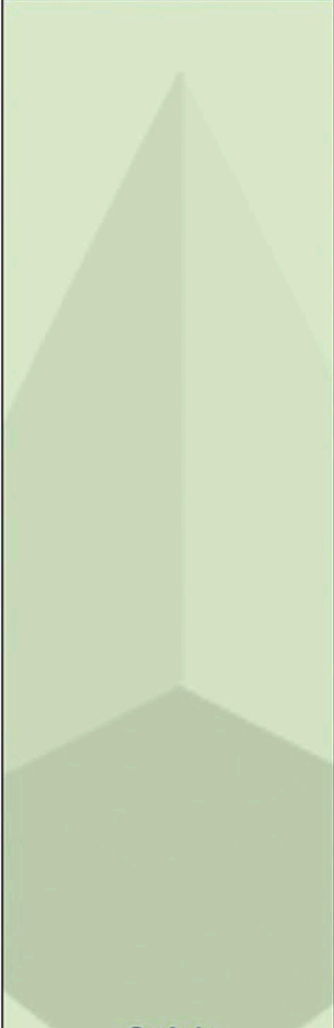



Appendix 1 Figure 5: Example of Stage 2 cover letter.



Appendix 1 Figure 6: Assessment methodology.





**ABORIGINAL CULTURAL HERITAGE SURVEY METHODOLOGY**

**WINTERBOURNE WIND FARM**

WALCHA COUNCIL AND URALLA SHIRE COUNCIL LOCAL GOVERNMENT  
AREAS

JUNE 2020

Report prepared by  
OzArk Environment & Heritage  
for WinterbourneWind Pty Ltd

**OzArk  
Environment & Heritage**

145 Wingewarra St  
(PO Box 2069)  
Dubbo NSW 2830  
Phone: (02) 6882 0118  
Fax: (02) 6882 0630  
[enquiry@ozarkehm.com.au](mailto:enquiry@ozarkehm.com.au)  
[www.ozarkehm.com.au](http://www.ozarkehm.com.au)

## DOCUMENT CONTROLS

Proponent	WinterbourneWind Pty Ltd	
Client		
Document Description	<i>Aboriginal Cultural Heritage Survey Methodology. Winterbourne Wind Farm, Walcha Council and Uralla Shire Council Local Government Areas.</i>	
File Location	OzArk Job No.	
► Vestas ► Winterbourne Windfarm Walcha April 2020 ► Survey methodology	2645	
Document Status <b>V3.0 FINAL</b>	Date 20 July 2020	
Draft V1.0 Author to editor OzArk	V1.0 BC author 13/6/20	
Draft V2.0 Draft report release to client	V2.0. OzArk edit 14/6/20 V2.1 BC incorporates client edits 16/6/20 V2.2 BC incorporates client comments 18/6/20	
FINAL V3.0 = Final report	V3.0 BC finalises 20/7/20	
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### **Acknowledgement**

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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## 1 INTRODUCTION

OzArk Environment & Heritage (OzArk) has been engaged by WinterbourneWind Pty Ltd (the proponent) to prepare a survey methodology for the proposed Winterbourne Wind Farm (the project). This methodology is in accordance with Stage 3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs; DECCW 2010). The project information provided here also complies with Stage 2 of the ACHCRs.

### 1.1 PROJECT BOUNDARY

The project is situated approximately 425 kilometres (km) (by road) from Sydney and 180 km northwest of Port Macquarie. It is located approximately 75 km northeast of Tamworth and 35 km south-southwest of Armidale within both the Walcha Council and Uralla Shire Council Local Government Areas (LGAs) (**Figure 1-1**).

The project area consists of the Project Boundary and the proposed ETL. The Project Boundary includes the main area of project activity and all the proposed turbine locations.

The Project Boundary is approximately 24,400 ha hectares (ha) in size and is at an elevation of approximately 1,100 to 1,300 metres (m) above sea level, comprised of hills and ridgelines rising out of the Walcha Plateau. Included in the project area is a proposed 30 km 330kV overhead electricity transmission line (ETL) that extends from the Project Boundary to a proposed switchyard 7 km south of the township of Uralla. There is an area of approximately 102 ha that is included in the project to allow for the construction of the proposed switchyard (**Figure 1-2** and **Figure 1-3**).

The project is proposed to consist of up to 126 wind turbine generator (turbine) locations with a combined maximum installed capacity of 700 megawatts (MW). A maximum tip height of 250 m is proposed.

### 1.2 PROJECT OVERVIEW

The project consists of the following proposed infrastructure within the Project Boundary:

- Up to 126 wind turbines
  - Three blades mounted on a tubular steel tower, not exceeding 250 m in height
- An internal electrical reticulation network (both overhead and underground)
- Three on-site substations
- New and upgraded access roads
- Temporary construction facilities (including concrete batching plants)
- Operation and maintenance buildings.

External to the Project Boundary are:

- 30 km of new 330kV ETL running through the Project Boundary and continuing to the northwest. This new ETL would connect to the existing grid network operated by TransGrid
- A new switchyard which would be constructed approximately 7 km south of Uralla, NSW. This switchyard location has also been proposed by WalchaEnergy as part of its Salisbury Solar Farm project and has previously been referred to as the "Uralla Hub".

Large-scale battery storage is also proposed for the project to support stabilising the supply of electricity to the National Electricity Market (NEM).

### 1.3 SURVEY BOUNDARY

The Survey Boundary comprises all land that will be impacted by the project components (**Section 1.2**) as well as a buffer to allow for some relocation of infrastructure. The Survey Boundary includes:

- A 100 m buffer around all proposed turbine locations
- A 20 m buffer on each side of proposed new access tracks
- A 30 m buffer on each side of the ETL centre line
- A construction buffer around each proposed substation location.

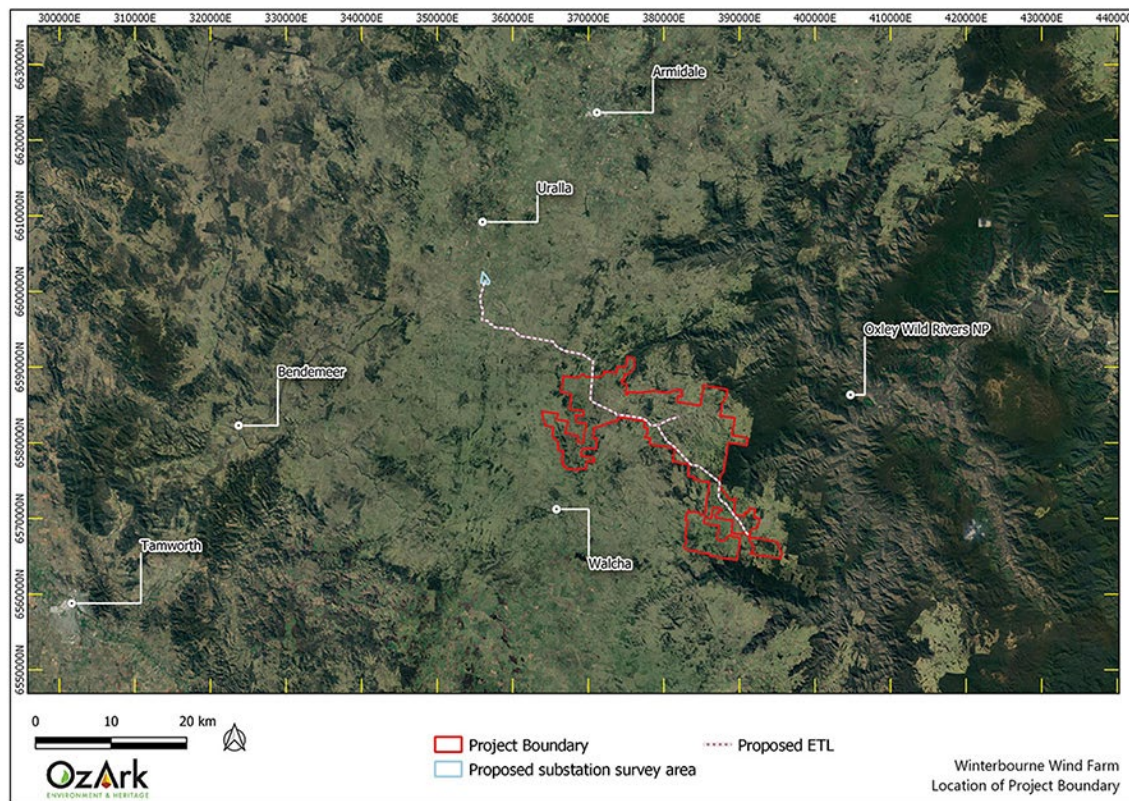
In addition, there are a number of existing, unsealed roads within the Project Boundary that may require upgrade to allow the transport of project infrastructure during construction. These existing roads will be included in the Survey Boundary where they exist within the Project Boundary.

An example of the Survey Boundary within the Project Boundary is shown on **Figure 1-4**.

Not included in the Survey Boundary are a number of items where the precise location of impacts is not presently known and will be developed during the environmental assessment for the Environmental Impact Statement (EIS). These areas may require survey at a later date when the exact locations are proposed:

- Any areas on existing secondary roads and highways that may require upgrade to allow the transport of project infrastructure during construction
- Any areas on existing unsealed roads outside of the Project Boundary that require upgrade to allow the transport of project infrastructure during construction
- Access tracks to allow the construction and maintenance of the 330kV ETL
- Other project components such as battery storage, temporary construction facilities, operation and maintenance buildings, laydown areas, and the internal reticulation system. It is noted that the electrical internal reticulation system will generally follow the access roads, and if this is the case, it will be within the Survey Boundary.

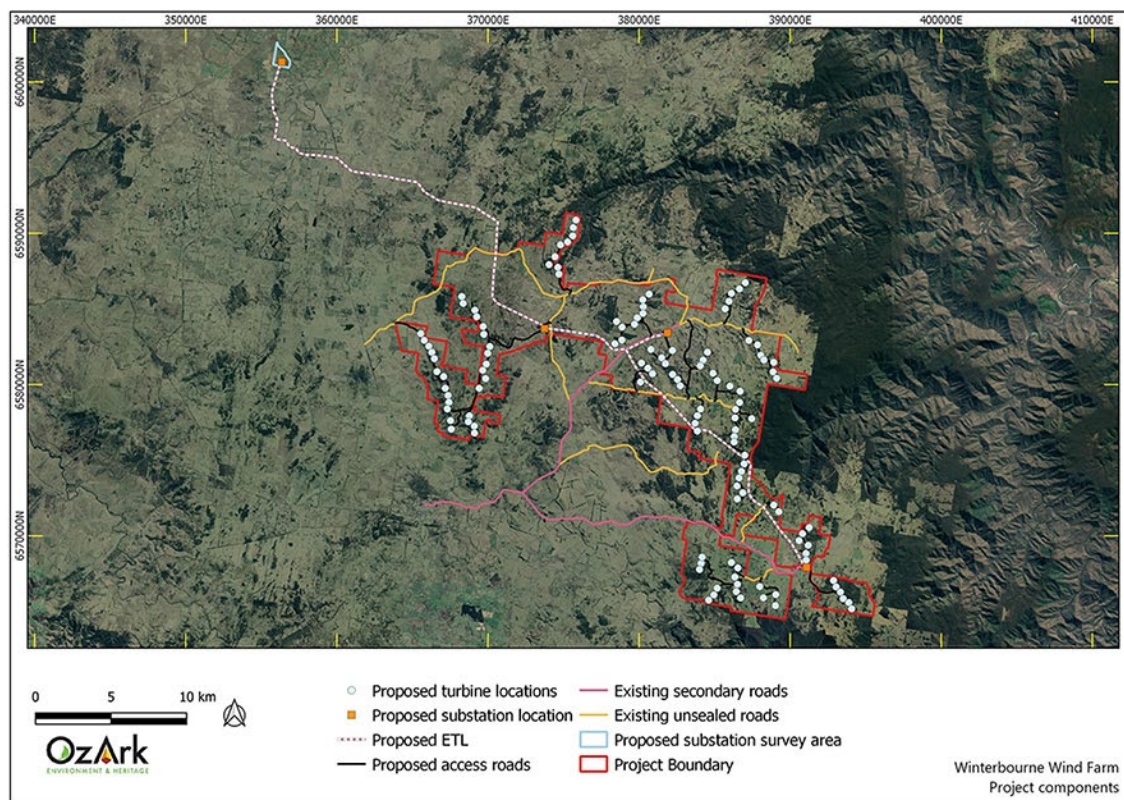
Figure 1-1. Location of the Project Boundary.



Aboriginal Cultural Heritage Survey Methodology. Winterbourne Windfarm, Walcha, NSW

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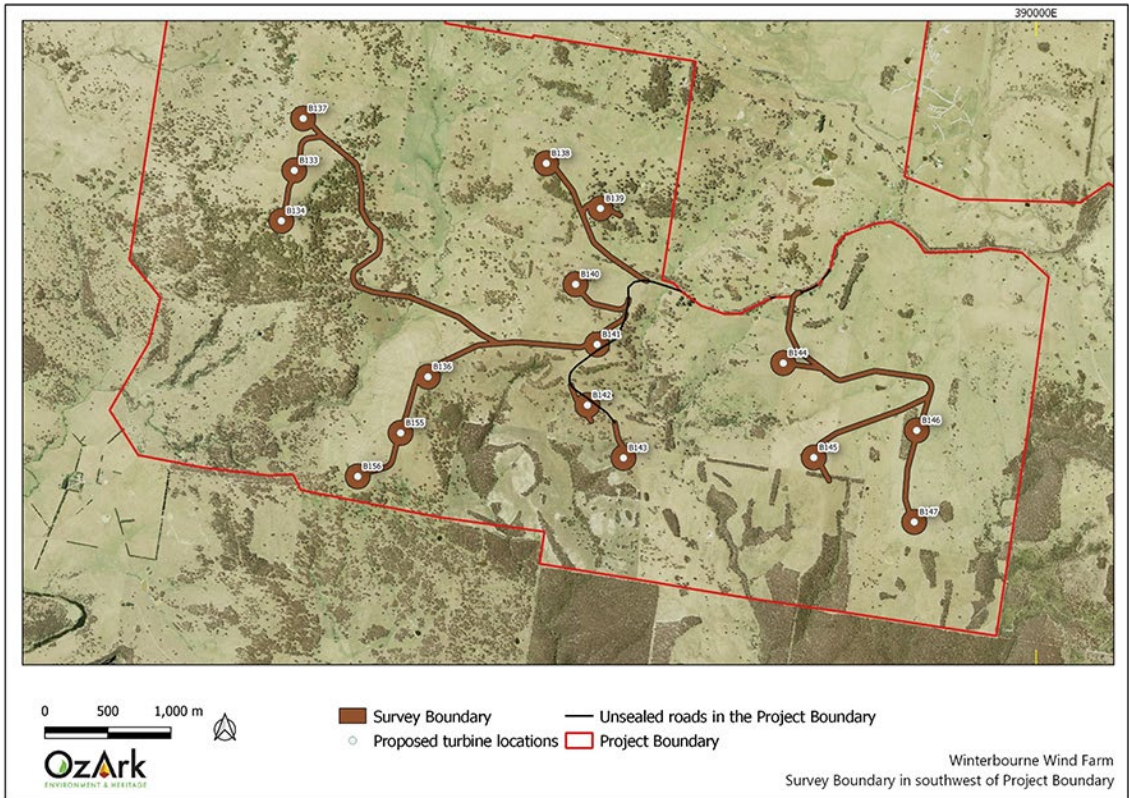
Figure 1-2. Indicative project component locations.



Aboriginal Cultural Heritage Survey Methodology. Winterbourne Windfarm, Walcha, NSW

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Figure 1-3. Example of the Survey Boundary within the Project Boundary.



#### 1.4 CONSULTATION ON THIS METHODOLOGY

Consultation for this proposal has followed the guidelines established in the *Aboriginal cultural heritage consultation requirements for proponents* (ACHCRs, DECCW 2010) whereby an advertisement was placed in the local press and relevant agencies were contacted to ascertain if they were aware of groups or individuals who may have cultural knowledge of the region containing the project.

On 29 April 2020 an advertisement was placed in the 'Northern Daily Leader' requesting expressions of interest in being consulted about the project. In addition, the following agencies were contacted to identify potential stakeholders for the area: Biodiversity and Conservation Division (BCD) of the Department of Planning, Industry and Environment; Amaroo Local Aboriginal Land Council (LALC); Armidale LALC; Office of The Registrar, ALRA; National Native Title Tribunal; NTSCORP; Walcha Council; Uralla Shire Council; and the Northern Tablelands Local Land Services

As a result, the Amaroo LALC and the Armidale LALC registered to be consulted about the project. These groups constitute the Registered Aboriginal Parties (RAPs) for the project.

The Project Boundary is largely within the boundary of the Amaroo LALC, while the 330kV ETL and Uralla switching yard is within the boundary of the Armidale LALC.

#### 1.5 LANDSCAPE CHARACTERISTICS OF THE PROJECT BOUNDARY

Pasture with open and isolated trees partially contained between low rounded hills and crests with stands of timber characterise the Project Boundary. Timbered hills are present in the Project Boundary but are infrequent as most of the landscape is cleared (**Figure 1-5**).

Multiple tributaries and creek lines occur within open pasture, valleys and gullies across the Project Boundary. There are no major waterways with the Apsley River to the south of the Project Boundary being the closest major water source. Notwithstanding, the Project Boundary is well watered with a number of named creeks that would hold permanent or semi-permanent water currently and probably held water more permanently before the hydrological changes brought about by agricultural activity in the modern period.

Soils within the Walcha Plateau subregion generally consist of mellow and harsh texture contrast soils on sediments and granite, red and brown to black structured loams on basalt. Soils can be thin in places and are generally quite stony.

The Walcha Plateau subregion in which the Project Boundary is located supports diverse vegetation, which varies with landform and elevation. Vegetation includes Snow Gum, Black Sallee, Mountain Gum, Silver-top Stringybark, and New England Blackbutt. Cool temperate rainforest elements are noted in moist, sheltered gullies. The subregion supports a number of fauna species suitable for subsistence by Aboriginal people in the past, such as wallabies,

possums, various species of river fish, and many native birds. The region is home to several threatened native fauna species, including the regent honeyeater.

The climate is generally temperate, characterised by warm summers with uniform rainfall during the summer. Winters in the New England Tablelands can be harsh, with frosts and cool conditions. It is therefore possible that people used the area seasonally when climatic conditions were more favourable (NSW DPIE 2019).

The majority of the Project Boundary been modified by historical land use practices and past disturbances associated with land clearing, manual and machine rock-picking, cropping and intensive livestock grazing. Although the entire Project Boundary has been subject to widespread clearing, there are a number of mature trees that have survived since colonial settlement for use as shade for livestock. The properties that make up the Project Boundary are currently primarily used for sheep grazing for production of wool and lambs, with some cattle grazing for beef production. These paddocks are still subject to cropping for pasture improvement and can be seen in their various stages of crop rotation.

Areas with significant outcropping bedrock have also been historically cleared of vegetation; however, depending on the nature and extent of bedrock, are likely to have been avoided from repeated cropping due to inaccessibility from farming machinery.

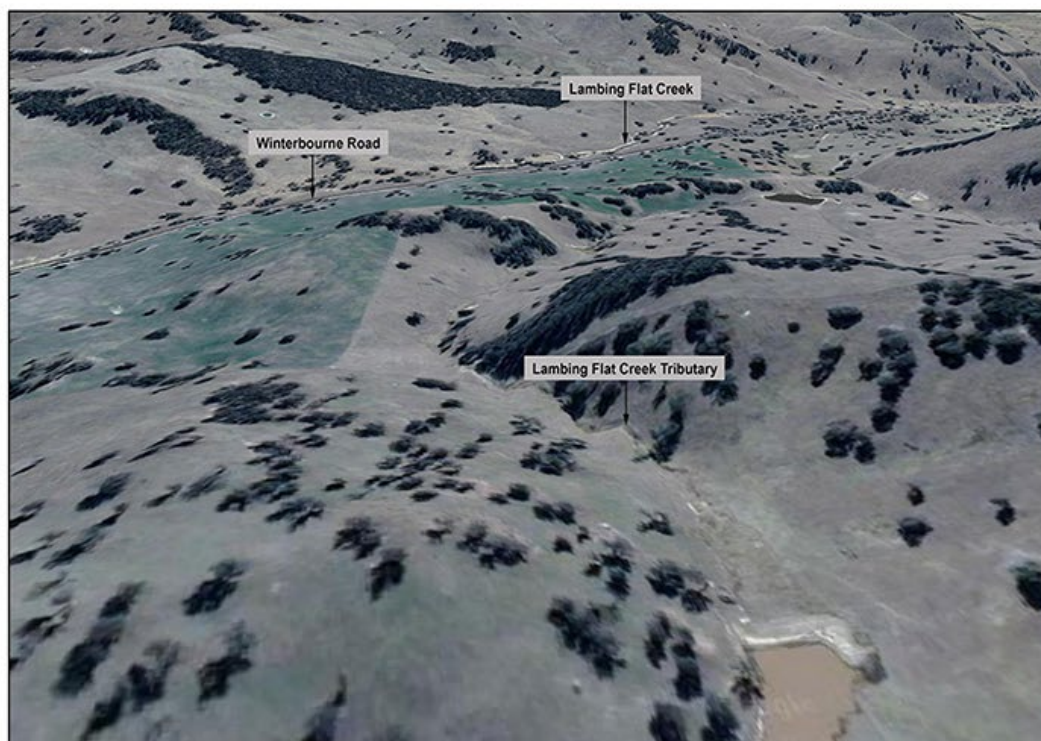
**Figure 1-4. Digital elevation model showing the typical topography of the Project Boundary.**



Figure 1-5. Digital elevation model showing a typical named waterway in the Project Boundary.



Figure 1-6. Digital elevation model showing a typical unnamed waterway in the Project Boundary.



## 2 ARCHAEOLOGICAL CONTEXT

### 2.1 ABORIGINAL PEOPLE OF THE SURVEY BOUNDARY

The Survey Boundary is situated within the traditional lands of the Anaiwan, Amaroo, and Dunghutti peoples, who have lived in the region for more than 6,000 years.

The Survey Boundary falls within the Aboriginal language group boundary of the *Nganyaywana*; also known as the *Anaiwan*. Norman Tindale (1974) recorded the location of the Anaiwan as “New England tableland from Guyra and Ben Lomond south to Uralla and Moombie Range; northwest to Tingha; at Bendemeer and Armidale”. *The Encyclopaedia of Aboriginal Australia* (AIATSIS) follows Tindale’s boundary but classifies the language spoken as *Nganyaywana* which was coined by linguist Terry Crowley (EMM 2018: 27). Crowley identified that the *Nganyaywana* had two dialects: *Himberong* spoken to the south in the Walcha district and *Iuwon* spoken in the areas of Armidale, Uralla and Bundarra. As the Survey Boundary extends through both these areas, it is likely that people in the Survey Boundary spoke both dialects of the *Nganyaywana*.

Further to the southwest of the Project Boundary the *Dunghutti* language is still spoken in the area, and is being revitalised by the Amaroo LALC, who are conducting language classes in Walcha and surrounds.

### 2.2 REGIONAL ARCHAEOLOGICAL CONTEXT

#### 2.2.1 Introduction

Academic-based archaeological investigations in the New England Tablelands (Tablelands) dating back to the 1960s have provided a wealth of high-level information that has attempted to link large datasets of sites together and create meaningful Aboriginal occupational models. As such, information about the regional archaeological character of the Tablelands has an advantage over other parts of NSW in areas where there are numerous consultancy reports but no overarching studies tying the data together.

These archaeological studies of the Tablelands are closely associated with the University of New England (UNE) along with archaeological consultancy investigations in response to proposed developments across the region. The academic studies in particular have led to the development of regional Aboriginal occupation models particularly from the mid-Holocene onwards.

Initial archaeological research by UNE indicated that Aboriginal occupation of the Tablelands was seasonal and transitory. This was argued to be because of the cold climate during winter and the associated lack of resources for subsistence (Bowdler 1981). In the 1970s, McBryde emphasised the harshness of the Tablelands, suggesting that it would have been a major obstacle to year-round occupation, resulting in a sparse distribution of sites in this zone compared with other more temperate climates. Some argued that instead, the Tablelands were mainly used for ceremonial

purposes which was supported by the rich archaeological record of Bora rings, art sites, stone arrangements and carved trees along with Aboriginal knowledge of intangible sites (Flood 2010: 238–239).

The initial hypotheses of seasonal occupation in the Tablelands were challenged as a result of further research at UNE. In a major study, Luke Godwin argued that the Tablelands were not abandoned in winter at all but occupied all year round by small mobile groups. His evidence based on ethno-history, climate and surface archaeology suggests that the cold winter climate of the Tablelands was not a barrier to year-round settlement (EMM 2018: 35). Goodwin identified that the Tablelands had varying resources zones of woodland, grassland and wetlands.

A recent study by Beck, Haworth and Appleton published in 2015 built upon the theory of year-round settlement, with a specific focus on the resources of lagoons in the upland wetlands (EMM 2018: 36). The researchers found that during the later Holocene, Aboriginal occupation in this area became more visible, including a high number of ceremonial sites in association with areas of greatest lagoon concentration. They hypothesise that the drier, more uncertain climate of the late Holocene would have concentrated game around larger lagoons which became the focus of consumption and exchange for Aboriginal people. They argue that the concentration of resources would have supported larger numbers of people often associated with ceremonial activity.

The upland wetlands study involved archaeological excavations at a number of lagoons including the nearby Dangars Lagoon, Racecourse Lagoon and Barleyfields Lagoon. Although the results are yet to be published, EMM (2018) contacted John Appleton for a summary of the results. Appleton noted the paucity of results at Dangars Lagoon where only two to three artefacts were identified. Appleton identified that the historical modification of the lagoon and not knowing the true prehistoric water level may have affected the results (EMM 2018: 36). The most informative results were gathered from Barleyfields Lagoon, where optically stimulated luminescence (OSL) dating has identified dates of possibly early Holocene occupation, which are currently the earliest dates on the Tablelands (EMM 2018: 36). The excavation also extended to the south of Barleyfields Lagoon into a quarry of silcrete where a number of subsurface silcrete artefacts were identified.

By distinguishing certain features of stone tools that are common to all sites, the dating of Aboriginal occupation in the Tablelands can be achieved within a rough estimate. The heavy core and flake scrapers (40,000–10,000 years ago) of the 'Australian Core Tool and Scraper Tradition' have been associated with making wooden tools such as boomerangs, spears, clubs and throwing sticks. Tools of the newer industries (10,000–5,000 years ago) are relatively small in size and are defined by shape as points, adzes and backed (blunted) blades and are known as the 'Small Tool and Scraper Tradition'. These smaller tools are found in conjunction with chisels and axes. The oldest examples of these stone tools come from the New England region (Binns

and McBryde 1972, McBryde 1974). There was a further change in technology (1,000–400 years ago) with a loss of some items from the range (backed blades and finely retouched [re-sharpened] blades) were replaced with simple flakes, bipolar pieces and ground edge axes and a greater use of shell, bone and glass for tool making.

From the available evidence of stone tool typology, therefore, it would appear that the Tablelands were increasingly occupied during the Holocene but that earlier dates are infrequent and often unreliable. Archaeological and linguistic evidence suggests that the Tablelands were most intensively occupied from around 4000 years ago (EMM 2018: 36). This is based on the finds of surface or near-surface artefacts, with very little found at greater depth. The oldest known Aboriginal site (c 4300 years old) is near Bendemeer on the southern edge of the Tablelands (EMM 2018: 36) (although this may change based on recent findings at Barleyfields Lagoon noted above).

### **2.2.2 Previous assessments within or near the Project Boundary**

A reasonable amount of archaeological work has been undertaken in the Tablelands and consequently only a brief regional archaeological context that focuses on work in similar landforms to the Project Boundary is provided here.

The results of these investigations provide an archaeological context for the current assessment and were used in the preparation of a predictive model of Aboriginal site location (**Section 3**).

Carved trees, ceremonial Bora grounds and art sites have all been identified within the Tablelands and indicate the original inhabitants' important spiritual and physical connection to the landscape. Other surviving material remains include seed grinding and axe grinding grooves in rock slabs, cooking areas and stone artefact scatters representing open camp sites. Studies identify that Aboriginal occupation was patterned, not random. Activities in the landscape were focused at places where people lived and worked (quarries, camp sites and ceremonial sites), with a preference for areas with clustered resources, such as lagoons, and also along tracks and pathways which were followed for ritual and secular purposes. Transitory areas feature fewer archaeological traces, sometimes only marked by isolated or low-density stone artefact scatters.

Stone quarry and grinding groove sites are site types that represent more utilitarian, even industrial practices. Stone quarries are relatively common in the Tablelands and range from significant quarries such as that at Moore Creek, to smaller but significant working areas on isolated outcrops such as the Salisbury Court axe quarry site (AHIMS #21-4-0004 1.2 km east of the ETL route). The Moore Creek quarry site is in the Tamworth LGA approximately 62 km south-southwest of the Project Boundary on a ridge approximately 300 m above a valley and features a large outcrop of andesitic greywacke.

McBryde noted in her 1974 publication that suitable rock for grinding grooves is rare across the Tablelands, and therefore grinding groove sites often comprise small portable sandstone blocks (McBryde 1974: 159). She noted that the closest grooves were near Walcha at the time. However, since then, a number of grinding groove sites have been identified in the local area. A number of these sites are noted to be on outcropping granite bedrock, but there is some ambiguity in the geological terminology. EMM 2018 postulate that areas of suitably coarse outcropping silcrete have been used for grinding grooves which may sometimes be mistaken for granite.

In the later Holocene, Aboriginal occupation in upland areas became more visible in the archaeological record, including a number of ceremonial sites in conjunction with lagoons.

Stone arrangements in various groupings such as cairns, circles, lines and corridors have also been identified although little is known about them. McBryde identified stone cairn sites at a number of locations across north-eastern NSW, which were often grouped along crests, ridges and knolls (McBryde 1974: 31–33). The study noted that stone arrangements on the Tablelands did not reveal any significant landscape patterning *“apart perhaps from the preference for elevated sites with a good outlook”*. One site at Black Mountain (approximately 56 km north of the Project Boundary) was known as part of a Bora ground and featured 17 large heaps of stones on a *“slight hollow on the top of a peak, one of the highest points in the area”* (McBryde 1974: 41).

Bora rings in the Tablelands have been identified as circular cleared areas (typically 10–15 m in diameter) edged with a low bank of earth up to 1 m in height and nearly 2 m wide (McBryde 1974: 52). Literary accounts suggest that Bora grounds often comprised two circles joined by a pathway, often flanked by ground drawings of human and animal figures, and carvings of geometric designs in nearby trees. McBryde listed 26 Bora sites known at the time in the Tablelands (McBryde 1974: 59–62).

Archaeological evidence of burials has been identified in rock shelters but also as open sites marked by earth mounds, piles of stones and nearby carved trees (McBryde 1974: 136–153).

#### **2.2.2.1 EMM 2018 New England Solar Farm**

A recent investigation in similar landforms to those of the Survey Boundary was for the New England Solar Farm by EMM Consulting (EMM) in 2018. This investigation was conducted approximately 25 km northwest of the Project Boundary.

Through background research and landscape analysis, EMM predicted that the study area had the potential to feature a range of Aboriginal sites including stone artefacts, scarred trees, quarries and grinding grooves. Based on a search of the Aboriginal Heritage Information Management System (AHIMS) register, no Aboriginal sites had previously been recorded in the EMM study area.

EMM conducted a targeted archaeological survey over 19 days in mid-2018 with the support of RAP representatives.

The survey focused on the proposed development footprint (i.e. where project infrastructure was proposed) and on areas likely to feature Aboriginal sites, but also extensively sampled areas and landscapes less likely to feature sites to test the survey predictions. The EMM survey coverage results indicated that the ground surface visibility conditions during the survey were generally effective to characterise the distribution of archaeological sites across their survey area.

The EMM survey identified 95 Aboriginal sites during the 19 days of archaeological field survey. Site recordings from EMM 2018 are shown in **Table 2-1**. As demonstrated by this table, artefact sites comprised most of the sites recorded by EMM as artefact scatters and isolated finds (with/without potential archaeological deposit [PAD]) were 74 per cent of the recordings.

**Table 2-1. Sites recorded by EMM 2018.**

Site type	Number of sites recorded	Percentage of total
Isolated find	43	45
Artefact scatter	16	17
Scarred tree	13	14
Artefact scatter with potential archaeological deposit (PAD)	9	9
Quarry, artefact scatter, PAD	5	5
Grinding groove, artefact scatter, PAD	4	4
Isolated find, PAD	3	3
Grinding groove	1	1
Grinding groove, PAD	1	1

EMM identified Aboriginal sites in each of the landform classes defined for the survey. The highest frequency of sites was identified on crests (57%), followed by hill slopes (30%), flats (6%) and watercourses (6%). Notably, all site type features are represented on crest landforms and contain the most archaeologically significant sites, including all of the stone quarry sites, all open stone artefact sites attributed with PAD and the most significant grinding groove site (NE09).

Sites were identified an average of approximately 218 m from 1st or 2nd order streams, 960 m from 3rd order streams and 1,750 m from 4th order and above streams, with the minimum distance being 3 m and the maximum distance being 764 m. The median distance from mapped watercourses was 166 m. The considerable average distance from higher order streams indicates that lower order streams (particularly 2nd order) were capable of supporting low intensity camping and resource gathering activities.

Approximately half of the sites identified on hill slope landforms were isolated artefacts which are largely attributed to 'background scatter' caused by isolated events or accidental discard. Over half of the scarred trees identified were on hill slope landforms.

Three of the six grinding groove sites identified were on hill slope landforms in areas with outcropping silcrete bedrock. Most of the sites identified on flats and watercourses were isolated artefacts but also included isolated incidences of scarred trees and artefact scatters.

Stone artefact scatters (including those with PAD) were mostly identified on crest landforms (n=19, or 76%). The remaining artefact scatters were rare and occurred on hill slopes (n=5) and on a watercourse in one instance (NE44). Isolated finds were more widely distributed throughout the landscape, whereby only half occurred on crests (n=23), followed by hill slopes (n=14), flats (n=5) and watercourses (n=4). The wider representation of isolated finds suggests they are generally a product of more transitory occupation, except where on a crest considered to have PAD. The artefact scatters (n=9) and isolated artefacts (n=3) associated with PAD are mainly on crests defined by outcropping granite and/or silcrete boulders which has acted to protect these sites from considerable disturbance. Artefacts were commonly identified amongst the outcropping boulders and noticeably discontinued outside of the crest areas, even if ground surface visibility levels remained favourable for artefact detection.

A total of 238 surface artefacts were recorded during the survey. Artefact frequencies ranged from 1 to 19 across the sites that featured stone artefacts. The average artefact frequency per site was low at only 2.6, which is noted by EMM as being not surprising considering that 46 of the 80 sites that featured stone artefacts were isolated finds.

The largest percentage of artefacts is classed as complete flakes (42%). Fragments of broken flakes including proximal, medial and distal portions, as well as flaked pieces and longitudinally split flakes make up a further 14% of the assemblage. Notably, a total of 75 cores were identified, making up 31% of the assemblage. EMM notes that this is a very high proportion when compared to typical artefact assemblages and is a strong indicator that much of the raw material for stone tool manufacture was sourced locally.

A total of 12 retouched flakes were identified (8%), eight of which were classed as retouched axe blanks. Five of the axe blanks were identified as basalt and three were identified as metamorphosed greywacke. Notably, none of the axes showed evidence of grinding and all were bifacially flaked. The remaining four retouched flakes were all of silcrete and included two scrapers and two flakes with retouch along their lateral margins.

Silcrete was the predominant artefact raw material (n=112). A total of 52 chert artefacts were identified, and over half of these were flakes (n=31). Material labelled as 'volcanic' included basalts and metabasalts. Quartzite made up only 5% of the assemblage.

Six grinding groove sites were identified during the survey. All of the grinding groove sites were identified in areas of outcropping coarse silcrete bedrock resembling granular quartzite.

Grinding groove sites were identified within an elevation range between 1,030-1,080 m above sea level. This closely correlates with Appleton's observation of silcrete outcropping at 1030 m above sea level throughout the Tablelands (EMM 2018: 77).

The most significant and extensive grinding groove site was identified on a prominent hill crest along the southern boundary of the northern array area (NE09). The survey team counted approximately 100 grooves made up of concentrations across the width of the crest on outcropping silcrete bedrock. EMM postulated that further grinding grooves are likely to occur on the site where soil and vegetation debris are obscuring the bedrock surface.

NE09 is relatively far from a waterway, being over 220 m from a 1st order stream and over 850 m from the nearest 3rd order stream. EMM note that grinding activities typically require the aid of water to assist stone abrasion and it is assumed that the bedrock pavements at NE09 easily captured water in rock pools. The grooves observed were elongated and oval in shape typical of the axe grinding process. Additionally, stone artefacts including basalt, silcrete and chert flakes and a basalt hammerstone were identified within 20 m of the outcropping silcrete at the periphery of the site. Despite concentrated survey effort further from the site, surface artefacts did not appear to extend past this distance.

A total of 13 scarred trees were recorded across the EMM study area. All of the examples were on dead trees and typically scars were small and round to oval in shape, starting from around 350–400 millimetres (mm) but up to 100 mm from the base of the tree. Such scars may have been used for containers (such as coolamons) or shields, but the ambiguity of bark regrowth makes it difficult to determine their original forms. Larger, more elongated scars were rarer, with one scar (N39) extending over 2 m which could possibly represent bark removal for a single-person canoe or bark for shelter.

The survey team identified five open stone artefact sites which are considered to be Aboriginal stone quarries. Stone quarries were defined by the presence of outcropping stone material with adjacent evidence of the same material type used in stone tool manufacture process. Stone quarries of a variety of material were identified in the survey area, comprising silcrete (NE14 and NE22), basalt (NE21 and NE33) and greywacke. However, EMM note that quarry sites were rarely identified considering the high amount of outcropping material, including basalt, silcrete, greywacke, chert and jasper, observed on crests and slopes during the survey.

In their significance assessment, EMM ranked assessed four sites, all grinding groove sites, as having high scientific significance. 31 sites are assessed as having moderate scientific significance and 60 are assessed as having low scientific significance.

The sites assessed as having high scientific significance demonstrated rare and unique features, high educational potential as evidenced by their easily distinguishable characteristics and aesthetic qualities, and high research potential. Moderate scientific significance was frequently

attributed to sites with some research potential for their predicted subsurface archaeological material. The 60 sites (62%) assessed to be of low scientific significance do not have the same capacity as the other sites to inform about past Aboriginal life. Notwithstanding the limited information potential, EMM noted that each site is of cultural significance to the Aboriginal community.

## 2.3 LOCAL ARCHAEOLOGICAL CONTEXT

A search of the Department of Premier and Cabinet (DPC) administered AHIMS database on 3 June 2020 returned 106 records for Aboriginal heritage sites within a 60 km x 60 km search area centred on the Survey Boundary (GDA Zone 56 Eastings: 350000–410000; Northings: 6540270–6600270 with no buffer) (see **Table 2-2** for the site types and frequencies; results mapped on **Figure 2-1**).

Within the search area are 19 'restricted' sites whose features and location are unknown. Advice received from AHIMS on 10 June 2020 is that none of these sites are within the Project Boundary and these sites will therefore not be discussed further in this methodology.

One site, 21-4-0041, is located within the Project Boundary (**Figure 2-2**). The artefact scatter of four greywacke and silcrete flakes was recorded in 1995, and although the site card contains very little information, it would appear that the AHIMS coordinates are wrong as the site card mentions that the site has been impacted by road construction. Therefore, it is assumed that 21-4-0041 was recorded further north and closer to Winterbourne Road or to the northwest where there is a noticeable area of exposure that matches the site card description of being 250 m from Lambing Flat Creek (or in this case, more correctly, a tributary to Lambing Flat Creek). When the site is mapped with the proposed location of project components, no impacts are planned within the vicinity of this site.

Sites within proximity to the Project Boundary include:

- 21-4-0044: A conflict site known as 'Boozers' Massacre' site located approximately 1 km east of the Project Boundary. This site was recorded at a desktop level based on literature references by the National Parks and Wildlife Service. While this coordinate does not mark a tangible item in the landscape, the site recording is indicative of the conflict that took place across the district in the early years of colonisation
- 30-1-0015 et al: A cluster of sites around the Aspley Falls area consisting of ceremonial sites, a burial and a modified tree. These sites are all located more than 1.7 km south of the Project Boundary
- 21-4-0068 et al: A cluster of artefact scatter and isolated find sites recorded by Davies et al (1993) as part of an investigation in the Walcoba-Nundle Management Area to develop a predictive model of site location and to consider the impact of proposed forestry activities on the archaeological record. The closest of these sites is approximately 360 m from the Project Boundary

- 38-4-0541: An artefact scatter recorded by Mary Dallas in 1997 located on a farm track approximately 240 m south of the Project Boundary. The site card for this site contains very little information although it notes that the scatter is in poor condition having been impacted by the use of the track
- 21-4-0004: A stone axe quarry and artefact scatter recorded by Isabel McBryde located approximately 2.4 km to the east of the proposed ETL on the far side of Salisbury Waters.

Table 2-2: AHIMS site types and frequencies.

Site Type	Number	% Frequency
Artefact scatter	21	24.4
Artefact (number unspecified)	1	1.2
Artefact and modified tree	3	3.5
Artefact, Grinding Groove	1	1.2
Isolated find	10	11.6
Aboriginal Ceremony and Dreaming	3	3.5
Art (Pigment or Engraved)	1	1.2
Burial and Aboriginal Ceremony and Dreaming	3	3.5
Ceremonial Ring (Stone or Earth)	5	5.8
Ceremonial Ring (Stone or Earth) and Modified Tree (Carved or Scarred)	1	1.2
Ceremonial Ring (Stone or Earth) and Stone Arrangement	1	1.2
Conflict	2	2.3
Grinding Groove	9	10.5
Habitation Structure	7	8.1
Modified Tree (Carved or Scarred)	9	10.5
Ochre Quarry	2	2.3
Stone Arrangement and Burial	1	1.2
Stone Quarry and Artefact Scatter	5	5.8
Waterhole	2	2.3
<b>Total</b>	<b>86*</b>	

\* The 19 'restricted' sites are not included here.

Figure 2-1. AHIMS sites in relation to the Project Boundary.

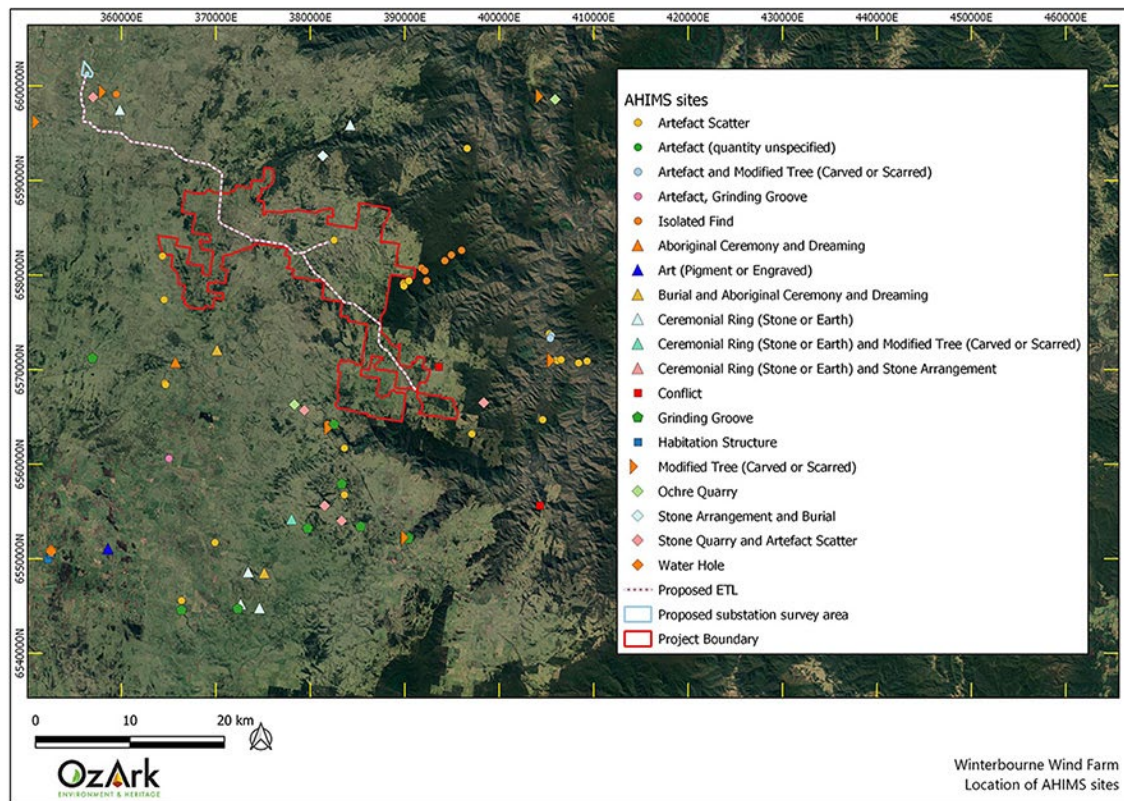
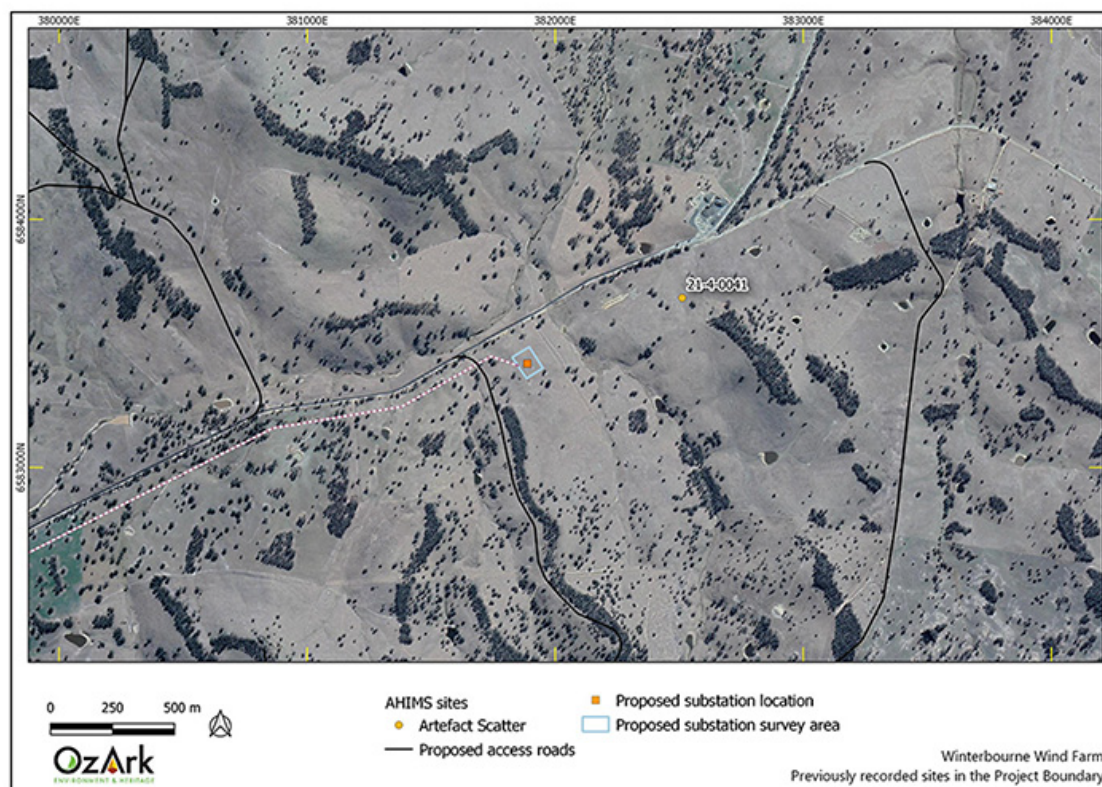


Figure 2-2. Location of site 21-4-0041 in relation to proposed project components.



## 2.4 ARCHAEOLOGICAL CONTEXT: CONCLUSION

The archaeological investigations surrounding the Project Boundary as summarised in Sections 2.2 and 2.3 indicate that:

- Stone artefact sites (isolated finds and artefact scatters) are the most commonly recorded site types in the area and that other site types, such as ceremonial sites, culturally modified trees, grinding grooves, and quarries are possible
- Scarred trees will often be in dead trees making conclusive identification as having a cultural origin difficult
- Ceremonial sites, such as Bora rings and stone arrangements are possible in the landscapes of the Survey Boundary
- Artefacts tend to be associated only with the A-Horizon soil layers indicating a date in the Holocene period (i.e. 10,000 years ago to the present)
- The predominant raw materials used for stone artefact manufacture are locally sourced silcrete and volcanics
- Sites tend to be associated with crests within reasonable distance to reliable water supplies. EMM 2018 noted that landforms in association with minor waterways also recorded sites suggesting that these systems may have had a chain of ponds morphology which would have retained water longer than is the case today

- Sites on slopes are generally in a secondary context having been displaced by erosional processes. The exception is where there is outcropping rock as this feature may have attracted occupation or use.

### 3 PREDICTIVE MODEL

#### 3.1 LANDFORM MODELLING

The Survey Boundary is generally at around 1100 m above sea level with small, isolated areas rising 50 m or 100 m above this level. The topography in the east of the Survey Boundary is higher when compared to the west with an average elevation of approximately 1200 m above sea level with small areas rising to above 1300 m. The slopes which fall away from the ridges and crests are generally moderately steep (see **Figure 1-5**). Previous studies in the district (EMM 2018) indicate that these sloping landforms are not likely to contain intact sites and any finds in this environment would be in a secondary context as a result of erosion.

The project components which comprise the Survey Boundary, are generally situated on the crests of rounded ridges, as these areas are subject to higher wind speeds. Such landforms have been shown to be a favoured area for Aboriginal occupation in the district as the elevated landforms probably avoided areas where cold air would have pooled.

Lower topographic areas within the Survey Boundary are associated with the numerous creeks and their tributaries, although these landforms comprise only a small portion of the Survey Boundary. In general these are located in V-shaped valleys with little in the way of terrace formation (see **Figure 1-6** and **Figure 1-7**). The assumption in such landforms is that archaeological material is rarely preserved as the landforms did not afford level ground for camping and there is an increased probability of archaeological deposits being removed due to erosion. Other creek systems, such as Draytons Creek, are located in broader valleys but aerial imagery shows extensive bank and gully erosion which has probably disturbed or removed archaeological deposits had they existed. Yet other systems, such as Lambing Flat Creek, show areas of aggrading landforms associated with the waterway. This is probably an indication of past erosion and re-deposition in the historic period and, as a consequence, any Aboriginal objects are likely to be in a secondary context from their primary depositional location. Previous studies in the district (EMM 2018) indicate that creek flats do not record a high density of Aboriginal sites as people probably preferred to camp out of the cold air that would pool in such areas.

The ridges and crests are generally clear of native vegetation and while the sheltered slopes contain some woodland, it is expected that these will be regrowth, or at best, logged. The remnant stands of the original vegetation can also remain as paddock trees although, as demonstrated by EMM 2018, the older trees that may contain cultural modification are generally dead.

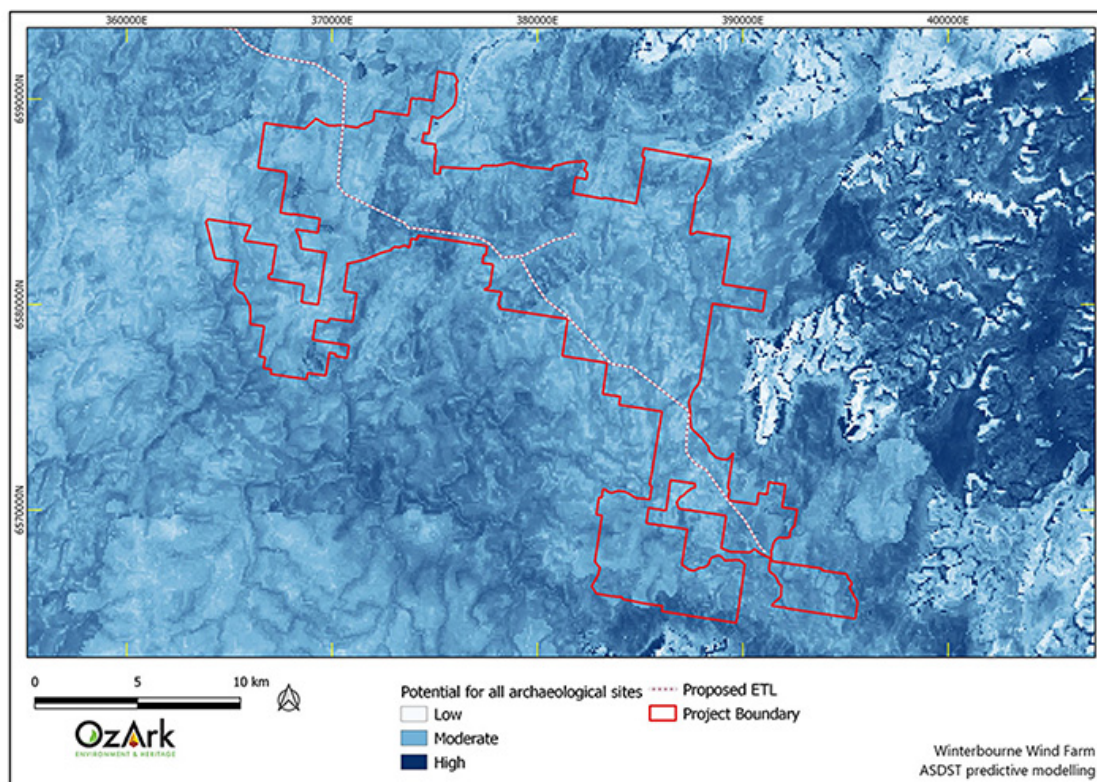
The Survey Boundary has been used historically and is currently used for low-intensity livestock grazing. The presence of hooved livestock is likely to have resulted in trampling and compaction of the ground surface which accelerates soil loss. Erosional process within the Survey Boundary would be exacerbated by the types of landforms present which are generally clear of vegetation.

### 3.2 ASDST PREDICTIVE MODELLING

The Department of Planning, Industry and Environment (DECCW 2010c) have produced a series of 'pre-1750' predictive models termed the *Aboriginal Sites Decision Support Tool* (ASDST) which combines data derived from AHIMS with a series of spatial variables that describe the landscape such as elevation, geology and proximity to water. The ASDST outputs GIS raster layers composed of one hectare cells that predict the likelihood of Aboriginal sites (e.g. mounds, artefacts, modified trees, grinding grooves, burials and hearths) occurring in the landscape prior to European settlement. These models do not account for land use disturbance in the intervening period, or local conditions leading to differential preservation of features. However, the ASDST includes an 'accumulated impacts' model that indicates impacts of post-European settlement land-use and its impact upon Aboriginal site features in the landscape. In combination, these models are used to predict the likelihood of encountering different Aboriginal site types prior to colonial settlement, and how the distribution of Aboriginal sites are likely to have been affected since this time.

Applying the ASDST to the Project Boundary indicates that the entire area has a medium to high likelihood of recording Aboriginal sites (**Figure 3-1**). While this likelihood is less than in landforms to the east due to the impact of agricultural activity within the Project Boundary, the probability of recording Aboriginal sites in the landforms of the Survey Boundary remains high.

**Figure 3-1. ASDST predictive modelling for the Project Boundary.**



### 3.3 PREDICTIVE MODEL FOR THE SURVEY BOUNDARY

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including: plant and animal foods; stone and ochre resources and rock shelters; as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these however may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of colonial farming practices. Scarred trees, by their nature, may survive for up to several hundred years but rarely beyond.

The archaeological studies undertaken in the vicinity of Project Boundary provide an insight into the nature and distribution of archaeological sites within the area. However, the location of sites can only reflect what has been identified, usually as a result of infrastructure/development-driven projects, thus presenting the site data as clustered or on linear alignments. Generally, sites have been recorded in proximity to a recognised water source, in locations that have been subject to reduced landform disturbance, and on gentle, elevated landforms. However, landform disturbance may also explain why Aboriginal objects become revealed on the ground surface, such as within modified and disturbed landforms.

Based on knowledge of the environmental contexts of the Project Boundary and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded:

- Isolated finds may be indicative of: random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
  - As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Survey Boundary. It is

noted in **Section 2** that isolated finds are commonly recorded near the Survey Boundary (cf. EMM 2018).

- Open artefact scatters are here defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Stone artefact distributions of variable artefact densities are the most common Aboriginal object found within the region. A general correlation between landform and the nature of the evidence of past Aboriginal occupation is evident. Higher artefact density sites are located on elevated landforms within proximity to permanent water sources and low-density artefact distributions are found on slopes and adjacent to waterways. This is probably due to the cool climate of the region where there is an advantage to camp outside of areas where cold air pools. Based on this, the moderate to steeply sloping landforms within the Survey Boundary are unlikely to have been utilised with the ridges and spurs being more attractive for camping. The Survey Boundary contains locations of lower elevation associated with permanent or semi-permanent watercourses which have a moderate archaeological potential for lower density scatters.
- Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed as a consequence of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any particular example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some forms of natural trauma and European bark extraction

create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.

- The ridgelines and crests where most of the proposed work will take place, are mostly cleared of vegetation, therefore this site type is not predicted likely to occur. It is also noted that this site type is not common at a regional level due to historical tree clearance.
- Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.
  - This site type could be recorded within the Survey Boundary should suitable rock outcroppings be available. Stone quarries have been recorded in the district and EMM 2018 note that silcrete tends to outcrop in the district at around 1030 m above sea level. As landforms of this elevation are present in the Survey Boundary, it is therefore possible that outcropping silcrete is present that may have been quarried.
- Grinding grooves are most likely to occur on flat outcrops of coarse-grained sandstone in the vicinity of water sources, however, grinding grooves have been recorded on fine-grained granite outcrops.
  - The district has recorded a wide variety of grinding grooves, particularly high significance sites such as NE09 (EMM 2018) which was recorded away from water sources. Therefore, wherever there is suitable outcropping silcrete rock, there is the possibility for there to be grinding grooves.
- Burials are generally found in soft sediments such as aeolian sand, alluvial silts and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.
  - Given the topography, nature of the soils and geology, burials are not predicted to be present in the Survey Boundary.
- Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.
  - Studies have emphasised that the Tablelands have a high number of ceremonial sites including Bora grounds, stone arrangements, carved trees and rock art sites (McBryde 1974, Bowdler 1981). The distribution of stone arrangements and Bora grounds across the landscape is somewhat unpredictable as the choice of their location appears to be based on spiritual reasons rather than simply landscape features and resources. Notwithstanding, sites such as stone arrangements have

been noted to be commonly on hill crests, spurs and ridges (McBryde 1974). As site types such as Bora rings and stone arrangements etc. have been recorded in the district, their presence in the Survey Boundary cannot be discounted.

- Conflict sites relate to sites of known massacres of Aboriginal people (or, very rarely, sites of Aboriginal resistance). Given the nature of these sites, the exact location of events such as massacres are often not known. While AHIMS may record a specific location, this is more often than not a generalised location based either on historical research or oral history, rather than tangible objects in the landscape.
  - It is noted that there have been two conflict sites recorded in the district and one site recorded 1 km east of the Project Boundary. Therefore, evidence of early colonial conflict either in terms of graves and/or objects could be recorded in the Survey Boundary. However, the possibility of tangible evidence of such events surviving is very unlikely.

### 3.4 FACTORS LIMITING THE RECORDING OF SITES

The predictive modelling presented here has been informed by the 2018 investigation by EMM for the New England Solar Farm that was in similar landforms to the Survey Boundary. However, there is a fundamental difference between the two projects in that solar farms tend to have a widespread impact across landforms, while wind farms have a more localised impact.

Therefore, whilst EMM surveyed a broader range of landscapes, the survey for the Winterbourne Wind Farm will be more linear in its characteristics. Like other linear surveys, this reduces the opportunity for an archaeological feature to be recorded in the more-restricted survey area (i.e. at any one location in a crest landform, the survey for the Winterbourne Wind Farm will assess 100 m around a proposed turbine location, not the entire crest landform).

While the predictive modelling gained from the EMM survey remains valid, there is the likelihood that the current survey will record fewer sites when compared to surveys such as that by EMM.

Another factor that may limit the number of sites that may be recorded is the fact that the proposed access tracks generally follow existing farm tracks. The previous use of these access tracks may have removed or dispersed any sites such as artefact scatters that may have existed, thereby lowering the opportunity to record sites in the vicinity of the proposed access tracks.

### 3.5 RESEARCH QUESTIONS

A number of research questions can meaningfully be applied to the investigation of the Survey Boundary. These research questions include:

- What resources were available to the Aboriginal people using the Survey Boundary (food, stone and water) and what resources were transported to the area?
- How do the artefact assemblages from the sites along the slopes and ridge crests in the Survey Boundary differ from sites that are located along creek flats?
- What tasks were Aboriginal people undertaking at the sites?

- Did the Aboriginal people use the Survey Boundary at any particular time of the year?
- If there are hearths present, do they contain remains (animal/plant) that may indicate what people were cooking/eating?
- Is there potential for burials to be present in the landscape?
- Are the outcropping rock materials present suitable for stone tool procurement and manufacture?
- Is there evidence to suggest that Aboriginal people were using the area earlier than the mid to late Holocene?
- Can dates be obtained for the Aboriginal use of the area?
- Establish how the findings within the Survey Boundary (if any) accord with the regional archaeological context examined in **Section 2.2**.

The survey methodology set out in **Section 4** will be framed to help answer these questions; should sites of sufficient significance be encountered. However, based on the results of previous assessments and past disturbances, it not expected that the Survey Boundary will contain sites of sufficient significance to help answer those research questions that require a robust data set.

## 4 SURVEY METHODOLOGY

### 4.1 ASSESSMENT APPROACH

The Aboriginal cultural heritage assessment of the Survey Boundary will follow the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010b). The field inspection will follow the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011).

Survey for Aboriginal cultural heritage values will concentrate on the Survey Boundary and not the broader Project Boundary. All impacts associated with the project will be located within the Survey Boundary.

### 4.2 SURVEY AIMS

The aim of any archaeological survey is not to locate each artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within a Survey Boundary are known. Therefore, the aims of the survey will be to:

- Inspect all landforms in the Survey Boundary so that their archaeological potential can be determined
- Confirm that previously recorded site 21-4-0041 will not be harmed by the project (see **Section 2.3**)
- Evaluate whether the predictive model set out in **Section 3.3** is valid
- Determine if the research questions set out in **Section 3.5** can be answered
- Determine if any landforms of the Survey Boundary require test excavation to understand the archaeological potential at a particular location
- Undertake sufficient assessment in order to satisfy Sections 2.2, 2.4, 2.5, 2.6, and 2.7 in the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011)
- Collect sufficient data so that the results can be presented in an *Aboriginal Cultural Heritage Assessment Report* (ACHAR) as set out in Section 3 in the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (OEH 2011)
- Undertake survey and record keeping satisfying Requirements 1–13 of the Code of Practice.

### 4.3 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004) and will follow the Code of Practice.

As highlighted in **Section 2**, greater Aboriginal archaeological potential tends to exist on crest landforms within proximity of permanent and ephemeral water sources, along access or trade routes, and areas with suitable flora/fauna and shelter. Archaeological potential is generally reduced on steep landforms unsuitable for camping, and landforms disturbed by erosion and historical impacts (e.g. farming and infrastructure installation). The exception to this model is where there is outcropping rock on slopes as this may contain evidence of occupation/use. As such, during the field assessment, greater survey effort will be expended on landforms deemed to have greater Aboriginal archaeological potential.

The current Survey Boundary does not consist of a contiguous area of land, but rather the need is to survey scattered turbine locations, linked by proposed access tracks. Therefore, it is not practical to employ formal survey transects for such a study area. Rather, 'full survey' will refer to the survey team travelling to a specific turbine location and then inspecting on foot the entire Survey Boundary at that location. 'Sample survey' refers to components such as access tracks, existing unsealed roads in the Project Boundary, and the ETL that may cross a variety of landforms. In this case, only those landforms with archaeological potential will be surveyed. For example, where an access track crosses a waterway, the survey team will inspect the location on foot. However, when the access track crosses steeply sloping landforms, those portions will be driven.

As such, the field assessment will include:

- Turbine locations. All proposed turbine locations will be assessed through full survey
- Access tracks, existing unsealed roads in the Project Boundary and the 330kV ETL: sample survey will occur in areas with minimal disturbance and good ground surface visibility within landforms possessing Aboriginal archaeological potential, i.e. areas within 200 m of water, along ridgelines and crests, as well as areas of outcropping rock on slopes
- All trees deemed to be of sufficient maturity to contain cultural modification within the Survey Boundary will be inspected. Care will be taken to inspect fallen or felled trees for signs of cultural modification
- Some areas may not be physically surveyed if RAPs and OzArk staff agree they are too disturbed or possess a very low likelihood of sites.

In the field, OzArk staff will identify, record and evaluate physical (i.e. archaeological) evidence. Site recording will capture all the information required to complete current AHIMS site recording forms (e.g. site location, site boundary, site plan, representative photographs, artefact recording and feature recording).

All survey will be undertaken with the assistance of RAP representatives. Apart from their valuable experience in recognising and recording archaeological sites, the RAP representatives

will be able to acquaint themselves with the Survey Area in order to inform the cultural value assessment.

#### **4.4 TEST EXCAVATION**

It is possible that the survey may identify landforms where test excavation under the Code of Practice (Requirements 14–17) is required. Should such landforms be identified during the survey, the test excavation methodology will be prepared as a separate document that will be circulated to all RAPs for review and comment.

#### **4.5 CULTURAL VALUES**


Any cultural values relating to the Survey Area will be captured by the OzArk archaeologists (if such information is provided by RAPs during the survey) and included in the ACHAR.

In addition, should any RAPs have knowledge of cultural values regarding the Survey Area that they wish to share or that may affect this survey methodology, OzArk invites them to contact us so that these values can be recorded and/or responded to in this methodology.

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Appendix 1 Figure 7: Example of the RAP update letter.



**OzArk Environment & Heritage**

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04 February 2021

**ABORIGINAL CULTURAL HERITAGE ASSESSMENT UPDATE**

**WINTERBOURNE WIND FARM**

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Dear Members,

We wish to apologise for the delay in correspondence and thank you for your registration of interest to become a Registered Aboriginal Party (RAP) for the proposed Winterbourne Wind Farm project located to the north and east of Walcha in the Northern Tablelands of New South Wales.

The purpose of this letter is to update you in relation to the progress of this project.

OzArk was contacted in early 2020 by Vestas, a global leader in sustainable energy solutions, to complete an Aboriginal Cultural Heritage Assessment for the project.

Stage 1 of the community consultation requirements commenced on 27 April 2020 with a closing date of 11 May 2020. As part of Stage 1 an advertisement was placed in the Northern Daily Leader and The Armidale Express on 28 April 2020.

Stage 2 of the community consultation requirements commenced on 18 June 2020 when you were sent the assessment methodology and project information with a closing date for comment on 17 July 2020.

Fieldwork was carried out in two stages and concluded on 6 November 2020. During the survey, the 15 sites shown in **Table 1** were recorded.

**Table 1. Aboriginal cultural heritage sites recorded during the survey.**

Site Name	Location (GDA 2020 / MGA Zone 56)	Feature(s)	Landform
Yalgoo IF-1	366555E / 6581007N	Isolated artefact	Undulating ridgeline
Woodburn IF-1	370328E / 6586262N	Isolated artefact	Gentle slope
Woodburn IF-2	366997E / 6580582N	Isolated artefact	Flat crest
Table Top Rd IF-1	385597E / 6584050N	Isolated artefact	Gentle slope: in road corridor
Bywell OS-1	379890E / 6580970N	Artefact scatter (7 artefacts)	Low spur / gentle slope
Green Range OS-1	379606E / 6582509N	Artefact scatter (5 artefacts)	Very gentle slope
Green Range OS-2 with potential archaeological deposit (PAD)	381615E / 6583396N	Artefact scatter (11 artefacts)	Flat plain: partially in road corridor
Green Range OS-3 with PAD	381917E / 6583491N	Artefact scatter (100+ artefacts)	Gentle slope: Partially in road corridor
Millbank OS-1	380847E / 6583243N	Artefact scatter (18 artefacts)	Creek flat
Tarwonga ST-1	370282E / 6583869N	Scarred tree	Very gentle slope
The Ranch IF-1	365820E / 6592755N	Isolated artefact	Creek bed
The Ranch OS-1 with PAD	365932E / 6592699N	Artefact scatter (9 artefacts)	Creek bed
Queenlee OS-1 with PAD	356066E / 6597447N	Stone quarry	Flat crest
Queenlee E-1	356589E / 6596159N	Rock engraving	Flat plain
Talisker ST-1	356071E / 6601298N	Scarred tree	Moderate slope

These sites range from representative sites such as low density artefact scatters and isolated finds, through to culturally and scientifically significant sites, such as Queenlee OS-1 with potential archaeological deposit (PAD), which is a significant recording of an axe manufacturing quarry. The input from the Aboriginal community who accompanied the survey allowed the OzArk archaeologists to better understand the context and importance of recordings such as this.

Another significant site is Green Range OS-3 with PAD. Although recorded in a reasonably disturbed context in a road corridor and ploughed paddock, this site contains a large number of artefacts, some of which are very unique, such as a beautifully back glass microlith (illustrated on the next page).

OzArk and Winterbourne Wind are working to ensure that the significant site recordings are appropriately managed and that important sites, such as Queenlee OS-1 with PAD, are conserved in the landscape so that they can be enjoyed by future generations.

At present, Winterbourne Wind is finalising the design of the wind farm and OzArk is working on completing the Aboriginal Cultural Heritage Assessment Report (ACHAR). The ACHAR will include all results from the survey, as well management and mitigation measures to ensure that, wherever possible, Aboriginal cultural heritage values are conserved.

## OzArk Environment &amp; Heritage

As a project RAP you will be sent a draft of the ACHAR for your review and comment. We invite any comment on the management measures contained in the ACHAR and are always keen to understand the community's cultural values with regard to both the landscape of the Project Boundary and the individual site recordings.

At this point Winterbourne Wind and OzArk would like to thank the project RAPs for the knowledgeable and energetic way in which they have engaged with the survey program. We look forward to working with you to make sure that the views of the community are heard when it comes to Aboriginal cultural heritage management.

Should you have any queries in relation to the enclosed information please do not hesitate to contact our office

Kind regards,




Rebecca Hardman  
**Community Liaison & Administration**





## APPENDIX 2: AHIMS SITE SEARCHES

Appendix 2 Figure 1: AHIMS search results



# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631


SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
21-4-0044	'Boozers' Massacre, 'Moona Plains' property	AGD	56	393500	6570100	Open site	Valid	Conflict : -	Massacre	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0014	Brackendale; Fern Hill;	AGD	56	377900	6554000	Open site	Valid	Modified Tree (Carved or Scarred) : - Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial Carved Tree	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0017	Apsley Falls; Apsley Gorge National Parks;	AGD	56	382500	6563900	Open site	Valid	Artefact : -	Isolated Find	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0018	Bolimba Downs; Apsley;	AGD	56	404500	6564500	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0019	Apsley;	AGD	56	397000	6563000	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0020	Stony Creek Falls	AGD	56	383500	6561500	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0021	Moona Plains Quarry	AGD	56	398250	6566300	Open site	Valid	Stone Quarry : - Artefact : -	Quarry	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0022	Waterloo Quarry;	AGD	56	379250	6565500	Open site	Valid	Stone Quarry : - Artefact : -	Quarry	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0023	Majors creek;	AGD	56	383500	6566550	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0025	Mt Arlington;	AGD	56	366240	6545370	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0083	W1/CS	AGD	56	364480	6568360	Open site	Valid	Artefact : -	Open Camp Site	2511
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0084	W2/CS	AGD	56	364550	6568200	Open site	Valid	Artefact : -	Open Camp Site	2511
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0085	Waterloo Ochre Quarry;	AGD	56	378200	6566100	Open site	Valid	Ochre Quarry : -	Ochre Quarry	421
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0086	Apsley Axe Grinding Groove;	AGD	56	382400	6564000	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0087	Apsley falls 1 Camping Area;	AGD	56	381800	6563700	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone : 56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270

with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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# AHIMS Web Services (AWS)

## Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-1-0089	Apsley River;	AGD	56	381700	6564000	Open site	Valid	Artefact : -	Isolated Find	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-4-0002	Dunvegan;Uralia;	AGD	56	359700	6597300	Open site	Valid	Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-4-0004	Salisbury Court;Salisbury Waters;	AGD	56	356872	6598614	Open site	Valid	Stone Quarry : - Artefact : -	Quarry	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-4-0009	Fernside;Borah Mountain;	AGD	56	384100	6595700	Open site	Valid	Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-5-0038	Iron Bark Crk;Apsley R;Scarred Tree;	AGD	56	405400	6573400	Open site	Valid	Artefact : - Modified Tree (Carved or Scarred) : -	Open Camp Site;Scarred Tree	801
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-5-0039	Riverside;Apsley R;Base Camp;	AGD	56	405200	6573600	Open site	Valid	Artefact : -	Open Camp Site	801
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-5-0040	Rusben Creek;Stockyard Site 1-4;	AGD	56	405900	6570800	Open site	Valid	Artefact : - Modified Tree (Carved or Scarred) : -	Open Camp Site;Scarred Tree	801
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-5-0047	Riverside 1-4;	AGD	56	405300	6573100	Open site	Valid	Artefact : - Modified Tree (Carved or Scarred) : -	Open Camp Site;Scarred Tree	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-5-0048	Cliff Site;	AGD	56	408300	6570500	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-5-0049	Tom Henry Ck;	AGD	56	409200	6570700	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-4-0019	Hole Creek;	AGD	56	396500	6593200	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-4-0041	Lamhine Flat;	AGD	56	382400	6583500	Open site	Valid	Artefact : -	Open Camp Site	
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
30-1-0096	MDL 3	AGD	56	369790	6551500	Open site	Valid	Artefact : 3		
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		
21-4-0061	Winterbourne 1	AGD	56	392200	6579200	Open site	Valid	Artefact : 1		3090
	<b>Contact</b>	<b>Recorders</b>						<b>Permits</b>		

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone : 56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270 with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
21-4-0062	Winterbourne 2a	AGD	56	395910	6582420	Open site	Valid	Artefact : 1		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0063	Winterbourne 2b	AGD	56	394820	6581930	Open site	Valid	Artefact : 1		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0064	Winterbourne 2c	AGD	56	394130	6581320	Open site	Valid	Artefact : 1		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0065	Winterbourne 3a	AGD	56	389800	6578640	Open site	Valid	Artefact : 4		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0066	Winterbourne 3b	AGD	56	389750	6578850	Open site	Valid	Artefact : 10		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0067	Winterbourne 3c	AGD	56	389790	6578990	Open site	Valid	Artefact : 1		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0068	Winterbourne 3d	AGD	56	390320	6579190	Open site	Valid	Artefact : 10		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0069	Winterbourne 3e	AGD	56	391660	6580540	Open site	Valid	Artefact : 1		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0070	Winterbourne 3f	AGD	56	392020	6580250	Open site	Valid	Artefact : 1		3090
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
29-3-0031	Inglebark Aboriginal Place	AGD	56	352380	6550420	Open site	Valid	Aboriginal Ceremony and Dreaming : -		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0011	Walcha:Riverglade;	AGD	56	385200	6553200	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0024	St Leonards 1:St Leonards;	AGD	56	366230	6544360	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-5-0111	halls peck	GDA	56	404677	6598893	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-5-0112	halls peck 2	GDA	56	405926	6598562	Closed site	Valid	Ochre Quarry : -		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
20-6-0066	Kentucky Closed Landfill Site	AGD	56	351239	6596002	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone : 56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270 with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-1-0094	Axe Groovesesey	AGD	56	390300	6552050	Open site	Deleted	Grinding Groove : -		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0229	NE34	GDA	56	359448	6599120	Open site	Valid	Artefact : 1		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0230	NE35	GDA	56	358377	6599349	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
38-4-0540	OD2	AGD	56	364400	6577200	Open site	Valid	Artefact : -	Open Camp Site	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
38-4-0541	OD1	AGD	56	364220	6581800	Open site	Valid	Artefact : -	Open Camp Site	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0007	Wilson Creek Tiara	AGD	56	381400	6555400	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-4-0001	Gurruwa Five Mile Creek	AGD	56	356800	6571000	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
21-5-0137	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0109	Pendora	GDA	56	365022	6560580	Open site	Valid	Artefact : -, Grinding Groove : -		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0090	Garibaldi Rock Massacre	AGD	56	404200	6555400	Open site	Valid	Conflict : -	Massacre	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0001	Brackendale;	AGD	56	372500	6545000	Open site	Valid	Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0002	Brackendale;Walcha;	AGD	56	372200	6544500	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0003	Brackendale;	AGD	56	373300	6548400	Open site	Valid	Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
30-1-0004	The Lake;Brackendale;	AGD	56	374500	6544600	Open site	Valid	Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial	
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone : 56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270 with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
30-1-0005	Tia Range	AGD	56	375000	6548300	Open site	Valid	Burial : -, Ceremonial Ring (Stone or Earth) : -	Bora/Ceremonial.Burial/s	
	<b>Contact</b>	<b>Recorders</b>	Ray Kelly							
30-1-0006	Wilsons Creek/Fern Hill	AGD	56	379600	6553000	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<b>Contact</b>	<b>Recorders</b>	Harry Creamer, Glen Morris							
30-1-0008	Apsley Initiation Ground	AGD	56	382200	6564100	Open site	Valid	Ceremonial Ring (Stone or Earth) : -, Stone Arrangement : -	Bora/Ceremonial.Stone Arrangement	
	<b>Contact</b>	<b>Recorders</b>	Ray Kelly							
30-1-0009	Wilsons Creek/Fern Hill	AGD	56	383200	6557700	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	<b>Contact</b>	<b>Recorders</b>	Isabel McBryde							
30-1-0010	Tiara Station Riverglade	AGD	56	383200	6553800	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	<b>Contact</b>	<b>Recorders</b>	Isabel McBryde							
30-1-0093	The Shield Tree	AGD	56	390260	6551900	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<b>Contact</b>	<b>Recorders</b>	Patrick Lipica							
30-1-0091	Axe Grooves	AGD	56	390300	6552050	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<b>Contact</b>	<b>Recorders</b>	NPWS - Walcha Sub-District							
30-1-0092	Tia Shield Tree	AGD	56	390260	6551900	Open site	Valid	Grinding Groove : -		
	<b>Contact</b>	<b>Recorders</b>	NPWS - Walcha Sub-District							
30-1-0095	Jodi cottage 1	AGD	56	358443	6550868	Closed site	Valid	Art (Pigment or Engraved) : -		
	<b>Contact</b>	<b>Recorders</b>	Emma Lees							
30-1-0015	Apsley Falls Sacred Place	AGD	56	382400	6564100	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Natural Mythological (Ritual)	
	<b>Contact</b>	<b>Recorders</b>	Harry Creamer							
30-1-0016	Apsley Falls Massacre Site	AGD	56	382170	6563602	Open site	Valid	Modified Tree (Carved or Scarred) : -	Carved Tree	
	<b>Contact</b>	<b>Recorders</b>	Harry Creamer							

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone :56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270 with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
21-4-0010	Mount Pleasant Bora Ground	AGD	56	381200	6592410	Open site	Valid	Stone Arrangement : -, Burial : -	Burial/s.Stone Arrangement	
	<b>Contact</b>	<b>Recorders</b>	S Fields, W Cook, Jim Swanson							
21-4-0008	Walcha Mission Cemetery	AGD	56	370000	6571900	Open site	Valid	Burial : -, Aboriginal Ceremony and Dreaming : -		1746
	<b>Contact</b>	<b>Recorders</b>	Glen Morris, Cecil Morris							
29-3-0010	Inglebair Aboriginal Reserve	AGD	56	352380	6550420	Open site	Valid	Burial : -, Aboriginal Ceremony and Dreaming : -		
	<b>Contact</b>	<b>Recorders</b>	Harry Creamer, Pat Cohen, Clara Smutter, Alfred Boney, Aubrey Briggs							
21-5-0090	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0091	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0092	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0093	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0094	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0095	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0096	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
30-2-0033	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0097	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			
	<b>Contact</b>	<b>Recorders</b>	Mr. Bruce Cohen							
21-5-0098	Restriction applied. Please contact ahims@environment.nsw.gov.au.					Open site	Valid			

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone :56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270 with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
21-5-0099	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0100	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0101	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0102	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0103	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0104	<b>Contact</b> T Russell Paradise Hammer Stones	<b>Recorders</b>	AGD 56 406445 6570847			Open site	Valid	Artefact : 2	<b>Permits</b>	
21-5-0105	<b>Contact</b> T Russell Rusden Creek Artefact Site 5	<b>Recorders</b>	AGD 56 406050 6570750			Open site	Valid	Artefact : 100	<b>Permits</b>	
21-5-0106	<b>Contact</b> T Russell Rusden Scarred Tree 1	<b>Recorders</b>	AGD 56 405799 6570789			Open site	Valid	Modified Tree (Carved or Scarred) : 1	<b>Permits</b>	
21-5-0107	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0108	<b>Contact</b> T Russell Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Bruce Cohen			Open site	Valid	<b>Permits</b>		
21-5-0109	<b>Contact</b> T Russell Rusden Scarred Tree 4	<b>Recorders</b>	AGD 56 405710 6570726			Open site	Valid	Modified Tree (Carved or Scarred) : 1	<b>Permits</b>	
21-5-0110	<b>Contact</b> T Russell Rusden Scarred Tree 5	<b>Recorders</b>	AGD 56 405824 6570764			Open site	Valid	Modified Tree (Carved or Scarred) : 1	<b>Permits</b>	
29-3-0021	<b>Contact</b> T Russell Widders Well	<b>Recorders</b>	AGD 56 352422 6550725			Open site	Valid	Water Hole : 1	<b>Permits</b>	

Report generated by AHIMS Web Service on 03/06/2020 for Harrison Rochford for the following area at Datum :GDA, Zone : 56, Eastings : 350000 - 410000, Northings : 6540270 - 6600270 with a Buffer of 0 meters. Additional Info : DD. Number of Aboriginal sites and Aboriginal objects found is 106

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## AHIMS Web Services (AWS)

### Extensive search - Site list report

Your Ref/PO Number : Winterbourne 2

Client Service ID : 510631

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
29-3-0022	<b>Contact</b> S Scanlon Widders House Site	<b>Recorders</b>	Mr.Patrick Lupica			Open site	Valid	Habitation Structure : 1	<b>Permits</b>	
29-3-0023	<b>Contact</b> S Scanlon Yarry's Water Hole	<b>Recorders</b>	Mr.Patrick Lupica			Open site	Valid	Water Hole : 1	<b>Permits</b>	
29-3-0024	<b>Contact</b> S Scanlon Yarry's House Site	<b>Recorders</b>	Mr.Patrick Lupica			Open site	Valid	Habitation Structure : 1	<b>Permits</b>	
29-3-0025	<b>Contact</b> S Scanlon Yarry's Yards	<b>Recorders</b>	Mr.Patrick Lupica			Open site	Valid	Artefact : -	<b>Permits</b>	
29-3-0026	<b>Contact</b> S Scanlon Uncles House Site - George Dixon and Vera Morris	<b>Recorders</b>	AGD 56 352393 6550417			Open site	Valid	Habitation Structure : 1	<b>Permits</b>	
29-3-0027	<b>Contact</b> S Scanlon Granny Morris's House site 1 and 2 plus Herb Garden	<b>Recorders</b>	AGD 56 352341 6550390			Open site	Valid	Habitation Structure : 2	<b>Permits</b>	
29-3-0028	<b>Contact</b> S Scanlon Morris's House Site	<b>Recorders</b>	AGD 56 352433 6550303			Open site	Valid	Habitation Structure : 1	<b>Permits</b>	
29-3-0029	<b>Contact</b> S Scanlon Pat Cohen's Dwellings and Artefact Scatter	<b>Recorders</b>	AGD 56 352384 6550258			Open site	Valid	Habitation Structure : 2	<b>Permits</b>	
29-3-0030	<b>Contact</b> S Scanlon Mackenzies House Site	<b>Recorders</b>	AGD 56 352121 6549728			Open site	Valid	Habitation Structure : -	<b>Permits</b>	
21-4-0076	<b>Contact</b> S Scanlon Walcha Mill Hole	<b>Recorders</b>	AGD 56 365598 6570606			Open site	Valid	Aboriginal Ceremony and Dreaming : -	<b>Permits</b>	
21-5-0136	<b>Contact</b> S Scanlon Restriction applied. Please contact ahims@environment.nsw.gov.au.	<b>Recorders</b>	Mr.Patrick Lupica			Open site	Valid	<b>Permits</b>		
	<b>Contact</b> Dunghutti Elders Council (Abo	<b>Recorders</b>	Barry Cain					<b>Permits</b>		

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