

# Appendix F

Cultural heritage due diligence assessment





# Theodore Wind Farm Connection Project

Due Diligence Assessment

Prepared for WSP | 17 October 2025





# Document control

Project number	Client	Project manager	LGA
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Cover image: 1995 aerial image of Belmont State Forest ranges and surrounding landscape encapsulating the Theodore Wind Farm project area (Source: QImagery QAP5355 Frame 163)

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# Executive summary

## Project outlines

Niche has been commissioned by WSP to undertake a cultural heritage Due Diligence Assessment (DDA) for the proposed transmission connection of the Theodore Wind Farm near Theodore, Banana Shire Local Government Area to the Powerlink Queensland (Powerlink) transmission network.

The Project area will involve the development of a new 445 m x 270 m (12 ha) substation at Castle Creek and a double circuit transmission line (275 kilovolts (kV)) running 55.4 km north along the western extent of Banana Range towards Banana. The transmission line towers are proposed to be situated on either side of watercourses to prevent waterway and infrastructure damage. In addition to this, it will avoid remnant vegetation, to the greatest extent possible.

The transmission line will connect to a substation at Mt Benn of which is already within the planning and approvals phase of works and is not part of the Theodore Wind Farm (although it is part of the Banana Range Wind Farm Connection Project).

It is proposed that the connection between substations will be via overhead lines. In order to complete these works, a degree of clearance and ground disturbance will occur to construct elements of the powerlines. Ground disturbance will also be required for the construction of the Castle Creek substation.

## Summary of potential impacts and safeguards

This DDA considers the entire area proposed for project activity, including the substation to the south and the powerline corridor leading north along the Banana Range mountains.

Searches of relevant statutory and non-statutory databases identified no previously documented Aboriginal or historical cultural heritage or items within the Project area. On the other hand, background research for the Project area indicated that this area has high potential for Aboriginal cultural activities.

The proposed activity includes groundworks for the construction of the substation and powerlines and has subsequently been identified as Category 4 of the Duty of Care (DoC) Guidelines for the majority of the Project area, with some areas which have been classified as Category 5 due to remnant vegetation. These areas are most prevalent within the northern half of the Project area.

Significant ground disturbance has been documented within the aerial imagery and historical accounts. The Category 4 activities are proposed for areas that have been previously subject to significant ground disturbance, in contrast to the Category 5 remnant vegetation areas.

## Recommendations

The Project area has been assessed as Category 4 and Category 5.

Four primary recommendations have been identified for the Project area. These include:

### **Recommendation 1 – Category 5: avoidance of harm**

For waterways and remnant vegetation areas that have been classified as having a category 5 DoC, care should be taken to avoid harm to these areas. This category triggers the requirement to engage with relevant Aboriginal



party/ies to ensure that potential 'features' of the areas are properly assessed and identified. As per the Duty of Care guidelines, additional assessment should be undertaken.

#### **Recommendation 2 – Category 4: care should be taken**

As per the DoC guidelines, where an activity is assessed as DoC Category 4, it is generally unlikely that the activity will harm Aboriginal cultural heritage and it is reasonable and practicable that the activity proceeds without further cultural heritage assessment. While not required under the DoC guidelines, Powerlink may, as a matter of caution, choose to engage with the relevant Aboriginal Party to discuss the Project in relation to areas assessed as Category 4. This engagement is encouraged to ensure that the full extent of potential cultural sites within the Project area are identified.

#### **Recommendation 3 - Cultural heritage induction**

All site personnel should be provided with a Cultural Heritage Induction prior to the commencement of the Activity. This induction should include a procedure to be followed if unexpected cultural heritage finds are identified during the Activity or if human remains are identified.

#### **Recommendation 4 – Unexpected finds procedure**

All Activities for the Project should be undertaken with an appropriate Unexpected Finds Procedure in place. An example procedure is provided in Annex 2.



# Glossary and list of abbreviations

Term or abbreviation	Definition
ACHA	<i>Aboriginal Cultural Heritage Act 2003</i>
Aboriginal Cultural Heritage (Section 8 ACHA)	Anything that is: <ul style="list-style-type: none"><li>– A significant Aboriginal area in Queensland.</li><li>– A significant Aboriginal object.</li><li>– Evidence, of archaeological or historic significance, of Aboriginal occupation of an area of Queensland.</li></ul>
Aboriginal cultural heritage body	An entity registered under part 4 (of the ACHA) as an Aboriginal cultural heritage body for the area. The sole function of a cultural heritage body is to identify the Aboriginal or Torres Strait Islander parties for an area and serve as the first point of contact for cultural heritage matters.
Aboriginal and Torres Strait Islander Cultural Heritage Database	Also referred to as the DWATSIPM Cultural Heritage Database. The purpose of the database is to: <ul style="list-style-type: none"><li>– Assemble information about Aboriginal and Torres Strait Islander cultural heritage in a central and accessible location.</li><li>– Provide a research and planning tool to help Aboriginal and Torres Strait Islander Parties, researchers and other persons assess the Aboriginal and Torres Strait Islander cultural heritage values of particular areas.</li></ul> The database is not publicly available.
Aboriginal and Torres Strait Islander Cultural Heritage Register	Also referred to as the DWATSIPM Cultural Heritage Register. The cultural heritage register holds: <ul style="list-style-type: none"><li>– Information regarding cultural heritage studies under Part 6 of the ACHA.</li><li>– Information regarding Designated Landscape Areas.</li><li>– Information regarding whether a particular area has been the subject of a Cultural Heritage Management Plan under Part 7 of the ACHA.</li><li>– Information regarding cultural heritage bodies.</li><li>– Details of statutory Aboriginal and Torres Strait Islander Parties.</li></ul> The register is available to the public.
Aboriginal human remains	Aboriginal human remains are highly significant to Aboriginal and Torres Strait Islander people, and it is important not to interfere with them.



	<p>All burials in Queensland are regulated under the <i>Criminal Code Act 1899</i>, <i>Coroners Act 2003</i>, <i>Aboriginal Cultural Heritage Act 2003</i>, <i>Torres Strait Islander Cultural Heritage Act 2003</i>, and local government by-laws.</p> <p>DWATSIPI is responsible for administering the Aboriginal and Torres Strait Islander cultural heritage legislation.</p> <p>See also Burials.</p> <p>For information regarding the Handling and Management of human remains, follow this link:</p> <p><a href="https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/human-remains">https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/human-remains</a></p>
Aboriginal Party	<p>In the event that there is no native title party for an area, the ACHA recognises the Aboriginal or Torres Strait Islander party for an area as being:</p> <ul style="list-style-type: none"><li>– The person recognised in accordance with tradition/custom as being responsible for the area.</li><li>– An Aboriginal or Torres Strait Islander person/family/clan group with particular knowledge about traditions, observances, customs or beliefs associated with the area.</li></ul>
Areas of biogeographical significance, such as natural wetlands	<p>A landscape feature as listed in Section 6.2 of the DoC guidelines.</p> <p>Meaning is context dependant.</p>
BP	<p>Before Present (measurement of dating to before the present year/year of publication).</p>
Burial	<p>Pre-contact Aboriginal burials are commonly found in caves and rock shelters, midden deposits and sand dunes. Burial sites are sensitive places of great significance to Indigenous people. Also see Aboriginal Human Remains.</p>
Cave	<p>A landscape feature as listed in Section 6.2 of the DoC guidelines.</p> <p>May mean any natural underground chamber in a hillside or cliff that is suitable for human habitation.</p>
Ceremonial places	<p>The material remains of past Aboriginal ceremonial activities may come in the form of earthen arrangements or bora grounds and their associated connecting pathways, and stone circles, arrangements and mounds. Indigenous people used these places for ceremonies, including initiation and inter-group gatherings.</p>
CHMP	<p>Cultural Heritage Management Plan</p>



	<p>A CHMP is an agreement/contract between a land user (sponsor) and an Aboriginal Party (endorsed party) developed under Part 7 of the ACHA.</p> <p>The CHMP explains how land use activities can be managed to avoid or minimise harm to Aboriginal or Torres Strait Islander cultural heritage.</p> <p>For information regarding the Cultural Heritage Management Plans, follow this link: <a href="https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-management-plans">https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-management-plans</a></p>
Commonwealth Heritage List (CHL)	The CHL is a list of Indigenous, historic, and natural heritage places owned or controlled by the Australian Government.
Contact site	The material remains of Indigenous participation in the development of Queensland after the arrival of European settlers. These include former or current Aboriginal missions, native mounted police barracks and historical camping sites and artefacts.
Cultural Heritage Duty of Care (Section 23 of the ACHA)	A person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage.
Cultural Heritage Find	A significant Aboriginal object or, evidence of archaeological or historic significance of Aboriginal occupation of an area of Queensland, or Aboriginal human remains, found in the course of undertaking an activity covered by the DoC guidelines.
Cultural Heritage Study	A comprehensive study of Aboriginal cultural heritage in an area was conducted under part 6 of the ACHA for the purpose of recording the findings of the study on the Aboriginal Cultural Heritage Register. For information regarding the Cultural Heritage Studies, follow this link: <a href="https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-studies">https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-studies</a> .
DDA	Due Diligence Assessment
Designated Landscape Areas	Under the repealed <i>Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987</i> , an area was declared a 'designated landscape area' (DLA) if it was deemed necessary or desirable for it to be preserved or to regulate access. For information regarding Designated Landscape Areas, follow this link: <a href="https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/designated-landscape-areas">https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/designated-landscape-areas</a>
DETSI	Department of Environment, Tourism, Science and Innovation.
Developed Area	This means that the area is developed or maintained for a particular purpose such as use as a park, garden, railway, road or other access



	route, navigation channel, municipal facility or infrastructure facility, such as power lines, telecommunication lines or electricity infrastructure.
DoC guidelines	<p>Duty of Care Guidelines 2004</p> <p>Gazetted guidelines identifying reasonable and practicable measures for ensuring activities are managed to avoid or minimise harm to Aboriginal cultural heritage.</p> <p>For information regarding the Cultural Heritage Duty of Care Guidelines 2004, follow this link:</p> <p><a href="https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-duty-of-care">https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-duty-of-care</a></p>
DWATSIPM	Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism. Responsible for the administration of the ACHA.
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
Fish traps and weirs	Fish traps and weirs are stone or wooden constructions designed to capture aquatic animals, predominantly fish. Traps are considered structures made predominantly from stone to form a type of pen or enclosure. Weirs are constructions designed to block the natural flow of water in creeks, streams and other watercourses.
Foreshores and coastal dunes	A landscape feature as listed in Section 6.2 of the Duty of Care Guidelines. May mean beach or inlet, lake shores and the dunes associated with coastal and lacustrine environments.
Grinding groove	Grinding grooves represent the physical evidence of past tool-making or food-processing activities. They are generally found near water sources. The presence of long thin grooves may indicate where the edges of stone tools were ground. Food processing activities such as seed grinding can leave shallow circular depressions in rock surfaces.
kV	kilovolts
Ha	Hectare
Harm	Damage or injury to, or desecration or destruction of, Aboriginal cultural heritage.
Hearth	Fire-pit or fireplace.



Land user	A person carrying out, or proposing to carry out, activities on land likely to materially affect the land.
LGA	Local Government Area
MNES	Matters of national environmental significance
National Heritage List (NHL)	The NHL is Australia's list of natural, historic, and Indigenous places of outstanding significance to the nation.
Native title party	<p>The native title party for an area is defined as:</p> <ul style="list-style-type: none"><li>– Native title holders – that is where native title has been recognised by the Federal Court of Australia.</li><li>– Registered native title claimants – native title claims currently before the Federal Court of Australia.</li><li>– Previously registered native title claimants (the 'last claim standing') – native title claims that have been removed from the Register of Native Title Claims administered by the National Native Title Tribunal (NNTT).</li></ul> <p>Previously registered native title claimants will continue to be the native title party for that area providing:</p> <ul style="list-style-type: none"><li>– There is no other registered native title claimant for the area.</li><li>– There is not, and never has been, a native title holder for the area.</li></ul> <p>The native title party maintains this status within the external boundaries of the claim even if native title has been extinguished.</p>
Occupation sites	These are places where the material remains of human occupation are found. Such sites contain discarded stone tools, food remains, ochre, charcoal, stone and clay hearths or ovens, shell middens and shell scatters, including deposits found in rock shelters and caves. These deposits may be buried. Other evidence of occupation sites includes the remains of Aboriginal dwellings or "gunyahs".
PA	<p>Protected Area</p> <p>PA is an area declared to be a protected area under Part 10 of the QHA.</p>
Particular types of native vegetation	<p>A landscape feature as listed in Section 6.2 of the Duty of Care Guidelines.</p> <p>Native vegetation consists of plants that occur naturally within the region. Particular types of native vegetation may mean plants that are rare or have economic and/or social value to Aboriginal people.</p>
Permanent and semi-permanent waterholes, natural springs	A landscape feature as listed in Section 6.2 of the Duty of Care Guidelines.



	Waterholes (natural or cultural) and natural springs.
Project	<p>Includes:</p> <ul style="list-style-type: none"><li>– A development or proposed development.</li><li>– An action or proposed action.</li><li>– A use or proposed use of land.</li></ul>
Project area	In relation to a project, means the area the subject of the project, whether in construction or operational phases.
QHA	<i>Queensland Heritage Act 1992</i>
QHR	<p>Queensland Heritage Register</p> <p>The QHR is a list of places that have cultural heritage significance to the people of Queensland.</p>
Quarry	Quarries are places where raw materials such as stone or ochre were obtained through either surface collection or sub-surface quarrying. Stone collected or extracted from stone quarries was used for the manufacture of stone tools. Ochre, a type of coloured clay, was utilised by Indigenous people in rock art and for body and wooden tool decoration.
Registered significant area	Means an area recorded in the cultural heritage register as a significant Aboriginal area.
Registered significant object	Means an object recorded in the cultural heritage register as a significant Aboriginal object.
RNE	Register of the National Estate.
RNTBC	Registered Native Title Body Corporate.
Rock art	Queensland has a rich and diverse rock art heritage. Rock art sites can include engravings, paintings, stencils, and drawings. Paintings, stencils and drawings may have been done for everyday purposes but are often used for ceremonial and sacred functions. Engravings include designs scratched, pecked, or abraded into a rock surface.
Rock outcrop	<p>A landscape feature as listed in Section 6.2 of the Duty of Care Guidelines.</p> <p>May mean a prominent boulder or cluster of boulders or a rock with an overhang suitable for human shelter.</p>



Sand hills	<p>A landscape feature as listed in Section 6.2 of the Duty of Care Guidelines.</p> <p>May mean sand dunes associated with coastal and lacustrine environments or inland dune systems.</p>
Scarred or carved trees	<p>Scars found on large mature trees often indicate the removal of bark by Indigenous people to make material items like canoes, containers, shields and boomerangs. Carved trees generally feature larger areas of bark that have been removed and carved lines deeply etched into the timber. Carvings include geometric or linear patterns, human figures, animals and birds.</p>
SHP	<p>State Heritage Place</p> <p>SHPs are places entered in the Queensland heritage register as a State heritage place under Part 4 of the QHA.</p>
Significant Aboriginal area (Section 9 of ACHA)	<p>An area of particular significance to Aboriginal people because of either or both of the following:</p> <ul style="list-style-type: none"><li>– Aboriginal tradition.</li><li>– The history, including a contemporary history of any Aboriginal Party for the area.</li></ul>
Significant Aboriginal object (Section 10 of ACHA)	<p>An object of particular significance to Aboriginal people because of either or both of the following:</p> <ul style="list-style-type: none"><li>– Aboriginal tradition.</li><li>– The history, including a contemporary history of any Aboriginal Party for the area.</li></ul>
Significant Ground Disturbance	<p>Means:</p> <ul style="list-style-type: none"><li>– Disturbance by machinery of the topsoil or surface rock layer of the ground, such as by ploughing, drilling or dredging.</li><li>– The removal of native vegetation by disturbing root systems and exposing underlying soil.</li></ul>
Some hill and mound formations	<p>A landscape feature as listed in Section 6.2 of the Duty of Care Guidelines.</p> <p>Possible links to intangible cultural heritage values (e.g., story places, dreaming places, etc).</p>
Stone artefact	<p>A stone artefact usually refers to flaked stone tools. Technologically, this would include cores, flakes and retouched flakes. Other classes of artefacts such as hammerstones are often included in this term.</p>



Stone artefact scatter	A group of stone artefacts clustered together. Stone artefact scatters are described by their size (area), density (artefacts per m <sup>2</sup> ) and diversity (frequency of different artefact types and materials).
Surface Disturbance	Means any disturbance of an area which causes a lasting impact to the land or waters during the activity or after the activity has ceased.
UNESCO	United Nations Educational, Scientific and Cultural Organization.
Well	Rock wells are reliable water sources that have been altered by Indigenous people for the storage of water. The presence of wells often indicates the location of routes frequently travelled by Indigenous people in the past.
WWII	World War Two



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# 1. Introduction

## 1.1 Background and need for the project

Niche has been engaged by WSP Australia Pty Ltd (WSP) to undertake a Due Diligence Assessment (DDA) for the proposed establishment of a transmission connection of the Theodore Wind Farm near Theodore, in the Banana Shire Local Government Area (LGA) to the Powerlink Queensland (Powerlink) transmission network (the Project). WSP has been engaged on behalf of Powerlink to assist with securing approval of the Project through the Ministerial Infrastructure Designation project under the *Planning Act 2016*.

The includes development of a new Castle Creek Substation at the Theodore Wind Farm along with a double circuit 275kV transmission line extending approximately 55.4 km north of the wind farm to a new substation to be constructed at Mt Benn. The Mt Benn Substation forms part of the Banana Range Wind Farm Connection Project (currently in the planning and approvals phase) and does not form part of the Theodore Wind Farm Connection Project.

In summary, the Project comprises the following components:

- A 275kV substation proposed in the locality of Castle Creek, Queensland (the Castle Creek Substation). The substation footprint encompassing an area of 445 m x 270 m (12 hectares (ha)).
- A 55.4 km 275kV transmission line between Castle Creek Substation and Mt Benn Substation (the transmission line). The transmission line will be a double circuit configuration on self-supporting structures (steel lattice towers and/or poles) and located within 60 m wide easements.

## 1.2 Project area

The Project is located in the Banana Shire Council local government area (LGA), approximately 32 km east of Theodore and 23 km west/south-west of Biloela.

The Banana Shire area is founded in agricultural, mining, and energy production activities, with cattle farming contributing to Central Queensland being the largest beef provider in Australia (Banana Shire, 2025; State Development, Infrastructure and Planning, 2025).

Agricultural activity is reflected in the Project area, which consists of a mix of cleared agricultural land, remnant vegetation, waterways, and Belmont State Forest woodland along the Banana Range, which runs adjacent to the Project area in the east.

## 1.3 Project activity

Niche has been commissioned by WSP to undertake a cultural heritage DDA for the proposed transmission connection for the Theodore Wind Farm.

The Project area will involve the development of a new substation at Castle Creek and a transmission line (275 kilovolts (kV)) running north along the western extent of Banana Range towards Banana. The transmission line will be within 60m wide easements.

The transmission line will connect to a substation at Mt Benn, which is already within the planning and approvals phase of works and is not part of the Theodore Wind Farm (although it is part of the Banana Range Wind Farm Connection Project).



It is proposed that the connection between substations will be via overhead lines. In order to complete these works, significant clearance will occur within the corridor area as well as some significant ground disturbance to construct elements of the powerlines. This degree of ground disturbance will also be implemented for the construction of the Castle Creek Substation.

## 1.4 Assessment overview

The aim of this DDA is to assist Powerlink in identifying the potential for the Project area to contain any Aboriginal and/or historical cultural heritage values that could constrain the Project works and assist them in meeting their Duty of Care (DoC) under the *Aboriginal Cultural Heritage Act 2003* (ACHA). This DDA was written to ensure that Powerlink complies with the statutory requirements of the ACHA and the *Queensland Heritage Act 1992* (QHA).

The scope of this DDA includes:

- Desktop searches of statutory registers, inventories and relevant lists for cultural heritage, including:
  - Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism (DWATSIPM) Aboriginal Cultural Heritage Register and Database.
  - National Heritage List (NHL).
  - Commonwealth Heritage List (CHL).
  - Queensland Heritage Register (QHR).
  - Local Government heritage register and/or planning scheme.
- Desktop searches of non-statutory registers, inventories and relevant lists for cultural heritage, including:
  - Register of the National Estate.
  - National Trust of Australia (Queensland) Heritage Register.
  - Queensland Native Mounted Police Research Database.
  - Queensland WWII (World War 2) Historic Places.
- A desktop review of available cultural heritage and archaeological studies of relevance to the Project area (Aboriginal and historical studies) to provide historical context and inform the assessment of archaeological potential within the Project area.
- A desktop analysis of available historical aerial photographs of the Project area to establish the extent of disturbance caused by past land use activities to assist in the determination of the activity category under the DoC Guidelines. In addition, the review will also identify any high-risk landscapes and/or geographic areas.
- Inclusion of recommendations based on an understanding of known and potential Aboriginal and historical cultural heritage being present within the Project area and requirements and obligations under relevant heritage legislation.

## 1.5 Authorship and acknowledgements

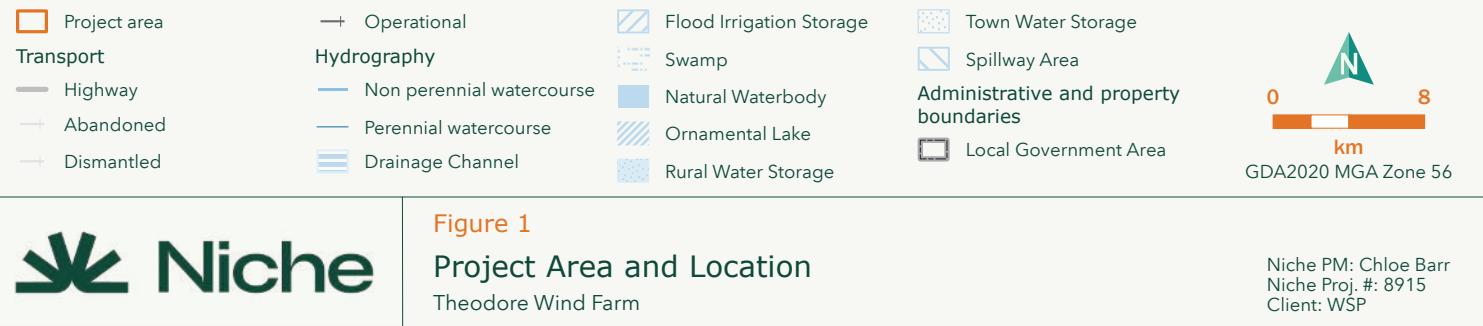
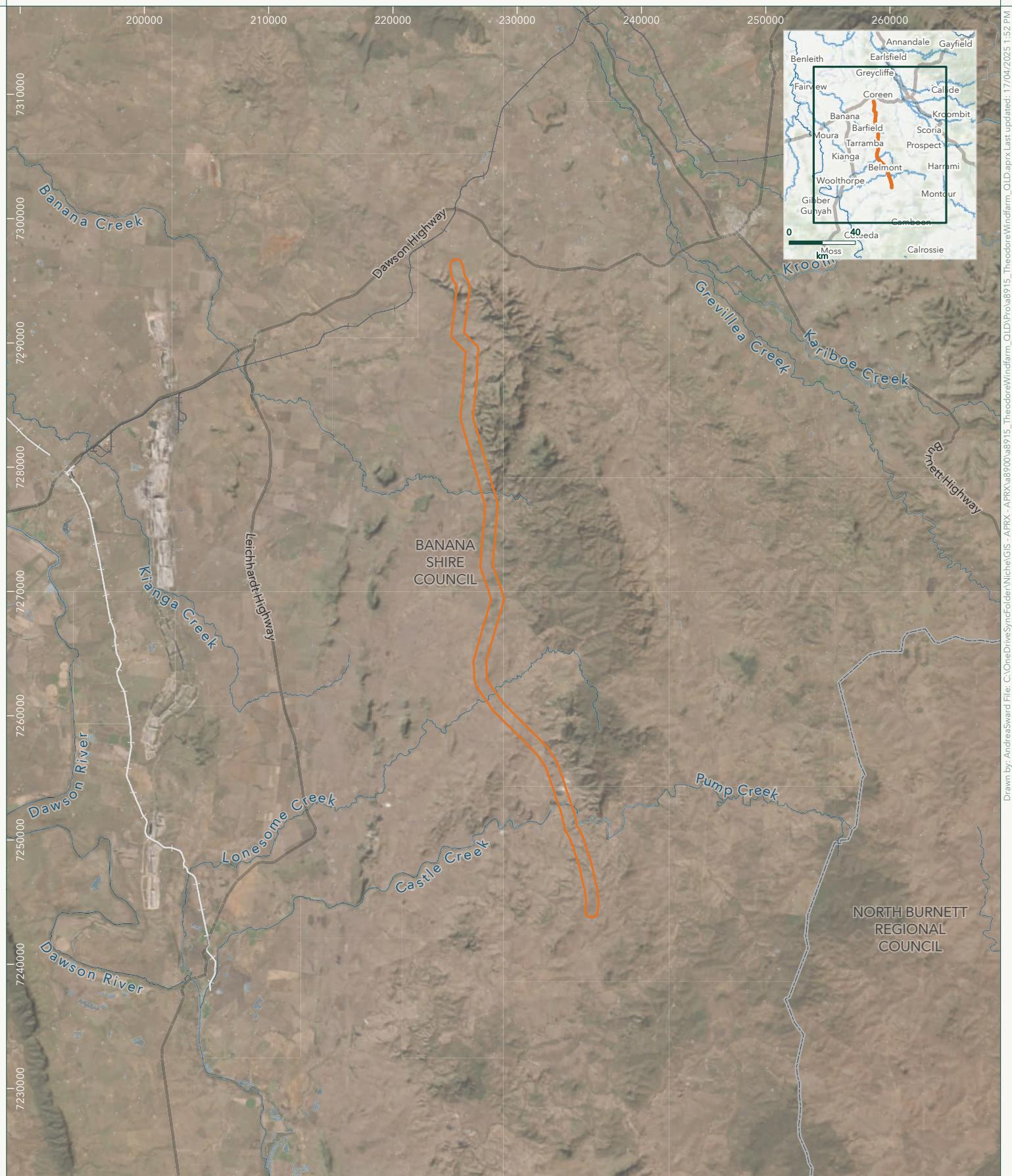
This report has been prepared by Georgia Rolls (Heritage Consultant - Niche). It was internally reviewed by Jacqueline Matthews (Principal - Heritage, Niche) and Chelsea Jones (Associate - Heritage) for consistency and accuracy.

## 1.6 Limitations

- Consultation with the Aboriginal Party for the Project area has not taken place. Aboriginal Parties are not required to participate in the DDA process.
- No site inspection has been undertaken for this DDA. The desktop findings are considered sufficient to inform the Project area's DoC risk level and heritage constraints.



- The previous assessments used to inform this DDA have been retrieved as readily available and publicly available documents. The scope of this DDA has not included accessing documents stored in private, non-publicly accessible repositories.
- Historical aerial imagery for the Project area is available from 1957, and imagery for some years is not available. Historical aerial imagery was sourced from QImagery a public repository, there may be earlier disturbances that occurred prior to the records made available from QImagery. An assessment of land use and disturbance has been made based on available imagery and sources and is considered to be sufficient to inform this DDA.
- It is important to note that submission of known Aboriginal cultural heritage sites to the DWATSIPM heritage database is not mandatory. The absence of recorded cultural heritage sites does not necessarily mean that cultural heritage sites are not present.



**Figure 1**  
**Project Area and Location**  
Theodore Wind Farm

Niche PM: Chloe Barr  
Niche Proj. #: 8915  
Client: WSP



## 2. Legislative context

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

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes a framework for assessing and managing the environmental impacts of activities that could affect matters of national environmental significance (MNES). MNES include:

- **World heritage properties:** Sites listed under the UNESCO World Heritage Convention, are recognised for their outstanding universal value.
- **National heritage places:** Locations of outstanding heritage significance to the nation, encompassing natural, Indigenous, and historic heritage.
- **Commonwealth heritage places:** Places owned or leased by the Australian Government that are of heritage significance.
- **Ramsar wetlands:** Wetlands designated under the Ramsar Convention, important for their international significance as habitats for waterfowl.
- **Nationally threatened species and ecological communities:** Species and ecosystems listed as threatened under national environmental law.

The EPBC Act provides a framework for assessing and managing potential impacts on these MNES, ensuring their conservation and sustainable management. While MNES include Ramsar wetlands and nationally threatened species and ecological communities, this DDA report only considers these as and when they become relevant to heritage places and values.

The Australian Heritage Database serves as a central repository and information source concerning Australia's cultural and natural heritage places protected under the EPBC Act, including:

- Places in the World Heritage List (WHL)
- Places in the National Heritage List (NHL)
- Places in the Commonwealth Heritage List (CHL)
- Places in the Register of the National Estate (RNE; non-statutory archive)
- Places in the List of Overseas Places of Historic Significance to Australia
- Places under consideration, or that may have been considered for, any one of these lists.

### 2.2 *Aboriginal Cultural Heritage Act 2003*

The *Aboriginal Cultural Heritage Act 2003* (ACHA) recognises Aboriginal people as the primary authority on Aboriginal cultural heritage, aiming to facilitate the continuation of Aboriginal culture, traditions, and customs.

The following fundamental principles underline the ACHA's main purpose (Division 2, Section 5):

- The recognition, protection and conservation of Aboriginal cultural heritage should be based on respect for Aboriginal cultural and traditional practices.
- Aboriginal people should be recognised as the primary guardians, keepers and knowledge holders of Aboriginal cultural heritage.
- It is important to respect, preserve and maintain knowledge, innovations and practices of Aboriginal communities and to promote understanding of Aboriginal cultural heritage.
- Activities involved in the recognition, protection and conservation of Aboriginal cultural heritage are important because they allow Aboriginal people to reaffirm their obligations to "law and country."



- There is a need to establish timely and efficient processes for the management of activities that may harm Aboriginal cultural heritage.

The ACHA is a 'blanket' legislation that applies to any activity that has the potential to impinge upon cultural heritage values or objects (Section 23(1)). The ACHA places all persons in Queensland under a DoC to take all reasonable and practicable measures to ensure they do not harm Aboriginal cultural heritage whenever they undertake an activity.

Aboriginal heritage values and objects include both previously documented as well as unknown items of Aboriginal significance. Under the ACHA, Aboriginal cultural heritage is defined in Section 8 as:

- A significant Aboriginal area in Queensland.
- A significant Aboriginal object.
- Evidence, of archaeological or historic significance of Aboriginal occupation of an area in Queensland.

### 2.2.1 The cultural heritage duty of care

Section 23(1) of the ACHA states that any person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage (the "cultural heritage duty of care").

Section 23 (2) of the ACHA states that, without limiting the matters that may be considered by a court required to decide whether a person has complied with the cultural heritage duty of care in carrying out an activity, the court may consider the following:

- The nature of the activity, and the likelihood of its causing harm to Aboriginal cultural heritage.
- The nature of the Aboriginal cultural heritage likely to be harmed by the activity.
- The extent to which the person consulted with Aboriginal parties about the carrying out of the activity, and the results of the consultation.
- Whether the person carried out a study or survey, of any type, of the area affected by the activity to find out the location and extent of the Aboriginal cultural heritage, and the extent of the study or survey.
- Whether the person searched the database and register for information about the area affected by the activity.
- The extent to which the person complied with the cultural heritage duty of care guidelines.
- The nature and extent of past uses in the area affected by the activity.

Section 28 of the Act states that the Minister (of the Department of Women, Aboriginal and Torres Strait Islander Partnerships and Multiculturalism) may by gazetted notice notify guidelines ("cultural heritage duty of care guidelines") identifying reasonable and practicable measures for ensuring activities are managed to avoid or minimise harm to Aboriginal cultural heritage.

It is not a statutory requirement to follow the DoC guidelines. However, complying with the DoC guidelines affords strict compliance with the cultural heritage DoC and is, therefore, a defence against an accusation of breach of the ACHA. Where Aboriginal cultural heritage is harmed by an activity and the activity is not otherwise covered by Sections 23, 24, 25 or 26 (the cultural heritage protection provisions) of the ACHA, failure to have complied with the DoC guidelines may result in prosecution under the ACHA.

### 2.2.2 Duty of care guidelines

The DoC guidelines have been gazetted by the Minister responsible for the administration of the legislation under section 28 of the ACHA. The DoC guidelines set out a framework that assists land users ensure they take reasonable and practical measures with regard to the key protection provisions of the ACHA. It is expected that land users should consult the DoC guidelines before undertaking any land-use activity.

The DoC guidelines recognise that it is unlikely that Aboriginal cultural heritage will be harmed where (paragraph 2.2):



- The current or proposed activity is on an area previously subject to significant ground disturbance and the activity will impact only the area subject to the previous disturbance; or
- The impact of the current or proposed activity is unlikely to cause any additional harm to Aboriginal cultural heritage than that which has already occurred.

The DoC guidelines set out a system to categorise the nature of an activity to understand the potential for any activity to impact upon significant Aboriginal cultural heritage values. The criteria that determine this categorisation consider the likelihood of an activity to cause surface disturbance and the appropriate procedure to commence the activity.

### 2.2.2.1 Categorisation of Proposed Activity

Table 1 provides a summary of the five categories recognised under the DoC guidelines. These categories inform the proponent of how to meet their DoC requirements.

There are two types of disturbance defined by the DoC guidelines (Section 3), which are a central part of an activity's categorisation:

- Significant ground disturbance
  - Disturbance by machinery of the topsoil or surface rock layer of the ground, such as by ploughing, drilling or dredging.
  - The removal of native vegetation by disturbing root systems and exposing underlying soil.
- Surface disturbance
  - Means any disturbance of an area that causes a lasting impact on the land or waters during the activity or after the activity has ceased.

The categorisation of the activity also needs to consider the provisions relating to the potential of the activity to excavate, relocate, remove or harm Aboriginal cultural heritage (as noted below).

Land users should also exercise greater caution before proceeding with an activity in circumstances where the nature and extent of the past land use of an area is not inconsistent with the continued presence of Aboriginal cultural heritage. This requirement of the DoC guidelines requires consideration of whether, despite a history of even significant ground disturbance, Aboriginal cultural heritage may persist in certain areas.

Table 1 Summary of the activities categorised under the DoC guidelines

Category	Description
Category 1	Where an activity involves <b>no surface disturbance</b> of an area it is generally unlikely that the activity will harm Aboriginal cultural heritage and the activity will comply with the DoC guidelines. These activities may include walking, driving along existing roads and tracks, aerial surveys, navigating through water, and GPS survey that does not include surface disturbance. These activities are unlikely to alter the formation or destroy Aboriginal cultural heritage values. It is reasonable and practicable for the activity to proceed without further cultural heritage assessment.
Category 2	Where an activity causes <b>no additional surface disturbance</b> of an area it is generally unlikely that the activity will harm Aboriginal cultural heritage or could cause additional harm to Aboriginal cultural heritage to that which has already occurred, and the activity will comply with the DoC guidelines. These activities may include cultivation of an area that is currently used for cultivation, cattle grazing overgrazed land, use and maintenance of existing roads, tracks and powerlines within the existing infrastructure alignment etc. It is reasonable and practicable for these activities to proceed without further cultural heritage assessment. This is subject to provisions outlined in sub-section 2.1.1.2 below.
Category 3	Where an activity is proposed in a <b>developed area</b> it is generally unlikely that the activity will harm Aboriginal cultural heritage and the activity will comply with these DoC guidelines. In these



Category	Description
	circumstances, it is reasonable and practicable that the activity proceeds without further cultural heritage assessment. Examples of the types of activities that may generally proceed within a developed area include the use and maintenance of existing roads, tracks and power lines within the existing alignment, or other infrastructure footprint or the use and maintenance of services and utilities (such as electricity infrastructure; water or sewerage disposal) on an area where such services and utilities are currently being provided. This is subject to provisions outlined in sub-section 2.2.1.2 below.
Category 4	Where an activity is proposed in an area, that has <b>previously been subject to significant ground disturbance</b> it is generally unlikely that the activity will harm Aboriginal cultural heritage and the activity will comply with these DoC guidelines. This is subject to provisions outlined in sub-sections 2.2.1.2 and 2.2.1.3 below.
Category 5	<b>Activities causing additional surface disturbance.</b> Where an activity is proposed under Category 5 there is generally a high risk that it could harm Aboriginal cultural heritage. In these circumstances, the activity should not proceed without a cultural heritage assessment. The DoC guidelines also note that particular care must be taken where it is proposed to undertake activities causing additional surface disturbance to 'features' considered likely to have cultural heritage significance and that if such features are present then it is necessary to notify the Aboriginal Party.

### 2.2.2.2 Provisions relating to excavation, relocation, removal or harm

If, at anytime during the activity, it is necessary to excavate, relocate, remove or harm Aboriginal cultural heritage in the Activity Area, the DoC guidelines make the following provisions (**paragraphs 5.8-5.12**):

*"5.8 If at any time during the activity, it is necessary to excavate, relocate, remove or harm a Cultural Heritage Find the activity should cease immediately. You must notify the Aboriginal Party for the area and seek their advice and agreement as to how best this may be managed to avoid or minimise harm to the Aboriginal cultural heritage. Paragraph 6.0 of the Guidelines sets out examples of features highly likely to constitute or contain a Cultural Heritage Find.*

*5.9 It is advisable that the terms of any agreement you reach with the Aboriginal Party for the area be recorded and documented in the event of future disputes.*

*5.10 Where agreement cannot be reached with the Aboriginal Party for the area, you continue to have a duty of care obligation under section 23 of the ACHA and must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage including, where necessary, through the development of a Cultural Heritage Management Plan under Part 7 of the ACHA.*

*5.11 An activity under Category 3 or Category 4 that will excavate, relocate, remove or harm Aboriginal cultural heritage entered on the Aboriginal Cultural Heritage Register or the Aboriginal Cultural Heritage Database should not proceed without the agreement of the Aboriginal Party for the area or a Cultural Heritage Management Plan undertaken pursuant to Part 7 of the Act.*

*5.12 Information regarding Aboriginal cultural heritage entered on the Aboriginal Cultural Heritage Register or the Aboriginal Cultural Heritage Database may be obtained from the Cultural Heritage Unit."*

### 2.2.2.3 Significant features and landscape features

Paragraph 6.0 of the DoC guidelines sets out examples of features that are highly likely to have cultural heritage significance. These include, but are not limited to:

- Ceremonial places
- Scarred or carved trees
- Burials
- Rock art



- Fish traps and weirs
- Occupation sites
- Contact sites
- Wells.

In accordance with Section 6.2 of the DoC guidelines, landscape features that may also have cultural heritage significance include:

- Rock outcrops
- Caves
- Areas of biogeographical significance, such as natural wetlands
- Permanent and semi-permanent waterholes, natural springs
- Particular types of vegetation
- Some hill and mound formations.

The DoC guidelines state that the views of the Aboriginal Party for the Project area are key in helping assess the Aboriginal cultural heritage significance of these kinds of features. The DoC guidelines also note that an appropriately qualified person such as anthropologists, archaeologists and historians can also assist.

With regard to Category 4, the following statement is also made in the DoC guidelines:

*"5.6 In some cases, despite an area having been previously subject to Significant Ground Disturbance, certain features of the area may have residual cultural heritage significance. These features are set out in paragraph 6.0 of these guidelines.*

*5.7 It is important to be informed about any cultural heritage significance that may attach to these features and extra care must be taken prior to proceeding with any activity that may cause additional surface disturbance to the feature, or the area immediately surrounding the feature which is inconsistent with the pre-existing Significant Ground Disturbance. In these circumstances, it is necessary to notify the Aboriginal Party and seek:*

- Advice as to whether the feature constitutes Aboriginal cultural heritage; and
- If it does, agreement as to how best the activity may be managed to avoid or minimise harm to any Aboriginal cultural heritage."

### 2.2.3 Aboriginal cultural heritage database and register

A cultural heritage database and cultural heritage register have been established under Part 5 of the ACHA. DWATSIPI is responsible for administering the database and register.

The cultural heritage database holds information on the location and type of some of the previously recorded Aboriginal cultural heritage 'sites' in Queensland. A 'site' recorded on the database may be a physical object (for example, a stone artefact or scarred tree) or an intangible area (for example, a story place or pathway).

The purpose of the **cultural heritage database** is to:

- Assemble information about Aboriginal and Torres Strait Islander cultural heritage in a central and accessible location; and
- Provide a research and planning tool to help Aboriginal and Torres Strait Islander parties, researchers and other persons assess the Aboriginal and Torres Strait Islander cultural heritage values of particular areas.

The database is not publicly available. However, DWATSIPI provides information from the database to:

- Aboriginal and Torres Strait Islander parties - if the information relates to the party's area of responsibility.
- Land users - if the information is necessary for them to satisfy their duty of care.



The cultural heritage register holds:

- Information regarding cultural heritage studies under Part 6 of the legislation.
- Information regarding Designated Landscape Areas.
- Information about whether a particular area has been the subject of a cultural heritage management plan under Part 7 of the legislation.
- Information on cultural heritage bodies.
- Details of statutory Aboriginal and Torres Strait Islander parties.

The register is intended to be:

- A depository of information for consideration for land-use planning (including local government planning schemes and regional planning strategies); and
- A research and planning tool to help people in their consideration of the Aboriginal and Torres Strait Islander cultural heritage values of particular objects and areas.

The register is available to the public.

## 2.3 Queensland Heritage Act 1992

The QHA provides for the conservation of Queensland's cultural heritage for the benefit of the community and future generations. Administered by the Department of Environment, Tourism, Science and Innovation (DETSI), the QHA sets out a framework for identifying and protecting heritage places by establishing the Queensland Heritage Council (QHC), the QHR, local heritage registers, regulating development and enabling the management of heritage places through heritage agreements.

The QHR is a record of places of cultural heritage significance to the people of Queensland. Places may be entered under two categories - Protected Area (PA) or State Heritage Place (SHP). PA's have strong heritage values that are vulnerable and under threat.

SHPs are places of significance that contribute to our understanding of the wider pattern and evolution of Queensland's history and heritage. SHPs are the most common category in the QHR. A place may be entered in the QHR under this category if it satisfies one or more of the eight cultural heritage criteria specified in Section 35 of the QHA.

The criteria are:

- a. The place is important in demonstrating the evolution or pattern of Queensland's history.
- b. The place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage.
- c. The place has the potential to yield information that will contribute to an understanding of Queensland's history.
- d. The place is important in demonstrating the principal characteristics of a particular class of cultural places.
- e. The place is important because of its aesthetic significance.
- f. The place is important in demonstrating a high degree of creative or technical achievement at a particular period.
- g. The place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- h. The place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history.



### 2.3.1 Significant features and landscape features

Part 9 of the QHA outlines the process under which the discovery and protection of archaeological artefacts and underwater cultural heritage artefacts should be managed.

Section 89 provides for the requirement to give notice about discovery, including:

- A person who discovers a thing the person knows or ought reasonably to know is an archaeological artefact or underwater cultural heritage artefact that is an important source of information about an aspect of Queensland's history must give the chief executive notice under this section.
- The notice must –
  - Be in the approved form.
  - Be given to the chief executive as soon as practicable after the person discovers the thing.
  - State where the thing was discovered.
  - Include a description or photographs of the thing.

## 2.4 Local heritage registers and planning schemes

The Project area is in the Banana Shire LGA.

The Banana Shire Council considers places of historical cultural heritage significance in the Banana Shire Planning Scheme (2021) and the Banana Shire Local and State Heritage Register (2014).



## 3. Desktop assessments

### 3.1 Ethnohistorical context

#### 3.1.1 Aboriginal occupation

The Project area is within the traditional lands of the Wulli Wulli and Gaangalu people as recognised through their native title claims over the Project area and surrounds<sup>1</sup>.

Research indicates that Aboriginal occupation within Central Queensland dates to at least 19,000 years ago. This date is derived from Roof Fall Cave in Cania Gorge, approximately 64km east of the Project area (Westcott, Lilley & Ulm, 1999; Williams and Ulm, 2014). This site contains rock art, ochre, stone artefacts, faunal remains, and charcoal. Cania Gorge is of cultural significance to Gooreng Gooreng people, whose Country borders Gaangalu and Wulli Wulli people's. Cania Gorge demonstrates the diversity of cultural practices within the wider region. It includes multiple rock shelters boasting art, cultural artefacts, faunal remains, hearths, and grinding grooves (Lilley et al., 1998; Westcott, Lilley & Ulm, 1999).

Carnarvon Gorge and Carnarvon Park, along with the sites associated with them, represent another culturally rich landscape within the Central Queensland region. The landscape includes multiple rock shelters and rock art sites, with the oldest being 'Native Well 2' which is dated to  $10,770 \pm 135$  cal BP. The stylistic differences between the stencilled art at Carnarvon and free-hand paintings at Cania Gorge demonstrate the cultural richness of the Central Queensland region (Taçon, 2021 Westcott, Lilley & Ulm, 1999; Queensland Government, 2024).

Other important Aboriginal sites within the Central Queensland region include the Gyranda site complex and Rainbow Cave art site. There are also numerous sites of cultural importance around the Seventeen Seventy region, to the east of the Project area.

Aboriginal groups within Central Queensland were well-connected through multiple trade routes (Kerwin, 2010). Of particular importance, was the Bunya (Bonyi) Festival in South-East Queensland, which attracted people within a wide stretch of Queensland and New South Wales (Fahey et al., 2024; Laurie, 1959).

The expansion of European Settlers during the 1800s inevitably resulted in conflict with Aboriginal groups within Central Queensland. The earliest recorded massacre was between the 1<sup>st</sup> of June and the 31<sup>st</sup> of July 1849. In the incident, at least 60 Aboriginal people were massacred in retaliation to an Aboriginal killing of two white men (University of Newcastle, 2024). One of the most prominent massacre events within the region was of the Iman (Yiman/Yimen) people (whose country borders Wulli Wulli Country) in the aftermath of the Hornet Bank massacre, on the southern side of the Precipice National Park (Forde, 2000; University of Newcastle, 2025). Between 1851 and 1865, there were multiple conflict events between Aboriginal people and Settlers in the area west of the Project area between Banana and Theodore and a Native Mounted Police camp was set up in Banana (Burke and Wallis, 2024).

From early settling in the 1880s and throughout the 20<sup>th</sup> century, Aboriginal people were attacked and gentrified, before also being isolated through the Stolen Generation crisis. In 1927, the Woorabinda Government

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<sup>1</sup> Niche recognises that Traditional Custodians do not always agree on language and tribal boundaries. We do not claim authority on any specific matters that may affect native title claims or personal identities. Our central purpose in this section is to broadly understand and characterise the history and context of the Project area utilising the available sources and recognising their limitations.



Settlement mission camp was established to displace Aboriginal people and place them under colonial control, affecting their ability to practice culture as well as enforcing labour and colonial ideals upon them (Forde, 1990).

### 3.1.2 European settlement and township development

Apart from Cook's 1770 exploration of the Eastern coastline, some of the earliest records for colonial exploration into Central Queensland were of Ludwig Leichhardt in 1844, who travelled north from Jimbour into the Dawson Valley, and Major Mitchell in 1846, who travelled north-east from the western extent of Central Queensland through Tambo (Bolton, 1972; Towner, 1962).

After this exploration, colonial settlement began in Central Queensland, and with that came a rise in mining and agricultural economies during the late 1880s. Sugar cane plantations were one major aspect of agriculture in the region, especially between Mackay and Bundaberg, which provided significant economic growth with the aid of South Sea Islander people who were brought over as indentured labourers (Moore, 2001; National Museum of Australia, 2022). Another aspect of agriculture that thrived was sheep and cattle farming. The Laurel Bank Works of Rockhampton, which made tallow, was a significant business in the initial period of sheep and cattle agriculture (Bird, 1904).

Mining was another important aspect of economic and colonial population growth within Central Queensland, especially due to multiple gold mine sites supporting 'gold rushes' (Bird, 1904; Mate, 2014). Notably, the Cracow, Mount Morgan, Eungella, and Paradise Gold Mines were key sites during this 'gold rush' (Doole and Dowsett, 2022; Mate, 2014).

Banana Station, approximately 20km west of the Project area, was in operation since at least 1855 when Philip Sellheim emigrated from Germany to manage the station (Bolton, 1972). The introduction of telegraph lines to Banana in 1865, and some rail infrastructure in the wider surrounding region aided in developing the area to some degree (Bird, 1904; Bowden, 2015). Banana was established as a township in 1881 (Banana Shire, 2025).

The township of Theodore, previously a part of Castle Creek, was established as a farming region with irrigation systems during the 1920s as a result of the acknowledgment of great soil quality (Elder, 2023; Madsen & O'Mullen, 2013). In the same time period, the first mine in the Banana Shire area opened up at Baralba (Banana Shire, 2025).

The area also has various mining and quarry sites, with Dawson Mine being the closest to the Project area (approximately 25km west). The mine was established in the 1960s (AngloAmerican, 2013).

## 3.2 Previous cultural heritage assessments

A search and review of previous, readily available cultural heritage assessment reports for the Project area and nearby vicinity of the Project area has been conducted and a summary is provided in Table 2.

While there were no previous cultural heritage assessments that were undertaken within the Project area or 100m of it, Table 2 details three assessments that are within the wider region. These offer a local and regional context for archaeology and history within the area that assists in constructing a predictive model for cultural heritage and also provides context for management strategies.



Table 2 Summary of previous cultural heritage assessments relevant to the Project area

Reference	Summary	Relevance to Project area
Aboriginal Heritage Duty of Care Assessment - Theodore Solar Farm 326 Colombo Road, Lonesome Creek (NGH Pty Ltd, 2019)	<p>NGH was engaged by juwi Renewable Energy to undertake a Duty of Care assessment. The team partially surveyed the area and found that the area had mostly been cleared, meaning that significant ground disturbance had occurred within the vast majority of the project area.</p> <p>As a result, only one isolate artefact was identified within the survey less than 100m from a waterway. No previous records of Aboriginal sites or artefacts were found.</p>	This assessment was undertaken approximately 20km west of the project area.
Aboriginal Party Cultural Heritage Site Survey - BSC Nobbs St, Moura Drainage Upgrade, Nobbs St, Moura, Queensland Redleaf Group, April 2025	<p>Redleaf Group worked with representatives of the Gaangalu Nation People to assess a portion of Nobbs Street, Moura, for potential risks to cultural heritage values.</p> <p>No Aboriginal cultural artefacts or sites had been recorded, and none were found during the works. However, large remnant vegetation did exist in the project area in close proximity to water.</p>	The Moura area is around 30km west of the Project area. This survey represents a very recent assessment of the greater landscape.
Preliminary Cultural Heritage Assessment - Dawson Valley Water Supply Scheme, QLD Niche, March 2023	<p>This assessment was undertaken for a number of potential options for water supply for the Dawson Valley Water Supply Scheme, operated by Arup. These sites were proposed for the greater region around Moura.</p> <p>The assessment revealed a large number of variable cultural sites including artefact scatters, scarred trees, and hearth ovens. These sites were in greatest concentration in association with waterways.</p>	The Moura area is around 30km west of the Project area. The Dawson River is an important aspect of the landscape in this area, which directly relates to the waterways within the Project area. Thus, it may offer insight into site concentration, type, and distribution.
Cultural Heritage Due Diligence Assessment - Mount Rainbow, Moura Line Ch. 78.485 km Niche, November 2022	<p>The purpose of this due diligence assessment was to investigate the nature of land use in a section of road in Banana. The section was a level crossing between a rail line and Banana Holdings Road.</p> <p>The assessment found that in 1959 there had been minimal ground disturbance; however, after this, the area was dramatically altered in the form of land clearance, and rail and road construction. Due to the nature of land disturbance as well as an absence of recorded Aboriginal sites and colonial heritage sites, the area was marked as having low-risk levels.</p>	The site is within close proximity to the northern section of the Project area (approximately 3.5km west).

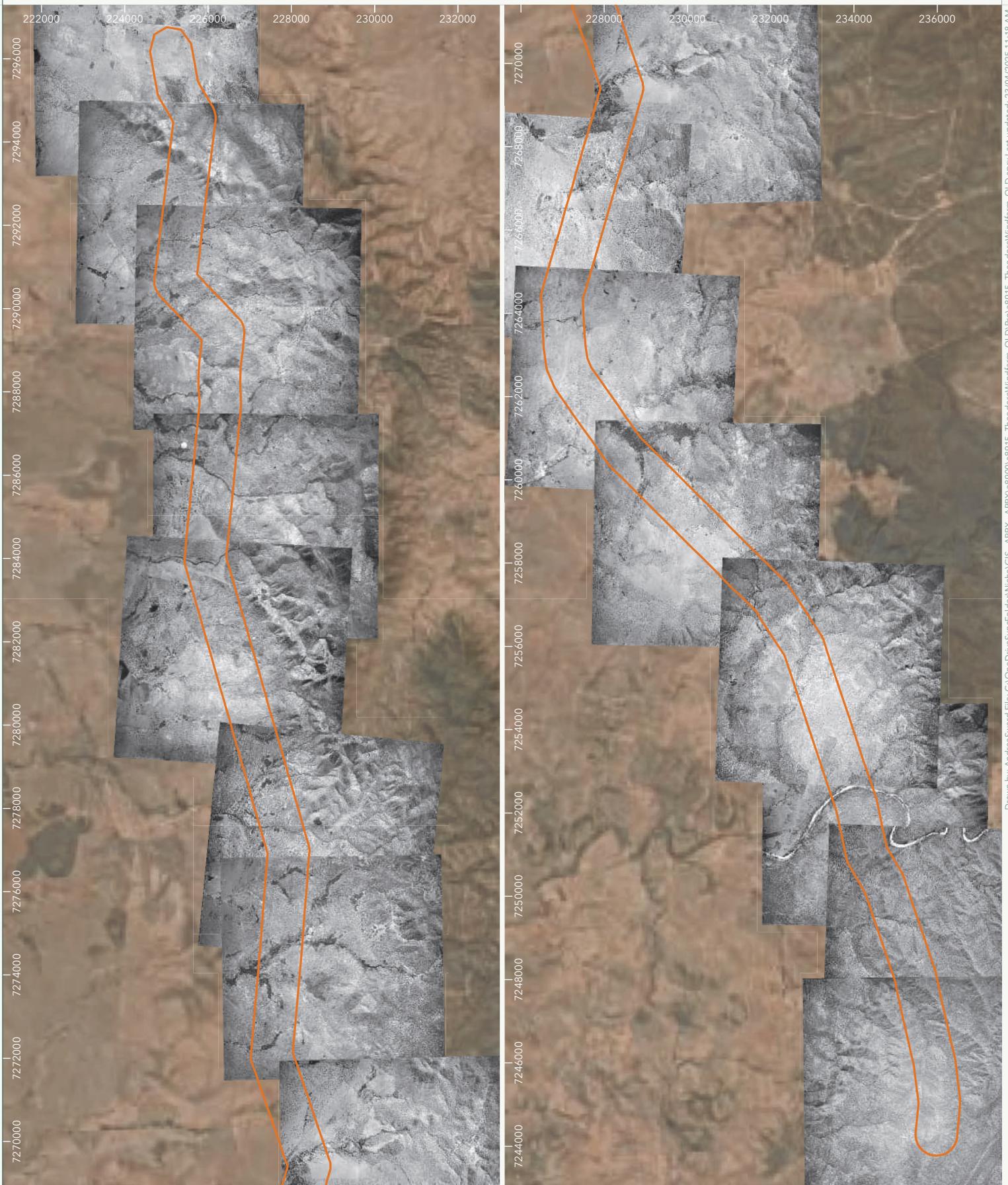


Site Inspections at Proposed Drill Sites Harcourt 8, Harcourt 9, Harcourt 11, Harcourt 12 Niche, August 2013	<p>These site inspections were undertaken to assess the nature of Aboriginal heritage and ecology for the purpose of clearing the site for exploration drilling for the client, Harcourt Petroleum NL.</p> <p>The inspections found that, while no records of archaeological sites were identified for this Project area, there were numerous historical accounts to support a history of traditional cultural activities within the area.</p> <p>Importantly, the presence of gilgais within the site area was suggested in relation to soil analysis. A landscape with gilgais would have acted as an important area for food resources. If the Project area mirrored this landscape, it could be inferred that the wider region was an important site for Aboriginal subsistence.</p>	<p>The site inspections at Banana are within approximately 25km of the proposed project area. They also indicate that the area has experienced a high degree of clearance for the purpose of farming. Environmental factors may be inferred from this study's findings.</p>
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### 3.3 Historical land use and aerial imagery

This section provides a review of available historical aerial imagery for the Project area. This review provides further context for the historical cultural heritage assessment by demonstrating land use specific to the Project area. A thorough compilation of the Project area's disturbance history is also an essential component of an accurate categorisation of Aboriginal cultural heritage under the DoC guidelines.

Aerial imagery covering the Project area that shows past land use and disturbance is available from the 1960s-2000s. Observations of land use and disturbance for the key available periods are seen in Figure 2 and are summarised below in Table 3.

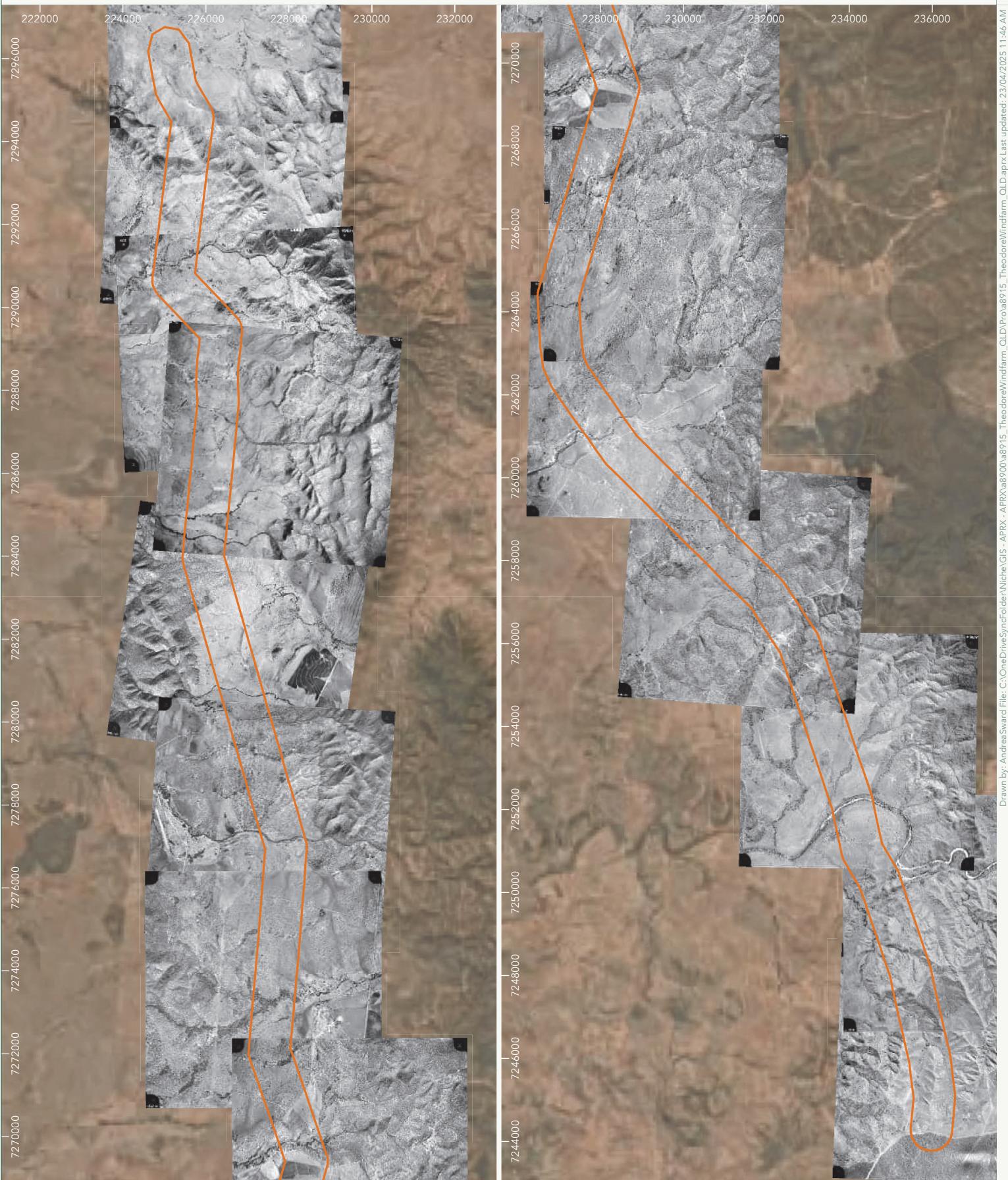


Project area



**Figure 2-1**  
**Historical Aerial Imagery Assessment (1960)**  
**Theodore Wind Farm**

Niche PM: Chloe Barr  
 Niche Proj. #: 8915  
 Client: WSP

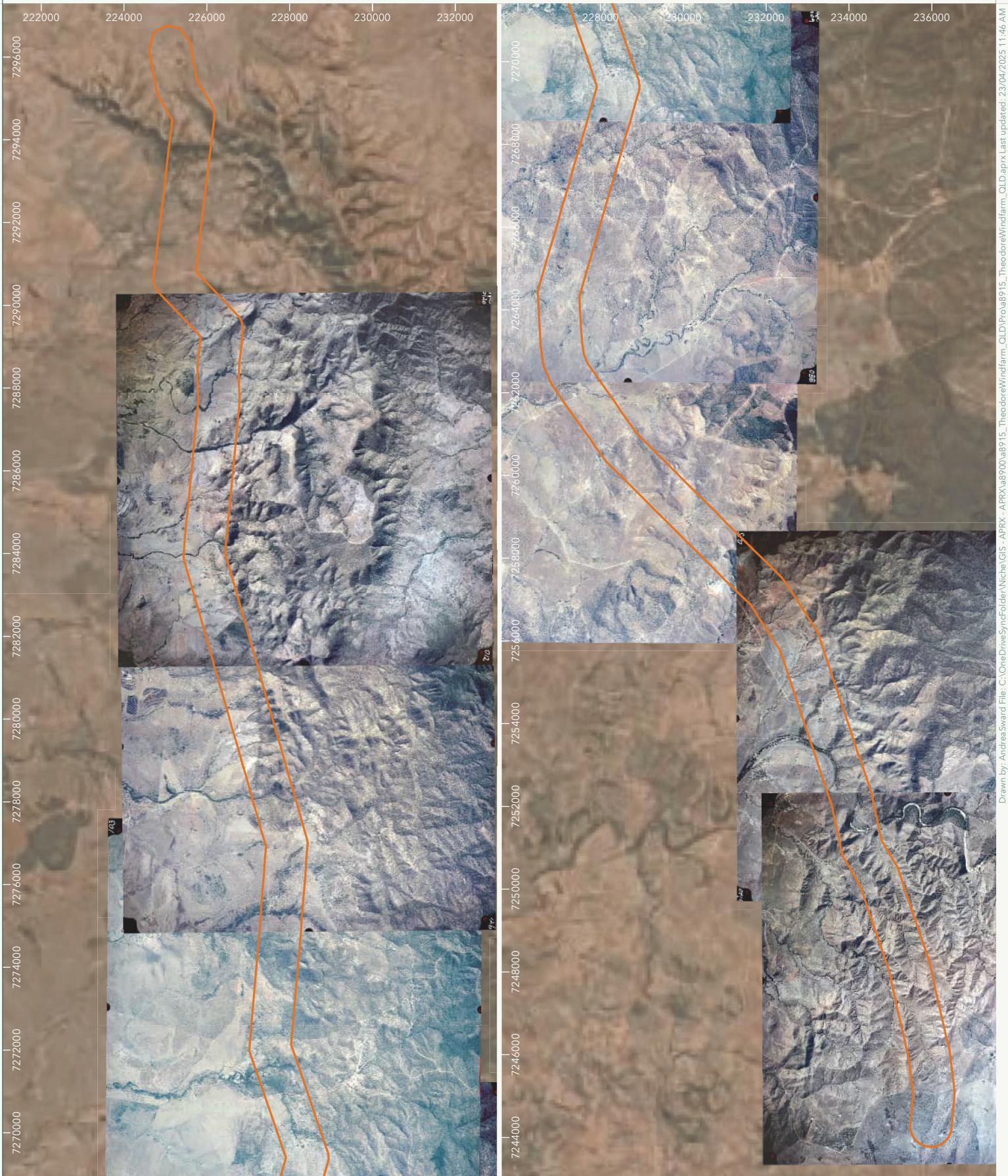


Project area



**Figure 2-2**  
**Historical Aerial Imagery Assessment (1980)**  
**Theodore Wind Farm**

Niche PM: Chloe Barr  
 Niche Proj. #: 8915  
 Client: WSP



Project area

0 3  
 km  
 GDA2020 MGA Zone 56



**Figure 2-3**  
**Historical Aerial Imagery Assessment (2000)**  
**Theodore Wind Farm**

Niche PM: Chloe Barr  
 Niche Proj. #: 8915  
 Client: WSP



Table 3 Historical aerial imagery assessment

Year	Observation
1960	The aerial imagery reveals that much of the Project area had been cleared prior to 1960, which makes sense considering its agricultural history from the 1850s. The northern half of the Project area has more areas of remnant vegetation in comparison with the southern half. These vegetation areas are typically closer to creeks.
1980	The aerial imagery reveals that very little change in vegetation occurred between the 1960s and 1980. Areas of remnant vegetation remain consistent, except for a section midway through the Project area, which appears to have a reduction in vegetation. This also occurs in the eastern-facing 'bend' within the southern portion of the Project area.
2000	The aerial imagery reveals that very little change in vegetation has occurred between the 1980s and 2000. According to the Department of Climate Change, Energy, the Environment and Water (2003) there was an approximate loss of 3.1% of vegetation within the wider Carnarvon Range region between 1991 and 2003, which may account for any minimal vegetation reduction within the Project area.

## 3.4 Historical cultural heritage

### 3.4.1 Statutory database search results

Searches of statutory databases for historical cultural heritage were undertaken on 11 April 2025 with a 100 m buffer. In summary, the search results identified the following:

- **Commonwealth:** searches of the [World Heritage List](#) (WHL), [National Heritage List](#) (NHL) and the [Commonwealth Heritage List](#) (CHL) identified **no places** in the Project area or within 100 m of the Project area boundary.
- **State:** a search of the [Queensland Heritage Register](#) (QHR) returned **no results** in the Project area or within 100 m of the Project area boundary.
- **Local:** a search of the Banana Shire Planning Scheme, 2021, heritage overlay map and Banana Shire Local Heritage Register returned **no results** in the Project area or within 100 m of the Project area boundary.

### 3.4.2 Non-statutory database search results

Searches of relevant non-statutory databases were undertaken on 11 April 2025. In summary, the searches returned the following results:

- [National Trust of Australia \(Queensland\) Heritage Register](#) (NTAQHR) identified **no places** in proximity to the Project area. A confirmatory search of the National Trusts of Australia Register of Significant Trees was also undertaken to verify the results of the NTAQHR and identified **no registered trees** in proximity to the Project area.
- [Register of the Nation Estate](#) (RNE) returned **no places** in the Project area and or within 100 m of the Project area boundary.
- [Queensland WWII Historic Places database](#) returned **no results** within 100 m of the Project area.
- [Queensland Native Mounted Police Research Database](#) returned **no results** within 100 m of the Project area.



## 3.5 Aboriginal cultural heritage

### 3.5.1 Register and database search results

A search of the DWATSIPM Aboriginal and Torres Strait Islander Cultural Heritage Database and Register was conducted on 10 April 2025 (#183786; Annex 1). The search was conducted for the Project area lots with a 100m buffer and returned the following results (Table 4):

- **No** Aboriginal cultural heritage site points were recorded in the Project area or within 100 m of the Project area boundaries.
- **No** Aboriginal or Torres Strait Islander cultural heritage site polygons were recorded in the Project area boundaries.
- **No** Designated Landscape Areas (DLAs) were recorded in the Project area.
- **No** Registered Cultural Heritage Study Areas were recorded in the Project area.
- **No** National Heritage Areas (Indigenous values) were recorded in the Project area.
- **Gaangalu Nation People, Wulli Wulli People, and Wulli Wulli People #3** are listed as the Aboriginal Parties for the Project area.
- **Wulli Wulli Nation Aboriginal Corporation RNTBC** Cultural Heritage Body is listed as the Project area (Table 5).
- **1** Cultural Heritage Management Plan recorded in the Project area (Approved CHMP – Dawson Wind Farm with Wulli Wulli People).

Table 4. Aboriginal Party for the Project area

Aboriginal Party	Federal Court no.	Contact
Gaangalu Nation People	QUD33/2019	Gaangalu Nation People Saylor Legal AMP Building PO Box 4017 VINCENT QLD 4814  Phone: (07) 4431 0074 Mobile: 0474 244 447 Email: <a href="mailto:david@saylorlegal.com.au">david@saylorlegal.com.au</a>
Wulli Wulli People	QUD6006/2000	c/- Ted Besley Legal Practice Director Lithic Legal Pty Ltd Level 17, 110 Mary Street, Brisbane Qld 4000 Ph: (07) 3211 4478 Email: <a href="mailto:t.besley@lithiclegal.net.au">t.besley@lithiclegal.net.au</a>
Wulli Wulli People #3	QUD619/2017	c/- Ted Besley Legal Practice Director Lithic Legal Pty Ltd Level 17, 110 Mary Street, Brisbane Qld 4000 Ph: (07) 3211 4478 Email: <a href="mailto:t.besley@lithiclegal.net.au">t.besley@lithiclegal.net.au</a>



Table 5. Cultural Heritage Body for the Project area

Cultural heritage body	Departmental ref. no.	Registration date	Contact
Wulli Wulli Nation Aboriginal Corporation RNTBC	CHB015527	11/02/2016	c/- Ted Besley Legal Practice Director Lithic Legal Pty Ltd Level 17, 110 Mary Street, Brisbane Qld 4000 Ph: (07) 3211 4478 Email: t.besley@lithiclegal.net.au



### 3.5.2 Landscape features and environmental context

Through an understanding of the current and past environment, certain predictions can be made on the likelihood of occurrence for Aboriginal sites within the Project area. The presence or absence of certain environmental factors, in particular, waterways, have been shown through numerous investigations throughout Australia to correlate with the nature and distribution of Aboriginal sites (Moggridge, 2020). A study by Rowland and Connolly (2002) identified nearly 50 per cent of inland sites were situated within 200 m of water and 91.5 per cent were situated within 700 m of water.

#### 3.5.2.1 Geology

The Project area is within the Brigalow Belt South bioregion, which runs through South Queensland and into New South Wales (Department of Climate Change, Energy, the Environment and Water, 2008). This geological group is characterised by "extensive basalt flows" with "Jurassic and Triassic quartz sandstone and shale" (NSW Government, 2003). The Brigalow Belt South bioregion supports 34 threatened animal species within Queensland (Department of Climate Change, Energy, the Environment and Water, 2008).

A range of additional geologies underlie the Project area: Torsdale Volcanics; Camboon Volcanics; Back Creek Group; Woolton Granite Complex; and Glenleigh Granite. These groups consist of basalt, sandstone, siltstone, shale, coal, granite, and volcanoclastic lithic and sediment types. This may result in a higher yield of stone tools within the area.

The Project area is adjacent to the Belmont State Forest which is situated on the Banana Range. As a result, the Project area is within a valley with variable terrain elevations. The area with the highest degree of elevation is within the northern extent of the Project area.

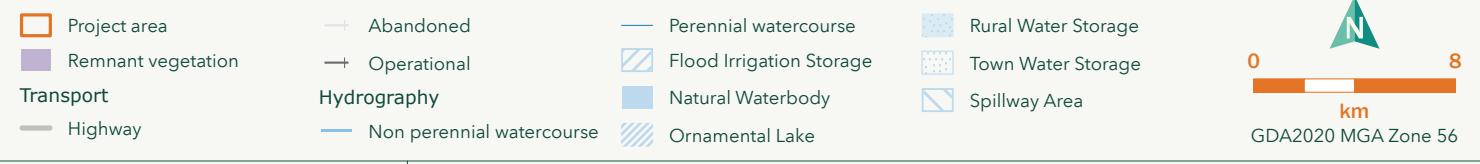
In terms of the Project area's soil profile, it may relate to those of other sites within the Banana Shire area. At Baralaba, the soils consist of "cracking clays in the Dawson River floodplain and texture contrast soils on the gently undulating rises" (ARC Environmental Consulting, 2023:49).

Site inspections at Proposed Harcourt Drill Sites within the Banana Shire region also suggested that the soil profile was conducive to a gilgai landscape in the past. A gilgai, also known as a melon hole, reveals "alternating periods of expansion during wet weather and contraction (with deep cracking) during hot, dry weather" (Australian National University, 2017). As discussed in Table 3, this landscape type supports food resources (Department of Environment, Tourism, Science and Innovation, 2013).

#### 3.5.2.2 Hydrology

A vast network of waterways surrounds the Project area (see Figure 3). The predominant water bodies within this area (from north to south) are Banana Creek, Lonesome Creek, and Castle Creek (Queensland Globe, 2025). In terms of their Strahler Stream Order classification, Banana Creek (4), Lonesome Creek (4), and Castle Creek (5) represent significant bodies of water within the region, meaning that they have the potential to support a diversified ecological system (ESRI, 2025; NSW Government, 2025). When considering that the Dawson River, from which each of these creeks stem, has a stream order of 8, the degree of waterway distribution throughout the area becomes further apparent.

Sawpit Creek, a tributary of Lonesome Creek, flows north towards Banana Creek, while Nine Mile Creek, which stems from Castle Creek, flows north towards Lonesome Creek. The variably hilly terrain within the wider area is likely to have impacted the nature of waterways within the area. The degree of accessibility to water resources is a meaningful aspect of subsistence in terms of fresh drinking water and availability of aquatic food sources.



## Figure 3 Landscape Features Present in the Project Area

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### 3.5.2.3 Vegetation

Inspection of the site via aerial imagery indicates that much of the area is cleared, which is likely in relation to farming activities; however, the Banana Range on the eastern border of the Project area includes state forest, which likely contains "mixed eucalypt woodland with areas of brigalow scrubs and open Mitchell grasslands" (Department of Climate Change, Energy, the Environment and Water, 2008). As seen in Figure 3, there is remnant vegetation throughout the Project area, particularly within the northern portion.

Within the Queensland portion of the Brigalow Belt South bioregion, 61 threatened plant species exist (Department of Climate Change, Energy, the Environment and Water, 2008). The complexity of water distribution throughout the areas and range of terrain would be the main reason for vegetation diversity, while the extreme changes in land use are a likely cause of species vulnerability.

A comparison of wetland mapping between the Banana region (northern extent of the Project area) and Theodore region (predominant region covering the Project area) revealed vegetation types and land use (Department of the Environment, Tourism, Science, and Innovation, 2013a; Department of the Environment, Tourism, Science, and Innovation, 2013b). Theodore had a greater percentage of land (60.3%) which was artificial and highly modified in comparison with Banana (27.6%). In the period between 2001 and 2019, this vegetation type increased from 535 to 947 hectares in Theodore and 620 to 785 hectares in Banana.

Despite this, they did not impact the size of predominant terrains (sub-coastal non-floodplain swamp and sub-coastal floodplain tree (Melaleuca and Eucalypt) swamp). Even though the size has not changed, this does not necessarily mean that the ecosystems have remained consistent, as there is a chance that they have been impacted by changes in the surrounding landscape (such as pollution).

Banana contains slightly more diversity of wetland vegetation types than Theodore which perhaps explains a higher degree of 'green vegetation' as of December 2022.

Table 6 presents a summary of the types of landscape features that the DoC guidelines consider to be of significance for Aboriginal cultural heritage and the results for the Project area.



Table 6. Landscape features present in the Project area

Landscape feature	Present
Rock outcrops	Yes
Caves	No
Foreshore and coastal dunes	No
Sandhills	No
Areas of biogeographical significance, such as wetlands	No
Permanent and semi-permanent waterholes, natural springs	Yes
Particular types of native vegetation, scarred trees	Yes
Some hill and mound formations	No

### 3.5.3 Aboriginal cultural heritage risk profile

The Aboriginal cultural heritage risk profile for the Project area is based on:

1. The likelihood that Aboriginal people used the area in the past.
2. The nature of the local environment and previous level of disturbance.
3. Whether any archaeological remains of that occupation are still present (archaeological potential).
4. The nature of the proposed Project activities.

The Project area has experienced significant environmental change due to colonial expansion into the area by the 1850s. Heavy use of the land for agricultural and mining purposes means that the wider region is generally cleared. Subsequently, the Project area has experienced significant ground disturbance, especially on the surface. This is reinforced by aerial imagery (Figure 2), which shows that this disturbance has persisted at least between 1960 and 2000. Amongst this cleared land, there are areas of remnant vegetation that have not experienced this extensive ground disturbance.

Within the wider region, there are numerous rock shelters and cave art sites that have been associated with cultural materials and other evidence of occupation. These sites demonstrate cultural complexity dated to at least 19,000 years ago. The variable terrain and accessibility of water is a good indicator that the landscape would have been advantageous to Aboriginal people and their livelihoods.

A summary of the Aboriginal cultural heritage risk profile for the Project area is provided in Table 7.



Table 7. Aboriginal cultural heritage risk profile for the Project area

Criteria	Assessment	Risk profile
1. The likelihood that Aboriginal people used the area in the past	<p>It is highly likely that Aboriginal people used this area in the past, as its waterway network would have supported important food resources.</p> <p>Furthermore, the wider area contains numerous cave sites which indicate long-term occupation within the area and contain various cultural artefacts including art.</p> <p>The location of these site types on the surrounding mountain ranges, in conjunction with water accessibility within the region, may have also resulted in the Project area having been used as a transport corridor.</p>	<p><b>High</b></p> <p>The likelihood of Aboriginal use of the Project area in the past is <b>High</b>.</p>
2. Nature of the local environment - past land use and disturbance	<p>The majority of the Project area has been subjected to varied Significant Ground Disturbance and Surface Disturbances.</p> <p>Aerial imagery shows evidence of Significant Ground Disturbance and Surface Disturbance in the form of vegetation clearance along the western extent of the Banana Range mountains at least by 1960. This is consistent with the agricultural history of the area.</p> <p>Between 1960 and 2000, there were no significant changes to the Project area in terms of vegetation or waterways. The majority of the Project area was seen to have been cleared, experiencing significant ground disturbance, with some remaining areas of vegetation persisting mostly in the northern half.</p>	<p><b>Low to High</b></p> <p>The likelihood of finding Aboriginal Cultural Heritage in the disturbed areas is <b>Low</b>.</p> <p>The likelihood of finding Aboriginal Cultural Heritage in parts of the Project area where remnant vegetation is present, and disturbance has not occurred is <b>High</b>.</p>
3. Archaeological potential	<p>Significant ground surface disturbance has occurred within the majority of the Project area. However, there are a few areas consisting of remnant vegetation. These areas are mostly situated in the northern extent of the Project area within close proximity to creeks.</p> <p>Significant ground disturbance is indicated to have been limited to vegetation clearing and agricultural activities with no high-intensity subsurface earthworks or development.</p> <p>DWATSIPM results have identified no Aboriginal cultural heritage sites within the Project area or within 100m (see Annex 1). The surrounding area: however, shows many cultural artefacts and sites have previously been identified. The lack of previous archaeological assessments within the Project area may affect this lack of recorded sites.</p>	<p><b>Low to High</b></p> <p>The archaeological potential is <b>Low</b> in the previously disturbed areas.</p> <p>The archaeological potential is <b>High</b> in areas containing uncleared vegetation, and where disturbance has not occurred.</p>
4. Project activities	<p>Project activities within the existing disturbance footprint will be consistent with previous disturbance as significant ground surface</p>	<p><b>Low - High</b></p> <p>The risk for harming cultural heritage is <b>Low</b> in the previously disturbed areas.</p>



	<p>disturbance has occurred in these areas (i.e. where vegetation clearing and erosion has occurred in the past).</p> <p>Project activities outside the existing disturbance footprint will be inconsistent with previous disturbance, e.g. uncleared vegetation.</p>	<p>The risk for harming cultural heritage is <b>High</b> in areas containing uncleared vegetation, and areas where disturbance has not occurred.</p>
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## 3.6 Summary of desktop assessment findings

The desktop assessment presented above provides a review of all statutory and relevant non-statutory cultural heritage matters relevant to the Project area. This review has allowed us to generate an overall risk profile for the Project area for both historical and Aboriginal cultural heritage.

- The key historical cultural heritage findings are: Within the Commonwealth, State, or Local Government heritage databases there are no registered historical heritage sites located within or 100m from the Project area. A search of the Project area boundary in DWATSIPM revealed that there are no previously recorded Aboriginal sites within or 100m from the Project area.
- No registered Aboriginal or historical heritage sites were identified in any of the non-statutory databases utilised.
- Despite a lack of results in both statutory and non-statutory databases, there is clear evidence that both sites of historic and Aboriginal significance are within the wider area. Additionally, the absence of evidence may be a result of a lack of previous archaeological assessments within the Project area.
- There are traces of remnant vegetation spread throughout the Project area, especially in the corridor section where the transmission line will be located. As a result, the area contains a variety of land use and disturbance types.
- Since colonial settling in the area around the 1850s, it has been transformed into a landscape predominantly used for agriculture. As such, the region enveloping the Banana Shire Council has been significantly disturbed, especially in terms of the ground surface. The area also has a history of extensive mining projects, with Dawson Mine being the closest to the project area. The town of Theodore was set up in the 1920s to further support agriculture and involved the establishment of an irrigation scheme. The area contains a vast network of waterways and has been previously identified as an area of interest regarding damming.
- The wider region is culturally significant to various Aboriginal groups, which is evident in the number and types of cultural sites. Rock shelters containing art are recorded within the wider region east and south of the Project area and have been associated with a range of cultural artefacts and hearths. The oldest dated site is in Carnarvon Gorge, west of the Project area and suggests an occupation date of at least ~19,000 years before the present day.
- The desktop assessment suggests that the land may have been used previously by Aboriginal people as a connection route for Aboriginal people to traverse the landscape and likely as an area with abundant food availability and resources.



# 4. DoC categories and risk assessments

## 4.1 Activity description

As discussed in Section 1.3, the proposed works will include:

- Construction of a 445 x 270 m (12 ha) substation at Castle Creek.
- Construction of 275kV double circuit overhead transmission line along a length of 55.4km of the corridor, running from Castle Creek to Mt Benn substation. The transmission line towers are proposed to be situated on either side of watercourses to prevent waterway and infrastructure damage. Remnant vegetation has also been considered in the proposed positioning of these towers, to avoid any harm.
- Clearance of surface and sub-surface grounds within the Project area in order to facilitate this construction.

Table 8 outlines the significance of each task's surface disturbance.

Table 8. Activity descriptions

Activity	Nature of activity	The extent of surface disturbance
Castle Creek Substation construction	Construction of a new substation including required surface and subsurface ground clearance.	Significant
Transmission connection between substations	Construction of overhead transmission line running between Castle Creek Substation and Mt Benn Substation including required surface and subsurface ground clearance.	Significant

## 4.2 Duty of care category

The assignment of a DoC Category relies on two sources of information, being the degree of disturbance caused by the proposed Project activities and the extent of previous land disturbances. Table 9 outlines these criteria and the DoC category assessment for the Project.

Table 9. Duty of Care category assessment for the Project area

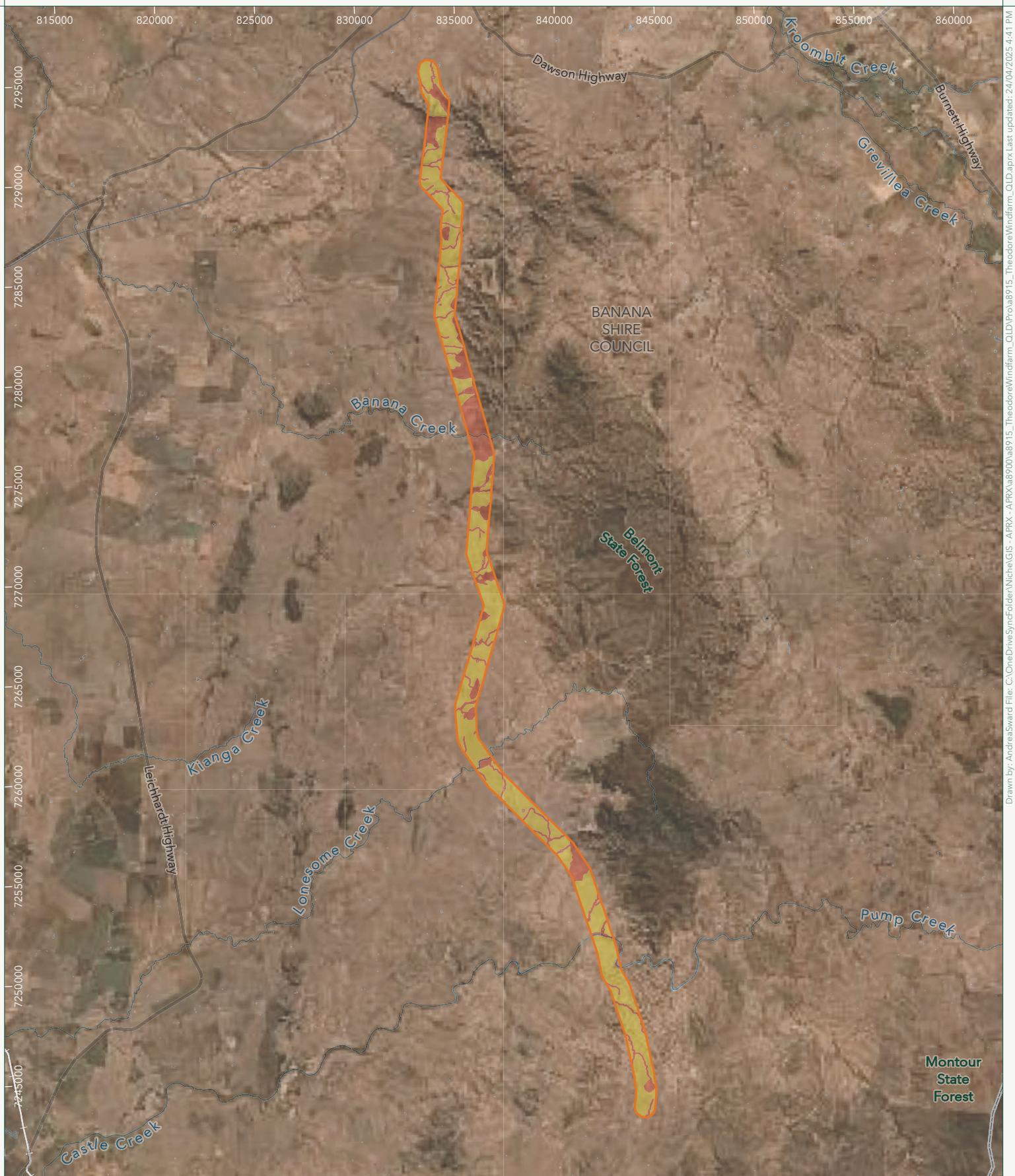
Project activity	Landscape features	Known cultural heritage sites	Previous disturbance	Consistent with previous land use?	DoC category
Castle Creek Substation construction	The proposed works are within an area that is comprised of variably hilly	No known cultural heritage sites within this Project activity area.	Significant land clearance for the purpose of agriculture has affected this Project activity area.	Yes, the Project activity is consistent with previous land use.	The Project activity is identified as having a <b>duty of care category of 4</b> due to the high degree of surface ground disturbance.



Project activity	Landscape features	Known cultural heritage sites	Previous disturbance	Consistent with previous land use?	DoC category
	terrain and small creek tributaries. Analysis of landscape features within the Project area (Table 6) identified that rocky outcrops are likely to occur (in relation to the Banana Range side of the Project area). If this landscape feature is confirmed to exist in the Project activity area, there will be an increased risk factor.				
Transmission line construction	The proposed works will occur 60 m wide easements running adjacent to the Banana Range/Belmont State Forest through a region of hilly terrain of various elevations. Analysis of landscape features within the Project area (Table 6) identified that rocky outcrops are likely to occur along the Banana Range. If this landscape feature is confirmed to exist in the Project activity area, there will be an increased risk factor.  The area consists predominantly of cleared land, most likely used for agricultural purposes. Some remnant vegetation is	No known cultural heritage sites within this Project activity area.	Significant land clearance for the purpose of agriculture has affected the majority of this Project activity area.	The Project activity is mostly consistent with previous land use.  Cleared sections of the Project activity area are consistent with the previous land use.  Areas containing remnant vegetation and areas in proximity to known waterways have not been subject to significant ground disturbance in the past. Therefore, the proposed activity would not be consistent with previous land use.	The Project activity is identified as having a <b>duty of care category of 4</b> for cleared areas due to the high degree of surface ground disturbance.  Areas containing remnant vegetation will be classified as having a <b>duty of care category of 5</b> .



Project activity	Landscape features	Known cultural heritage sites	Previous disturbance	Consistent with previous land use?	DoC category
	<p>situated within this area, and is commonly in close proximity to waterways.</p> <p>Numerous creek lines flow through the Project area which have ecological and cultural importance. The nature of waterway dispersal and interconnectivity within the Project area therefore elevates the potential for Aboriginal cultural heritage. Aerial imagery revealed a lack of significant ground disturbance near the waterways.</p> <p>For these reasons, activities impacting those areas within the transmission easement area are Category 5.</p>				



Project area

Duty of Care areas

Category 4

Category 5

Transport

Highway

Abandoned

Operational

Hydrography

Non perennial watercourse

Perennial watercourse

Flood Irrigation Storage

Natural Waterbody

Rural Water Storage

0 4  
km  
GDA2020 MGA Zone 56



Figure 4

## Duty of Care Category Assessment for the Project Area Theodore Wind Farm

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Niche Proj. #: 8915  
Client: WSP



# 5. Conclusion and recommendations

## 5.1 Historical heritage conclusions

While there is an absence of registered historical heritage places within both statutory and non-statutory databases, the activity should proceed with caution with an unanticipated finds procedure in place for historical heritage items.

## 5.2 Aboriginal cultural heritage conclusions

The activities are subject to the provisions outlined in Section 23 of the ACHA and its gazetted DoC guidelines. Categorising the activities in alignment with the DoC guidelines establishes the level of risk for the activity to cause harm to Aboriginal cultural heritage and establishes next steps (if required).

Activities fulfilling Category 4 and Category 5 criteria:

The Project area has been identified as fulfilling either Category 4 and/or Category 5 of the DoC guidelines. Category 4 activities are those proposed in areas where the land has already been cleared and has been subject to significant ground disturbance (as defined in the DoC guidelines) but have not been subject to previous development or construction. Category 5 has been proposed for areas of remnant vegetation, in which the activity may cause additional surface disturbance (as defined in the DoC guidelines).

Where an activity is assessed as Category 4, it is generally unlikely that the activity will harm Aboriginal cultural heritage, and it is reasonable and practicable that the activity proceeds without further cultural heritage assessment.

Powerlink should be aware of their responsibilities to not excavate, relocate, remove or harm Aboriginal cultural heritage. An Unexpected Finds Procedure should be implemented for all activities. Despite there being no requirement to undertake further cultural heritage assessment or engage the relevant Aboriginal Party for Category 4 activities, a proponent may still choose to do so voluntarily. This engagement is encouraged to ensure that the full extent of potential cultural sites within Project area is identified.

For areas deemed as Category 5, there is generally a high risk that it could harm Aboriginal cultural heritage. In these circumstances, the activity should not proceed without a cultural heritage assessment. In addition to taking care of causing any additional surface disturbances during work, an understanding of the cultural implication of the feature itself should be in place to ensure that harm is avoided. Powerlink should be aware of their responsibilities to not excavate, relocate, remove or harm Aboriginal cultural heritage.



## 5.3 Recommendations

### Recommendation 1 – Category 5: avoidance of harm

For waterways and remnant vegetation areas that have been classified as having a Category 5 DoC, care should be taken to avoid harm to these areas. This category triggers the requirement to engage with relevant Aboriginal party/ies to ensure that potential ‘features’ of the areas are properly assessed and identified. As per the DoC guidelines, additional assessment should be undertaken.

The Project area has been assessed as Category 4 and Category 5.

### Recommendation 2 – Category 4: care should be taken

As per the DoC guidelines, where an activity is assessed as DoC Category 4, it is generally unlikely that the activity will harm Aboriginal cultural heritage and it is reasonable and practicable that the activity proceeds without further cultural heritage assessment. While not required under the DoC guidelines, Powerlink may, as a matter of caution, choose to engage with the relevant Aboriginal Party to discuss the Project in relation to areas assessed as Category 4. This engagement is encouraged to ensure that the full extent of potential cultural sites within the Project area are identified.

### Recommendation 3 - Cultural heritage induction

All site personnel should be provided with a Cultural Heritage Induction prior to the commencement of the Activity. This induction should include a procedure to be followed if unexpected cultural heritage finds are identified during the Activity or if human remains are identified.

### Recommendation 3 – Unexpected finds procedure

All Activities for the Project should be undertaken with an appropriate Unexpected Finds Procedure in place. An example procedure is provided below in Annex 2.



## 6. References

AngloAmerican, 2013. Dawson [WWW Document]. URL  
<https://australia.angloamerican.com/~/media/Files/A/Anglo-American-Australia-V3/document/factsheets/ang-2291-fs-dawson-fa-sr.pdf>

ARC Environmental Solutions, 2023. Baralaba South Project Environmental Impact Statement. Baralba South Mine.

Australian National Herbarium, 2017. Gilgai.

Banana Shire, 2025. Shire Information [WWW Document]. Banana Shire Bus. Ind. URL  
<https://www.banana.qld.gov.au/shire-information/shire-information-1>

Banana Shire, 2021. Banana Shire Planning Scheme 2021 (Planning Scheme). Banana.

Banana Shire, 2014. Banana Shire Local and State Heritage Register (Register). Banana Shire Council, Banana.

Bird, John.T.S., 1904. The early history of Rockhampton: Dealing chiefly with events up till 1870. The Morning Bulletin, Rockhampton.

Bolton, G.C., 1972a. 1. Explorers, in: A Thousand Miles Away: A History of North Queensland to 1920. Australian National University Press.

Bolton, G.C., 1972b. A Thousand Miles Away A History of North Queensland to 1920. ANU Press.

Bowden, B., 2015. Perverse transformation: Railway development and the shaping of Queensland society, 1880-1901. Labour Hist. J. Labour Soc. Hist. 109, 1-23. <http://dx.doi.org/10.5263/labourhistory.109.0001>

Burke, H., Wallis, L., 2024. Frontier Conflict and the Native Mounted Police in Queensland Database.  
<https://doi.org/10.25957/5d9fb541294d5>

Department of Climate Change, Energy, the Environment and Water, 2008. Brigalow Belt South bioregion. Australian Government.

Department of the Environment, Tourism, Science, and Innovation, 2013a. Wetland mapping – Banana 100K map tile – 8949 [WWW Document]. Wetl. Website. URL  
<https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/tile-100k-banana/>

Department of the Environment, Tourism, Science, and Innovation, 2013b. Wetland mapping – Theodore 100K map tile – 8948 [WWW Document]. Wetl. Website. URL  
<https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/tile-100k-theodore/>

Doole, S., Dowsett, D., 2022. Paradise started as a gold mining town and now lies beneath a dam of the same name. ABC.

Elder, B., 2023. A complete guide to Theodore, QLD [WWW Document]. Aust. Geogr. URL  
<https://www.australiangeographic.com.au/travel/2023/06/a-complete-guide-to-theodore-qld/>

ESRI, 2025. How Stream Order works [WWW Document]. Stream Order Works. URL  
<https://pro.arcgis.com/en/pro-app/latest/tool-reference/spatial-analyst/how-stream-order-works.htm>

Fahey, M., Ens, E., Rossetto, M., Costello, O., Cooke, P., 2024. Walking the trees: we traced how First Nations groups moved bunya pine and black bean trees [WWW Document]. Qld. Alliance Agric. Food Innov. URL  
<https://qaafi.uq.edu.au/article/2024/09/walking-trees-we-traced-how-first-nations-groups-moved-bunya-pine-and-black-bean%C2%A0trees>

Forde, T., 1990. Confinement and control: A history of Woorabinda Aboriginal community 1927-1990 (PhD Thesis). University of Queensland.

Gilgai wetlands, 2013.

Laurie, N., 2022. Life After (or Winner Takes All). Qld. Hist. J. 25, 260-276.

Lilley, I., Brian, D., Clarkson, C., Ulm, S., 1998. Pleistocene Aboriginal occupation at Cania Gorge, Central Queensland: preliminary results of fieldwork. Archaeol. Ocean. 33, 28-31.

Madsen, W., O'Mullan, C., 2013. Responding to disaster: Applying the lens of social memory. Aust. J. Commun. 40, 57-70.

Mate, G., 2014. Digging deeper: The archaeology of gold mining in Queensland. Qld. Archaeol. Res. 17, 21-35.

Moggridge, B.J., 2020. Aboriginal People and Groundwater. Proc. R. Soc. Qld. 126, 11-27.



Moore, C., 2019. Hardwork: Australian South Sea Islander Bibliography with Select Bibliography of the Sugar Industry and the Pacific Labour Trade, 2nd ed. Australian South Sea Islanders (Port Jackson) Ltd., Pyrmont, NSW.

National Museum of Australia, 2022. Islander Labourers [WWW Document]. URL <https://www.nma.gov.au/defining-moments/resources/islander-labourers>

NGH Pty Ltd, 2019. Aboriginal Cultural Heritage Duty of Care Assessment Theodore Solar Farm. Report to juwi.

NSW Government, 2025. An introduction to Strahler stream order [WWW Document]. Introd. Strahler Stream Order. URL <https://water.dpie.nsw.gov.au/about-us/learn-about-water/an-introduction-to-water/an-introduction-to-strahler-stream/order#:~:text=Strahler%20stream%20order%20classifies%20the,smallest%20in%20a%20river%20system>

NSW National Parks and Wildlife Service, 2003. Chapter 11: The Brigalow Belt South Bioregion, in: The Bioregions of New South Wales – Their Biodiversity, Conservation and History. NSW National Parks and Wildlife Services, pp. 131–144.

Queensland Government, 2025. Queensland Globe [WWW Document]. URL <https://qldglobe.information.qld.gov.au/>

Queensland Government, 2024. Cania Gorge National Park: Bundaberg [WWW Document]. Dep. Environ. Tour. Sci. Innov. Parks For. URL <https://parks.desi.qld.gov.au/parks/cania-gorge/about/culture>

Redleaf Group, 2025. Aboriginal Party Cultural Heritage Site Survey: BSC Nobbs St, Moura Drainage Upgrade, Nobbs St, Moura, Queensland (Site Survey). Banana Shire Council.

Rowland, M., Connolly, M., 2002. Towards GIS mapping and spatial modelling of Archaeological sites in the southeast Queensland Bioregion. Qld. Archaeol. Res. 13, 39–62.

RWE, 2025. Theodore Wind Farm [WWW Document]. Theodore Wind Farm. URL <https://au.rwe.com/projects/theodore-wind-farm/>

State Development, Infrastructure and Planning, 2025. Strengthening Central Queensland [WWW Document]. URL <https://www.statedevelopment.qld.gov.au/regions/queenslands-regions/central-qld#:~:text=The%20region%20is%20a%20significant,nuts%20and%20other%20agricultural%20products>

Taçon, P., 2021. Baloon Cave visit and assessment, Carnarvon Gorge, Queensland. Fieldwork report, 7 February 2019 (Fieldwork Notes). PERAHU, Griffith Centre for Social and Cultural Research Griffith University, Queensland.

The University of Newcastle, 2017. Colonial Frontier Massacres in Australia, 1788–1930 [WWW Document]. Colon. Front. Massacres Aust. 1788–1930. URL <https://hdl.handle.net/1959.13/1340762> (accessed 12.19.24).

Towner, A.C., 1962. An outline of the history of western Queensland. J. R. Hist. Soc. Qld. 6, 779–816.

Westcott, C., Lilley, I., Ulm, S., 1999. THE ARCHAEOLOGY OF CANIA GORGE: AN OVERVIEW. Qld. Archaeol. Res. 11, 15–28.

Williams, A., Ulm, S., 2014. AustArch: A Database of 14C and Luminescence Ages from Archaeological Sites in Australia. <https://doi.org/10.5284/1027216>



# Annex 1: DWATSIPM results

## Cultural Heritage Database and Register Search Report

Search report reference number: 183786

The Aboriginal and Torres Strait Islander Cultural Heritage Database (cultural heritage database) and Aboriginal and Torres Strait Islander Cultural Heritage Register (cultural heritage register) have been searched in accordance with the location description provided, and the results are set out in this report.

The cultural heritage database is intended to be a research and planning tool to help Aboriginal and Torres Strait Islander parties, researchers, and other persons in their consideration of the cultural heritage values of particular areas.

The cultural heritage register is intended to be a depository for information for consideration for land use and land use planning, and a research and planning tool to help people in their consideration of the Aboriginal cultural heritage values of particular objects and areas.

Aboriginal or Torres Strait Islander cultural heritage which may exist within the search area is protected under the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* (the Cultural Heritage Acts), even if the Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (the Department) has no records relating to it.

The placing of information on the database is not intended to be conclusive about whether the information is up-to-date, comprehensive or otherwise accurate.

Under the Cultural Heritage Acts, a person carrying out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal or Torres Strait Islander cultural heritage. This applies whether or not such places are recorded in an official register and whether or not they are located on private land.

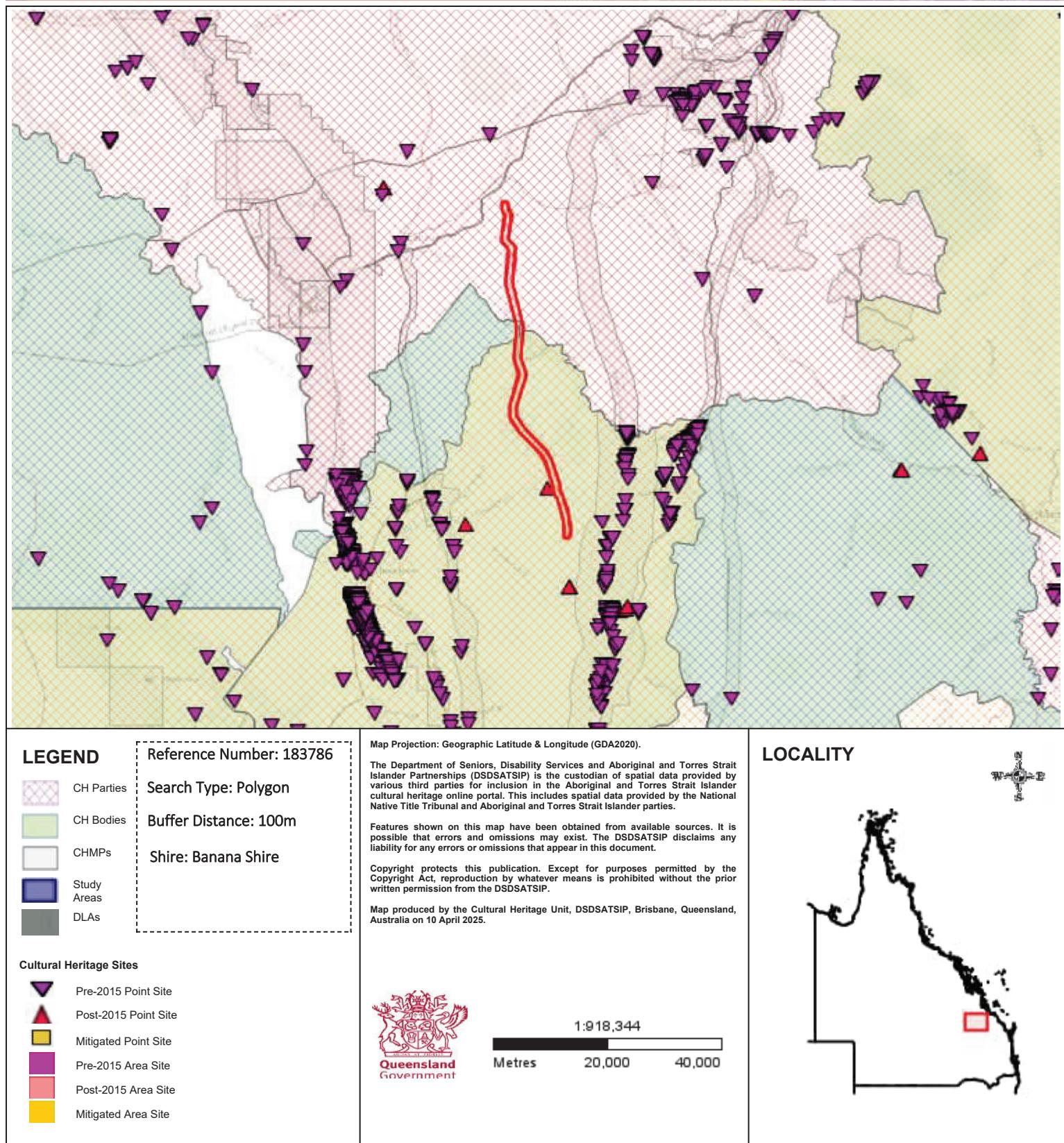
Please refer to the Department website <https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/cultural-heritage-duty-of-care> to obtain a copy of the gazetted Cultural Heritage Duty of Care Guidelines, which set out reasonable and practicable measure for meeting the cultural heritage duty of care.

In order to meet your duty of care, any land-use activity within the vicinity of recorded cultural heritage should not proceed without the agreement of the Aboriginal or Torres Strait Islander Party for the area, or by developing a Cultural Heritage Management Plan under Part 7 of the Cultural Heritage Acts.

The extent to which the person has complied with Cultural Heritage Duty of Care Guidelines and the extent the person consulted Aboriginal or Torres Strait Islander Parties about carrying out the activity – and the results of the consultation – are factors a court may consider when determining if a land user has complied with the cultural heritage duty of care.

Should you have any further queries, please do not hesitate to contact the department via email: [cultural.heritage@dsdatsip.qld.gov.au](mailto:cultural.heritage@dsdatsip.qld.gov.au) or telephone: 1300 378 401.

# Cultural Heritage Database and Register Search Report



# Cultural Heritage Database and Register Search Report

There are no Aboriginal or Torres Strait Islander cultural heritage site points recorded in your specific search area.

There are no Aboriginal or Torres Strait Islander cultural heritage site polygons recorded in your specific search area.

Cultural Heritage Party/ies for the area:

Reference No.	Federal Court No.	Name	Contact Details
	QUD33/2019	Gaangalu Nation People	Gaangalu Nation People Saylor Legal AMP Building PO Box 4017 VINCENT QLD 4814  Phone: (07) 4431 0074 Mobile: 0474 244 447 Email: david@saylorlegal.com.au
	QUD6006/2000	Wulli Wulli People	c/- Ted Besley Legal Practice Director Lithic Legal Pty Ltd Level 17, 110 Mary Street, Brisbane Qld 4000 Ph: (07) 3211 4478 Email: t.besley@lithiclegal.net.au
	QUD619/2017	Wulli Wulli People #3	c/- Ted Besley Legal Practice Director Lithic Legal Pty Ltd Level 17, 110 Mary Street, Brisbane Qld 4000 Ph: (07) 3211 4478 Email: t.besley@lithiclegal.net.au

Cultural Heritage Body/ies for the area:

Departmental Reference No.	Name	Contact Details	Registration Date
CHB015527	Wulli Wulli Nation Aboriginal Corporation RNTBC	c/- Ted Besley Legal Practice Director Lithic Legal Pty Ltd Level 17, 110 Mary Street, Brisbane Qld 4000 Ph: (07) 3211 4478 Email: t.besley@lithiclegal.net.au	11/02/2016

# Cultural Heritage Database and Register Search Report

Cultural Heritage Management Plans (CHMP) for the area:

Departmental Reference No.	Project	Sponsor	Party	Registration Date
CLH024033	Approved CHMP - Dawson Wind Farm	Highland Energy Australia Pty Ltd	Wulli Wulli People	No Date

There are no Designated Landscape Areas (DLA) recorded in your specific search area.

There are no Registered Cultural Heritage Study Areas recorded in your specific search area.

There are no National Heritage Areas (Indigenous values) recorded in your specific search area.

# Cultural Heritage Database and Register Search Report

## Glossary

**Cultural Heritage Body:** An entity registered under Part 4 of the Cultural Heritage Acts as an Aboriginal or Torres Strait Islander cultural heritage body for an area. The purpose of a cultural heritage body is to:

- identify the Aboriginal or Torres Strait Islander parties for an area
- serve as the first point of contact for cultural heritage matters.

**Cultural Heritage Management Plan (CHMP):** An agreement between a land user (sponsor) and Traditional Owners (endorsed party) developed under Part 7 of the Cultural Heritage Acts. The CHMP explains how land use activities can be managed to avoid or minimise harm to Aboriginal or Torres Strait Islander cultural heritage.

**Cultural Heritage Party:** Refers to a native title party for an area. A native title party is defined as:

- Registered native title holders (where native title has been recognised by the Federal Court of Australia).
- Registered native title claimants (whose native title claims are currently before the Federal Court of Australia).
- Previously registered native title claimants (the 'last claim standing') are native title claims that are no longer active and have been removed from the Register of Native Title Claims administered by the National Native Title Tribunal. Previously registered native title claimants will continue to be the native title party for that area providing:
  - there is no other registered native title claimant for the area; and
  - there is not, and never has been, a registered native title holder for the area.

The native title party maintains this status within the external boundaries of the claim even if native title has been extinguished.

**Cultural heritage site points (pre 2015):** Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as point data **before** 1 July 2015.

**Cultural heritage site points (post 2015):** Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as point data **after** 1 July 2015.

**Cultural heritage site points (post 2015 mitigated):** Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as point data after 1 July 2015 where the recorder has advised the department that the site has been mitigated.

**Cultural heritage site polygons:** Aboriginal and Torres Strait Islander cultural heritage sites and places recorded in the database as a polygon.

**Designated Landscape Areas (DLA):** Under the repealed *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*, an area was declared a 'designated landscape area' (DLA) if it was deemed necessary or desirable for it to be preserved or to regulate access.

**Indigenous Protected Areas (IPA):** Areas of land and sea managed by Indigenous groups as protected areas for biodiversity conservation through voluntary agreements with the Australian Government. For further information about IPAs visit <https://www.environment.gov.au/land/indigenous-protected-areas>

**National Heritage areas:** Places listed on the National Heritage List for their outstanding heritage significance to Australia and are protected under the *Environment Protection and Biodiversity Conservation Act 1999*. For further information about the National Heritage List visit <https://www.environment.gov.au/heritage/about/national>

**National Heritage Areas (Indigenous values):** Places listed on the National Heritage list (Indigenous values) are recognised for their outstanding Indigenous cultural heritage significance to Australia and are protected under the *Environment Protection and Biodiversity Conservation Act 1999*. These areas are now included in the cultural heritage

# Cultural Heritage Database and Register Search Report

register.

**Registered Cultural Heritage Study Areas:** Comprehensive studies of Aboriginal and or Torres Strait Islander cultural heritage in an area conducted under Part 6 of the Cultural Heritage Acts for the purpose of recording the findings of the study on the register.

**Traditional Use of Marine Resources Agreement (TUMRA):** Areas subject to agreement between Great Barrier Reef Traditional Owners and the Australian and Queensland governments on the management of traditional use activities on their sea country. For further information about TUMRAs visit <https://www.gbrmpa.gov.au/our-partners/traditional-owners/traditional-use-of-marine-resources-agreements>

**World Heritage Areas:** Places inscribed on the World Heritage List pursuant to the World Heritage Convention adopted by the United Nations Education, Scientific and Cultural Organisation (UNESCO) and are protected under the [\*Environment Protection and Biodiversity Conservation Act 1999\*](#). For further information about World Heritage places in Queensland visit <https://parks.des.qld.gov.au/management/managed-areas/world-heritage-areas>

***Disclaimer:** The Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is the custodian of spatial data and information provided by various third parties for inclusion in the Aboriginal and Torres Strait Islander cultural heritage online portal. This includes spatial data provided by the National Native Title Tribunal and Aboriginal and Torres Strait Islander parties. Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships is not responsible for the accuracy of information provided by third parties or any errors in this search report arising from such information.*



# Annex 2: Unexpected finds procedure

The absence of registered cultural heritage sites or materials does not necessarily mean that there are none present. A procedure for handling unexpected finds during proposed works should be developed and implemented for all projects involving ground disturbance. A generic example of an unexpected finds procedure is provided below; however, this would need to be tailored specifically to each project based on its specific conditions and the likelihood of different heritage finds occurring in that Project Area.

A standard unexpected finds procedure would typically include consideration of both Aboriginal and Historical cultural heritage.

## Aboriginal cultural heritage

In general, if suspected Aboriginal cultural heritage sites or objects are identified, works should stop immediately in the vicinity of the find and a representative of the relevant Aboriginal Party or suitably qualified professional be engaged to verify the nature of the find.

In lieu of a specific and targeted procedure, any suspected Aboriginal cultural heritage sites or objects should be reported to the DWATSIPM Cultural Heritage unit via email to [cultural.heritage@dsdsatsip.qld.gov.au](mailto:cultural.heritage@dsdsatsip.qld.gov.au) or phone 1300 378 401.

## Historical cultural heritage

In general, if suspected historical heritage objects are identified, works should stop immediately in the vicinity of the find and the Report a discovery provisions provided by the Department of Environment Science and Innovation should also be referred to

<https://www.qld.gov.au/environment/land/heritage/archaeology/discoveries>

## Human remains

In the event that suspected human remains are encountered during the Project works, all Project works must cease immediately and the police must be notified. The DWATSIPM guidelines for managing human remains must then be followed. These can be accessed online at <https://www.qld.gov.au/firstnations/environment-land-use-native-title/cultural-heritage/human-remains>



## Contact us

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Melbourne VIC 3000

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