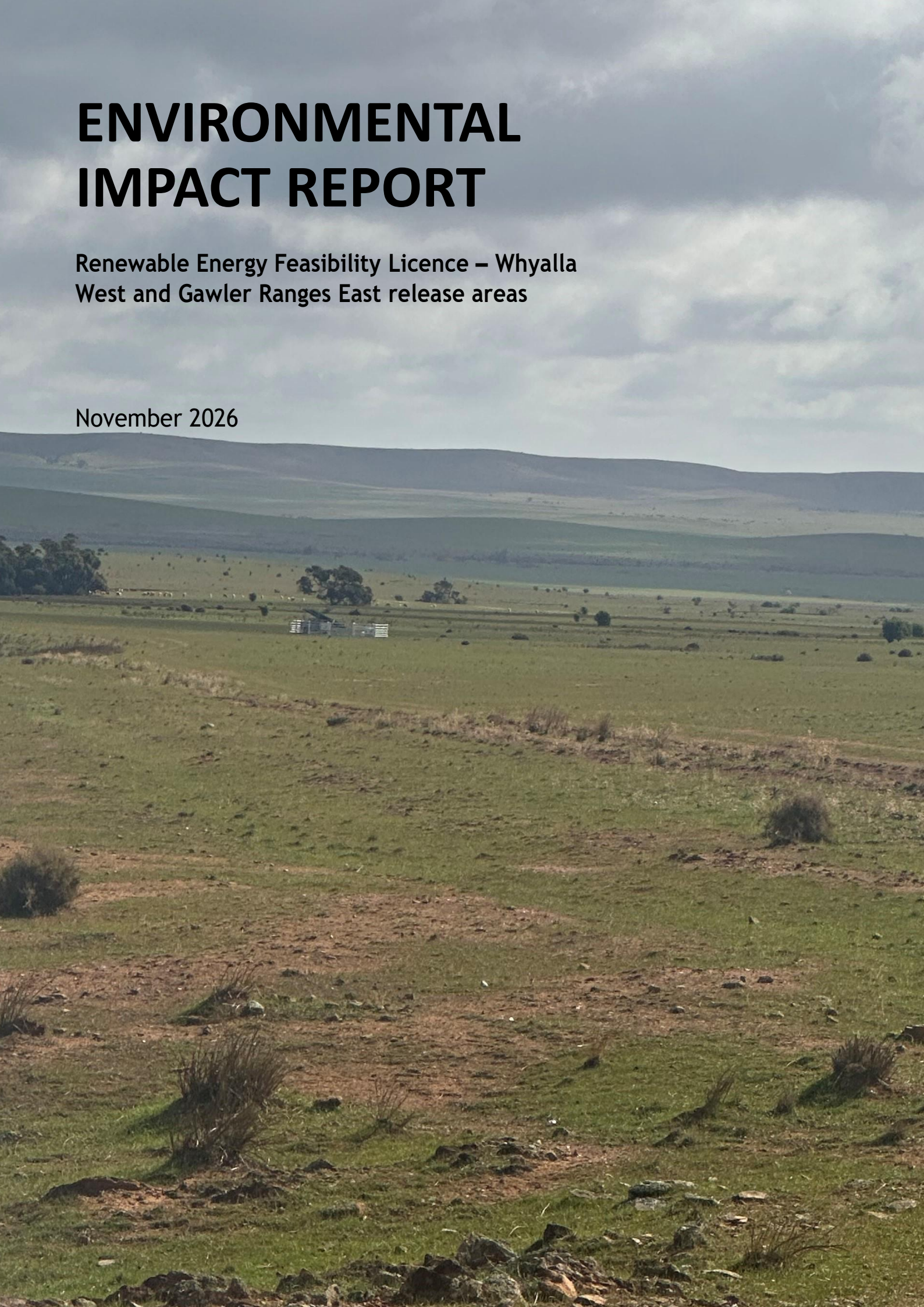
ENVIRONMENTAL IMPACT REPORT

Renewable Energy Feasibility Licence – Whyalla West and Gawler Ranges East release areas

November 2026



As guests on Aboriginal land, the Department for Energy and Mining (DEM) acknowledges everything this department does impacts on Aboriginal country, the sea, the sky, its people, and the spiritual and cultural connections which have existed since the first sunrise. Our responsibility is to share our collective knowledge, recognise a difficult history, respect the relationships made over time, and create a stronger future. We are ready to walk, learn and work together.

Document Status

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Hydrogen and Renewable Energy Register

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Cover photo. Light Detection and Ranging (LiDAR) station located in the mid-North of South Australia.

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Abbreviations and glossary

Abbreviation / Glossary	Definition
AAR	Aboriginal Affairs and Reconciliation
ADG	Australian Dangerous Goods
ALARP	As Low As Reasonably Practicable
AS	Australian Standard
BDAC	Barngarla Determination Aboriginal Corporation
BDBSA	Biological Databases of South Australia
CASA	Civil Aviation Safety Authority
DEM	Department for Energy and Mining
DEW	Department for Environment and Water
DIT	Department for Infrastructure and Transport
E	Endangered
EIR	Environmental Impact Report
EN	Endangered
EPA	Environment Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
GAS	Goal Attainment Scaling
GPS	Global Positioning System
HRE Act	*Hydrogen and Renewable Energy Act 2023*
IBRA	Interim Biogeographic Regionalisation for Australia
ILUA	Indigenous Land Use Agreement
LGA	Local Government Association
LiDAR	Light Detection And Ranging
NEPM	National Environment Protection (Assessment of Site Contamination) Measure (1999) amended in 2013
NPW Act	National Parks and Wildlife Act 1972
OCA	Outback Communities Authority
OMP	Operation Management Plan
PIRSA	Department of Primary Industries and Regions
PMST	Protected Matters Search Tool
R	Rare

Abbreviation / Glossary	Definition
REFL	Renewable Energy Feasibility Licence
RSDs	Remote sensing devices
SAAL	South Australian Arid Lands
SAPN	SA Power Networks
SEO	Statement of Environmental Objectives
SoDAR	Sound Detection And Ranging
SPR	Source Pathway Receptor
UXO	Unexploded ordnance
V	Vulnerable
VU	Vulnerable
Waste to Resources EPP	*Environment Protection (Waste to Resources) Policy 2010*
WoNS	Weeds of National Significance

1. Introduction

1.1 Purpose

This document has been prepared to meet the specific requirements of an Environmental Impact Report (EIR) under the *Hydrogen and Renewable Energy Act 2023* (the Act). It has been prepared in accordance with current legislative requirements, in particular Section 61 of the HRE Act, and Regulation 32 of the *Hydrogen and Renewable Energy Regulations 2024* (Regulations).

This EIR applies to activities carried out under a Renewable Energy Feasibility Licence (REFL) which has been granted in accordance with section 13 and 17 of the HRE Act within a declared release area following a competitive tender process. This EIR focuses on the Study Area in the southern part of the Gawler IBRA[1] bioregion shown in Figure 1-1. The Study Area was selected based on multi-criteria analysis and high-level mapping conducted by the Department for Energy and Mining (DEM), which identified areas of the state where high quality wind and solar resources coincide, along with existing key infrastructure such as transmission lines, ports, gas pipelines, water access and roads. Consideration was also given to the compatibility with current land users and any industry interest expressed to the State Government.

Within the Study Area, (Figure 1-1) there are two release areas, the Whyalla West and Gawler Ranges East release areas, which were declared in the South Australian Government Gazette by the Minister for Energy and Mining on 22 January 2026.

Exploring for a renewable energy resource is a regulated activity under the HRE Act. On designated land (e.g. pastoral land or Crown land), it must be authorised under a REFL. A REFL can only be granted (and authorised operations can only be undertaken under a REFL) within designated land and must be wholly located within a release area. A REFL can also only be granted if there is an approved Statement of Environmental Objectives (SEO) in force.

This EIR (and accompanying SEO) have been prepared by the Department for Energy and Mining (DEM) to assist the approval process for activities undertaken within release areas in the Study Area. This EIR and accompanying SEO will be made available for applicants to adopt in accordance with section 62(4) of the HRE Act and regulation 35 of the Regulations, whereby an applicant can demonstrate that their proposed authorised operations are within the ambit of this EIR and accompanying SEO.

As regulated activities undertaken within a REFL are generally limited in scope, temporary, of small footprint and low environmental impact when compared with other renewable energy infrastructure projects it is considered that preparation of multiple EIRs for activities undertaken on an REFL may result in unnecessary expense and delays for proponents and regulators. Therefore, the Department for Energy and Mining (DEM) determined that a State-wide EIR and SEO will streamline the approval process and ensure consistency for most regulated activities undertaken under a REFL within South Australia without detriment to protection of the environment. Proponents that elect to adopt this EIR and associated SEO must demonstrate that the proposed activities (project) are within the scope of the EIR and must provide an assessment against the objectives, assessment criteria, and leading performance criteria set out in the SEO to demonstrate that all relevant objectives will be met.

1.2 Scope

This EIR has been developed to apply to activities undertaken under a REFL in the Whyalla West and Gawler Ranges East release areas by licensees and their contractors. A corresponding SEO has also been developed to set out the environmental objectives with which the regulated activities must conform. The SEO establishes criteria that determines how the achievement of these objectives will be assessed and defines immediately reportable and reportable incidents. The SEO has been developed based on the matters contained in this EIR. The activities covered by this EIR are described in Section 3.

[1] Interim Biogeographic Regionalisation for Australia. Refer to Section 4.2.

1.2.1 Exclusions and Constraints

The following are excluded from the coverage of this EIR:

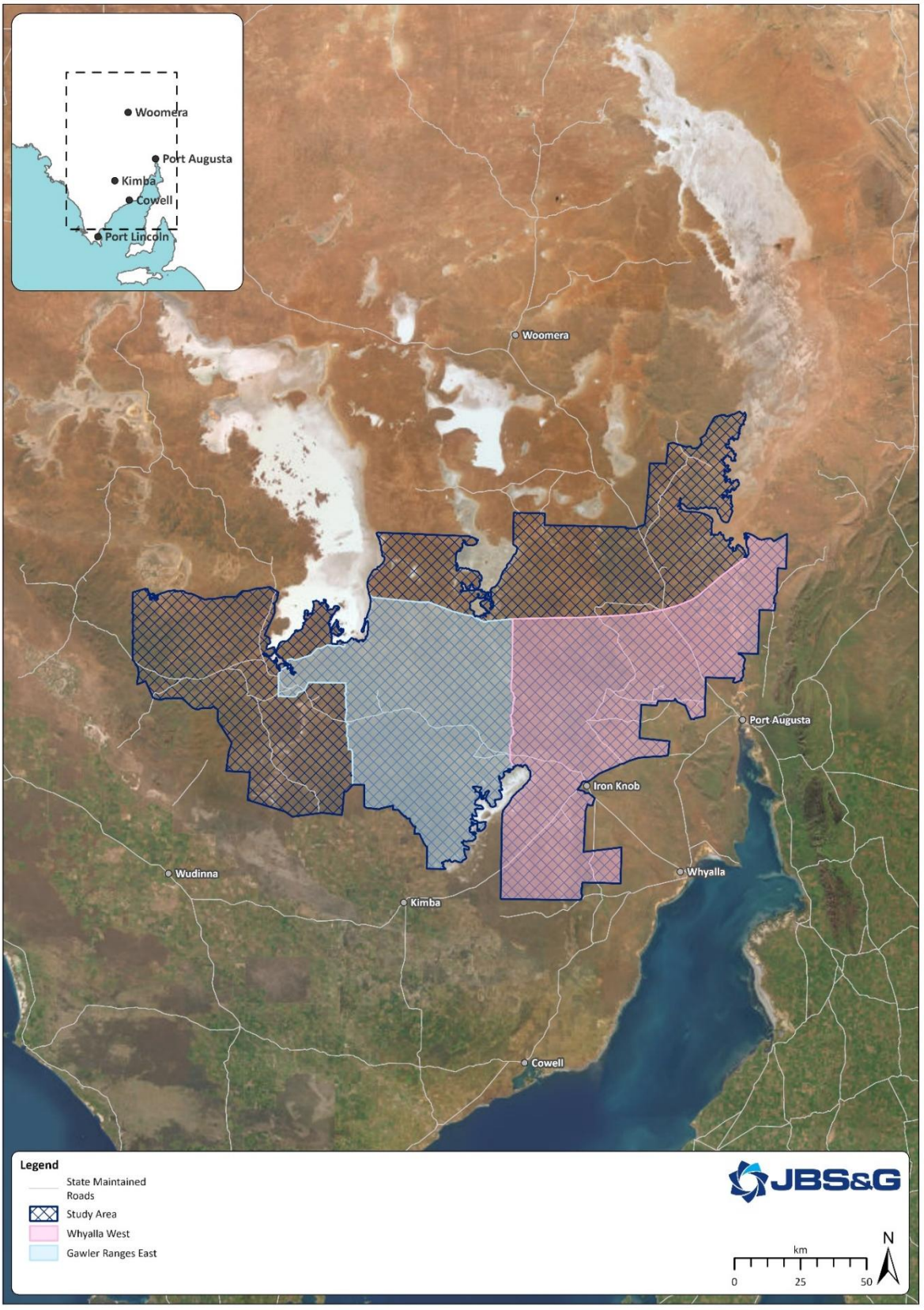
- Areas defined as reserves under the *National Parks and Wildlife Act 1972*
- Activities deemed to be Level 4 for proposed vegetation clearance, in accordance with the Native Vegetation Council Risk Assessment Fact Sheet are generally excluded but can be considered on a case-by-case basis whereby it can be shown that the proponent has attempted to avoid and minimise vegetation clearance.
- Activities deemed to have significant impact to Matters of National Environmental Significance (MNES).
- Areas within the Planning and Design Code (P&D Code) Heritage Adjacency Overlay and State Significant Native Vegetation Areas Overlay.
- Native Vegetation Heritage Agreement and Significant Environmental Benefit Offset areas.

Meteorological masts located within 500 m from non-associated dwellings and tourist accommodation are also outside the scope of the EIR and SEO (consistent with the P&D Code's existing defined setback distances).

Subsequently, proponents proposing activities that are outside the coverage of this EIR would be required to develop a project specific EIR and SEO for assessment under the HRE Act.

1.3 Environmental Commitment

Licensees shall be committed to responsible environmental management of all phases of proposed operations and must commit to achieving the environmental objectives outlined in the SEO.



Spatial Reference: GDA2020 MGA Zone 53; Author: rtandon; Date: 4/10/2024
Client: DEM; Job Number: 65625

Figure 1-1: Location of Study Area and release areas. Note that this EIR describes the larger physical area, i.e. the Study Area, however, only the release areas have been declared, i.e. Whyalla West and Gawler Ranges East. A REFL must be wholly located within a release area.

2. Legislative Requirements

2.1 Hydrogen and Renewable Energy Act 2023

The Act regulates the generation of hydrogen and renewable energy in South Australia. It defines regulated activities and establishes a framework for regulation of these activities.

Section 12 of the Act lists 'exploring for a renewable energy resource' as a regulated activity, and notes that a reference to a regulated activity includes all operations reasonably necessary for, or incidental to, undertaking that activity. Under sections 13 and 17 of the Act, exploration for a renewable energy resource on designated land (e.g. pastoral land or Crown land) must be authorised under a REFL.

As per section 17 of the Act, a REFL authorises the licensee to explore a renewable energy resource in the licence area and assess the feasibility of exploiting a renewable energy resource, and construct, install, operate, maintain and decommission renewable energy infrastructure for the purposes of exploring a renewable energy resource.

Under section 12 and 17 of the Act, regulated activities authorised under a REFL would include surveys and other assessments as well as construction, installation, operation, maintenance and decommissioning of renewable energy infrastructure to assess the feasibility of exploiting a renewable energy resource.

2.1.1 Statement of Environmental Objectives

Under section 62 of the Act, a REFL (or any other licence) must not be granted unless an approved SEO in respect of the proposed operations is in force, and a licensee must not undertake authorised operations under a licence unless an approved SEO is in force.

Section 62 states that an SEO must address matters contained in the Environmental Impact Report. The SEO must set out environmental objectives, assessment criteria, leading performance criteria and immediately reportable and reportable incidents.

2.1.2 Environmental Impact Report

Section 61 of the Act requires that an EIR addressing proposed authorised operations must be prepared for the purpose of the approval of an SEO. The EIR must assess the environmental impact of authorised operations against environmental impact assessment criteria that are determined by the Minister.

Under section 61(2) of the Act, an EIR must:

- take into account the environment, cultural and other values as those matters are relevant to the assessment
- take into account risks inherent in the authorised operations to the health and safety of the public
- contain sufficient information to make possible an informed assessment of the likely impact of the authorised operations on the environment
- include an assessment of the environmental impact of authorised operations to which the report applies against the environmental impact assessment criteria
- be prepared in accordance with the requirements of the regulations.

Regulation 32 requires that the EIR contains the following:

- a description of the authorised operations to be undertaken and the location at which the operations are to be undertaken
- a description of the specific elements of the environment that can reasonably be expected to be affected by authorised operations, with particular reference to the environment and existing land uses
- data relating to biodiversity within the area of land to which the report relates that can reasonably be expected to be affected by authorised operations

- an assessment of the heritage and cultural values of Aboriginal people and other persons in relation to the area of land to which the report relates that can reasonably be expected to be affected by authorised operations, and the public health and safety risks inherent in undertaking those operations (insofar as these matters are relevant in the particular circumstances)
- if relevant and required by the Minister—an assessment of the continuity of supply with respect to hydrogen
- information on consultation that has occurred on the potential impacts of the proposed activities, including specific details about relevant issues that have been raised and any response to those issues (but not including confidential information).

Section 4(3) of the Act defines the environment as including:

- land, air, water (including both surface and underground water and sea water), organisms, ecosystems, flora, fauna and other features or elements of the natural environment
- buildings, structures and other forms of infrastructure, and cultural artefacts
- existing or permissible land use
- public health, safety or amenity
- the heritage, aesthetic, Aboriginal, social and cultural values of an area
- the social or economic effects associated with regulated activities.

This document fulfils the requirements of an EIR for authorised activities under a REFL and has been prepared in accordance with current legislative requirements with section 61 of the Act and regulation 32 of the Regulations.

2.1.3 EIR and SEO Approval

The SEO is written into the Regulations under regulation 35 and is available for applicants to adopt in accordance with section 62(4) of the HRE Act. Section 62(4) and regulation 35 require demonstration that the proposed authorised operations are within the ambit of this EIR and accompanying SEO.

2.2 Operational Management Plan

Section 66 of the Act requires that a licensee must not commence operations under a licence unless an Operational Management Plan has been approved by the Minister[2].

Under Section 66, an operational management plan must:

- specify the authorised operations proposed to be undertaken
- specify the statement of environmental objectives to which the plan applies
- specify how proposed authorised operations will be managed, including details of the management systems and controls that will ensure compliance with the relevant statement of environmental objectives
- contain any other information and comply with any other requirements as prescribed by the regulations.

Regulation 37 of the *Hydrogen and Renewable Energy Regulations 2024* (HRE Regulations) mandates that an Operational Management Plan must set out the following:

- policies of the licensee that address the achievement of regulatory requirements and objectives;
- resources that will be applied to effectively implement the plan;
- recognised industry practices and procedures that will be applied in—
    - undertaking authorised operations; and

[2] A pre commencement guideline can be found on DEM's website: 009-Pre-commencement-requirements-for-final-on-ground-approvals.pdf

    - achieving compliance with regulatory requirements
- processes for managing physical, operational, procedural or organisational changes in respect of authorised operations;
- systems that will manage risks allowing achievement of the regulatory objectives arising from undertaking authorised operations including—
    - the controls that will be implemented to eliminate or reduce risks associated with authorised operations; and
    - the systems that will ensure the implemented controls will be clearly defined and achieved;
- practices and procedures to ensure employees, contractors and visitors to the licence area have the appropriate competency, training (including ongoing training), induction and supervision;
- mechanisms for consulting and communicating with external parties in relation to authorised operations;
- systems to identify, investigate and report incidents arising from authorised operations;
- practices and procedures to be followed in the event of an emergency relating to authorised operations;
- the manner in which the effectiveness of a matter referred to in a preceding paragraph will be monitored, evaluated, audited and reviewed;
- the manner in which the licensee intends to comply with the statement of environmental objectives in force in relation to authorised operations;
- the day on which authorised operations will, or are proposed to, commence;
- any other relevant matter as determined by the Minister.

The Operational Management Plan provides an additional opportunity for the Minister to ensure that the proposed activities and their impacts can be effectively managed and are consistent with the approvals obtained in the EIR and SEO approval process. This is particularly relevant for activities that are conducted under an SEO that applies to a broad geographical area, as it provides site-specific detail that is not usually contained in the generic documents.

2.3 Land Access

Licensees are required to enter into an access agreement with pastoral lease holders or other prescribed owners of land before undertaking authorised operations (under section 41 of the Act). Other owners of land must be provided with a notice of entry at least 42 days before entering land (unless an access agreement is in place), in accordance with the requirements of section 76 of the Act.

2.4 Other Legislation

A variety of legislation applies to hydrogen and renewable energy activities. Legislation that is particularly relevant to REFL activities are listed below (note that this is not a comprehensive list of all applicable legislation).

Commonwealth

Aboriginal and Torrens Strait Islander Heritage Protection Act 1984

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Native Title Act 1993

South Australia

Aboriginal Heritage Act 1988

Biodiversity Act 2025[3]

Biosecurity Act 2025[4]

Civil Aviation Act 1988

Crown Lands Management Act 2009

Dangerous Substances Act 1979

Environment Protection Act 1993

Fire and Emergency Services Act 2005

Heritage Places Act 1993

Highways Act 1926

Landscape South Australia Act 2019

Local Nuisance and Litter Control Act 2016

National Parks and Wildlife Act 1972

Native Title (South Australia) Act 1994

Native Vegetation Act 1991Pastoral Land Management and Conservation Act 1989

South Australian Public Health Act 2011 and *Public Health (Wastewater) Regulations 2013*

State Development Coordination and Facilitation Act 2025[5]

Work Health and Safety Act 2012.

[3] The *Biodiversity Act 2025* was passed in June 2025 but has not yet come into force. Once fully operational the wildlife elements of the *National Parks and Wildlife Act 1972* will move to the new Act and the *Native Vegetation Act 1991* will be repealed. However, as implementation of the Act will occur in stages to allow supporting regulations, policies and guidelines to be developed, these Acts will continue to apply until the Biodiversity Act comes into operation.

[4] The Biosecurity Act was passed in February 2025 but has not yet come into force. Once fully operational it will consolidate the *Plant Health Act 2009, Livestock Act 1997, Dog Fence Act 1946* and the *Impounding Act 1920* and will also repeal provisions of the Fisheries Management Act 2007 related to exotic aquatic organisms and diseases.

[5] The *State Development Coordination and Facilitation Act 2025* was passed in May 2025 but has not yet come into force. The Act provides for the coordination, facilitation and promotion of development in the State for economic, social and environmental purposes. The HRE Act is a designated Act for the purposes of the legislation.

3. Description of Activities

This section provides an overview of the activities that could potentially be undertaken under a REFL that are covered by this EIR, including:

- Access track construction
- Aerial surveys
- Meteorological masts
- Portable remote sensing devices
- Vehicle-based field surveys
- Geotechnical investigations
- Groundwater investigations
- Campsites

3.1 Access tracks

Wherever possible, existing roads and tracks would be used to provide access to the area being investigated.

In some cases it may be necessary to upgrade existing tracks or construct new tracks, for example to allow installation of meteorological masts (refer Section 0) or to facilitate vehicle access for other REFL activities such as installation of portable remote sensing devices. Tracks are typically prepared to the minimum standard to allow access by four-wheel drives, small trucks and in some cases, cranes.

The method used to prepare access tracks is dependent on the terrain in which it is being built as well as the expected level of use and vehicle type. Access across relatively smooth or stable terrain by four-wheel drives to install portable monitoring devices may not require any specific track preparation. Where a higher standard of access track is required (e.g. for trucks or cranes), bulldozers and graders would be used to clear vegetation where necessary to provide a trafficable surface which allows safe passage. Light grading is often sufficient, depending on terrain and preparation requirements. Tracks may be rolled instead of graded in areas where it is preferable to retain the protective stony ground cover and maintain soil stability (e.g. in areas of gibber soils).

Access tracks would typically be between two and five metres wide, depending on the type of vehicles and expected traffic levels. Access tracks would generally not be surfaced with imported material such as gravel or clay, however some areas such as sand dunes may require capping with imported material obtained from borrow pits (see Section 3.1.1). Where required, access and egress routes should be designed to accommodate large emergency service vehicles, in accordance with the SACFS Renewable Energy Facilities Guide.

Access tracks would be aligned to avoid steep slopes, use naturally clear areas and avoid clearance of native vegetation, particularly longer-lived shrubs and trees (see Section 3.1.3). Construction of tracks through sensitive features such as wetlands or salt lakes would be avoided.

Erosion controls would be implemented during and after construction where required, with particular attention given to flood and water flow areas. Culverts or other structures may be installed, where required, to ensure that surface water flows are not impeded.

Table 3-1 summarises typical construction methods for access tracks to provide access for larger vehicles (e.g. crane) in different landforms.

Access tracks would be rehabilitated when they are no longer required by the licensee, subject to landholder agreement, or may be handed over to the landholder for ongoing use, where appropriate. Rehabilitation would be dependent on the terrain and soil, but would typically involve ripping compacted areas (except in gibber soils) and respreading of any cleared vegetation.

Table 3-1: Access track construction methods for larger vehicle (e.g. crane) access in different landforms

Construction Method	Landform			
	Dunefields / Sand Plains	Floodplains	Gibber plains	Salt lakes
Avoid construction on landform				✓
Utilise naturally cleared areas	✓	✓	✓	
Avoid steep slopes	Susceptible to erosion. Ensure controls are in place		✓	
Weave road between trees and large shrubs	✓	✓	✓	
Clear and grade	✓	✓	*	
Roll			✓	
Cap road surface with clay or similar borrow material if required	✓	✓	✓	
Culverts or floodways installed on drainage line crossings as required	✓	✓	✓	

* In gibber environments the surface stone layer cover should be maintained wherever possible to control erosion. Clear and grade of gibber is non-standard practice, which may be undertaken in some circumstances, with adequate erosion controls in place. Detailed site-specific assessment, planning, management, monitoring and rehabilitation would be required.

3.1.1 Borrow pits

Borrow pits may be excavated to provide material (e.g. clay or gravel) for the construction of access tracks. Borrow pits vary considerably in dimension depending upon the quality and quantity of material contained in them. Site selection, construction, environmental management and restoration of borrow pits would be undertaken in accordance with standards for borrow pit management developed by the Department for Energy and Mining (DSD, 2014). These standards aim to manage the risks from habitat disturbance, soil erosion and increased grazing pressure and predation due to water retention. Existing borrow pits would be used in preference to new ones where appropriate.

3.1.2 Use of existing tracks and roads

As noted above, existing tracks and roads would be used where available. Existing tracks and roads may degrade over time due to naturally occurring environmental conditions, e.g. development of corrugations, potholes, etc. The degradation of roads, however, can be exacerbated by changes in traffic volume, vehicle type, and road use in changing weather conditions, e.g. use of unsealed roads in wet weather. Damage to roads as a result of authorised operations may require maintenance and repair, the requirements of which may depend on the owner or responsible party of the existing road or track. For example, the use of Department for Infrastructure and Transport (DIT) managed road assets require dilapidation reports to be prepared both prior to commencement and upon completion of project activities where their road assets may be affected.

3.1.3 Water affecting activities

The construction of access tracks that intersect or may have adverse impacts on the health and condition of a water resource, for example the construction of culverts and structures in a watercourse, may trigger the need for a water affecting activity permit. Activities that are considered water affecting activities are defined on the Water affecting activity permits webpage. The application for a permit must be submitted to the relevant landscape board.

3.1.4 Native vegetation clearance

Where native vegetation clearance cannot be avoided an application to clear must be made to the Native Vegetation Council (NVC) in accordance with the Guide for applications to clear native vegetation. The application must include a data report for native vegetation clearance that is prepared by an accredited consultant and, as set out in the aforementioned guide, the data report must detail how the mitigation hierarchy was applied, the calculation of the Significant Environmental Benefit (SEB), including provision of the SEB scoresheets, and how the SEB is proposed to be achieved. The applicant must demonstrate that a reasonable attempt has been made to provide an on-ground offset before a payment into the Native Vegetation Fund is accepted.

It is important to note that under section 14(2) of the *Native Vegetation Act 1991* (NV Act), NVC is required to take into account, and seek to further, the Principles of Clearance of native vegetation insofar as they are relevant in the particular circumstances. Further, under Schedule 1 of the NV Act, native vegetation should not be cleared if, in the opinion of the Council, it is seriously at variance with these Principles.

3.2 Aerial surveys

Aerial surveys undertaken under a REFL may include photography or remote-sensing techniques such as LiDAR to gather information on topography, vegetation or geology.

Aerial surveys would typically be undertaken using drones (small remotely operated aircraft) however they may also be undertaken using piloted aircraft (such as light single-engine or twin-engine planes, or helicopters).

Drones would typically be operated at heights of up to 120 m. Surveys involving piloted aircraft would fly at altitudes between of 90 m or more above ground level, typically along pre-determined flight-paths while recording the required data[6]. The flight-paths used for aerial surveys may form a series of regularly-spaced lines over a region of interest, which may be several hundred metres or more apart.

Drone surveys are undertaken by a trained operator. Access to or near the site is required to launch and operate the drone.

The nature of these surveys means that peak disturbance for a given receptor is typically short term, occurring for the duration of the aircraft passing over the receptor while flying along the nearest one or two flight-lines.

In addition to the requirements of the HRE Act, proponents undertaking airborne surveying must meet their obligations under other relevant legislation, including all civil aviation requirements.

3.3 Meteorological masts

Meteorological masts are used to obtain wind field data at potential wind farm sites. The masts accommodate different sensors that accurately measure wind speed, wind direction and other weather data which is used to design the optimal turbine layout for maximum energy generation. Meteorological masts can also be equipped with other sensors, e.g. microphones, cameras, radar, to collect data and monitor bird and bat activity.

A meteorological mast would typically be installed early in the feasibility assessment stage. As a project is developed more masts may be progressively erected to collect data across the site. Temporary masts may be in place until wind farm construction activities commence in order to capture hourly, seasonal and year to year data, before being removed totally, or removed and replaced by a permanent mast in an alternative location. A period of correlation overlap (e.g. 6 months) between the temporary and permanent masts may be needed before removal of temporary masts. Alternatively, masts may remain permanently and continue to monitor meteorological data throughout operation of the wind farm.

The mast consists of a supporting structure (either a pole or a lattice tower) and is anchored by guy wires (cables). Sensors and data loggers are powered by a small solar panel mounted on the mast. The height of the mast is generally aligned with the proposed wind turbine hub height, whose height may exceed 150 m.

[6] Aerial surveys at altitudes greater than 500 m would not typically be considered regulated activities under the Act.

The mast is protected by a lightning rod and its top third section is typically coated in a contrasting aviation safety paint scheme as per the national airports safeguarding framework guidelines[7] (refer to Plate 3-2 and Plate 3-3). Outer guy wires with high visibility marker balls, flags or sleeves are generally also required, in line with Civil Aviation Safety Authority (CASA) requirements[8].

Masts have a small footprint at their base with a larger guy wire span (proportional to mast height). Concrete footings are installed at the mast base and at each contact point from the guy wire to the ground with a buried anchor system secured with locking pins and attachment points are in contrasting colours. Concrete footings may be pre-cast concrete blocks or poured on-site The central anchor point, located at the intersection of the guy wire layout, is generally a cement pad of roughly 1.5 metres (m) by 1.5 m and the supporting guy wire anchor points measure approximately 3.4 m by 0.8 m, extending to a depth of approximately 2 m. Fencing may be installed around the mast base and each footing to protect them from livestock or third-party access if required.

Excavation works for footings may, in some instances, intersect shallow groundwater and may require dewatering. There may also be instances where other non-groundwater related temporary dewatering activities may be required, for example, after significant rainfall. In accordance with the EPA guideline, *Environmental management of dewatering during construction activities,* water removed during dewatering activities is classified as wastewater and must not be discharged directly or indirectly to surface waters and all reasonable and practicable alternatives to environmental discharge must be considered. Dewatering of groundwater may require a relevant permit or licence relating to water affecting activities or water allocation plan. Additional laydown and storage areas may also be required adjacent to the masts during construction.



Plate 3-1: Truck transport of 140 m meteorological mast components

[Source: Future Engineering and Communication]

Where possible, masts are located in areas where there is limited native vegetation. The area of clearance for a meteorological mast is usually less than 1.0 ha, consisting of clearance at the mast base and each anchor point and to provide area for equipment laydown and access for excavators. Some vegetation removal or

[7] National Airports Safeguarding Framework – Guideline D: Managing the risk to aviation safety of wind turbine and installations (wind farms)/ wind monitoring towers.

[8] Advisory Circular AC 139.E-05v1.1 Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome.

trimming may be required under the guy wires to maintain sufficient clearance between the wires and trees, however grasses and shrubs can typically remain. See Section 3.1.3 for information relating to native vegetation clearance.

Mast construction typically takes 1-2 weeks (depending on access and site topography).

Meteorological masts, once constructed, do not require a permanent on-site presence for operation and require infrequent maintenance via scheduled inspections, e.g. visual checks, six monthly detailed inspections, three to five yearly structural maintenance works. Maintenance undertaken may include inspections for structural integrity and/or protective coatings, replacement of mechanical parts and/or electronic component replacement or calibration.

If the mast is to be removed, the mast structure is dismantled and trucked offsite. Sub-surface concrete footings would generally remain, buried below ground level at approximately 600 millimetres (mm) depth, however the minimum depth of cover required would depend on landholder requirements and future land uses e.g. cropping. Best practice restoration of the site is generally to rip compacted areas and allow natural revegetation, however this is site dependent and best practice revegetation for specific revegetation types should be investigated to inform site restoration.



Plate 3-2: Meteorological mast base (105m), logger and fencing enclosure
[Source: Precinct Urban Planning]

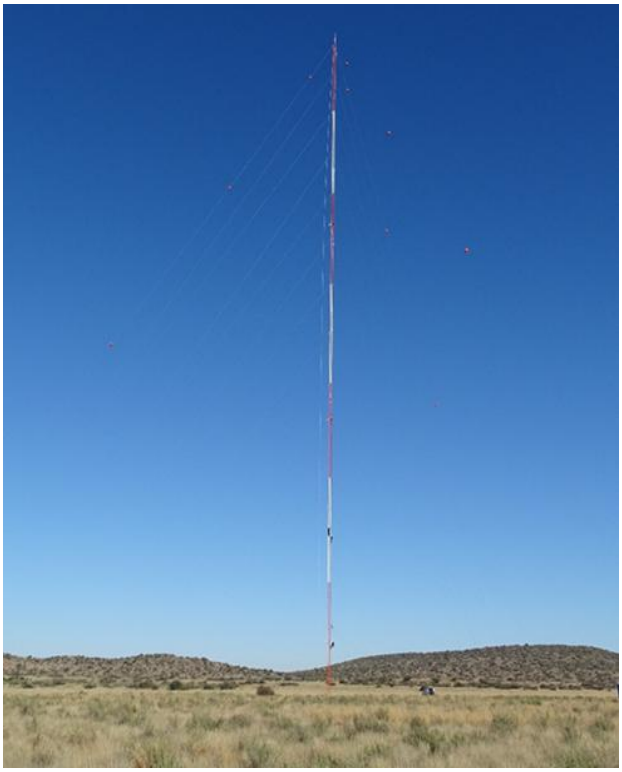


Plate 3-3: Meteorological mast (160m)
[Source: GEO NET]

3.4 Portable remote sensing devices

Portable remote sensing devices (RSDs) may be used to assess wind and solar resources on site, supplementing data collection by meteorological masts. RSDs for wind monitoring include SoDAR and LiDAR devices.

SoDAR (Sound Detection And Ranging) or 'acoustic radar' measures wind speed through the apparent change in frequency of an acoustic signal and is similar to sonar technology used underwater. Sodar equipment measures wind speed at various heights above the ground, and in wind power applications is typically focused on a measurement range from 50 m to 200 m above ground level, corresponding to the size of modern wind turbines.

LiDAR (Light Detection And Ranging), or 'laser radar' uses laser technology to measure wind speed and direction at various elevations. Ground-based measurement devices shoot laser beams into the sky which hit particles and aerosols in the air, a process that reflects the light. Measurement heights can be calculated from this duration period.

Remote sensing devices are standalone devices that are typically transported and housed in a trailer towed by a vehicle such as a four-wheel drive. They are powered by deep cycle batteries housed within the trailer, charged by a solar panel.

A cleared four-wheel drive track for vehicle and trailer access is necessary for their deployment. A temporary fence may be erected around the remote sensing devices to avoid interaction with livestock.

Remote sensing device may be left on site for several months to one year or more.



Plate 3-4: SoDAR trailer RSD
[Source: Kintech Engineering]



Plate 3-5: LiDAR and power trailer
[Source: Total Eren]

3.5 Vehicle-based field surveys

A range of vehicle-based field surveys may be undertaken under an REFL. These may include:

- topographical or cadastral surveys
- ecological surveys
- heritage surveys
- unexploded ordnance surveys
- contaminated land assessment
- geophysical surveys
- traffic surveys
- other site surveys

These surveys are typically undertaken by transporting equipment in light vehicles or on quad bikes. Existing roads and tracks are generally used wherever possible. Surveys may be undertaken partially on foot if survey points are inaccessible by vehicle, or if vehicle use would have a detrimental environmental impact (e.g. on the surface of salt lakes).

3.5.1 Topographical / cadastral survey

Topographical / cadastral survey activities may include site work by licensed surveyors to identify the accurate location of easements and property boundaries, or accurately record locations for proposed infrastructure. GPS is typically used to obtain or confirm the geographic locations of survey points, although theodolite

surveys or other methods may also be employed. Survey points may be marked with pegs or flagging tape. Minimal equipment is required and is typically limited to the access vehicle, survey equipment and hand tools.

3.5.2 Ecological survey

In order to determine the significance of potential ecological impact, a baseline field survey is generally conducted. This would involve gaining access to areas of native vegetation, identifying plant species, assessing the condition of vegetation communities, assessing potential wildlife habitat and recording any observations of fauna species' presence. Small cuttings samples may be collected from some plant species for off-site identification, if necessary.

Fauna surveys may be undertaken, including installation of wildlife cameras and song meters, active searches for fauna, call playback to aid in detection of cryptic bird species and establishment of pits for fauna trapping. Multiple visits may be made to the site across different seasons to undertake detailed surveys of bird and bat movements. Bat (or bird) monitoring may also include erecting infrastructure to fix bat (or bird) detectors. A permit under the National Parks and Wildlife Act and wildlife ethics approval must be obtained prior to undertaking most types of fauna survey.

Groundwater samples may also be collected and analysed in the laboratory to check for the presence of any subterranean fauna such as stygofauna.

Minimal equipment is typically required for ecological surveys and is limited to access vehicles and hand tools, handheld and wildlife camera and bat or bird monitoring equipment.

Pursuant to regulation 32(2)(c) of the HRE Regulations, ecological data collected must be submitted to DEM and the Department for Environment and Water (DEW) following the completion of any ecological surveys. Ecological data collection and submission should be undertaken in format consistent with the Biological Databases of South Australia (BDBSA) – Contributing Data fact sheet.

Appropriate survey methods should be adopted in the collection of ecological data that are specific to the objectives of the survey and/or to the target species. For example, the desert greenhood (*Pterostylis xerophila*) only flowers between September and October and cannot be identified at any other time and generally only after sufficient rainfall. Relevant standard survey methods are outlined on the DEW's Data collection and management webpage. The CSIRO publication, Wildlife Research in Australia, also provides guidance on appropriate survey methods for different types of fauna.

3.5.3 Aboriginal cultural heritage survey

Aboriginal cultural heritage surveys involve physical inspection of an area to locate and identify Aboriginal cultural heritage so that it can be recorded prior to planning of more extensive ground disturbing activities. Surveys would involve Traditional Owner representatives and may also include heritage consultants skilled in identifying and recording Aboriginal heritage.

Some Aboriginal heritage can be readily identified in the landscape (e.g. culturally modified trees or engraved or painted artwork). Other types of heritage may only be reflected by subtle features or changes in the landscape, obscured by vegetation or completely hidden beneath the ground's surface. Some heritage sites may exhibit very little or no material evidence of their existence but are nonetheless well known to Traditional Owners and custodians of those sites.

The survey would typically involve traversing (by foot or by vehicle) the proposed development location. Landscape features such as dunes and sandhills, creeklines, springs, rockholes (ephemeral and permanent) claypans and rocky outcrops are often targeted as locations often associated with Aboriginal heritage.

Hand excavation or test pitting[9] (e.g. to determine a site's extent) is not generally expected to be undertaken during the feasibility phase and would only be employed where imperative. Appropriate authorisation under

[9] Test pitting involves use of a test probe, hand auger or back-hoe to sample or excavate sub-surface soils to detect the presence of artefacts.

the Aboriginal Heritage Act would be obtained for any excavations or test pitting where required (e.g. if undertaken within existing registered Aboriginal sites).

3.5.4 Non-Aboriginal cultural heritage survey

A field survey for non-Aboriginal cultural heritage may also be undertaken, particularly if listed heritage sites or places have been identified in the area. The survey would typically aim to confirm the location of known archaeological and anthropological heritage sites of significance. The survey may also involve examination of bare or cleared areas and areas of remnant native vegetation in the vicinity for the presence of historical artefacts.

3.5.5 Contaminated land assessment

Targeted soil investigation to assess the presence of any contaminants of concern may be undertaken, based on the results of initial desktop assessment. This would be undertaken in accordance with relevant national and state-based guidance documents including the *National Environment Protection (Assessment of Site Contamination) Measure* (NEPM, 2013) and the *Guidelines for the Assessment and Remediation of Site Contamination* (EPA, 2019).

Contaminated land assessment involves the collection of representative soil samples to be later analysed in the laboratory. Soil sampling may be undertaken using hand augers, but is typically undertaken by push tube mechanical drilling, with the rig mounted on a four-wheel drive vehicle or a small truck.

3.5.6 Unexploded ordnance survey

Items of explosive ordnance (e.g. ammunition, bombs and grenades) that have failed to detonate correctly upon use, but which are still at risk of exploding, are known as unexploded ordnance (UXO). Locations historically used for military staging and training during World War 2 and lands more recently associated with military testing and training exercises may contain UXO.

Projects undertaken on these lands must ensure the proposed development is being constructed safely and not in an area where UXO may be present. The requirement for a UXO site survey is determined following desktop assessment including historic land uses, geophysical mapping and risk assessment. If required, surveys are carried out by appropriately qualified specialists

The Department of Defence identifies and maintains a record of areas affected or suspected of being affected by UXO that may influence the nature of land use[10]. Section 4.5.5 below provides the context for unexploded ordnance within the Study Area.

3.5.7 Geophysical survey

Ground-based geophysical surveys that may be undertaken include:

- Ground-penetrating radar, which involves the input of electromagnetic signals into the earth to map the subsurface.
- Gravity, magnetic or electromagnetic survey, which use one or more specialised meters to measure spatially-varying physical properties of the Earth such as changes in the gravity, magnetic and / or electromagnetic field.
- Passive seismic surveys, using detection equipment (“receivers”) to record data, relying on natural environmental noise (e.g. wind noise, wave noise or micro-earthquakes) and incidental anthropogenic noise (e.g. road or rail traffic) as the sound source.
- Geological mapping and geochemical surveying, which may require the recovery of samples or specimens collected via hand-held equipment.

Surveys are typically undertaken by transporting the geophysical meter(s) in light vehicles or on quad bikes.

[10] Can be found here https://uxo-map.defence.gov.au/

3.5.8 Traffic survey

Traffic loggers such as Automatic Tube Counts (ATCs) may be installed with approval from either the council or DIT on public roads within the licence area that would be used to access the site, to gather data for use in planning and approvals.

A Traffic Impact Assessment Report shall be provided where required to identify proposed access routes, anticipated vehicle types and volumes, and any potential impacts to DIT-managed roads arising from activities undertaken under a Renewable Energy Feasibility Licence (REFL).

3.5.9 Other site surveys

Other low impact field surveys that require personnel and or vehicles to traverse the site may be undertaken to assist with development design and approvals. This may include installation of noise or air quality monitors or inspections associated with hydrological or visual impact assessment, which typically involve taking photographs from selected sites and installing photopoint markers (metal stakes).

3.6 Geotechnical investigations

Geotechnical investigations may be conducted to assess subsurface conditions and determine soil or rock properties, for use in engineering design of renewable energy infrastructure. They may also be carried out to investigate the suitability of site material for construction use (e.g. for use as hardstand construction material). Geotechnical investigations may include:

- Soil resistivity testing which measures the capacity of the ground to pass an electrical current. Electrodes are set out at equal distances in a fixed configuration array and a low-frequency electrical current is run across the outer electrodes and the voltage measured between the inner potential electrodes.
- Borehole or rotary drilling, using a four-wheel drive or truck-mounted rig to drill to depths of up to approximately 30 m. Rigs are usually self-levelling, however on steep slopes it may be necessary to construct a level pad up to approximately 10 m by 10 m. Boreholes may require a well construction permit under the *Landscape South Australia Act 2019* if they are likely to intercept groundwater.
- Test pits, which involve minor excavation works at selected locations. Test pits are typically up to two to four metres deep, one metre wide and five metres long and are excavated using a small backhoe.
- Cone penetration testing, which involves pushing a steel cone with a diameter of approximately 40 mm to depths of 20 m or more below the surface. Small portable rigs or larger truck-mounted rigs may be used.
- Testing to inform piling and drilling options for the foundation of a solar farm, which may include pile load testing, pile driving, pressure meter testing and soil infiltration testing.

These investigations typically require access to the site by light vehicles and small trucks. Following the completion of testing activities, all excavations, test pits and drill holes are backfilled and the site reinstated to pre-existing conditions.



Plate 3-6: Test pit excavation



Plate 3-7: Cone penetration testing



Plate 3-8: Example of truck-mounted borehole drilling

3.7 Groundwater investigations

It may be necessary for proponents to undertake groundwater investigations to ascertain baseline or ambient conditions, or to investigate potential sources of water that could be used during construction.

Groundwater investigation may involve sampling from existing bores with the owner's permission, or may require installation of new groundwater monitoring bores. Monitoring bores would be installed by an appropriately licensed water well driller, with all necessary approvals (e.g. well construction permit under the *Landscape South Australia Act 2019*) obtained from the relevant authority.

When no longer required, monitoring bores constructed by the proponent would be decommissioned and rehabilitated in accordance with regulatory requirements.

3.8 Campsites

Accommodation facilities in townships and pastoral quarters would be used wherever possible. Campsites, including portable accommodation, if used, would generally be for short-term use (typically up to a few weeks), small and generally house up to ten personnel. Wherever possible, camps would be set up on sites that have been previously utilised or on areas devoid of vegetation, and always adjacent to any existing tracks to minimise impacts.

Proposed campsites must be developed in line with bushfire planning requirements as set out by the CFS, including safe access and egress, adequate firefighting water supply, and appropriate Asset Protection Zones, while prioritising emergency management. Note that campsite design and associated emergency management procedures should also be developed with specific consideration given to being remotely located and the potential need for early evacuation.

Any domestic wastes (e.g. food waste, paper) and other waste (e.g. plastics, cans, glass) created at campsites would be stored on site prior to transportation to an appropriate waste disposal facility. Recyclable materials (e.g. returnable bottles and cans) would be segregated and transported to an appropriate waste facility. Storage methods would take issues such as scavenging by animals into account, to avoid scattering of litter and impacts on wildlife.

If campsites require the provision of systems for the management of sewage wastes, then this must be managed in accordance with the *Public Health (Wastewater) Regulations 2013*. Approved environmental treatment units may be utilised where practical and appropriate. Following treatment via an approved system, wastewater may be disposed of on-site (well away from watercourses or infrastructure) when in remote areas.

4. Overview of Existing Environment

This section provides an overview of the environment of the Study Area covered by this EIR, as shown in **Error! Reference source not found.**. The Study Area encompasses both release areas, Whyalla West and Gawler Ranges East . The release areas were declared by the Minister for Energy and Mining on the 22 January 2026 in the South Australian Government Gazette. The declaration follows the public consultation that occurred in 2024 which sought feedback on the locations, boundaries and sensitivities or constraints that may be affected by development on the land.

4.1 Climate

The Study Area is located within the Gawler IBRA region (see Section 4.2). This region's climate ranges from semi-arid to arid with rainfall occurring predominantly in winter (Government of South Australia, 2004). Climate data are available at Yudnapinna in the northern section of the region and at Nonning in the southern section of the region.

At Yudnapinna, mean daily maximum temperatures range from 16.8°C in winter to 33.7°C in summer, and mean daily minimum temperatures range from 9.0°C to 20.7°C. Average annual rainfall is 211.1 mm, with highest daily rainfall occurring in March with 114.3 mm.

At Nonning, mean daily maximum temperatures range from 16.5°C in winter to 33.4°C in summer, and mean daily minimum temperatures range from 3.8°C to 16.9°C. Average annual rainfall is 247.9 mm, with highest daily rainfall recorded in March with 114.3 mm.

Climate data at Yudnapinna and Nonning are summarised in Table 4-1 and Table 4-2.

Table 4-1: Temperature and rainfall records for Station # 016056 (Yudnapinna)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
Mean Daily Max (°C)	33.7	32.6	30.1	24.9	20.5	17.2	16.8	18.7	22.2	25.7	29.0	32.2	25.3
Mean Daily Min (°C)	17.7	17.9	15.4	11.6	8.1	5.5	4.4	5.2	7.5	10.7	13.4	16.0	11.1
Mean Rainfall (mm)	16.4	17.4	11.7	14.1	21.7	24.4	19.2	18.8	17.4	18.9	16.5	14.7	17.6
Median Rainfall (mm)	6.1	6.4	5.3	6.4	13.2	19.2	15.1	15.4	11.2	13.4	11.6	7.2	10.9
Highest Daily Rainfall (mm)	96.0	110.5	114.3	73.0	55.9	52.3	35.1	69.9	47.5	65.8	48.4	63.5	69.4

Table 4-2: Temperature and rainfall records for Station # 016032 (Nonning)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Average
Mean Daily Max (°C)	33.4	32.8	29.4	24.9	20.0	16.7	16.5	18.2	21.5	25.0	28.8	31.2	24.9
Mean Daily Min (°C)	16.6	16.9	14.4	10.8	7.0	4.7	3.8	4.6	6.9	9.5	12.8	14.9	10.2
Mean Rainfall (mm)	17.0	16.8	15.2	16.0	23.7	26.8	25.6	24.4	24.0	22.2	17.6	18.4	247.9
Median Rainfall (mm)	7.0	7.6	8.8	10.2	21.4	21.0	21.0	22.1	18.0	14.8	12.1	11.4	237.2

Highest Daily Rainfall (mm)	75.0	51.1	65.3	65.5	47.0	41.0	46.7	27.4	46.4	39.8	89.2	67.8	89.2

4.2 Bioregion, Landforms and Soils

The Study Area is located in the Gawler bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA). The IBRA system classifies Australia's landscapes into bioregions based on their characteristics including climate, geology, landform, native vegetation and fauna (DCCEEW, 2024). The Study Area encompasses four of the eight IBRA subregions that compose the Gawler bioregion: Myall Plains, Gawler Volcanics, Gawler Lakes and Arcoona Plateau (Figure 4-1).

At the regional scale, IBRA subregions can be further divided into smaller landscape areas or land systems ranging from 20 km^2 to 2000 km^2, based on recurring pattern in geology, topography, soil and vegetation characteristic (Government of South Australia, 2016). A total of 28 different land systems can be found within the Study Area (Table 4-3). Some of these land systems are reported as being prone to water erosion (Tent Hill) and wind erosion (Hesso, Pandurra and Tent Hill) (Government of South Australia, 2004).

Five major landforms of the Gawler bioregion occur in the Study Area (DEH, 2009):

- sand dunes and sand plains, characterised by parallel dunes and sand plains over heavier soils,
- stony plains, characterised by sandstone and quartzite plateau covered with sand and small pebbles,
- ranges and hills, characterised by hills up to about 700 m altitude,
- plains and rises, characterised by flat to gently undulating alluvial and sandy plains,
- drainage lines, floodplains and salt lakes, characterised by ephemeral watercourses and floodplains.

Ecological characteristics of these landforms are detailed in Section 4.4 (Table 4-4).

Table 4-3: IBRA subregions, land systems and landforms within the study area

IBRA Subregion	Land Systems		Landforms
Myall Plains (GAW01)	Roopena Iron Knob Pandurra Hesso Yudnapinna Thurlga Bittali	Weednanna Oxys Peterlumbo Peter Pan Yarlerberrie Ebunbanie	Sand dunes and sand plains Plains and rises Ranges and hills
Gawler Volcanics (GAW02)	Eucarro Yarna Ebunbanie Centre	Carpentaria Thurlga Kolendo Peterlumbo	Drainage lines, floodplains and salt lakes Sand dunes and sand plains Plains and rises Ranges and hills
Gawler Lakes (GAW03)	Beacon Gairdner Torrens Horseshoe Glendambo	Bowen Hesso Roxby Yorkey	Drainage lines, floodplains and salt lakes Sand dunes and sand plains Plains and rise Ranges and hills
Arcoona Plateau (GAW04)	Tent Hill Arcoona		Sand dunes and sand plains Stony plains Plains and rises Ranges and hills

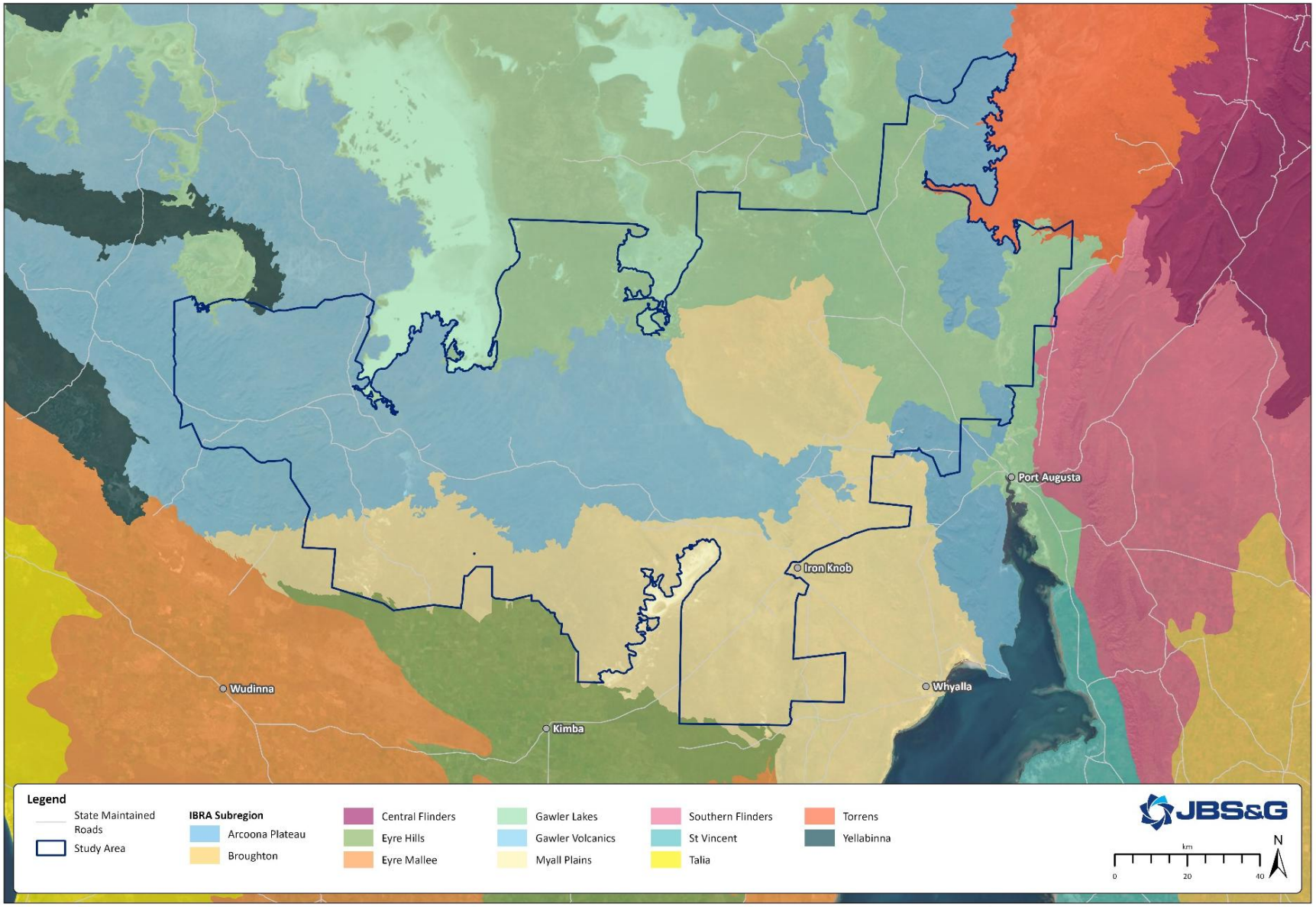


Figure 4-1: IBRA subregions within the Study Area

Acid sulfate soil

Acid sulfate soil materials is the term applied to soils, sediment or rock in the environment that contain elevated concentrations of metal sulfides (principally pyriteFeS_2 or monosulfides in the form of iron sulfide-FeS), which generate acidic conditions when exposed to oxygen (EPA, 2007) In South Australia, actual and potential coastal acid sulfate soils occupy approximately 2,410 km_2 and have an estimated acid reservoir of two million tonnes. Metal sulfides have been associated with historical mining of copper, gold and silver/lead deposits and within sediments throughout the state. They are also associated with some of South Australia's coal deposits (EPA, 2007). DEW has created acid sulphate soil potential mapping, which shows the proportion of land susceptible to the development of acid sulphate soils (DEW, 2020). Acid sulphate soil potential is viewable on NatureMaps under the Soils layer. Areas at risk of acid sulphate soils are mainly found along the coast or near freshwater areas and the majority of the Study Area is not at risk of being affected.

4.3 Water Resources

4.3.1 Surface water

The Study Area is located adjacent to (and south of) several large salt lakes (Lake Acraman, Lake Gairdner, Lake MacFarlane and Lake Torrens) and is adjacent to (and north of) Lake Gilles (Figure 4-2). Various seasonal lakes, salt lakes and saltpans occur within the area, in particular within the Thurgla and the Yorkey land systems. The area is crossed by numerous ephemeral watercourses (see Figure 4-2). A number of dams have been built throughout the region to provide water resources for pastoral purposes.

Rock-holes are water resources that are known to occur within the Study Area, especially in the Gawler Ranges where granite outcrops are frequent (Government of SA, 2008). Rock-holes are natural holes or depressions on the surface of rock outcrops that fill with freshwater during rainfall events. They provide an important water resource for the local flora and fauna. Rock-holes are also of cultural significance for Traditional Owners as described in Section 4.7.

The Landscape SA Act and the Water Affecting Activities Control Policies for each landscape management region set out a number of water affecting activities that must not be undertaken without a permit. These are usually avoidable by micro siting of infrastructure to avoid watercourses and surface water features and to maintain surface water flows during construction and operation.

4.3.2 Groundwater

Available mapping indicates that the depth to the shallowest aquifer is variable through the Study Area and is generally deeper than 10 m below the soil surface (SARIG, 2024). Depth to groundwater is predicted to be the deepest in the southern section of the Study Area between Lake Gilles and the Gawler Ranges National Park; and in the centre of the study area up to Bookaloo. Depth to groundwater is the shallowest in the north of the Carriewerloo pastoral station where it is predicted to be less than 2 m from the soil surface.

Shallow groundwater salinity is mapped as being variable through the Study Area, ranging from less than 1,500 ppm to more than 35,000 ppm. Sections with higher salinity can be found in the southern and the northern section of the Study Area (SARIG, 2024). These high levels of salinity are due to the low rainfall in the region (Government of South Australia, 2004). Shallow groundwater with lower salinity is mapped as occurring on across the central part of the Study Area where ephemeral drainage lines are numerous (Figure 4-2) and surface water concentrates after heavy storms (Government of South Australia, 2004; SARIG, 2024).

The use of groundwater for pastoralism purposes is limited due to generally insufficient quality for animal production (Government of South Australia, 2004). The potential to use groundwater for future mining activities that may occur in the region has previously been identified, however this would require extensive investigation (Government of South Australia, 2004).

There are no prescribed water resources or prescribed wells under the Landscape South Australia Act currently identified within the Study Area.

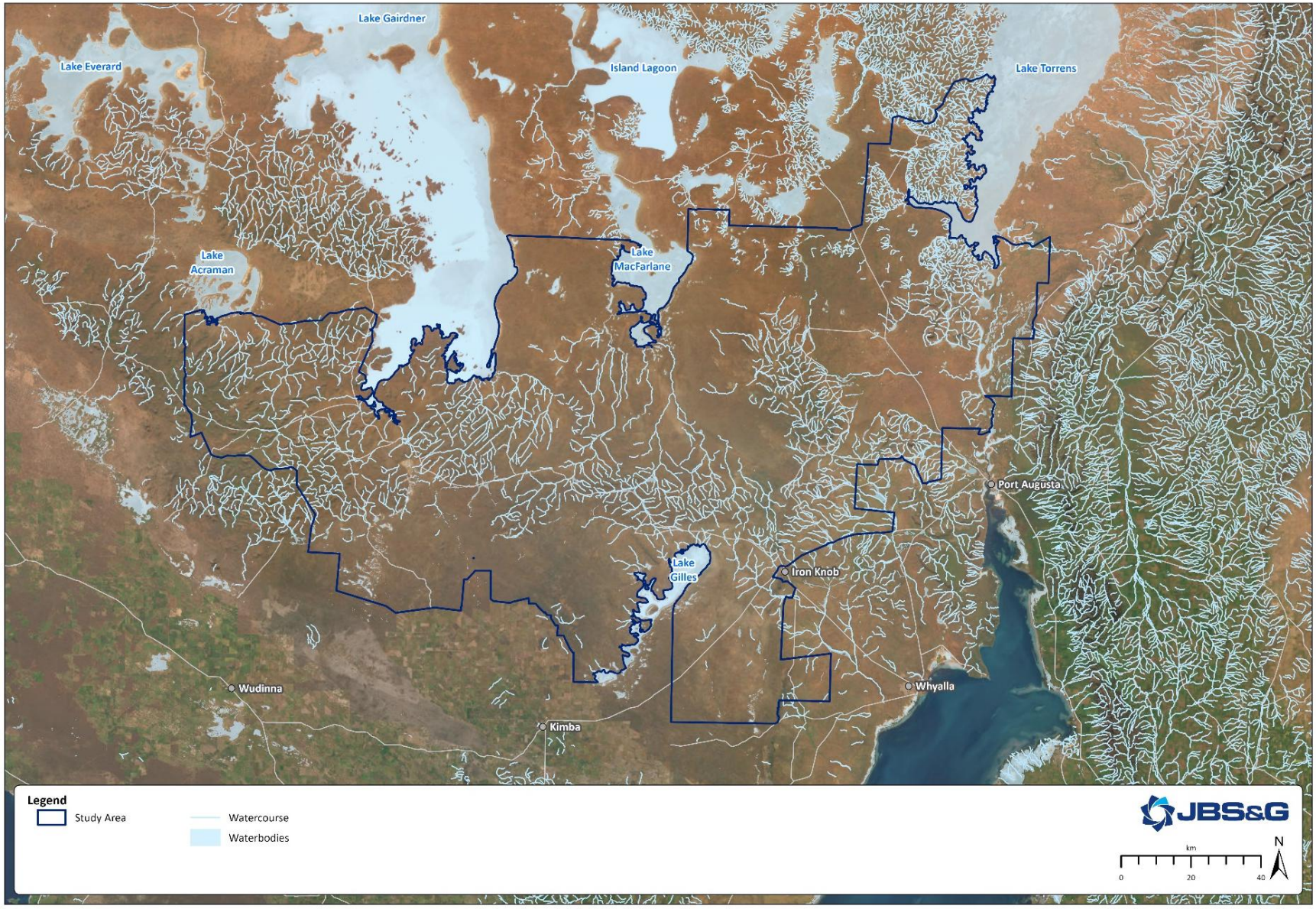


Figure 4-2: Surface water features in the study area

4.4 Flora, Fauna and Biodiversity

South Australia's native biodiversity is globally unique. It forms an integral part of the State's cultural heritage and identity, as well as underpinning wellbeing and economic prosperity (EPA, 2023).

4.4.1 Native flora and fauna

The five main landforms within the Study Area provide habitat for a broad range of flora and fauna species. The ecological characteristics associated with each of these landforms are described in Table 4-4 (based on DEH, 2009).

The Gawler region is home to several endemic species that are known to occur within or adjacent to the Study Area. The Corunna Daisy (*Brachyscome muelleri*) is known from a single site at the Corunna station. The Lake Acraman Button-daisy (*Leptorhynchos melanocarpus*) grows in the gypseous soils near Lake Acraman, directly adjacent to the northwestern border of the study area. The Western Grasswren (*Amytornis textilis myall*) and the Pernatty Knob-tail Gecko (*Nephrurus delenani*) have a distribution restricted to the Gawler bioregion and have previously been recorded in the Study Area.

The Study Area avoids, but is directly adjacent to, important salt lakes including Lake Gilles, Lake Torrens, Lake Macfarlane and Lake Gairdner, and Lake Acraman that are known to attract many bird species for breeding birds (ABC, 2017; DEH, 2009).

Native flora and fauna are protected under the *National Parks and Wildlife Act 1972* (NPW Act). The NPW Act also lists rare or threatened flora and fauna species, as discussed below. Native flora species also include those that are recognised as culturally important plants for Aboriginal people.

A number of threatened species listed at the Commonwealth level under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or at the State level under the *National Parks and Wildlife Act 1972* (NPW Act) occur within the study area. The EPBC Protected Matters Search Tool predicted that 8 threatened flora species and 24 threatened fauna species listed under the EPBC Act have the potential to occur in the study area (Appendix A).

A search of the Biological Databases of South Australia[11] (BDBSA) indicated that 44 flora species and 43 fauna species listed under the EPBC Act and/or the NPW Act have previously been recorded within the Study Area (0). Note that the BDBSA is not a comprehensive repository of all the biological records that are likely to be found, partly due to a small number of samplings across the study area. When considering a 50 km buffer of the Study Area[12], an additional 130 threatened flora species showed previous records. This tool should be used in conjunction with DEW's biodiversity values mapping, see below. EPBC-listed species previously recorded or classified by the PMST as known to occur (or whose habitat is known to occur) in the Study Area are detailed in Table 4-5.

DEW Biodiversity Values Identification Project

DEW have developed biodiversity values mapping for environmental values including native vegetation coverage, threatened ecological communities and listed threatened species. In addition, the mapping include species that are likely to be at high-risk from development impacts (i.e. development would result in a species qualifying as nationally threatened). This mapping generates spatially continuous interpreted information on environmental values covered by legislation and policy to produce useful spatial synthesis on biodiversity values related to landscapes, ecosystems and species. It can be applied to different planning areas across the study area and rapidly produce useful spatial synthesis on biodiversity values related to landscapes, ecosystems and species. The spatial outputs generated through this process provide interpreted information across the range of existing biodiversity policy and regulatory instruments.

Biodiversity values mapping outputs must be used by licensees in planning and assessment of proposed activities at a site-specific and licence-area scale. The biodiversity values mapping dataset is available from DEM and/or DEW for proponents use.

[11] South Australian Department for Environment and Water BDBSA. Recordset number DEWNRBDBSA240618-1

[12] 50 km buffer has been used for consistency with Native Vegetation Council's methodology (NVC, 2024).

Further information on the biodiversity values mapping for both the Whyalla West and Gawler Ranges East release areas, developed in September 2024 can be found within the following documents or via DEW.Science@sa.gov.au:

- Mapping of legislated biodiversity values to inform DEM HRE Whyalla West proposed release area: Summary of DEW approach, outputs, and interpretation considerations, September 2024 -
- Mapping of legislated biodiversity values to inform DEM HRE Gawler Ranges East proposed release area: Summary of DEW approach, outputs, and interpretation considerations, September 2024

4.4.2 Migratory species

The EPBC PMST identified 13 migratory birds as having the potential to occur within the Study Area (Appendix A). This included one marine species, two terrestrial species, and ten wetland species. The *Drainage lines, floodplains and salt lakes* landform offers significant habitat for migratory waders (DEH, 2009).

Table 4-4: Ecological characteristics of the study area's landforms (DEH, 2009)

Landform	Ecological characteristics
Drainage lines, floodplains and salt lakes	
	The drainage lines, floodplains and salt lakes landform is crossed by permanent and intermittent streams draining into large saltpans. Vegetation characteristic to this landform include salt- and inundation-tolerant species such as Samphire. This landform also supports several woodland types including River Red Gum, Coolibah and Mallee Box dominated-woodland. Significant ecological process occurs within this landform, with salt lakes attracting many bird species for breeding. The endemic Lake Acraman Button-daisy (*Leptorhynchos melanocarpus*) grows on the shore of the Lake Acraman that is adjacent to the northwest of the area.
Sand dunes and sand plains	
	The sand dunes and sand plains landform is dominated by Mallee species, Broombush and Tea tree woodland over chenopods. In the eastern part of the Gawler ranges, the landform is dominated with Mulga and Northern Cypress Pine woodland. This landform provides habitat for the South-Australian rare Pernatty Knob-tailed Gecko (*Nephrurus deleani*). The Mulga low woodland on sand plains is an ecological community identified as a conservation priority that covers part of this landform.
Stony plains	
	The stony plains landform mainly supports low chenopod shrubs with occasional Cottonbush, Swamp Cane-grass and Neverfail swamps. This landform provides habitat for the nationally vulnerable Plains Mouse (*Pseudomys australis*) north of the study area.

Landform	Ecological characteristics
Plains and rises	
	The plains and rises landform is predominantly covered with chenopods shrublands dominated by Pearl Bluebush, Bladder Saltbush, and Western Myall. Other major vegetation community involve low woodland, low shrublands and ephemeral grassland. Bullock Bush shrubland can be found in the southern section of the Gawler region. This landform provides habitat threatened bird species including for the EPBC-Vulnerable Malleefowl (*Leipoa ocellata*) and Western Grasswren (*Amytornis textilis myall*) and the South Australian-Vulnerable Slender-billed Thornbill (western) (*Acanthiza iredalei iredalei*). This landform provides habitat for the EPBC-Vulnerable Yellow Swainson-pea (*Swainsona pyrophila*). Threatened Ecological Community: Bullock Bush tall shrubland.
Ranges and hills	
	The Ranges and hills landform is predominantly covered with various species of Mallee. Black Oak woodland over chenopod shrubs, and Drooping Sheoak woodland and Spinifex hummocks are also common within this landform. This landform provides habitat for threatened flora including the nationally endangered Corunna Daisy (*Brachycome muelleri*) and the nationally vulnerable Desert Green-Hood (*Pterostylis xerophila*). This landform provides habitat for nationally vulnerable Yellow-footed Rock-wallaby (*Petrogale xanthopus xanthopus*).

Table 4-5: Threatened species known to occur or having suitable habitat within the Study Area

Species	EPBC Status	NPW Status	Distribution and habitat	Relation to Study Area[13]
Plants				
Greencomb Spider-orchid (*Caladenia tensa)*	EN		Within and around the Little Desert in western Victoria and southeast South Australia (TSSC, 2016). Cypress-pine/Yellow Gum Woodland, Heathy Woodland and Mallee on sands and sandy loams derived from aeolian sand deposits (Todd, 2000).	One record within the Study Area.
Yellow Swainson-pea (*Swainsona pyrophila*)	VU	R	From the northern Eyre Peninsula east to north-western Victoria and south-western and central-western New South Wales, generally within the 250–400 mm rainfall zone (Tonkinson & Robertson, 2010). Mallee scrub on well drained sands, sandy loams and heavier clay loams (Tonkinson & Robertson, 2010).	One record within the Study Area.
Frankenia plicata	EN	V	Northeastern section of the State from Port Augusta to the border with Northern Territory, Queensland and northern New South Wales (DEWHA, 2008a). Wide range of vegetation community on well-drained soil (DEWHA, 2008a).	Several records in the Study Area near Lake Torrens, suggesting the species have the potential to occur in the northern section of the study area.
Desert Greenhood (*Pterostylis xerophila*)	VU	V	Endemic to South Australia and Victoria (Duncan, 2010). Remote and semi-desert environment, in dry woodland with Broombush, Ridge-fruited Mallee, Beaked Red Mallee and/or Narrow-leaf Red Mallee on fertile red loamy soil or granite or quartzite rock outcrops (Duncan, 2010).	Two records adjacent to the western boundary outside of the Study Area.
Corunna Daisy (*Brachyscome muelleri*)	EN	E	Restricted distribution with one known site at Corunna Station near Iron Knob, upper Eyre Peninsula (DoE, 2013). Gravelly red to brown friable loams soil overlying bedrock and interspersed with rocky outcrops (DoE, 2013).	Corrunna Station is included within the Study Area.
Nodding Rufoushood (*Pterostylis mirabilis*)	VU		Restricted to the Eyre Peninsula Natural Resource Management Region (DEWHA, 2008b). Rocky hilly slopes, in shrubland dominated by broombush and woodlands dominated by Callitris and eucalyptus (DEWHA, 2008b).	South of the Study Area between the Gawler Ranges and Lake Gilles overlaps with the species distribution. One record within the Study Area.
Birds				
Southern Whiteface (*Aphelocephala leucopsis)*	VU		Large distribution including most of mainland Australia south of the tropics (DCCEEW, 2023a). Relatively undisturbed open woodlands and shrublands with an understorey of grasses or shrubs, or both; habitat with low tree densities and an herbaceous understory litter cover which provides essential foraging habitat; and living and dead trees with hollows and crevices which are important for roosting and nesting (DCCEEW, 2023a).	Multiple records within the Study Area.

[13] Records based on (DEW, 2024) and (ALA, 2024).

Species	EPBC Status	NPW Status	Distribution and habitat	Relation to Study Area[13]
Grey Falcon (*Falco hypoleucos*)	VU	R	Widespread distribution in arid and semi-arid zones on the Australian mainland (TSSC, 2020). Timbered lowland plains, particularly Acacia shrublands crossed by tree-lined watercourses (TSSC, 2020).	One record within the Study Area.
Blue-winged Parrot (*Neophema chrysostoma*)	VU	V	Partially migrant parrot, breeding in Tasmania, southern Victora and coastal southeastern South Australia, and over-wintering in northern Victoria, eastern South Australia, southwestern Queensland and western New South Wales (DCCEEW, 2023b). Grasslands, grassy woodlands, semi-arid chenopod shrubland and wetlands both near the coast and semi-arid zones. Eucalyptus forests and woodlands containing trees and stumps with hollows constitutes critical breeding habitat (DCCEEW, 2023b).	Recorded once within the Study Area.
Western Grasswren (Gawler Ranges) (*Amytornis textilis myall*)	VU	V	Endemic to the Southern ranges of South Australia. Fragmented distribution restricted to the northern Eyre Peninsula and the Gawler Ranges (DoE, 2014a). Dense spiny chenopod and acacia shrubland along drainage lines. It may also occur in open chenopod shrublands with a sparse or open canopy of small trees and shrubs (Higgins, Peter, & Steele, 2001; Black, Carpenter, & Pedler, 2009).	The Study Area covers a large proportion of the species distribution. Multiple records of this species within the Study Area.
Diamond Firetail (*Stagonopleura guttata*)	VU	V	Widespread distribution in southeastern Australia mainland, from the Eyre Peninsula to the southeastern Queensland (DCCEEW, 2023c). Eucalypt, acacia or casuarina woodlands, open forests and other lightly timbered habitats; and low tree density, few large logs, and little litter cover but high grass cover for foraging, roosting and breeding (DCCEEW, 2023c).	No records within the Study Area (predicted to occur by the PMST).
Red Knot (*Calidris canutus*)	VU		Small to medium migratory shorebird. Red knots are widespread around the Australian coast, however the species is occasionally recorded inland in all regions. Red Knots mainly inhabit intertidal mudflats, sandflats, and sandy beaches of sheltered coasts, estuaries, bays, inlets, lagoons, and harbours. and are occasionally seen on terrestrial saline wetlands near the coast and have been recorded on sewage ponds and saltworks. In South Australia, the species is found mostly from The Coorong, north and west to the Yorke Peninsula and Port Pirie (DCCEEW, 2024).	No records within the Study Area (predicted to occur by the PMST).
Gawler Ranges Short-tailed Grasswren (*Amytornis merrotsy pedleri*)	EN	E	Restricted distribution across central and western Gawler Ranges in South Australia (DoE, 2014b). Rocky hillsides, ridges and hilltops, covered with grassland dominated by spinifex tussock grassland with scattered spiny shrubs (DoE, 2014b).	Western section of the Study Area overlaps with the species distribution. Several records around Mt Ive Station, north of the Gawler Ranges National Park and east of the Hiltaba Nature Reserve.
Malleefowl (*Leipoa ocellata*)	VU	V	Widespread distribution in southern Australia (Benshemesh, 2007). Semi-arid to arid shrublands, and low woodlands dominated by mallee and/or acacias. Breeding habitat requires a sandy substrate and an abundance of leaf litter that is used for nest building (Benshemesh, 2007).	Numerous records to the south of the Study Area, with a few records observed within the study area southeast of Lake Gilles.

Species	EPBC Status	NPW Status	Distribution and habitat	Relation to Study Area[13]
Sharp-tailed Sandpiper (*Calidris acuminata*)	VU		Shorebird with a widespread distribution, occurring in Australia during the non-breeding season (DCCEEW, 2024). Freshwater and saline environment inland and on the coast (DCCEEW, 2024).	The species has previously been observed within the Study Area next to dams and along drainage lines.
Mammals				
Yellow-footed Rock-wallaby (SA and NSW) (*Petrogale xanthopus xanthopus*)	VU		In South Australia, occurs in the Gawler Ranges, Flinders Ranges and Olary Hills (DEWHA, 2008c). Includes rocky outcrops, cliff and ridges in semi-arid country, with a vegetation dominated by Mulga (DEWHA, 2008c).	Numerous records west of the Study Area in Hiltaba Station and Gawler Ranges NP.
Plains Mouse *Pseudomys australis*)	VU	V	In South Australia, occurs in stony desert including west of Lake Torrens around Pernatty station. Large open gypseous cracking clay areas with minor drainage features, and depressions within gibber stony plains.	Records immediately north of the Study Area. Not previously recorded within the Study Area (predicted by the PMST). Outside known range.
Sandhill Dunnart (*Sminthopsis psammophila*)	EN	V	Sandy, semi-arid and arid areas of southern central Australia in the Great Victoria Desert and the Eyre Peninsula (TSSC, 2015). Sand dunes with vegetation dominated by spinifex hummock grassland (*Triodia* spp.) (TSSC, 2015).	Records immediately south of the Study Area. No records within the Study Area (predicted by the PMST).

*Conservation status: EPBC Act (Cwlth): CE - Critically Endangered, EN – Endangered, VU – Vulnerable. NPW Act (SA): V – Vulnerable, E – Endangered, R -Rare

4.4.3 Weeds, pests and pathogens

A search of the BDBSA identified previous records for 16 declared flora species including 5 Weeds of National Significance (WoNS) within the Study Area (Table 4-6). Thirty-nine additional declared flora species, including 19 WoNS, occur within 50 km of the Study Area.

Four introduced species of bird and nine introduced species of mammals were recorded within the Study Area (Table 4-6). Feral goats (*Capra hircus*) and feral sheep (*Ovis aries*) are the most abundant introduced species in the region, with more than 1900 and 1100 records respectively throughout the Study Area. Feral goats are considered a major environmental and agricultural pest (DSEWPC, 2011) and are regulated under the *Landscape South Australia Act 2019*. Other key pest animals include Fox and European Rabbit.

Buffel grass is a declared weed in South Australia under the *Landscape South Australia Act 2019* and is recognised as an invasive species threat to biodiversity across the entire Australian arid zone. Buffel grass forms dense monocultures, increases the frequency and intensity of fires, and displaces native plants and the animals that depend on them, including bush foods and many culturally significant species. Buffel grass is widely distributed across northern arid South Australia with infestations varying widely in size and density. Most known large infestations occur in the far northwest of the state and along roads.

Buffel grass distribution in South Australia has been mapped by the Alinytjara Wilurara Landscapes Board and is presented in Figure 4-3. Buffel Grass is prevalent along road corridors within the Study Area and release areas. These are areas where buffel grass has been observed and mapped, however does not constitute the full distribution of the weed across the State.

A Buffel Grass Strategic Plan 2019-2024 was developed by the SA Buffel Taskforce in consultation with stakeholders as a high-level strategic document for buffel grass management as well as the development of regional weed management plans. In addition, DEM have developed the Buffel grass best practice management guide for the resource industries to support South Australian industries to understand and manage the risks associated with buffel grass.

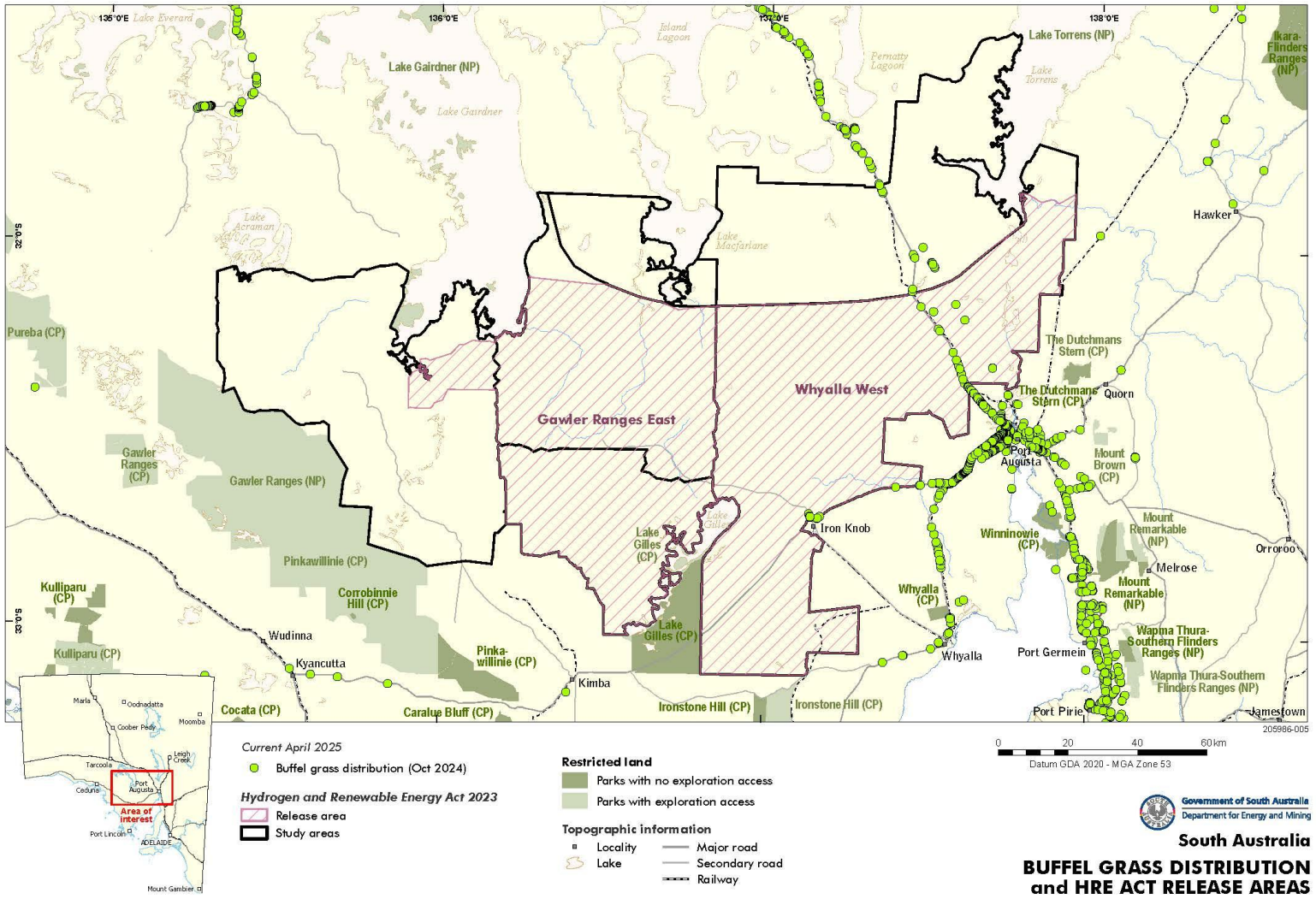


Figure 4-3: SA buffel grass distribution mapped by Alinytjara Wilurara Landscapes Board, as of October 2024.

The list of declared weeds is not static and can change over time, information on declared weeds within a given area is held by the relevant landscape board or can be found on the PIRSA website. Landscape Boards are generally also responsible for pest plant strategies that provide guidance on pest plant management in their landscape region.

Introduced plant species that are not declared under the Landscape SA Act can also impact agriculture and native vegetation.

Currently, 32 Weeds of National Significance (WONS) are listed under the Australian Weeds Strategy that have been identified based on their invasiveness, potential for spread and environmental, social and economic impacts. Further information on WONS and their occurrence as well as individual national strategic management plans for individual WONS are available via Weeds Australia.

Table 4-6: Declared weeds and pests within the Study Area

Species	Common name
Declared flora	
Cenchrus ciliaris	Buffel Grass
Cenchrus setaceus	Fountain Grass
Cylindropuntia imbricata	Devil's Rope Pear (WoNS)
Cylindropuntia prolifera	
Diplotaxis tenuifolia	Lincoln Weed (WoNS)
Echium plantagineum	Salvation Jane
Eragrostis curvula	African Love-grass
Euphorbia terracina	False Caper
Lycium ferocissimum	African Boxthorn (WoNS)
Marrubium vulgare	Horehound
Opuntia puberula	(WoNS)
Opuntia stricta	Erect Prickly Pear (WoNS)
Orbea variegate	Carrion-flower
Peganum harmala	African Rue
Rhaponticum repens	Creeping Knapweed
Rumex hypogaeus	Three-corner Jack
Introduced birds	
Sturnus vulgaris vulgaris	Common Starling
Carduelis carduelis britannica	European Goldfinch
Columba livia	Feral Pigeon
Passer domesticus domesticus	House Sparrow
Introduced mammals	
Bos taurus	European Cattle
Felis catus	Domestic Cat
Vulpes vulpes	Red Fox
Capra hircus	Feral Goat

Species	Common name
Equus caballus	Horse (Brumby)
Mus musculus	House Mouse
Camelus dromedarius	Dromedary
Oryctolagus cuniculus	European Rabbit
Ovis aries	Feral Sheep

Landscape Boards support landowners and other stakeholders in the management of pest animals, including pest animal (declared) management plans, the coordination of control programs as well as outlining priorities and strategies for pest control.

The federally coordinated response to pest animals in Australia, the Australian Pest Animal Strategy, provides national guidance on best practice vertebrate pest animal management.

There are no records of phytophthora within the Study Area (DEW, 2024).

4.5 Land Use and Tenure

4.5.1 Agriculture

Pastoralism is the primary land use within the Study Area, with a long history of pastoralism in the region dating to the 1850s. Livestock predominantly consists of sheep and, to a lesser extent, cattle (DEH, 2009). The Study Area encompasses 20 pastoral stations, as shown in Figure 4-5.

Other agricultural opportunities for future land use previously identified in the Gawler region include the diversification of the livestock with other species such as Damara sheep or domestic goats, and arid land horticulture such as the culture of date, quandong, desert lime and sandalwood (Government of South Australia, 2004).

The Whyalla West release area covers approximately 6,500 km^2 encompassing part or all of 18 pastoral leases and the Gawler Ranges East release area covers approximately 5,220 km^2, encompassing part or all of seven pastoral leases.

4.5.2 Mining

The region has significant potential for mining development. The Study Area and broader region falls within the Gawler Craton mineral region where geological surveys have predicted potential deposits of various metals, industrial minerals, gem, construction materials and energy minerals[14]. The northeastern section of the Study Area falls within the Cariewerloo basin whose prospective commodities include copper, gold, barite, sandstone and uranium[15]. There are numerous active mineral exploration licences throughout the area with sought commodities including uranium, rare earths and base and precious metals. The remoteness of the region, however, makes exploration and development challenging. Proposed gold and iron ore mining operations in the south of the Study Area, in the Wilcherry Hill area north of Kimba[16], are currently under assessment. The Study Area encompasses part of SIMEC Mining's iron ore mining operations in the Middleback Ranges, with the Iron Baron mine located in south-east of the Study Area and the outer perimeter of the Iron Knob mining operation intersecting the south-eastern margin of the Study Area.

4.5.3 Tourism

There are relatively limited tourism attractions in the Study Area. The adjacent Gawler Ranges National Park and adjacent Salt lakes such as Lake Gairdner National Park are the main attractions in the region. The Stuart Highway from Port Augusta to Coober Pedy, marketed as part of the Explorers Way tourist route, crosses the Study Area in the eastern section. Mount Ive Station, located in the Gawler Ranges in the eastern section of

[14] https://www.energymining.sa.gov.au/industry/geological-survey/geology/gawler-craton
[15] https://www.energymining.sa.gov.au/industry/geological-survey/geology/cariewerloo-basin
[16] Wilcherry Weednanna Gold and Iron Project

the Study Area, is a base for outback adventure and provides fuel and accommodation. Promoted tourism activities include four-wheel drive touring, bird and other flora and fauna watching, walking and photography.

4.5.4 Existing infrastructure

The road network within the Study Area includes two main sealed roads, the Stuart Highway, which connects Port Augusta to Coober Pedy, and the Eyre Highway between Iron Knob and Kimba (Figure 4-4). Traffic on the section of the Stuart Highway in the Study Area is estimated at 950 vehicles per day, while this section of the Eyre Highway carries an estimated 1,000 vehicles per day (DIT, 2023). A smaller sealed road (Middleback Road / Iron Baron Road) that provides access to the Iron Baron mine also traverses the south-eastern part of the Study Area, with estimated traffic of 201 vehicles per day. Three unsealed gazetted double road-train roads cross the Study Area to connect different pastoral stations to Iron Knob and Port Augusta: Nonning Road, Carriewerloo Road and Myall Creek Road. Traffic on these roads is lower and was previously estimated at 19 vehicles per day on Nonning Road (DIT, 2007). There are multiple minor unsealed roads as shown in Figure 4-4.

The transcontinental rail line traverses the Study Area along the Stuart Highway, providing both freight and passenger services (Figure 4-4). Passenger services on this rail line are operated by Journey Beyond with the Indian Pacific Train connecting Sydney to Perth through Adelaide on a weekly basis; and with the Ghan connecting Adelaide to Darwin twice weekly. Freight services on this rail line were estimated at about 14.5 million gross tonnes per year between 2017 and 2020 (Department of Infrastructure, Transport, Regional , 2022). Frequency of freight services provided on this segment varied between 58 and 69 trains per week between 2017 and 2021. The Whyalla-Iron Duke railway line (owned by SIMEC Mining) traverses the south-eastern corner of the study area.

There are several registered aeroplane landing areas and minor airstrips within the Study Area, located in proximity to pastoral stations such as Nonning, Siam, Mount Ive and Yardea (Figure 4-4).

Energy infrastructure is limited in the Study Area and include an Electranet Woomera-Port Augusta transmission line running along the Stuart highway, and a few SAPN overhead transmission lines in the south of the Study Area and along the Stuart highway (Figure 4-4). A single water main traverses the Study Area along the Stuart highway (Figure 4-4).

4.5.5 Contaminated sites

Previous land uses may have resulted in contamination to soils or groundwater. Historical agricultural land uses may include the use of herbicides, pesticides and/or insecticides and may also include sheep dips, waste or animal burials, as well as historical maintenance or storage facilities. Historical site use should be investigated to determine suitable locations for disturbance. Contaminated sites that are reported to the EPA are recorded on the Site contamination index, however, unknown site contamination may exist and may be encountered during disturbance activities.

Unexploded ordnance

Items of explosive ordnance (e.g. ammunition, bombs and grenades) that have failed to detonate correctly upon use, but which are still at risk of exploding, are known as unexploded ordnance (UXO). Locations historically used for military staging and training during World War 2 and lands more recently associated with military testing and training exercises may contain UXO.

Projects undertaken on these lands must ensure the proposed development is being constructed safely and not in an area where UXO may be present. The requirement for a UXO site survey is determined following desktop assessment including historic land uses, geophysical mapping and risk assessment. If required, surveys are carried out by appropriately qualified specialists.

The Department of Defence identifies and maintains a record of areas affected, or suspected of being affected by UXO that may influence the nature of land use on the Defence UXO map. No potential sites of UXO within the Study Area are identified on the Defence UXO map. However, it is noted that the Whyalla West release area partially overlaps with a Defence Controlled Area, the Cultana Training Area, and while it is low risk for

UXO within this overlapping area, UXO may be present anywhere on the Cultana Training Area (Department of Defence, 2015).

4.5.6 Conservation areas

The Study Area deliberately avoids conservation areas designated under the National Parks and Wildlife Act (Figure 4-5). There are large areas used for conservation purposes that are directly adjacent to the Study Area, with Lake Gairdner and Torrens National Parks to the north; Gawler Rangers National Park and Pinkawillinie Conservation Parks to the west, Lake Gilles National Park to the South. The Study Area is also immediately east of the Hiltaba Nature Reserve, a 780 km^2 property managed by Nature Foundation for the conservation and protection of native flora and fauna (Nature Foundation, 2024).

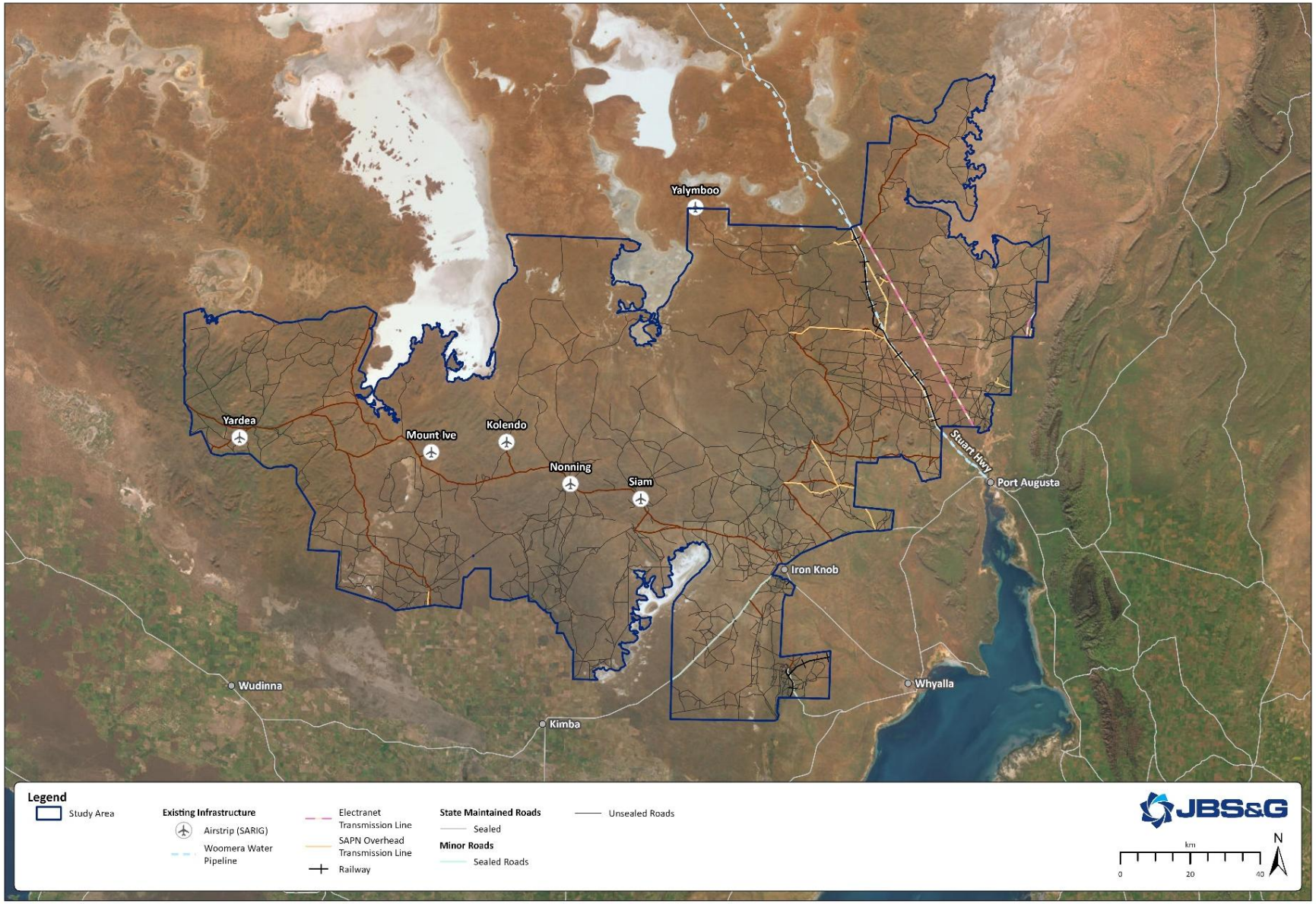


Figure 4-4: Existing infrastructure within the Study Area

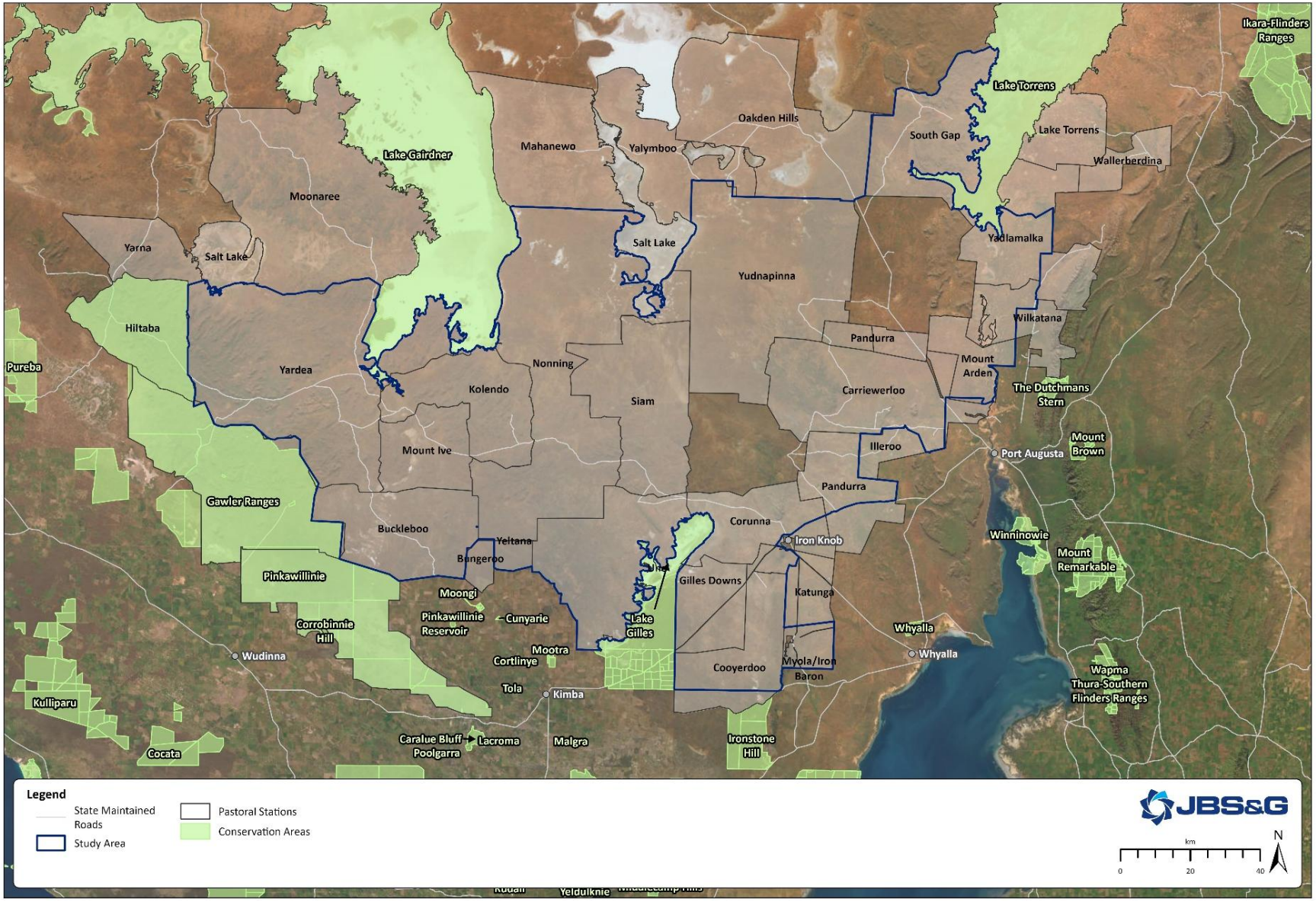


Figure 4-5: Conservation areas and pastoral stations within and adjacent to the Study Area

4.6 Native Title

Native Title, under the *Native Title Act 1993*, is a property right under Australian law that recognises that Aboriginal and Torres Strait Islander people continue to have interests, rights, and connection to land and waters according to their traditional laws and customs. Native Title may be claimed where it has not been extinguished, i.e. doesn't apply to land where people have exclusive possession, such as privately owned freehold land. Native title has been determined within most of the Study Area as shown in Figure 4-6.

The western section of the Study Area falls within the Gawler Ranges People native title claim, which was determined by the Federal Court of Australia in December 2011 as native title existing in parts of the determination area (Figure 4-6). The Gawler Ranges People's interests are managed by the Gawler Ranges Aboriginal Corporation. There are currently eight registered Indigenous Land Use Agreements (ILUAs) that apply to the Study Area that cover specific mining and pastoral operations.

The Kokatha People hold native title rights and interests in the northern section of the Study Area (Figure 4-6). Native title exists in parts of the Kokatha People determination area as per the Federal Court of Australia's determination in September 2014. The Kokatha People's interests are managed by the Kokatha Aboriginal Corporation. The Kokatha Native Title Claim Settlement ILUA registered between Kokatha Aboriginal Corporation, BHP Billiton Olympic Dam Corporation and the Minister for Mineral Resources and Energy is in place on the northern section of the Study Area.

The Barngarla Native Title Claim encompasses all eastern Eyre Peninsula and covers the eastern section of the Study Area. It was determined by the Federal Court of Australia in June 2016 as native title existing in parts of the determination area. The Barngarla People's interests are managed by the Barngarla Determination Aboriginal Corporation (BDAC). The BDAC has registered two ILUA that overlap with the Study Area covering mining and defence operations.

The Whyalla West release area is within the Barngarla Native Title Determination area and the Gawler Ranges East release area is within the Gawler Ranges Native Title Determination area.

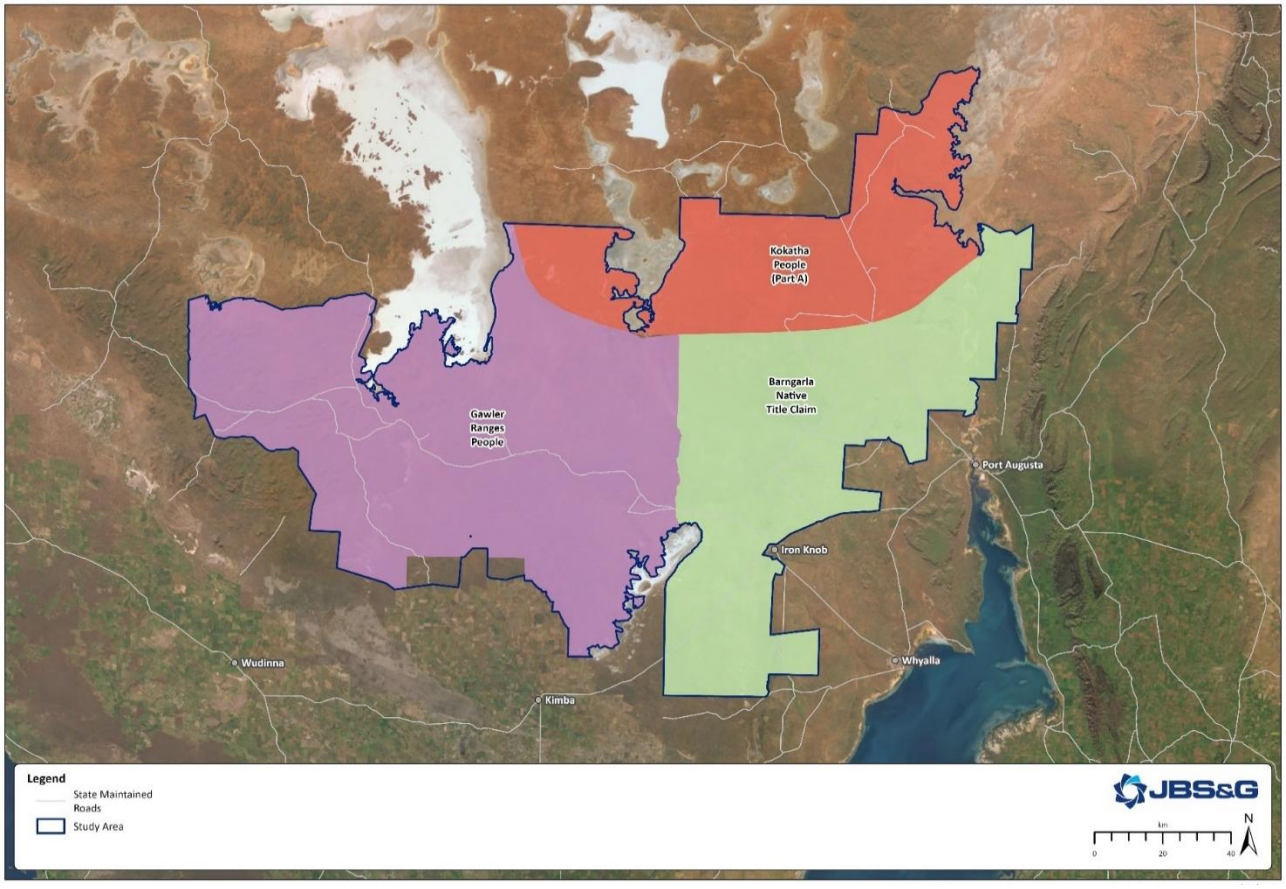


Figure 4-6: Native title determinations within the Study Area

4.7 Aboriginal Heritage

The Study Area encompasses lands that are culturally significant to the Gawler Ranges People, the Kokatha People, and the Barngarla People. The region is known to be rich in Aboriginal heritage (Government of SA, 2017).

Aboriginal sties, objects or remains are defined under section 3 of the Aboriginal Heritage Act 1988 (AH Act) as being of significance to Aboriginal tradition or Aboriginal archaeology, anthropology or history.

The Attorney-General's Department – Aboriginal Affairs and Reconciliation (AAR) has published guidelines and fact sheets to assist proponents with identifying and protecting Aboriginal heritage such as:

- *Managing Aboriginal Heritage in South Australia* guide (Attorney Generals Department, n.d) which provides information on how to search AAR's central archives and access information on the central archives, engagement with Traditional Owners and actions to take to ensure Aboriginal heritage is not damaged, disturbed or interfered with during project activities.
- *Discovery of Aboriginal Sites and Objects* fact sheet (DPC, n.d) which provides guidance on what to do should Aboriginal heritage be found. The fact sheet includes important Information about culturally sensitive areas (e.g. areas within close proximity to creeks, rivers, watercourses etc) and stopping works in the vicinity of the heritage discovery and reporting it to the Minister for Aboriginal Affairs, through AAR.
- *Aboriginal Heritage Discovery Protocols* (DPC, 2023) which sets out steps to follow upon the discovery of Aboriginal heritage in South Australia.

Certain landscape features are more likely to contain evidence of Aboriginal occupation and/or be Aboriginal sites and therefore pose a higher risk for the discovery of Aboriginal heritage. Landscape features that often have cultural significance include distinctive hills, rocky outcrops, rock holes or trees.

The Study Area contains landscape features that have been identified as having a high likelihood of being considered cultural sites by Aboriginal people or associated with Aboriginal heritage (Government of SA, 2024). These landscape features are and the types of Aboriginal sites that they are often associated with include (Government of SA, 2024):

- **clay pans, lakes, rivers, and estuaries:** May contain or be associated with stone artefact sites, shell middens, rock art, campsites, and stone arrangements. These landscape features may also be considered cultural sites by Aboriginal people.
- **dunes and sand hills:** May be associated with stone artefact sites, Aboriginal campsites, and burials, and these landscape features may also be considered cultural sites by Aboriginal people.
- **areas in proximity to creeks, rivers, watercourses, lakes, waterholes, rock holes, wells, and springs, whether permanent, seasonal, or ephemeral**: May be associated with Aboriginal campsites, stone artefact sites, burials, and other signs of Aboriginal occupation, especially in arid zones.
- **rocky outcrops**: May be associated with stone quarries, rock art, rock holes, stone arrangements, ceremonial sites, and stone artefact sites. These landscape features may also be considered cultural sites by Aboriginal people.

Rock-holes are of particular cultural significance and are known to occur within the Gawler bioregion, which includes the Study Area (Government of SA, 2008). Rock-holes are natural holes or depressions on the surface of rock outcrops that fill with freshwater during rainfall events. Rock-holes were important gathering places to Aboriginal People. They provided key water supply in arid area and sustaining other resources including medicinally important plants, and plants and animals that were used in Aboriginal diet (Government of SA, 2008).

The *Aboriginal Heritage Act 1988* (AH Act) provides for the legal protection and preservation of all Aboriginal heritage (known and unknown) in the State.

Under Section 20 of the AH Act, all Aboriginal heritage must be reported to the Minister for Aboriginal Affairs as soon as practicable. Reports must give particulars of the nature and location of the heritage discovery and may be made to AAR to satisfy this requirement. Discoveries of potential human remains must be reported to SA Police immediately on 131 444, as required under the *Coroners Act 2003*.

Under Section 21 of the AH Act, it is an offence to excavate land for the purposes of uncovering Aboriginal heritage without authorisation from the Minister for Aboriginal Affairs.

Under Section 23 of the AH Act, it is an offence to damage, disturb or interfere with Aboriginal heritage without authorisation from the Minister for Aboriginal Affairs.

The AH Act establishes the central archives, which includes the Register of Aboriginal Sites and Objects (Register). The central archives hold information on recorded heritage throughout the State; however, it is not a complete record of all heritage in the State. Undertaking a search of the central archives prior to undertaking any ground-disturbing works will reduce the risk of inadvertently damaging, disturbing or interfering with any recorded Aboriginal heritage.

Early consultation with relevant Traditional Owners about a proposed project is a key step in understanding the Aboriginal heritage profile of the area and how Aboriginal heritage may be protected and avoided during project works. Feedback from Traditional Owners may include information on whether specific elements of a project pose particular risk to known or unknown Aboriginal heritage. Importantly, early engagement may allow any future project to be designed in a way that does not impact Aboriginal heritage, potentially minimising project costs and delays.

4.8 Non-Aboriginal Heritage

A site or place may be of national, State or local heritage significance because of its history, evolution, rare qualities, or contribution to historical understanding. These places are often identified to protect and enable their special heritage values to be passed on to future generations. These sites can be viewed on NatureMaps.

Non-Aboriginal heritage in South Australia includes historical buildings and monuments, relics of agricultural and industrial heritage, archaeological artefacts and fossils, caves, mines and volcanic and geological sites, shipwrecks, lighthouses and whaling stations.

Heritage registers aren't comprehensive and conducting a search on a heritage register doesn't preclude the existence of unknown heritage or unanticipated discoveries of actual or potential heritage items.

The Coralbignie (Houlderoo) Rocks south of Nonning station are listed in the South Australian Heritage Place database for their distinctive and unusual variety of landforms (Department for Housing and Urban Development, 2024). Another listed heritage place is Lake Acraman Impact which is the largest known astrobleme in Australia. There are several South Australian Geoheritage Sites in the south and west sections of the Study Area near Corunna, Buckleboo and Yardea stations. The Corunna Range is the largest geological monument and encompasses an area of approximately 1643 km^2 north of Iron Knob (DEM, 2017).

4.9 Amenity

4.9.1 Noise

The existing noise environment in the region is expected to typical of rural and remote areas, with generally low levels of background noise dominated by natural sources (e.g. wind, animals and insects) and intermittent noise from vehicle traffic in proximity to roads. Locations in close proximity to Middleback Ranges mining operations in the south-east of the Study Area would experience intermittent noise from mining operations.

The EPA regulates noise from business and industry under the *Environment Protection (Commercial and Industrial Noise) Policy 2023,* which sets noise level guidelines and standards for industrial, commercial and licensed premises.

4.9.2 Air quality

Existing air quality in the Study Area is expected to be generally good and typical of that experienced in South Australia's rural and remote semi-arid areas. Air quality in close proximity to Middleback Ranges mining operations in the south-east of the Study Area may be intermittently affected by dust from mining activities. Air quality in the vicinity of roads would be influenced by vehicle emissions and dust from vehicle traffic on unsealed roads.

Air quality is regulated by the EPA through monitoring, policy development and enforcement under the *Environment Protection Act 1993* and the *Environment Protection (Air Quality) Policy 2016* (Air EPP). Unlicensed emissions of odours, dust and smoke from facilities are managed by authorised officers under the *Local Nuisance and Litter Control Act 2016*.

4.9.3 Landscape and visual

The Study Area is characterised by relatively natural landscapes. The dominant landscape types are sand dunes and sand plains, stony plains, ranges and hills, plains and rises, and drainage lines, floodplains and salt lakes, as described in Section 4.2. Anthropogenic influences are largely limited to transport and energy-related infrastructure such as roads, rail lines and transmission lines (mainly in the east of the Study Area) and pastoral infrastructure including fences, tanks, radio masts and sparsely distributed residences and other buildings. The southern margins of the study area are partly adjacent to agricultural areas where cleared and cropped paddocks dominate the landscape.

Authorised activities proposed to be located within 500m of from a non-associated (non-stakeholder) dwelling, township and/or tourist accommodations will be required to undertake visual impact assessment.

4.10 Socio-economic

The Study Area is located within the Pastoral Unincorporated Area. The Pastoral Unincorporated Area has an estimated population of 3024 persons (ABS, 2022) and a median total income of $45,788. The main industry of employment is *Agriculture, forestry and fishing*, with sheep and lamb commodities covering 883,672.4 ha of the LGA.

Population in the area is low and is mainly related to pastoral operations, for example, the largest population is recorded at Mount Ive with a population of 12 and a weekly household income of $1,125 (ABS, 2021).

Main towns in proximity to the Study Area are Port Augusta (population 13,829 in 2021), Kimba (population of 608 in 2021), Iron Knob (population of 110 in 2021) and Buckleboo (population of 40 in 2021).

The Whyalla West release area is approximately 25 km from Port Augusta and 50 km from Whyalla. The Gawler Ranges East release area is approximately 15 km north of Kimba.

5. Environmental Impact Assessment

This section summarises the methodology and results of the environmental impact assessment for REFL activities.

5.1 Methodology

The impact assessment method has been developed in accordance with the Environmental Impact Assessment Criteria published under the HRE Act (DEM, 2024a), using guidance provided in the Environmental Impact Assessment Criteria Guideline (DEM, 2024b).

The impact assessment was undertaken using the following steps:

1. **Identifying environmental elements** that could be impacted by the proposed regulated activities (Criteria 1).
2. **Identifying the potential impact events** that could impact elements of the environment during the construction, operation and decommissioning phases (Criteria 2)**.**
3. **Confirming the potential of impact events to occur** (Criteria 3)**.**
4. **Identifying relevant control and management strategies** for each potential impact event, needed to eliminate or otherwise reduce any potential environmental harm to as low as reasonably achievable (part Criteria 4).
5. **Identifying uncertainties and assumptions** associated with the effectiveness of control and management strategies (part Criteria 4).
6. **Assessing environmental significance** of each potential impact event, based on the sensitivity of the receiving environment and the magnitude of potential impacts, considering factors such as the frequency, duration, extent and severity of impacts as well as potential cumulative impacts (Criteria 5)**.**
7. **Developing environmental objectives and assessment criteria** for all potential impacts were determined for the elements of the environment. These objectives will be carried through to the SEO (Criteria 6).

The results of the impact assessment were then captured in the impact assessment summary tables provided in Section 5.2.

The steps followed in the impact assessment are described below.

5.1.1 Identifying environmental elements

Elements of the environment that have the potential to be impacted by the regulated activities were first identified. All phases of the regulated activities including construction, operation and closure were considered.

The following elements of the environment were identified and considered in this environmental impact assessment:

- soil and land quality
- surface water
- groundwater
- flora, fauna and biodiversity
- air quality
- noise and vibration
- landscape and visual amenity

- Aboriginal and non-Aboriginal heritage
- social environment (including land use and infrastructure).
- public health and safety.

Weeds/pests and waste have been considered under the relevant receptors (e.g. flora / fauna, land use, soil and land quality) rather than being listed as a separate environmental element.

In Section 5.2, a summary table of the applicable legislation and standards, and the affected parties and environmental receptors is provided for each environmental element.

5.1.2 Identifying potential impact events

Elements of the environment may be impacted in different ways by the regulated activities. All potential impacts from the regulated activities were identified and defined as potential impact events[17].

Each potential impact event was characterised by:

- the source of impact, defined as the activities associated with the proposed operation that could reasonably be expected to negatively impact a receptor for the environmental element (considering construction, operation or decommissioning and rehabilitation stages);
- the pathway of impact, defined as the mechanism by which a proposed activity may interfere with environmental elements; and,
- the environmental receptor of impact, defined as the component of the environmental element that may be detrimentally affected by the proposed activity in the absence of control measures.

Any uncertainties in the identification and description of the sources, pathways and environmental receptors as a result of assumptions or knowledge gaps were identified for each potential impact event.

5.1.3 Confirming the potential of impact events to occur

For each potential impact event, the occurrence of the source, pathway and environmental receptor within the proposed regulated activities scope and at the proposed location was verified.

Potential impact events for which the full source, pathway and environmental receptor linkage (SPR) was confirmed were considered as having the potential to occur and relevant control and management measures were then identified (refer Section 5.1.4).

Potential impact events for which the source, pathway and environmental receptor linkage was incomplete were not considered as having the potential to occur and were not considered further in this environmental impact assessment.

5.1.4 Identifying relevant control and management measures

Measures to control and manage potential impact events were identified. The hierarchy of controls approach was adopted consistently with the Environmental Impact Assessment Criteria Guideline (DEM, 2024). Identification of control and management measures considered the following priority of order:

- **Elimination** measures that eliminate the source of a potential impact event, preventing the impact from occurring.
- **Substitution** measures that replace the material or process at the source of a potential impact event with a less hazardous one, significantly reducing the likelihood of a potential impact event to occur.
- **Design and engineering (physical) control** measures that act to separate the source from the pathway and environmental receptor to either:
    - avoid or reduce the likelihood of a potential impact event to occur, or
    - avoid or reduce the consequences of an impact event occurring

[17] Both typical and atypical events were considered, in accordance with DEM (2024)

- **Management system control** measures that implement a procedure to manage the activity at the source of a potential impact event to either:
    - avoid or reduce the likelihood of a potential impact event to occur, or
    - avoid or reduce the consequences of an impact event occurring

5.1.5 Identifying uncertainties and assumptions

Uncertainties and assumptions related to the likely effectiveness of the proposed control and management strategies were identified. This included the assumptions underlying any analysis or modelling undertaken to assess potential impacts and effectiveness of proposed measures.

5.1.6 Assessing environmental significance

The level of significance of potential impacts was assessed considering the following factors outlined in the Environmental Impact Assessment Criteria Guideline (DEM, 2024):

- the level to which a potential impact can be avoided through elimination (prevention)
- the estimated frequency of the potential impact occurring
- the anticipated duration of the potential impact
- the extent of the potential impact
- the severity of the potential impact
- the cumulative effects (if any) of the potential impact when considered in conjunction with other impacts on the same receptor
- the sensitivity of the receiving environment.

Each of the factors required to be considered in the significance assessment has been defined in Table 5-1.

Table 5-1 Definitions used to assess significance of potential impacts

Factor	Description
Avoidance	Yes – Impacts can be avoided through the identified controls
	No – Impact cannot be avoided through the identified controls
Frequency	High: Impacts occur frequently or are present throughout the life of the project
	Moderate: Impacts occur several times during the lifespan of activities
	Low: Impacts occur infrequently
	Rare: Impacts not expected or only occur in exceptional circumstances
Duration	Permanent: Impacts to the environment are permanent and non-reversible
	Long lasting: Impact to the environment persist for a period of years but are reversible
	Short term: impacts of less than a year duration and are reversible
Extent	Widespread: Impacts occur on a regional scale
	Moderate: Impacts extend beyond the project site and immediate surrounds without occurring on a regional scale
	Localised: Impacts are limited to the project site and immediate surrounds
Severity	High: Statutory reference values or environmental quality standards are exceeded
	Moderate: Statutory reference values or environmental quality standards are not exceeded but the impact results in an increase in the occurring content/level
	Low: imperceptible or indistinguishable from natural background levels
Cumulative	Yes: Receptors are already impacted by similar activities
	Possible: Receptors could be impacted by similar activities depending on the site
	No: Receptors are not already impacted by similar activities
Sensitivity	Refer Table 5-2

Overall environmental significance

The overall environmental significance of each potential impact event was assessed using a matrix that considered the sensitivity of the receiving environment and the magnitude of the impact (5-4).

Categories for sensitivity and magnitude used in this matrix are defined in Table 5-2 and 5-3. (Note: The categories of magnitude consider frequency, duration, extent, severity and cumulative effects, and align with the more detailed definitions provided in 5-1 above).

Impacts were considered acceptable if they were in the 'Negligible' or 'Low' category of environmental significance, while impacts in the 'Moderate' category were generally considered acceptable if they were as low as reasonably practicable (ALARP) following the application of mitigation measures. High and Major impacts would be considered unacceptable necessitating redesign of the regulated activities (however there were no High or Major impacts identified).

Additional commentary providing justification why impacts are considered ALARP for 'Moderate' impacts is provided in the impact assessment summary tables in Section 5.2.

The environmental significance assessment considers any proposed controls or management measures to determine the outcome of the significance assessment.

Table 5-2 Criteria for sensitivity

Sensitivity	Description
High	• The environmental value is protected as a result of Australia's international commitments • The environmental value holds a statutory protection (national parks, etc) • The environmental value is intact • The environmental value is unique to the environment in which it occurs. It is isolated to the affected system/area which is poorly represented in the region, territory, country or the world. • It has not been exposed to threatening processes, or they have not had a noticeable impact on the integrity of the environmental value.
Moderate	• The environmental value is recorded as being important at a regional or local level, • The environmental value is in a moderate to good condition despite it being exposed to threatening processes. • It is relatively well represented in the systems/areas in which it occurs but its abundance and distribution are limited by threatening processes. • Threatening processes have reduced its resilience to change.
Low	• The environmental value is not listed on any recognised or statutory register. • It is in a poor to moderate condition as a result of threatening processes • It is abundant and widely distributed or representative examples exists throughout the host systems/areas. • There is no detectable response to change or change does not result in further degradation of the environmental value.

Table 5-3 Criteria for magnitude

Magnitude	Description
High	An impact that is widespread and/or is permanent or long-lasting. An impact that occurs frequently. Statutory reference values or environmental quality standards are exceeded.
Moderate	An impact that has a relatively large scope or is long-lasting. An impact that occurs several times during the lifespan of activities. Statutory reference values or environmental quality standards are not exceeded but the impact results in an increase in the occurring content/level.
Low	An impact with no or little effects on the receptor. The effects have a limited scope and are short-term. An impact that is infrequent. The effect is deemed to be imperceptible or indistinguishable from natural background levels.

The significance of potential impacts were assessed, based on a consideration of the sensitivity of the receiving environment (Table 5-2) and the magnitude of the impact (Table 5-3). The matrix below (Table 5-4) shows how the significance of an impact is determined.

Table 5-4 Significance Assessment Matrix

	Magnitude of Impact		
Sensitivity of Environmental Value	**High**	**Moderate**	**Low**
High	Major	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Negligible

5.1.7 Developing environmental objectives and assessment criteria

Environmental objectives and assessment criteria were developed for all potential impacts determined through the environmental impact assessment process. Objectives were developed to align with the elements of the environment. These objectives are defined in the impact assessment summary tables provided in Section 5.2 and will be carried through to the SEO.

Leading performance criteria were also developed for impact events that rely significantly on a control strategy to reduce the potential environmental impact.

Note: Due to the large geographical area regulated activities could occur in and their relatively low impact nature, the assessment criteria and leading performance criteria are more general in nature than would be the case for a defined project (e.g. renewable energy infrastructure) at a defined site with the potential for a higher level of impact.

5.2 Environmental Impact Assessment Summary Tables

The results of the environmental impact assessment for each impact event are captured in the summary tables provided in the following sections.

Brief discussion of impact significance is provided for each environmental element before the summary tables. Due to the nature of REFL activities and the relatively low level of impact, the summary tables have been used to provide the majority of the relevant information, and additional detailed discussion was not considered to be necessary.

5.2.1 Soil and land quality

Setting the context

Table 5-5 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to soil and land quality.

Table 5-5: Context summary for soil and land quality

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Landscape South Australia Act 2019 *Environment Protection Act 1993* *Environment Protection (Waste to Resources) Policy 2010 (Waste to Resources EPP)* *South Australian Public Health (Wastewater) Regulations 2013* *Environment Protection (Water Quality) Policy 2015*	EPA guideline 080/016 *Bunding and Spill Management* AS 1940 - The storage and handling of flammable and combustible liquids Australian Dangerous Goods Code *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) Guideline 638/07 *Site contamination – acid sulfate soil materials* National Acid Sulfate Soils Guidance (2018) – National acid sulfate soils identification and laboratory methods and manual SA Waste Strategy 2020-2025	Soil quality Landform Users of land

Impact events

The impact events relevant to soil and land quality are:

- Spills of fuel or chemicals result in soil contamination
- Vegetation clearance, earthworks and use of roads and tracks result in soil inversion, compaction or erosion and in reduced land quality
- Inappropriate waste management results in localised soil contamination
- Disturbance of existing contaminated soil or acid sulfate soil resulting in spread of contamination.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that these impacts were generally in the **Negligible to Low** category. Potential impacts from the proposed activities are localised and small scale and readily manageable using standard control measures. Events such as spills or inappropriate waste management are unlikely to occur due to the limited volumes of fuels, chemicals and waste expected to be present on site and control measures to be implemented.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Soil and land quality: *Impact ID #SOI01*	
Impact event	**Spills of fuel or chemicals result in deterioration of soil quality**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Hydrocarbon spills from vehicles and construction equipment. Spills from used chemicals.	Uncontrolled release	Soil quality Vegetation and biodiversity Land use	Yes – there will be machinery with fuel onsite and potential for other chemicals to be onsite.	Construction Decommissioning	Uncertainty on the extent of impact, however, assumed that area of a spill will be limited due to limited volume of fuels and chemicals onsite. The location of the activity site and presence of receptors has not been determined. Siting will determine SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA guideline 080/16 Bunding and Spill Management and the Australian Dangerous Goods Code (ADG). Where possible, refuel vehicles at service stations or other designated third-party refueling locations. Refueling undertaken using appropriate drip capture systems. No refueling outside designated refueling / servicing areas. No refueling near watercourses. No fuels or chemicals to be stored onsite outside of construction and decommissioning activities. Spills or leaks are immediately reported (both internally and to State regulators as required) and clean up actions initiated. Spills that cannot be immediately contained, cleaned up and or delineated (both vertically and laterally) will be assessed and remediated in consultation with DEM and consistent with relevant guidelines (e.g. SA EPA guidelines). Areas affected by a spill are fenced if threat is posed to livestock or native fauna. Consultation to be undertaken with landholders to ensure appropriate practices are developed and implemented to mitigate risks and impacts to any properties that are organic certified.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment	Environmental significance assessment outcome

Avoidance	**No –** Control strategies in place to manage impacts to ALARP are well understood and are regularly implemented. Design and engineering controls, and management system controls are put in place to avoid spills of fuel or chemicals but the risk cannot be completely eliminated.		Expected impact: **Low** (refer to Table 5-4)
Frequency	**Low –** Access to the site is expected to occur infrequently, only to occur during construction, decommissioning and potentially for occasional maintenance.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Duration is expected to be limited due to limited volume of fuels and chemicals onsite. Because of this, a potential spill should in most cases be able to be immediately contained and cleaned up.		
Extent	**Localised –** Limited quantities of fuel, oil and chemicals are expected to be present on site on access tracks and within the footprint of the meteorological mast and other authorised activities.		
Severity	**Low –** Limited quantities of fuel, oil and chemicals are expected to be present on site and are required to be remediated in the event of a spill.		
Cumulative	**Possible –** Existing contaminated sites may exist however, are expected to be avoided and any potential spills are expected to be of small quantities and remediated as required by the control measures.		
Sensitivity	**Moderate –** The Study Area predominately falls within designated land which would be sensitive to a spill. Sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No significant changes in soil stability, structure, quality or composition resulting from regulated activities	▪ Records of audits/inspections carried out in accordance with the OMP demonstrate that any escape of chemical, fuel or oil to land is immediately contained and/or removed. ▪ Any contaminated materials generated in response to clean up of a minor spill or leak will be disposed off-site at an EPA approved facility.	▪ Fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA guideline 080/16 Bunding and Spill Management and the Australian Dangerous Goods Code (ADG). ▪ Inspections demonstrate no evidence of soil contamination as a result of activities undertaken. ▪ Personnel trained in correct procedures for use of materials, including refuelling and clean- up ▪ Appropriate spill response equipment is available on site.

Soil and land quality: *Impact ID #SOI02*	
Impact event	**Vegetation clearance, earthworks and use of roads and tracks result in soil inversion, compaction or erosion and in reduced land quality**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Vegetation clearance and earthworks for meteorological mast installation and construction of temporary access track or laydowns Off-road vehicle use and field surveys involving minor ground disturbance: groundwater sampling, UXO and geophysical surveys, contaminated land assessment.	Direct disturbance Indirect (dust, water spraying)	Land users Vegetation Soil quality and quantity	Yes – The Study Area contains erosion prone soil and sensitive landforms such as gibber soils and salt lakes.	Construction Operation Decommissioning	The location of the activity site and presence of sensitive landforms, steep topography or erosion-prone soil has not been determined. Siting will determine SPR linkage.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Existing roads or tracks are used for access where possible. Pastoral lease holders and landowner consulted regarding land-disturbing activities to minimise potential for surface disturbance and facilitate rehabilitation (where required). Consultation with relevant Landscape Board may also be relevant. Wet weather operations are avoided to prevent station track damage. Micro-siting preferentially selects naturally clear or previously cleared areas and clearance of native vegetation is avoided, particularly longer-lived shrubs and trees. Access tracks aligned to avoid steep slopes. Appropriate construction methods used in gibber areas to maintain soil stability (e.g. tracks rolled instead of graded). No construction in landscapes with sensitive features such as wetlands or salt lakes. Sediment and erosion control measures installed where necessary The ability of an area to support the weight of survey vehicles (and potential impacts) considered, to reduce any disturbances, especially in salt lake systems. Area of excavation is restricted to the smallest practicable Soil stockpiles are appropriately managed, e.g. through covering, of a reduced height and/or for minimal duration. Suitability of water is determined prior to use for water spraying (e.g. dust control measure). Avoid soil erosion by aligning access tracks and fence lines across slopes rather than up and down, onto less erosion prone soil types wherever possible When installing tracks, fence lines and other infrastructure, ensure wherever possible that the gibber cover is retained by rolling or compacting rather than mechanical disturbance (e.g. grading) Compacted areas of soil (e.g. campsites, laydown areas, access tracks) are ripped (except on gibber and tablelands) and soil profile and contours are reinstated following completion of activities. Any excavations are backfilled with subsoil being placed below topsoil. Any cleared native vegetation is respread during restoration in line with consultation and landowner agreement.	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Restoration of land disturbance to be undertaken through consultation with, and to the satisfaction of the landowner Any infrastructure that the landowner would like to retain (e.g. meteorological mast pad, laydown or storage pads) must be requested through DEM and subject to relevant regulatory approvals.	

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Earthworks will be required to establish access and meteorological mast sites. Vegetation clearance may be required for particular sites.		Expected impact: Low (refer to Table 5-4)
Frequency	**Low –** Disturbance will not be ongoing and will only occur during installation, decommissioning, and potentially for occasional maintenance.	Overall magnitude is Low (refer Table 5-3).	
Duration	**Short term –** Disturbance will not be ongoing and will only occur during installation, decommissioning, and potentially for occasional maintenance. If soil is affected by the proposed activities, the control measures would ensure that impacts are short term.		
Extent	**Localised –** Disturbance will only occur directly at the sites and the geographical area needed is expected to be low. If soil is affected by the proposed activities, the control measures would ensure that impacts are localised.		
Severity	**Low –** Proposed activities generally require limited earthworks with low erosion potential**.** Impacts are reversible and change from existing conditions would be minor. Control measures in place will ensure that disturbance is rehabilitated to existing conditions, suitable to the existing land use, and/or to a condition agreed to with the landowner.		
Cumulative	**Possible –** Other infrastructure development in the Study Area is expected to be limited. Design and engineering controls, and management system controls are put in place to avoid soil degradation and facilitate rehabilitation. Because of this the activities are not expected to have any significant cumulative effects on soil quantity and quality.		
Sensitivity	**Low –**The Study Area predominately falls within designated land with a high level of human disturbance and clearance. Activities are not expected to result in further degradation of soils. However, the sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and should be considered on a case-by-case basis.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No significant changes in soil stability, structure, quality or composition resulting from regulated activities	▪ Landowners consulted regarding land-disturbing activities to minimise potential for surface disturbance and facilitate rehabilitation (where required). ▪ OMP includes relevant management	▪ Desktop and field assessment undertaken to ensure proposed meteorological mast location avoids both sensitive land systems that are prone to erosion and/or of importance to the landowner.

		plan/procedure that effectively manages and minimises soil inversion, compaction and erosion to reduce potential for impacts to land quality. ▪ OMP includes frequency of audits/inspections carried out to ensure and demonstrate no evidence of significant soil disturbance (e.g. erosion, wheel ruts, heavily compacted areas, soil inversion), or where these occur, they are remediated in a timely manner. ▪ No reasonable complaints received regarding soil compaction, inversion, erosion or reduced land quality are left unresolved.	▪ Sediment and erosion control measures installed, maintained and monitored where necessary. ▪ Integrity of sediment and erosion controls inspected following significant rainfall events and any necessary maintenance implemented. ▪ Appropriate track construction methods (e.g, tracks rolled instead of graded) used in gibber areas and construction of tracks through sensitive features such as wetlands or salt lakes has been avoided.
	Rehabilitate land adversely affected by regulated activities	▪ OMP includes a decommissioning and rehabilitation plan (or similar) that outlines how any infrastructure or equipment will be decommissioned and the land rehabilitated. ▪ Rehabilitation of disturbed areas occurs progressively and is completed at the conclusion of construction.	▪ Final decommissioning and rehabilitation plan to be provided 6 months prior to decommissioning activities commencing. Plan to be approved by DEM. ▪ Rehabilitation is included in the projects time plan and budget.

Soil and land quality: *Impact ID #SOI03* *This impact event is also applicable to Socio-economic environment under Section 5.2.9.	
Impact event	**Inappropriate waste management results in localised soil contamination**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Generated waste (solid and liquid) Wastewater including sewage from campsites People working on site bringing in material from outside. During decommissioning, parts of the meteorological mast might be considered waste.	Uncontrolled release Disposing of materials	Soil quality Vegetation and biodiversity Landowners Pastoral lease holders	Yes	Construction Decommissioning	Uncertainty on the extent of impact, however, assumed that amount of waste generated on site will be limited and managed within the site boundary. The location of the activity site and presence of receptors has not been determined.

						Siting will determine SPR linkage.

Control measures	Impact prediction uncertainties and assumptions
Waste management undertaken with regard to EPA's Waste Hierarchy model and the *Environment Protection (Waste to Resources) Policy 2010.* Waste streams segregated on site where practicable to maximise opportunities for waste recovery, reuse and recycling. Covered bins are provided for the collection and storage of waste. No waste storage near watercourses Waste removed off-site as soon as practicable and disposed of at appropriately licensed waste handling facility. Liquid waste stored in accordance with relevant standards and guidelines, including AS 1940, EPA guideline 080/16 Bunding and Spill Management and the Australian Dangerous Goods Code (ADG). High standards of 'housekeeping' implemented. Secure systems used for storage and transport of waste. Hazardous waste (if generated) handled in accordance with relevant legislation and standards. Licensed contractors used for waste transport. All wastewater disposed in accordance with the *South Australian Public Health (Wastewater) Regulations 2013* (or to the satisfaction of the Department of Health) and in accordance with the *Environment Protection (Water Quality) Policy 2015*.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Waste is expected to be created on site as a result of authorised activities. Control strategies are in place to avoid impacts but cannot be guaranteed.		Expected impact: **Low** (refer to Table 5-4)
Frequency	**Low –** Waste generated on site will only occur during construction, decommissioning and occasional maintenance in low volumes.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Waste generated on site will only be present during authorised activities being undertaken. Control measures ensure that waste is appropriately removed to avoid long term impacts.		
Extent	**Localised –** Waste will only occur at the site of authorised activities.		
Severity	**Low –** With relevant control measures in place, the expected site condition will be imperceptible or indistinguishable from existing conditions related to waste.		
Cumulative	**Low –** Proposed activities are small scale and produce limited quantities of waste, Potential cumulative effects of a waste release on soil and land quality depends on scope of other projects in the area but is generally expected to be low.		
Sensitivity	**Moderate –** The Study Area is expected to predominately be undertaken on designated land, where		

	land use for cropping and livestock may be sensitive to any waste materials being improperly handled.		
SEO	**Proposed environmental objective**	**Assessment criteria**	**Leading performance criteria**
	Optimise waste management (in order of most to least preferable) avoidance; reduction; reuse; recycling; treatment; and disposal.	▪ Management measures for waste generated during the construction and decommissioning stages documented in the Construction Environmental Management Plan and Decommissioning and Rehabilitation plan. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate wastes have been segregated and transported to an EPA licensed waste disposal facility for recycling or disposal. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate wastewater disposed in accordance with the South Australian *Public Health (Wastewater) Regulations 2013* (or to the satisfaction of the Department of Health) and consistent with the *Environment Protection (Water Quality) Policy 2015*.	▪ Waste is securely contained prior to removal from site. ▪ Waste management is undertaken in accordance with the EPA's Waste Hierarchy model and the *Environment Protection (Waste to Resources) Policy 2010*. ▪ Wastewater is managed according to *the Public Health (Wastewater) Regulations 2013*.
	Rehabilitate land adversely affected by regulated activities.	▪ Records of audits / inspections demonstrate that all waste has been removed from site following completion of activities unless alternative agreement is reached with the regulator and landowner(s). ▪ Records demonstrate no reasonable stakeholder complaints regarding rehabilitation of land are left unresolved.	▪ Inspections demonstrate no evidence of soil contamination or waste remaining as a result of activities.

Soil and land quality: *Impact ID #SOI04*	
Impact event	**Disturbance of existing contaminated soil or acid sulfate soil, or UXO resulting in spread of contamination and/or reduction of soil or land quality.**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Disturbance of contaminated sites, UXO or acid sulphate soils via earthworks for meteorological mast installation and construction of temporary access track or laydowns.	Soil	Soil quality Vegetation and biodiversity	Yes – Areas with a probability of occurrence of Acid Sulphate Soils exist in the Study Area. Records do not indicate that UXO are present within the Study Area, however, the Whyalla West release area intersects with the Cultana Training Area and UXO may be present anywhere within this area. The potential exists for isolated and localised existing contamination associated with historic land use e.g. mining, rail, fuel storage for pastoral operations.	Construction Decommissioning	The location of the activity site and presence of existing contaminated soil or acid sulfate soil has not been determined. Siting will determine SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Undertake desktop assessment for presence of potential acid sulfate soils or existing contamination for the activity site. Micro-siting avoids areas of potential acid sulfate soils or existing contamination as far as practicable. Undertake field screening to determine presence of acid sulfate soil or existing contamination if excavating in a risk area in accordance with EPA Guidelines. Implement procedures to manage acid sulfate soils encountered during construction, which may include: placing any intercepted soils identified as potential acid sulfate soils in an isolated bunded stockpile area	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

treating any identified acid sulfate soil with agricultural lime in accordance with the EPA guideline prior to backfill Implement procedures that will be triggered in the case of a discovery of potentially contaminated soil or groundwater, including measures to contain material and treat it on site or remove off-site for treatment or disposal at an appropriately licensed facility.	

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Design and engineering controls, and management system controls are put in place to avoid or manage areas of acid sulfate soils or existing contamination, however, unexpected occurrences may be present.		Expected impact: Negligible (refer to Table 5-4)
Frequency	**Low –** The proposed activities are small scale and require limited earthworks which further reduces the risk of impacts. Disturbance will not be ongoing and will only occur during construction, decommissioning and potentially for occasional maintenance.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Disturbance will not be ongoing and will only occur during construction, decommissioning and potentially for occasional maintenance. Impacts would be reversible.		
Extent	**Localised –** Disturbance will only occur directly at the sites of installation, decommissioning, and occasional maintenance. If soils are affected by the proposed activities, the control measures would ensure that impacts are localised and short term.		
Severity	**Low –** The proposed activities are small scale and require limited earthworks which further reduces the risk of impacts. Change from existing conditions would be minor or improved based on control measures.		
Cumulative	**No –** Control measures in place would ensure that any interaction with acid sulphate soils or contaminated sites were either avoided or improved from the existing condition.		
Sensitivity	**Low –** The Study Area predominately falls within designated lands with a high level of human disturbance and clearance. Activities are not expected to result in further degradation of soils. However, the sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and should be considered on a case-by-case basis.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No significant changes in soil stability, structure, quality or composition resulting from regulated activities	• Management and monitoring measures for existing contaminated soil or acid sulphate soils will be documented in the Construction Environmental Management Plan, where required. • Records of audits/inspections carried out in	• Desktop assessment undertaken for potential acid sulfate soils or existing contamination and activity location avoids risk areas. • Micro-siting avoids areas of potential acid sulphate soils or existing contamination as far as practicable. • Field screening undertaken for presence of acid sulfate soil or existing

		accordance with the OMP demonstrate existing soil contamination / acid sulfate soils have been appropriately managed (if encountered).	contamination if excavating in a risk area.

5.2.2 Surface water

Setting the context

Table 5-6 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to surface water.

Table 5-6: Context summary for surface water

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Environment Protection Act 1993 *Environment Protection (Water Quality) Policy 2015* *Landscape South Australia Act 2019*	Stormwater Pollution Prevention – Code of Practice for the Building and construction industry (EPA, 1999) Guideline EPA 080/16 *Bunding and Spill Management* AS 1940 - The storage and handling of flammable and combustible liquids Australian Dangerous Goods Code *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) Goal Attainment Scaling (GAS) criteria for borrow pit construction, management and rehabilitation (DSD, 2014) Regional Landscape Board water affecting activity control policies	Surface water Surface water users

Impact events

The impact events relevant to surface water are:

- Spills of fuel or chemicals result in a deterioration of surface water quality
- Sedimentation during the regulated activities results in a deterioration of surface water quality
- Alteration of drainage patterns adversely impacts surface water resources

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that these impacts land in the **Moderate to High** category due to the sensitivity of surface water as environmental value. However, potential impacts from the proposed activities are localised and small scale and readily manageable using standard control measures. Events such as spills or inappropriate waste management are unlikely to occur due to the limited volumes of fuels, chemicals and waste expected to be present on site and control measures to be implemented.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Surface water: *Impact ID #SWR01*	
Impact event	**Spills of fuel or chemicals result in a deterioration of surface water quality**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Potential hydrocarbon spills from vehicles and construction equipment. Spills from chemicals being used or stored.	Uncontrolled release Recharge from surface water bodies (after run-off of spills to surface water)	Surface water Surface water users Vegetation and biodiveristy	Yes – there will be machinery with fuel onsite and potential for other chemicals to be onsite. Watercourses and waterbodies occur within the Study Area (refer Section 4.3.1)	Construction Operation Decommissioning	The location of the activity site and presence of surface water features has not been determined. Siting will determine possibility for SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Areas with permanent or ephemeral surface water are avoided. Where possible refuel vehicles at service stations or other designated third-party refueling locations. Refueling undertaken using appropriate drip capture systems No refueling outside designated refueling / servicing areas. No refueling near watercourses. No fuels or chemicals to be stored onsite outside of construction and decommissioning activities. Spills or leaks are immediately reported (both internally and to State regulators as required) and clean up actions initiated. Any contaminated materials generated in response to clean up of a minor spill or leak will be disposed off-site at an EPA approved facility. Spills that cannot be immediately contained, cleaned up and or delineated (both vertically and laterally) will be assessed and remediated in consultation with DEM and consistent with relevant guidelines (e.g. SA EPA guidelines). Areas affected by a spill are fenced if threat is posed to livestock or native fauna. Consultation to be undertaken with landholders to ensure appropriate practices are developed and implemented to mitigate risks and impacts to any properties that are organic certified.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment		Environmental significance assessment outcome
Avoidance	**No –** Design and engineering controls, and management system controls are put in place to avoid spills of fuel or chemicals, but the risk of impact cannot be fully eliminated.	Expected impact**: Low/Moderate** (refer to Table 5-4)

Frequency	**Low –** Vehicles will access the site infrequently, only during construction, decommissioning and potentially for occasional maintenance.	Overall magnitude is low (refer Table 5-3).	ALARP assessment: control measures identified are recognised as standard industry practice and are considered effective in reducing impacts from spills. These controls are also readily available for implementation and the integrity of the controls in place is visible upon inspection.
Duration	**Short term –** Duration is expected to be limited due to limited volume of fuels and chemicals onsite. Because of this, a potential spill should in most cases be able to be immediate contained and cleaned up.		
Extent	**Localised –** Limited quantities of fuel, oil and chemicals are expected to be present on site on access tracks and within the footprint of the meteorological mast.		
Severity	**Low –** Limited quantities of fuel, oil and chemicals are expected to be present on site and are required to be remediated in the event of a spill.		
Cumulative	**Possible –** Potential cumulative effects on surface water quality depends on scope of other projects in the area but is generally expected to be low.		
Sensitivity	**Moderate/High –** There are no formally protected water sources in the Study Area but surface water is an important environmental value in general. Sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and can be higher in certain places. The abundance and distribution of surface waters in South Australia may be limited by threatening processes and may have reduced resilience to change.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No significant disturbance to surface drainage patterns and no adverse impacts to surface water and groundwater quality or quantity	▪ Records of audits/inspections and/or incident management system carried out in accordance with the OMP demonstrate no unauthorised discharge or escape of any liquid (including wastewater, processed substance, chemical or fuel) or solid wastes to surface and/or groundwater. ▪ Any contaminated materials generated in response to clean up of a minor spill or leak will be disposed off-site at an EPA approved facility.	▪ Fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA guideline 080/16 Bunding and Spill Management and the Australian Dangerous Goods Code (ADG). ▪ Personnel trained in correct procedures for use of materials, including refueling and clean-up. ▪ Appropriate spill response equipment is available on site.

Surface water: *Impact ID #SWR02*	
Impact event	**Sedimentation during the regulated activities results in a deterioration of surface water quality**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Vegetation clearance and earthworks for meteorological mast installation and construction of temporary access track or laydowns Off-road vehicle use and field surveys involving minor ground disturbance: groundwater sampling, UXO and geophysical surveys, contaminated land assessment.	Surface runoff	Surface water Surface water users	Yes – Watercourses and waterbodies occur within the Study Area (refer Section 4.3.1).	Construction Decommissioning	The location of the activity site and presence of surface water features has not been determined. Siting will determine SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Undertake surface water assessment prior to work and identify permanent and ephemeral surface water features. Areas with permanent or ephemeral surface water are avoided and a buffer zone from a water course or water body is implemented. Water affecting activity permits obtained where required under the relevant landscape board's Water Affecting Activities Control Policy. Excavated material is stockpiled and reused for backfill wherever possible Sediment and erosion control measures (e.g. earth bunds, soil stablisers, silt fences) installed where necessary Integrity of sediment and erosion controls inspected following significant rainfall events, and any necessary maintenance implemented	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** The primary control measure is avoidance of surface water bodies, limiting the possibility for sedimentation to reach water bodies, however, complete avoidance may not be possible for all projects.		Expected impact**: Moderate – High** (refer Table 5-4) ALARP assessment: control measures identified are recognised as standard industry practice and are considered effective in reducing impacts from sedimentation. These controls are also readily available for implementation and the integrity of the controls in place is visible upon inspection.
Frequency	**Moderate –** Earthworks are expected to occur infrequently, i.e. during construction, decommissioning and for occasional maintenance. Vegetation clearance will not always be necessary and will be limited in scope. However, disturbed areas over time may result in sedimentation of runoff to surface waters.	Overall magnitude is moderate (refer Table 5-3).	
Duration	**Long lasting –** Impacts are generally expected to be limited based on the small scale nature of disturbance activities. Control measures identified are recognised as standard practice for limiting sedimentation to surface waters. However, disturbed areas over time may result in sedimentation of runoff to surface waters that may be difficult to reverse.		

Extent	**Localised –** Proposed activities are small scale and generally require limited vegetation clearance and earthworks, any sedimentation runoff to surface water would be limited in extent. Control measures identified are recognised as standard practice for limiting sedimentation to surface waters.		
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to generate impacts that would result in the degradation of surface water quality.		
Cumulative	**Possible –** Potential cumulative effects on surface water quality depend on scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for sedimentation to generate cumulative effects on surface waters.		
Sensitivity	**Moderate/High –** There are no formally protected water sources in the Study Area, but surface water is an important environmental value in general. Sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and can be higher in certain places. Based on the climate across the Study Area, the abundance and distribution of surface waters in South Australia may be limited by threatening processes and may have reduced resilience to change.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No significant disturbance to surface drainage patterns and no adverse impacts to surface water and groundwater quality or quantity	• Management and monitoring measures for erosion, sedimentation and surface water impacts documented in the Construction Environmental Management Plan, where required. • Records of audits/inspections carried out in accordance with the OMP demonstrate no deterioration of surface water quality within or near the activity location when compared with adjacent areas. • Water Affecting Activity Permit is obtained from the relevant landscape board where required.	• Desktop and field assessments undertaken to identify if a Water affecting activity permit is required under the relevant landscape board's Water Affecting Activities Control Policy. • Micro-siting avoids areas with permanent or ephemeral surface water. • Sediment and erosion control measures installed where necessary. • Integrity of sediment and erosion controls inspected following significant rainfall events, and any necessary maintenance implemented.

Surface water: *Impact ID #SWR03*	
Impact event	**Civil construction works adversely impacts surface water resources**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Alteration of drainage patterns by civil construction works e.g. temporary access tracks or laydowns construction	Direct disturbance	Surface water Surface water users Vegetation and biodiversity	Yes – Watercourses and waterbodies occur within the Study Area	Construction Decommissioning	The location of the activity site and presence of surface water features has not been determined. Siting will determine SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Desktop assessments undertaken to identify areas for avoidance for water resources with high sensitivity and associated habitat, including GDEs. Sites and access tracks are located and constructed to maintain pre-existing water flows (e.g. channel contours are maintained on floodplains and at creek crossings). Culverts or other structures installed where required to ensure that surface water flows are not impeded by access tracks. Water affecting activity permits obtained where required under the relevant landscape board's Water Affecting Activities Control Policy. Micro-siting avoids areas of inundation, which may result in bogging, or creation of heavy wheel track rutting (e.g. more than 200 mm deep). Site selection, construction, environmental management and restoration of borrow pits undertaken in accordance with standards for borrow pit management developed by the Department for Energy and Mining (DSD, 2014). Drainage patterns are restored to as near as possible to their undisturbed state as soon as practicable following completion of activities.	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** The primary control measure is avoiding impacts through pre-construction siting, however, there may be instances where a project intersects surface water.		Expected impact**: Moderate – High** (refer Table 5-4) ALARP assessment: control measures identified are recognised as standard industry practice and are considered effective in preventing and reducing impacts. These controls are also readily available for implementation and the integrity of the controls in place is visible upon inspection.
Frequency	**Low –** Disturbance activities are expected to occur infrequently, i.e. during construction. Potential additional earthworks required at decommissioning and/or for occasional maintenance.	Overall magnitude is moderate (refer Table 5-3).	
Duration	**Long lasting –** Impacts are generally expected to be limited based on the small-scale nature of disturbance activities. Control measures		

	identified are recognised as standard practice for controlling impacts to water resources.		
Extent	**Localised –** Proposed activities are small scale and generally require limited disturbance. Control measures identified are recognised as standard practice for controlling impacts to water resources.		
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to generate impacts that would result in the degradation of water resources.		
Cumulative	**Possible –** Potential cumulative effects on surface water will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects on water resources.		
Sensitivity	**Moderate/High –** There are no formally protected water sources in the Study Area but surface water is an important environmental value in general. Sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and can be higher in certain places. Based on the climate across the Study Area, the abundance and distribution of surface waters in South Australia may be limited by threatening processes and may have reduced resilience to change.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No significant disturbance to surface drainage patterns and no adverse impacts to surface water quality or quantity	▪ Management and monitoring measures for impedances to surface water flow documented in the Construction Environmental Management Plan, where required. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate no unauthorised impedance of surface water flow that results in adverse impacts to native flora or fauna and groundwater dependent ecosystems. ▪ No new water affecting activities as defined under the Landscape South Australia Act 2019 undertaken unless an applicable permit has been obtained.	▪ Desktop and field assessments undertaken to ensure sites of meteorological mast installation and other authorised activities are located and constructed to maintain pre-existing water flows. ▪ Desktop and field assessments undertaken to identify if a Water affecting activity permit is required under the relevant landscape board's Water Affecting Activities Control Policy. ▪ Desktop assessments undertaken to identify areas for avoidance for water resources with high sensitivity and associated habitat, including GDEs. ▪ Micro-siting avoids areas of inundation, which may result in bogging, or creation of heavy wheel track rutting (e.g. more than 200 mm deep).
	Rehabilitate land adversely affected by regulated activities	▪ OMP includes a decommissioning and rehabilitation plan (or similar) that outlines how any infrastructure or equipment will be decommissioned and the land rehabilitated, including restoration of drainage patterns to as near as possible to their undisturbed state.	▪ Inspections demonstrate no evidence of alteration of drainage patterns as a result of activities following rehabilitation.

		▪ Records demonstrate no reasonable stakeholder complaints regarding restoration of drainage patterns are left unresolved. ▪ Restoration of land disturbance is undertaken in accordance with legislative requirements and approved by the landowner or in accordance with landowner's wishes.	

5.2.3 Groundwater

Setting the context

Table 5-7 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to groundwater.

Table 5-7: Context summary for groundwater

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Environment Protection Act 1993 *Environment Protection (Water Quality) Policy 2015* *Landscape (South Australia) Act 2019*	Stormwater Pollution Prevention – Code of Practice for the Building and construction industry (EPA, 1999) Guideline EPA 080/16 *Bunding and Spill Management* AS 1940 - The storage and handling of flammable and combustible liquids Australian Dangerous Goods Code *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013) Goal Attainment Scaling GAS criteria for borrow pit construction, management and rehabilitation (DSD, 2014) Environmental management of dewatering during construction activitiesRegional Landscape Board water affecting activity control policies	Groundwater (quantity) Groundwater dependent ecosystems

Impact events

The impact events relevant to groundwater are:

- Spills of fuel or chemicals result in a deterioration of groundwater quality
- Borehole or groundwater well installation results in localised impacts to groundwater quality and availability.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that these impacts were generally in the **Negligible to Low** category. Potential impacts from the proposed activities are localised and small scale and readily manageable using standard control measures. Events such as spills are unlikely to occur due to the limited volumes of fuels, chemicals and waste expected to be present on site and control measures to be implemented.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Groundwater: *Impact ID #GWR01*	
Impact event	**Spills of fuel or chemicals result in a deterioration of groundwater quality**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Hydrocarbon spills from vehicles and construction equipment. Potential spills from used chemicals.	Leaching/infiltration through unsaturated soil to shallow groundwater. Migration through shallow aquifers to receptors.	Groundwater quality Groundwater users Groundwater Dependent Ecosystems (GDE)	Yes – there will be machinery with fuel onsite and potential for other chemicals to be onsite. Groundwater is mapped within 2 m of the surface in some parts of the Study Area and there are groundwater wells within the Study Area (Water connect, 2024).	Construction Decommissioning	Uncertainty on the extent of impact, however, assumed that area of a spill will be limited due to limited volume of fuels and chemicals onsite. The location of the activity site and presence of shallow groundwater has not been determined. Siting may reduce SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Where possible refuel vehicles at service stations or other designated third-party refueling locations. Refueling undertaken using appropriate drip capture systems No refueling outside designated refueling / servicing areas. No refueling near watercourses. Spills or leaks are immediately reported (both internally and to State regulators as required) and clean up actions initiated. Any contaminated materials generated in response to clean up of a minor spill or leak will be disposed off-site at an EPA approved facility. Spills that cannot be immediately contained, cleaned up and or delineated (both vertically and laterally) will be assessed and remediated in consultation with DEM and consistent with relevant guidelines (e.g. SA EPA guidelines).	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment		Environmental significance assessment outcome
Avoidance	**No –** Control strategies in place to manage impacts to ALARP are well understood and are regularly implemented. Design and engineering controls, and management system controls are put in place to avoid spills of fuel or chemicals.	Expected impact**: Negligible – Low** (refer to Table 5-4)

Frequency	**Low –** Access to the site is expected to occur infrequently, only to occur during construction, decommissioning and potentially for occasional maintenance.	Overall magnitude is low (refer Table 5-3).
Duration	**Short term –** Duration is expected to be limited due to limited volume of fuels and chemicals onsite. Because of this, a potential spill should in most cases be able to be immediate contained and cleaned up.	
Extent	**Localised –** Limited quantities of fuel, oil and chemicals are expected to be present on site on access tracks and within the footprint of the meteorological mast and other authorised activities.	
Severity	**Low –** Limited quantities of fuel, oil and chemicals are expected to be present on site and are required to be remediated in the event of a spill.	
Cumulative	**Possible –** Existing contaminated sites may exist however, are expected to be avoided and any potential spills are expected to be of small quantities and remediated as required by the control measures.	
Sensitivity	**Low/Moderate –** There are no prescribed water resources or prescribed wells. Groundwater is at depth across much of the Study Area and is generally of insufficient quality for stock. The sensitivity is therefore assessed as low/moderate. Sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and aspects such as depth to groundwater and salinity and can be higher in places. The abundance and distribution of groundwater in South Australia may be limited by threatening processes and may have reduced resilience to change.	

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No significant disturbance to surface drainage patterns and no adverse impacts to surface water and groundwater quality or quantity	• Records of audits/inspections and/or incident management system carried out in accordance with the OMP demonstrate no unauthorised discharge or escape of any liquid (including wastewater, processed substance, chemical or fuel) or solid wastes to groundwater. • Any contaminated materials generated in response to clean up of a minor spill or leak will be disposed off-site at an EPA approved facility.	• Fuel and chemicals are stored and handled in accordance with relevant standards and guidelines, including AS 1940, EPA guideline 080/16 Bunding and Spill Management and the Australian Dangerous Goods Code (ADG). • Personnel required to use materials, including for refueling and clean-up, and are trained in correct procedures. • Appropriate spill response equipment is available on site during on site operations.

Groundwater: *Impact ID #GWR02*	
Impact event	**Borehole or groundwater well installation results in localised impacts to groundwater quality and availability**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Installation and use of borehole or groundwater wells for groundwater and geotechnical investigation.	Direct impact	Groundwater quantity and quality Groundwater users Groundwater dependent ecosystems	Yes – there is groundwater mapped in the Study Area and groundwater wells within the Study Area (Water connect, 2024).	Construction Decommissioning	The location of the activity site and depth and quality of groundwater have not been determined. Siting may reduce SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
New groundwater monitoring bores are installed by an appropriately licensed driller, with all necessary approvals (e.g. well construction permit under the *Landscape South Australia Act 2019*) obtained from the relevant authority. Well construction permit under the *Landscape South Australia Act 2019* obtained for boreholes if required (e.g. if they are likely to intercept groundwater). Groundwater monitoring bores decommissioned and rehabilitated in accordance with regulatory requirements and guidelines. Boreholes are constructed and later backfilled in accordance with relevant industry standards and guidelines (e.g. DEM Earth Resources information sheet M21 Mineral Exploration Drillholes — General specifications for construction and backfilling). Plugs are installed during backfilling in accordance with these standards and guidelines if confined or artesian aquifers are present. Water is extracted from water bores (for sampling/analysis), including collection and disposal of extracted water, in accordance with government regulations. Groundwater bores are capped at the completion of each sampling event. Excavations or boreholes for geotechnical surveys are backfilled at the completion of survey activities. Authority for entry to existing bore obtained from owner. Existing bore infrastructure is not altered without the owner's permission. All logging equipment to be appropriately cleaned prior to use at each sampling location. Purged bore water to be disposed of appropriately to avoid surface water impacts. Operations that access or alter bores are authorised by a relevant permit/licence. High pressure bores are not to be altered. Bores are left in a condition satisfactory to the bore owner.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** cannot be fully avoided.		Expected impact**: Negligible – Low** (refer to Table 5-4)
Frequency	**Low –** borehole or groundwater well installation is not expected to be installed frequently.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Design and engineering controls, and management system controls are put in place to avoid impacts		
Extent	**Localised –** Design and engineering controls, and management system controls are put in place to avoid impacts		
Severity	**Low –** Design and engineering controls, and management system controls are put in place to avoid impacts		
Cumulative	**Possible –** Potential cumulative effects depends on scope of other projects in the area but is generally expected to be low.		
Sensitivity	**Low/Moderate –** There are no prescribed water resources or prescribed wells. Groundwater is at depth across much of the Study Area and is generally of insufficient quality for stock. The sensitivity is therefore assessed as low/moderate. Sensitivity and environmental value/condition of the receiving environment will vary depending on the features of the work area and aspects such as depth to groundwater and salinity and can be higher in places. The abundance and distribution of groundwater in South Australia may be limited by threatening processes and may have reduced resilience to change.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No significant disturbance to surface drainage patterns and no adverse impacts to surface water and groundwater quality or quantity	▪ Records of audits/inspections carried out in accordance with the OMP demonstrate necessary approvals (e.g. well construction permits under the Landscape South Australia Act) have been obtained and complied with. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate no uncontrolled flows to surface from aquifers intersected in excavations, test pits and/or monitoring bores.	▪ New groundwater monitoring bores are installed by an appropriately licensed driller, with all necessary approvals (e.g. well construction permit under the *Landscape South Australia Act 2019*) obtained from the relevant authority. ▪ Groundwater monitoring bores decommissioned and rehabilitated in accordance with regulatory requirements and guidelines. ▪ Boreholes are constructed and later backfilled in accordance with relevant industry standards and guidelines (e.g. DEM Earth Resources information sheet M21 Mineral Exploration Drillholes — General specifications for construction and backfilling).
	Rehabilitate land adversely affected by regulated activities	▪ Records of audits / inspections carried out in accordance with the OMP demonstrate that groundwater infrastructure has been decommissioned in accordance with	▪ Records of audits / inspections carried out in accordance with the OMP demonstrate that boreholes are backfilled in accordance with relevant industry standards and guidelines (e.g. DEM Earth Resources information sheet M21 Mineral

		requirements under the Landscape South Australia Act (unless alternative agreement is reached with the regulator and landowner).	Exploration Drillholes — General specifications for construction and backfilling).

5.2.4 Flora, fauna and biodiversity

Setting the context

Table 5-8 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to flora and fauna.

Table 5-8: Context summary for flora and fauna

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Native Vegetation Act 1991 *National Parks and Wildlife Act 1972* *Landscape South Australia Act 2019* *Fire and Emergency Services Act 2005* *Environment Protection (Commercial and Industrial Noise) Policy 2023* *South Australia's Biosecurity Policy 2020-2023* *Controlled Substances (Pesticides) Regulations 2017* *Environment Protection and Biodiversity Conservation Act 1999* (Cth) *Biodiversity Act 2025*	National Light Pollution Guidelines for Wildlife GAS criteria for borrow pit construction, management and rehabilitation (DSD, 2014) Australian Weeds Strategy 2017-2027 (Commonwealth of Australia, 2017) AS1940 - The storage and handling of flammable and combustible liquids. Policy for a Significant Environmental Benefit.	Native vegetation Native flora and fauna Threatened ecological communities Critical Habitat Listed ecological entities Threatened flora Threatened and migratory fauna

Impact events

The impact events relevant to flora and fauna are:

- Clearance or disturbance of native vegetation results in a loss or degradation of native vegetation and biodiversity. Disturbance leads to degradation/destruction to non-vegetated habitats.
- Alteration of drainage patterns results in changes to vegetation community structure and composition
- Increased water retention in poorly constructed borrow pits results in increased grazing pressure and degradation of native vegetation.
- Introduction and spread of weed(s), pest(s) and/or pathogen(s) alter existing vegetation structure and composition, and outcompete native vegetation
- Presence of personnel, aircraft and vehicles, noise and vibration or lighting during the regulated activities impacts local fauna
- Direct mortality of fauna as a result of collision with vehicles, aircraft or infrastructure
- Regulated activities interfere with listed threatened or migratory fauna species, resulting in reduced abundance.
- Increase in pest animal abundance results in increased predation on or competition with native fauna.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that expected impacts were generally in the **Low** to **Moderate** category. Control measures targeted at assessing the sites prior to commencement of work will make sure areas of higher sensitivity will be avoided. Potential impacts from the proposed activities are localised and small scale and readily manageable using standard control measures.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Flora and fauna: *Impact ID #BIO01*	
Impact event	**Clearance or disturbance of native vegetation results in a loss or degradation of native vegetation and biodiversity. Disturbance leads to degradation/destruction to non-vegetated habitats.**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Vegetation clearance for meteorological mast installation and construction of temporary access track or laydowns Vegetation damage from walk/drive over during field surveys, unauthorised off-road vehicle use and field surveys involving minor ground disturbance: Groundwater sampling, UXO and geophysical surveys, contaminated land assessment. Ground disturbance during construction of temporary access track or laydowns	Direct disturbance	Native flora and fauna, including threatened ecological communities, critical habitat and listed ecological entities Non-vegetated habitats (e.g. rocky outcrops, stone pavements, soil cracks)	Yes – Both vegetated and non-vegetated habitats are at risk of impact. Native vegetation is present across most of the Study Area. There are numerous records of native flora and fauna (including threatened species) within the Study Area.	Construction Operation	The location of the activity site has not been determined and field studies have not been undertaken. Native vegetation and significant flora may occur in areas where it has not been detected/predicted in desktop studies.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Appropriately trained and experienced personnel will undertake ecological assessment prior to work and identify any areas of sensitivity or "no-go" areas, including consultation with the relevant landscape board to inform ecological assessments where relevant. Ecological assessments will consider vegetation condition and landscape connectivity. Ecological assessments will consider cumulative impacts of disturbance to identified species within the area and further avoidance or management measures will be implemented to avoid impacts where they are assessed to result in cumulative impacts on particular species. DEW biodiversity values mapping used in desktop component of ecological assessment. Naturally clear areas or areas with few long-lived species will be selected where possible. Trees, large shrubs and flora of conservation significance will be avoided. Suitably qualified personnel will assess the disturbance area for locations of vegetation associations or plant species of conservation significance that will not be disturbed, removed or traversed by vehicles. Identified areas of vegetation sensitive to disturbance and unlikely to recover readily from vehicle traverses will not be	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

traversed by vehicles. Repeated driving along temporary access routes will be avoided where likely to result in long-term damage to vegetation. Existing access roads or tracks are used for access where possible. Native vegetation will not be cleared if existing cleared areas can be utilised. Micro-siting is undertaken in line with the native vegetation mitigation hierarchy. The conservation needs of species will be considered and appropriate management strategies implemented where necessary. Where vegetation clearance is required, approval under the Native Vegetation Act is obtained where relevant. Where required, under an approval for native vegetation clearance by the Native Vegetation Council, an on-ground offset or payment to the fund is undertaken. Water quality, including salinity levels, is determined prior to use for water spraying (e.g. as dust control measure). Any areas of clearance will be rehabilitated where necessary (e.g. by respreading vegetation or reseeding with local seed sources where appropriate). Rehabilitation will consider the slower natural regeneration in arid and semi-arid vegetation communities.	

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Controls in place to prioritise avoidance and where unavoidable, ensuring approvals required from the Native Vegetation Council, offset contributions made (on-ground or payment to the fund), and site rehabilitated as required.		Expected impact: **Low-Moderate** (refer to Table 5-4)
Frequency	**Low –** Clearance is only expected to occur during construction.	Overall magnitude is low to moderate (refer Table 5-3).	
Duration	**Long term –** Clearance required is expected to be limited based on the area required for a meteorological mast and other authorised activities. If clearance can't be avoided, impacts are generally long term since regeneration can be slow.		
Extent	**Localised –** The proposed activities are small scale and the work area that could be affected by disturbances is expected to be not greater than 1 ha (refer Section 3).		
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to generate impacts that would result in the degradation biodiversity.		
Cumulative	**Possible –** Potential cumulative effects on native vegetation and biodiversity will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact biodiversity, however, these are generally mitigated by the relevant controls in place.		
Sensitivity	**Moderate/High –** Sensitivity of the receiving environment will vary. The main existing land use across the release area is pastoralism but there are areas of moderate/high sensitivity given the identification of threatened species within the area and that regeneration of vegetation to maturity within semi-arid		

	to arid environments is generally expected to be slow. Site-specific ecological assessments are required to further define the sensitivity within a given project area.	

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained.	▪ Any activities deemed to be Level 4 for proposed vegetation clearance, in accordance with the Native Vegetation Council Risk Assessment Fact Sheet are generally excluded, however, can be considered on a case-by-case basis whereby demonstration is provided in the OMP that the proponent has attempted to avoid and minimise vegetation clearance . ▪ Ecological assessment by appropriately trained and accredited personnel undertaken to determine baseline biodiversity of the site and to identify and avoid any areas of sensitivity or "no-go" areas, using appropriate methodology and scoresheets for Rangelands or Scattered Tree assessments. ▪ Ecological assessment by appropriately trained and accredited personnel demonstrates that cumulative impacts to native flora and fauna have been assessed and considered. ▪ Ecological surveys are timed appropriately to detect threatened flora and fauna where they may occur. ▪ Ecological assessment includes a description of weed management, landscape connectivity and vegetation condition. ▪ Where vegetation clearance is required, records must demonstrate that an appropriate ecological assessment has been actioned, that necessary approvals under the Native Vegetation Act have been obtained, and 'significant environmental benefit' obligation has been satisfied. These records must include, but are not limited to, a Data Report. ▪ Where vegetation and habitats may be sensitive to disturbance, consultation with relevant government departments carried out and	▪ Site selection and infrastructure micro-siting avoid threatened flora species listed under the *National Parks and Wildlife Act 1972*. ▪ Activities confined to existing cleared areas and existing access tracks where possible.

		location specific environmental management plan developed and implemented. ▪ Records (e.g. ecological assessments) demonstrate no listed threatened and/or migratory species will be significantly impacted (unless appropriate approval has been obtained). ▪ All biodiversity data collected by an appropriately qualified professional and reported to the Biological Databases of South Australia (BDBSA) and DEM pursuant to HRE Regulation 32(2)(c). ▪ Management and monitoring measures for any vegetation and or biodiversity impacts are documented in the Construction Environmental Management Plan, where required. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate there has been no unauthorised clearing of native vegetation. ▪ Any excavation or fill material surplus to the requirements of the development must be disposed of such that it will not adversely impact on native vegetation, contribute to erosion or sedimentation, or facilitate the spread of pest plant and pathonogenic material.	
SEO	Rehabilitate land adversely affected by authorised operations.	▪ OMP includes a management plan that includes information on how revegetation is planned. DEW to be consulted where relevant.	

Flora and fauna: : *Impact ID #BIO02*	
Impact event	**Alteration of drainage patterns results in changes to vegetation community structure and composition**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Alteration of drainage patterns by earthworks for temporary access tracks or laydowns	Surface water movement	Native flora and fauna, including threatened ecological communities, critical habitat and listed ecological entities	Yes – Native vegetation is present across most of the Study Area and there are ephemeral drainage lines within the Study Area	Construction Operation Decommissioning	The location of the activity site and in relation to surface water features has not been determined. Siting will determine SPR linkage.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Sites and access tracks are located and constructed to maintain pre-existing water flows (e.g. channel contours are maintained on floodplains and at creek crossings). Culverts or other structures installed where required to ensure that surface water flows are not impeded by access tracks. Water affecting activity permits obtained where required under relevant Landscape board's Water Affecting Activities Control Policy. Access tracks are located to avoid any diversion of water during flood inundation. Areas of inundation, which may result in bogging, or creation of heavy wheel track rutting (e.g. more than 200 mm deep) are avoided. Drainage patterns are restored to as near as possible to their undisturbed state as soon as practicable following completion of activities.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Controls in place prioritise avoidance of surface water features and drainage patterns, however, may be unavoidable for certain projects that would be required to implement the relevant control measures to avoid impacts to drainage patterns.		Expected impact: **Low** (refer to Table 5-4).
Frequency	**Low –** Disturbance is only expected to occur during construction, decommissioning and/or for occasional maintenance.	Overall magnitude is low-moderate (refer Table 5-3).	
Duration	**Long lasting –** Impacts are generally expected to be limited based on the small scale nature of disturbance activities and proposed control measures,		

	but if an alteration is necessary that will be a long lasting change in the environment.		
Extent	**Localised –** The proposed activities are small scale and the work area that could be affected by disturbances is expected to be not greater than 1 ha for meteorological mast (refer Section 3) and localised for other authorised activities, including prioritising the avoidance of surface water features.		
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to generate impacts that would result in the degradation of water resources.		
Cumulative	**Possible –** Potential cumulative effects on native vegetation and biodiversity will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact biodiversity, however, these are generally mitigated by the relevant controls in place.		
Sensitivity	**Low/Moderate –** Sensitivity of the receiving environment will vary but there are areas where it could be moderate, as there are native vegetation present that would depend on surface water flows. Protected areas and projects that are deemed to have significant impact on MNES are excluded from the EIR. There may be patches of native vegetation that are sensitive, however, those will be avoided or subject to approval for clearance in accordance with the control measures.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No significant disturbance to surface drainage patterns and no adverse impacts to surface water and groundwater quality or quantity	▪ Management and monitoring measures for impedances to surface water flow documented in the Construction Environmental Management Plan, where required. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate no unauthorised impedance of surface water flow that results in adverse impacts to native flora or fauna and groundwater dependent ecosystems. ▪ No new water affecting activities as defined under the Landscape South Australia Act undertaken unless applicable permits have been obtained.	▪ Desktop and field assessments undertaken to ensure sites of meteorological mast installation and other authorised activities are located and constructed to maintain pre-existing water flows ▪ Desktop and field assessments undertaken to identify if a Water affecting activity permit is required under the relevant Landscape Board's Water Affecting Activities Control Policy.

Flora and fauna: : *Impact ID #BIO03*	
Impact event	**Increased water retention in poorly constructed borrow pits results in increased grazing pressure and degradation of native vegetation.**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Borrow pits installation	Surface water retention and increased grazing pressure	Native flora and fauna, including threatened ecological communities, critical habitat and listed ecological entities	Yes – Native vegetation is present across most of the Study Area and introduced herbivores such as cattle and feral goats are present.	Operation Decommissioning	The location of the activity site and any borrow pits (if required) has not been determined. Siting and project design will determine SPR-linkage.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Site selection, construction, environmental management and restoration of borrow pits undertaken in accordance with standards for borrow pit management developed by the Department for Energy and Mining (DSD, 2014).	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Can't be fully avoided since some projects might need to utilise borrow pits during construction.		Expected impact: **Low** (refer to Table 5-4).
Frequency	**Low –** Proposed regulated activities are small scale and are expected to involve very limited (if any) borrow pit development.	Overall magnitude is low-moderate (refer Table 5-3).	
Duration	**Long lasting –** If any borrow pit development is undertaken, duration will last during the project lifetime, until decommissioning.		
Extent	**Localised –** Impacts will be localized in the vicinity of the authorised activities.		
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to generate impacts that would be severe.		
Cumulative	**Possible –** Potential cumulative effects for native vegetation degradation regionally depends on scope of other projects in the area, but generally expected to be low.		

Sensitivity	**Low/Moderate –** Sensitivity of the receiving environment will vary. The main existing land use across the release area is pastoralism but there are areas of moderate sensitivity given there are native vegetation present in the Study Area.	

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained	▪ Records of audits/inspections carried out in accordance with the OMP demonstrate that 0, +1 or +2 GAS criteria for borrow pit construction, management and rehabilitation (DSD, 2014) are attained or where 0, +1 or +2 GAS criteria are not attained, plans for remediation are documented and implemented in a timely manner.	▪ Relevant control and management measures implemented consistent with standards for borrow pit management as per DSD (2014).

Flora and fauna: : *Impact ID #BIO04*	
Impact event	**Introduction and spread of weed(s), pest(s) and/or pathogen(s) alter existing vegetation structure and composition, and outcompete native vegetation**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Weed/pest/pathogen introduction and spread which could impact agriculture and native vegetation	Vehicle, equipment and workers movement	Native flora and fauna, including threatened ecological communities, critical habitat and listed ecological entities	Yes – Native vegetation is present across most of the Study Area. There are numerous records of introduced flora and fauna within the Study Area.	Construction Operation Decommissioning	The location of the activity site and presence of weeds / pests have not been determined.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Appropriate consultation regarding weeds, pathogens and pests is carried out with landholders and the Department of Primary Industries and Regions (PIRSA) / DEW / relevant Landscape Board (where relevant). Environmental assessment undertaken during the planning stage to identify specific weed, pathogens and/or pests at the site or within transport routes to the site. Weed/pest data shared with relevant landscape board. Management procedures in place to prevent the spread of identified weeds / diseases / pathogens, including the relevant Landscape Board Regional and District Pest Action Plans Where relevant, a specific environmental management plan for Buffel Grass will be developed and implemented in line with the Buffel grass best practice management guide for the resource industries. Equipment that has been operating outside the State or in areas of known weed infestation must be cleaned (washed down where appropriate) before arrival at the survey location. All vehicles and equipment should generally be cleaned before arrival at site, and between properties where required, unless it is demonstrated that the risks are not significant. Details or logs of equipment cleaning are kept and are available for audit upon request. Disturbance of significant weeds, (e.g. weeds of National Significance) is avoided unless for their control. Records of detection (whether introduced by an operator or not), monitoring, eradication or control of introduced species are kept. Permit is obtained from the relevant landscape board for any transport of declared plants including soils containing declared plant materials.	• High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment		Environmental significance assessment outcome
Avoidance	**No –** Controls in place prioritise the prevention of spread or introduction of weeds, however, the potential exists that weeds, pests, or pathogens may be introduced or spread as a result of activities.	Expected impact: **Low** – **Moderate** (refer to Table 5-4)

Frequency	**Low –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low.	Overall magnitude is low-moderate (refer Table 5-3).
Duration	**Short term –** Management plans outlining the site specific control measures in place are expected to be effective in controlling the potential introduction or spread of weeds, pests or pathogens. Where the spread of weeds, pests of pathogens are identified this may have the potential to have longer lasting effects on biodiversity. Management plans are required to address this.	
Extent	**Localised/Moderate –** The proposed activities are small scale and the work area is expected to be not greater than 1 ha for meteorological mast (refer Section 3) and localised for other authorised activities . However, if weeds and/or pathogens are introduced this has the potential to spread.	
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to result in the introduction or spread of weeds, including appropriate management plans in place if weeds, pests or pathogens are identified or spreading.	
Cumulative	**Possible –** Potential cumulative effects on native vegetation and biodiversity will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact biodiversity, however, these are generally mitigated by the relevant controls in place.	
Sensitivity	**Low/Moderate –**The sensitivity of the receiving environment is assessed as low-moderate, and will depend on the areas resilience to change as well as if there is native vegetation in the specific work area. Protected areas and projects that are deemed to have significant impact to MNES are excluded from the EIR. Sensitive areas will be avoided or subject to approval for clearance in accordance with the control measures.	

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No introduction or spread of weeds, pest animals, pathogens or diseases as a consequence of regulated activities.	▪ OMP includes relevant management plan/procedure that effectively manages and minimizes the potential for the introduction and or spread of weeds, pest animals or pathogens. ▪ Relevant management plan for weeds and pests is developed in consultation with PIRSA/DEW/SAAL. ▪ Where relevant, a specific environmental management plan for Buffel Grass will be developed and implemented in line with the	▪ Records demonstrate that all equipment and vehicles are inspected, and cleaned where required, before arrival at the site. ▪ Areas of significant weeds are identified and flagged for avoidance unless for their control.

		Buffel Grass best practice management guide for the resources industries. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate that the presence of weeds, pest animals or pathogens is consistent with or better than pre-disturbance conditions and adjacent land. ▪ Declared weeds, pest animals or pathogens occurring within/adjacent to operational areas are reported and managed in accordance with relevant legislation, SA Arid Lands Regional Landscape Plan and declared pest animal and weed policies. ▪ Any excavation or fill material surplus to the requirements of the development must be disposed of such that it will not adversely impact on native vegetation, contribute to erosion or sedimentation, or facilitate the spread of pest plant and pathogenic material.	

Flora and fauna: : *Impact ID #BIO05*	
Impact event	**Presence of personnel, aircraft and vehicles, noise and vibration or lighting during the regulated activities impacts local fauna**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Generation of noise and vibration or lighting during: Meteorological mast installation and decommissioning Construction of temporary access tracks and laydowns Aircraft and drones during aerial surveys Geotechnical and hydrogeological investigation	Noise and vibration Direct disturbance	Native fauna	Yes – there are numerous records of native fauna within the Study Area.	Construction Operation Decommissioning	The location of the activity site and occurrence and abundance of fauna has not been determined.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Appropriately trained and experienced personnel will undertake ecological assessment prior to work and identify any areas of sensitivity or "no-go" areas. Site/route selection to minimise potential impacts to fauna DEW biodiversity values mapping used in desktop component of ecological assessment. Significant areas for native fauna (including but not limited to nesting areas for water birds) are identified during the planning process and are avoided, either spatially or temporally. Equipment operated and maintained in accordance with manufacturer specifications. Maintenance of machinery to minimise unnecessary disturbing noise sources. Noisy equipment and machines are shut down when not in use. Any lighting required (e.g. at camp sites) is positioned to minimise light emanating from the site. If proposed activities are in close proximity to a park or reserve established under the National Parks and Wildlife Act and indirect impacts are likely, consultation is undertaken with DEW to determine appropriate mitigation measures.	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Controls in place prioritise the prevention of impacts to and avoidance of native fauna, however, unexpected incidents may occur.		Expected impact: **Low – Moderate** (refer to Table 5-4)
Frequency	**Low –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low.	Overall magnitude is low-moderate (refer Table 5-3).	

Duration	**Short term –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low.		
Extent	**Localised –** The proposed activities are small scale and the work area is expected to be not greater than 1 ha for meteorological mast (refer Section 3). Other authorised activities are expected to have limited extent of impact locally.		
Severity	**Low –** Proposed activities are small-scale and generally, with control measures in place, are not expected to result in disturbance or impacts to native fauna.		
Cumulative	**Possible –** Potential cumulative effects on native fauna will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact native fauna, however, these are generally mitigated by the relevant controls in place.		
Sensitivity	**Moderate/High –** Sensitivity of the receiving environment will vary but there are areas where it could be moderate-high, as there are possibilities for native fauna and threatened species within the Study Area. The preliminary control measure is avoidance through design and engineering controls such as siting pre-assessments.		

	Proposed environmental objective	**Assessment criteria**	**Leading Performance Criteria**
SEO	No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained.	▪ Ecological assessment by appropriately trained and accredited personnel undertaken to determine baseline biodiversity of the site and to identify and avoid any areas of sensitivity or "no-go" areas, using appropriate methodology and scoresheets for Rangelands or Scattered Tree assessments. ▪ Ecological surveys are timed appropriately to detect threatened flora and fauna where they may occur. ▪ Where vegetation and habitats may be sensitive to disturbance, consultation with relevant government departments carried out and location specific environmental management plan developed and implemented. ▪ Records (e.g. ecological assessments) demonstrate no listed threatened flora species will be significantly impacted (unless appropriate approval has been obtained). ▪ Management and monitoring measures for	▪ Significant areas for native fauna identified by a suitably trained and experienced personnel are avoided either spatially, temporally, or measures put in place to minimize disturbance.

		any vegetation and/or fauna impacts are documented in the Construction Environmental Management Plan, where required. ▪ Records (e.g. ecological assessments) demonstrate that disturbance to fauna has been considered and measures implemented to minimise it where appropriate. ▪ Records of audits/inspections carried out in accordance with the OMP demonstrate that control measures have been implemented. ▪ DEW biodiversity values mapping used in desktop component of ecological assessment and for the design of on-ground surveys.	

Flora and fauna: : *Impact ID #BIO06*	
Impact event	**Direct mortality of fauna as a result of collision with vehicles, aircraft or infrastructure**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Collision with vehicles during construction and field surveys Collision with aircraft during aerial surveys Collision with meteorological masts Interaction with excavations of boreholes	Vehicle / aircraft movements, direct disturbance from project infrastructure	Native fauna including avifauna and bats	Yes – if unplanned event occurs. There are numerous records of native fauna including avifauna within the Study Area.	Construction Operation Decommissioning	The location of the activity site and occurrence and abundance of fauna has not been determined.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Driver awareness training for all personnel. Existing access roads and turn-arounds used. Drive at appropriate speed to avoid undue disturbance. Traffic and journey management procedures followed. Avoid travel at night where possible Significant areas for native fauna (including but not limited to nesting areas for birds) are identified during the planning process and are avoided, either spatially (e.g. siting to avoid disturbance of sensitive species) or temporally (e.g. construction and maintenance activities undertaken outside of breeding season). Excavations (e.g. foundations for meteorological masts) are kept open for the minimum amount of time and are regularly checked for trapped fauna. Boreholes are capped / backfilled to prevent injury or death to wildlife. Consultation with DEW/ Landscape Board when planning aerial surveys Control measures adopted under impact ID #SAF01 that increase visibility of the meteorological mast for aviation safety may also increase visibility for avifauna.	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment		Environmental significance assessment outcome
Avoidance	**No –** Controls in place prioritise the prevention of impacts to native fauna, however, unexpected incidents may occur.	Expected impact: **Low – Moderate** (refer to Table 5-4)

Frequency	**Low –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low.	Overall magnitude is low-moderate (refer Table 5-3).	
Duration	**Long lasting –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low. Mortality of fauna is not reversible, however, impact at species level would not be expected to be significant considering controls in place and nature of works.		
Extent	**Localised –** Proposed activities are small scale and require limited vehicle and aircraft movements, and limited numbers of meteorological masts and boreholes. Generally, with control measures in place, proposed activities are not expected to result in disturbance or impacts to native fauna.		
Severity	**Low –** Proposed activities are small-scale and generally, with control measures in place, are not expected to result in disturbance or impacts to native fauna.		
Cumulative	**Possible –** Potential cumulative effects on native fauna will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact native fauna, however, these are generally mitigated by the relevant controls in place.		
Sensitivity	**Moderate/High –** Sensitivity of the receiving environment will vary but there are areas where it could be moderate-high, as there are possibilities for native fauna and threatened species within the Study Area. The preliminary control measure is avoidance through design and engineering controls such as siting pre-assessments.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained.	• Ecological assessment by appropriately trained and accredited personnel undertaken to determine baseline biodiversity of the site and to identify and avoid any areas of sensitivity or "no-go" areas, using appropriate methodology and scoresheets for Rangelands or Scattered Tree assessments. • Records (e.g. ecological assessments) demonstrate no listed threatened flora species will be significantly impacted (unless appropriate approval has been obtained). • Management and monitoring measures for any vegetation and/or biodiversity impacts are documented in the Construction Environmental	• Significant areas for native fauna (including but not limited to nesting areas for water birds) are identified during the planning process and are avoided, either spatially or temporally. • Excavations are kept open for the minimum amount of time and are regularly checked for trapped fauna. • Boreholes are capped / backfilled to prevent injury or death to wildlife.

		Management Plan, where required. • Records of audits/inspections carried out in accordance with the OMP demonstrate there are no native fauna casualties that could have reasonably been prevented through the management measures/controls described in the EIR.	

Flora and fauna: : *Impact ID #BIO07*	
Impact event	**Regulated activities interfere with listed threatened or migratory fauna species, resulting in reduced abundance**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Vegetation clearance for meteorological mast installation and construction of temporary access track or laydowns Construction, operation noise Pest animals Collision with masts, aircrafts, drones, vehicles	Direct disturbance Noise and Vibration Competition, predation Direct disturbance Aircraft / drones / vehicle movements	Threatened / migratory fauna	Yes –fauna species listed under the EPBC Act and the NPW Act occur within the Study Area. Records of migratory species occur within the Study Area.	Construction Operation Decommissioning	The location of the activity site and occurrence and abundance of threatened or migratory fauna has not been determined.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Appropriately trained and experienced personnel will undertake ecological assessment prior to work and identify any areas of sensitivity or "no-go" areas. DEW biodiversity values mapping used in desktop component of ecological assessment. Areas of habitat important to threatened or migratory fauna species are identified during the planning process and impacts are avoided, either spatially or temporally. If habitat with significant conservation value is present in the vicinity of survey activities, it will be flagged and / or fenced off where necessary to prevent disturbance. The conservation needs of species will be considered and appropriate management strategies implemented where necessary. Refer also to control measures listed under #BIO06	Moderate to high certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Controls in place prioritise the prevention of impacts to and avoidance of native fauna (threatened or migratory species), however, unexpected incidents may occur.		Expected impact: **Low** – **Moderate** (refer to Table 5-4)
Frequency	**Low –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low. Ecological survey assessments identifying habitat for or occurrence of threatened or migratory bird species will be avoided.	Overall magnitude is low-moderate (refer Table 5-3).	

Duration	**Short term –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of vehicles and people required on site is generally expected to be low.		
Extent	**Localised –** The proposed activities are small scale and the work area is expected to be not greater than 1 ha (refer Section 3). Other activities are expected to have limited extent of impact locally.		
Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to result in disturbance or impacts to native fauna.		
Cumulative	**Possible –** Potential cumulative effects on native fauna will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact native fauna, however, these are generally mitigated by the relevant controls in place.		
Sensitivity	**Moderate/High –** Sensitivity of the receiving environment will vary but there are areas where it could be moderate-high, as there are possibilities for native fauna and threatened species within the Study Area. The preliminary control measure is avoidance through design and engineering controls such as siting pre-assessments.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained.	▪ Ecological assessment by appropriately trained and accredited personnel undertaken to determine baseline biodiversity of the site and to identify and avoid any areas of sensitivity or "no-go" areas, using appropriate methodology and scoresheets for Rangelands or Scattered Tree assessments. ▪ DEW biodiversity values mapping used in desktop component of ecological assessment and for the design of on-ground surveys. ▪ Records (e.g. ecological assessments) demonstrate no listed threatened or migratory species will be significantly impacted (unless appropriate approval has been obtained). ▪ Clearance data and/or visual inspection demonstrates no clearance outside of approved areas.	▪ Areas of habitat important to threatened or migratory fauna species are identified during the planning process and impacts are avoided, either spatially or temporally.

Flora and fauna: : *Impact ID #BIO08*	
Impact event	**Increase in pest animal abundance results in increased predation on or competition with native fauna.**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Pest animals attracted to areas where activities are being undertaken (e.g. attraction to putrescible waste materials)	Competition, predation	Native fauna	Yes – there are numerous records of native fauna and pest fauna (such as Feral goat and Foxes) within the Study Area.	Construction Operation Decommissioning	The location of the activity site and local presence and abundance of pest animals have not been determined.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Covered bins are provided for the collection and storage of waste. Waste removed off-site and disposed of at appropriately licensed waste handling facility. Refer also to general waste management measures under Impact #SOI03 in Section 5.2.1 – Soil and land quality Feeding of wildlife (e.g. dingoes) is not permitted. No domestic pets allowed at camps or worksites. Wastewater disposal areas (if used) fenced where required (e.g. to prevent access by goats)	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Controls in place prioritise the prevention of impacts to and avoidance of attracted pest animals, however, unexpected incidents may occur.		Expected impact: **Low** (refer to Table 5-4)
Frequency	**Low –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of people required on site is generally expected to be low. With waste management system measures in place, potential risk of ongoing waste generation attracting pest animals is expected to be low.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Site access is only expected to occur during construction, decommissioning and occasional maintenance and the number of people required on site is generally expected to be low.		
Extent	**Localised –** The proposed activities are small scale and the work area is expected to be not greater than 1 ha for meteorological masts (refer Section 3). Other authorised activities are expected to have limited extent of impact locally.		

Severity	**Low –** Proposed activities are small scale and generally, with control measures in place, are not expected to result in increasing pest animal abundance.	
Cumulative	**Possible –** Potential cumulative impacts associated with attracted pest animals on native fauna will depend on the scope of other projects in the area. Where multiple projects (not limited to projects of the same nature) are within a similar area, the potential exists for cumulative effects to impact native fauna, however, these are generally mitigated by the relevant controls in place.	
Sensitivity	**Moderate –** Sensitivity of the receiving environment is moderate given the presence of native vegetation and designated land use in the Study Area.	

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No introduction or spread of weeds, pest animals and pathogens as a consequence of regulated activities.	• Records of audits/inspections carried out in accordance with the OMP demonstrate that the presence of weeds, pest animals or pathogens is consistent with or better than pre-disturbance conditions and adjacent land. • Declared weeds, pest animals or pathogens occurring within/adjacent to operational areas are reported and managed in accordance with relevant legislation, SA Arid Lands Regional Landscape Plan and declared pest animal and weed policies. • Any excavation or fill material surplus to the requirements of the development must be disposed of such that it will not adversely impact on native vegetation, contribute to erosion or sedimentation, or facilitate the spread of pest plant and pathogenic material.	• Waste securely stored and removed off-site for disposal at appropriately licensed waste handling facility to prevent access by fauna.

Flora and fauna: : *Impact ID #BIO09*	
Impact event	**Fires caused by the regulated activities result in a loss of native vegetation and habitat**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	Assumptions and sensitivity to change
Potential impact	Use of equipment and machinery	Spread of fire	Native flora and fauna, including threatened ecological communities, critical habitat and listed ecological entities	Yes – if unplanned event occurs. Native vegetation is present across most of the Study Area and some types (e.g. mallee) are susceptible to fire	Construction Operation Decommissioning	The location of the activity site and the vegetation present has not been determined. Fire behaviour in relation to receptors would also affect the SPR linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Firefighting equipment available as appropriate for location and use. *Fire and Emergency Services Act 2005* requirements complied with (e.g. permits for 'hot work' on total fire ban days). Ensure all vehicles are fitted with appropriate fire-fighting equipment and spark arrestors. Avoid driving over long dry grass. Identify and assess bushfire hazards across all project components, including risks from uncontrolled fire events, ember attack, burning debris, radiant heat and direct flame contact, and outline how these risks will be minimised. Design and construct buildings, structures and infrastructure or the alike using siting, layout and construction requirements that reduce bushfire impact and improve resistance to ember, heat and flame exposure. Ensure all project components comply with relevant requirements of the CFS Renewable Energy Facilities Guide and checklist, or as otherwise agreed with CFS. Assess the potential for fire ignition originating from the development itself, and evaluate associated risks to people, property and the environment. Implement measures to avoid and minimise bushfire risks during all stages of the project, including planning, construction, operation and maintenance. Procedures are in place to minimise the risk of initiating and propagating fire during periods of high temperatures and high winds. Hazard identification plan for immediate implementation on days of high temperatures and winds. Response plan for the safety of crew personnel should a fire approach or be initiated by field crew. Crews are trained in use of firefighting equipment.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Guides, codes and standards are available to provide appropriate prevention and management measures, as provided by the *Fire and Emergency Services Act 2005* and local Country Fire Service.	

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Unexpected fire may result from activities being undertaken.		Expected impact: **Moderate** (refer to Table 5-4)
Frequency	**Low –** The frequency of fire incident is expected to be low with relevant control measures and procedures in place.	Overall magnitude is moderate (refer Table 5-3).	
Duration	**Short term –** Fire events as a result of authorised operations are only expected to occur during site access, i.e. construction, decommissioning and maintenance. Long term impacts are possible depending on the scale of the fire.		
Extent	**Moderate –** Impacts from a fire may extend beyond the project site and immediate surrounds but would not be expected to occur on a regional scale. Management system measures are put in place to prevent initiation of bushfire and ensure propagation of potential bushfire is quickly managed.		
Severity	**High –** Fires could result in death or damage to property or extensive damage to native vegetation and habitat.		
Cumulative	**Possible –** Depending on the existing environment, if fires have occurred in nearby areas or within the same area, additional fires may result in cumulative impacts. This should be considered on a case-by-case basis.		
Sensitivity	**Moderate –** Sensitivity of the receiving environment is moderate given the presence of native vegetation and designated land use in the Study Area.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained	▪ No uncontrolled fires as a result of authorised activities. ▪ OMP includes an emergency response plan (or similar) that clearly outlines the response to a fire related incident, both caused by authorised activities and/or threatening authorised activities from offsite. ▪ Fire and Emergency Services Act 2005 requirements are complied with. ▪ Infrastructure, site design, and management plans comply with relevant requirements of the CFS Renewable Energy Facilities Guide and checklist, or as	▪ Fire prevention and firefighting equipment is present, certified and maintained in accordance with applicable standards.

		otherwise agreed with CFS.	

5.2.5 Air quality

Setting the context

Table 5-9 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to air quality.

Table 5-9: Context summary for air quality

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Environment Protection Act 1993 *Environment Protection (Air Quality) Policy 2016* *Climate Change and Greenhouse Gas Emissions Reduction Act 2007* *National Greenhouse and Energy Reporting Act 2007* *Local Nuisance and Litter Control Act 2016*	*National Environment Protection (Ambient Air Quality) Measure 2021*	Local community Visitors Fauna Flora Stock

Impact events

The impact events relevant to air quality are:

- Dust generated during construction activities results in a deterioration of air quality at sensitive receptors.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that expected impacts were generally in the **Negligible** category. Potential impacts from the proposed activities are localised, small scale and short term, and readily manageable using standard control measures.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Air quality: : *Impact ID #AIR01*	
Impact event	**Dust generated during construction activities results in a deterioration of air quality at sensitive receptors**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Generation of dust during: Meteorological masts installation Temporary access tracks or laydowns construction Use of temporary access tracks and unsealed roads	Airborne dust deposition	Local community Visitors Native fauna Native flora Stock	Yes – There are several pastoral station residences within the Study Area, numerous records of native flora and fauna in the Study Area and Pastoral, agricultural and tourism activities exist in the region.	Construction Decommissioning	The location of the activity site, soil type at the site and proximity to sensitive receptors have not been determined. Siting may reduce linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Dust control measures (e.g. water spraying) implemented if dust generation becomes a problem (e.g. near sensitive sites). Vehicles are driven at speeds slow enough to minimise generation of dust. Dust generating activities to be scheduled to avoid adverse weather conditions (e.g. periods of high winds). Soil stockpiles are appropriately managed, e.g. through covering, of a reduced height and/or for minimal duration. The number of site visits is restricted to as few as practicable. Existing tracks are used where possible. The extent of new exposed and stripped surface area is minimised. System is in place for logging communication with landowners and pastoral lease holders and logging complaints to ensure that any identified amenity issues are recorded, addressed as appropriate and complaints are resolved in a timely manner.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Dust impacts may occur as a result of activities.	Overall magnitude is low (refer Table 5-3).	Expected impact: **Negligible** (refer to Table 5-4)
Frequency	**Low –** Site access is only expected to occur during construction, decommissioning and occasional maintenance. The number of vehicles and people required on site is generally expected to be low.		
Duration	**Short term –** Impacts are expected to be temporary and to only occur during site access/activities. Control measures are recognised to minimise dust impacts in most environments.		
Extent	**Localised –** Dust impacts are expected to be associated with site access and/or site activities.		

Severity	**Low –** Dust impacts are expected to be indistinguishable from background levels with appropriate controls in place.	
Cumulative	**Possible –** Potential cumulative effects on native fauna will depend on the scope of other projects in the area. Where multiple projects or activities (not limited to projects of the same nature) are being undertaken within a similar area, the potential exists for cumulative effects to air quality. Potential cumulative impacts may occur to native flora in the event of plant die-off due to dust dispersion, however, the proposed dust suppression control measures are considered reasonable industry standard practice that have been demonstrated to be effective in reducing dust dispersion.	
Sensitivity	**Low –** Sensitivity of the receiving environment is generally low, given activities are not likely to be located near residences. It is generally expected that air quality is good in these areas and may also be recognised locally as an important amenity of rural living. However, activities are not likely to generate sufficient dust to impact beyond the immediate area and control measures in place are generally considered standard practice in dust dispersion prevention where required.	

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	Minimise disturbance to receptors, land use and infrastructure.	▪ The applicant must consult with landowners, pastoral lease holders, Traditional Owners, the Outback Communities Authority (OCA) or relevant council, any affected Government agencies and any potentially affected receptors on the potential impacts (including cumulative impacts) of the proposed activities and how they will be adequately managed prior to the approval of the OMP. ▪ The applicant must provide a report that details the result of the consultation, setting out the people consulted, any issues or concerns raised and the steps if any proposed to be taken to address those concerns in the OMP. ▪ Management and monitoring measures for dust impacts to sensitive receptors are documented in the Construction Environmental Management Plan, where required. ▪ Records demonstrate that no reasonable complaints received about air quality are left unresolved.	▪ Where required, equipment to perform water-spraying is available onsite during construction and decommissioning, and implemented if dust generation becomes a problem (e.g. near sensitive sites).

5.2.6 Noise and vibration

Setting the context

Table 5-10 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to noise and vibration.

Table 5-10: Context summary for noise and vibration

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Environment Protection Act 1993 *Environment Protection (Commercial and Indutrial Noise) Policy 2023* *Local Nuisance and Litter Control Act 2016*	EPA 425/23 Construction Noise Information Sheet (EPA, 2023)	Local community Visitors

Impact events

The impact events relevant to noise and vibration are:

- Noise and vibration generated by the regulated activities reduces local amenity.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that expected impacts were generally in the **Negligible** category. Potential impacts from the proposed activities are localised, small scale and short term, and readily manageable using standard control measures.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Noise and vibration: *Impact ID #NOI01*	
Impact event	**Noise and vibration generated by the regulated activities reduces local amenity.**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Generation of noise and vibration during: Meteorological mast installation and de-installation Construction of temporary access tracks and laydowns Aerial surveys Geotechnical and hydrogeological investigation	Noise and vibration	Local community Visitors	Yes – There are several pastoral station residences within the Study Area and pastoral, agricultural and tourism activities exist in the region.	Construction Operation Decommissioning	The location of the activity site and proximity to sensitive receptors has not been determined. Siting may reduce linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Location of sensitive receptors (e.g. pastoral station residences) considered when planning activities, and avoidance or mitigation measures implemented where required. Equipment operated and maintained in accordance with manufacturer specifications. Vehicles and equipment are turned off when not in use. Activities restricted to daytime hours as far as practicable in line with the EPA 425/23 Construction Noise Information Sheet. Avoid travel at night where possible. System is in place for logging complaints to ensure that issues are recorded, addressed as appropriate and complaints are resolved in a timely manner.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Noise and vibration impacts may occur as a result of activities.		Expected impact: **Negligible** (refer to Table 5-4)
Frequency	**Low –** Noise impacts are only expected to occur during construction, decommissioning and occasional maintenance. The number of vehicles and people required on site is generally expected to be low.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Impacts are expected to be temporary and to only occur during site access/activities. Control measures are intended to reduce noise and vibration impacts to within limited duration.		
Extent	**Localised –** Noise and vibration impacts are expected to be associated with site access and/or site activities.		
Severity	**Moderate –** Noise impacts are not expected to exceed statutory reference values or environmental quality standards, however, may result in an increase in the occurrence and level of noise or vibration.		

	This should be considered on a case-by-case basis in the context of potential receptors.		
Cumulative	**Possible –** Potential cumulative effects of noise and vibration will depend on the scope of other projects in the area. Where multiple projects or activities (not limited to projects of the same nature) are being undertaken within a similar area, the potential exists for cumulative effects to exist and should be considered on a case-by-case basis.		
Sensitivity	**Low –** Sensitivity of the receiving environment is generally low, given activities are not likely to be located near residences. It is generally expected that ongoing noise impacts are generally low in these areas and low noise levels may also be recognised locally as an important amenity of rural living. However, the noise and vibration generated by activities is expected to be consistent with other short term agricultural activities.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	Minimise disturbance to receptors, land use and infrastructure	▪ The applicant must consult with landowners, pastoral lease holders, Traditional Owners, the Outback Communities Authority (OCA) or relevant council, any affected Government agencies and any potentially affected receptors on the potential impacts (including cumulative impacts) of the proposed activities and how they will be adequately managed prior to the approval of the OMP. ▪ The applicant must provide a report that details the result of the consultation, setting out the persons consulted, any issues or concerns raised and the steps if any proposed to be taken to address those concerns in the OMP. ▪ Generation of noise during construction and operation is consistent with the EPA 425/23 Construction Noise Information Sheet (EPA, 2023) and the *Environment Protection (Commercial and Industrial Noise) Policy 2023*. ▪ Records demonstrate that no reasonable complaints received about noise levels are left unresolved	▪ Location of sensitive receptors (e.g. pastoral station residences) considered when planning activities, and avoidance or mitigation measures implemented where required.

5.2.7 Landscape and visual amenity

Setting the context

Table 5-11 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to landscape and visual amenity.

Table 5-11: Context summary for landscape and visual amenity

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Planning, Development and Infrastructure Act 2016	Planning and Design Code	Local community Visitors

Impact events

The impact events relevant to landscape and visual amenity are:

- Regulated activities result in unacceptable reduced visual amenity for the local community and/or visitors.

Impact assessment outcomes

The assessment detailed in the table below indicates that expected impacts will be **low.** The meteorological masts or campsites may change the outlook of the landscape but will be preferentially installed to minimise visual impacts from public viewpoints and residents.

Environmental impact and significance assessment

The following tables detail the impact assessment for of the identified impact events.

Landscape and visual amenity: *Impact ID #VIS01*	
Impact event	**Regulated activities result in reduced visual amenity for the local community and/or visitors**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	The experience of the area and the landscape changes when the meteorological masts and campsites become visible.	Line of sight	Local community Visitors Geoheritage sites	Yes – There are several main roads and pastoral station residences within the Study Area. Tourism activities exist in the region.	Construction Operation	The location of the activity site and proximity to sensitive receptors has not been determined. Siting may reduce linkage.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Campsites and meteorological masts located in areas that minimise visibility from residential, tourist development, or other visually sensitive areas such as geoheritage sites. Drill cuttings are returned to hole and surplus buried or cuttings spread to minimise visual impact. Maintain a high standard of 'housekeeping' to minimise visual impact. A visual impact assessment is undertaken within 500 m from a non-associated dwelling, tourist accommodation, and/or township. System is in place for logging complaints to ensure that issues are recorded, addressed as appropriate and complaints are resolved in a timely manner. Restoration of land disturbance to be undertaken through consultation with the landowner and in line with approved management plans. Any infrastructure that the landowner would like to retain (e.g. meteorological mast pad, laydown or storage pads) must be requested through DEM and subject to relevant regulatory approvals.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Visual impacts may occur as a result of activities and additional infrastructure in the landscape.		Expected impact: **Low** (refer to Table 5-4)
Frequency	**Moderate –** The frequency of visual impacts is project specific, with regard to how frequently a receptor may be impacted by the change in the visual amenity. It is expected that the primary visual impacts will occur as a result of installation of meteorological mast or development of campsites, which may remain in the landscape for years. At decommissioning the visual amenity of the landscape is likely to be fully restored (in consultation with landowner).	Overall magnitude is moderate (refer Table 5-3).	

Duration	**Long term –** Impacts are expected to occur over years. Control measures are intended to reduce impacts to visual amenity by siting masts or campsites away from public view points, however may not always be possible.		
Extent	**Low –** Impacts may extend beyond the project site and immediate surrounds, without occurring on a regional scale. Meteorological masts are not considered visually intrusive, due to having a lattice structure, however safety markings or features may increase the visual impact. Campsite infrastructure will be designed to minimize visual impact e.g. limited heights, color scheme and architectural design to blend into the surrounding environment.		
Severity	**Moderate –** Visual **i**mpacts may result in a decrease in visual amenity, this should be considered on a case-by-case basis in the context of potential receptors.		
Cumulative	**Possible –** Potential cumulative effects on visual amenity will depend on the scope of other projects in the area. Where multiple projects or activities, particularly related to other tall structures, are being undertaken within a similar area. This should be considered on a case-by-case basis in the context of potential receptors. For a particular project, meteorological masts are required to be sufficiently spaced to gather a broad range of data for the proposed wind farm site and therefore, for a given project, will not be grouped in proximity to each other.		
Sensitivity	**Low –** Sensitivity of the receiving environment is generally low. It is generally expected that visual changes to the landscape, particularly for tall structures, are not common. Visual amenity may also be recognised locally as an important amenity of rural living.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	Minimise visual impact of regulated activities	▪ Visual assessment undertaken where mast or campsite siting is proposed within 500 m from a non-associated dwelling, tourist accommodation, and/or township. ▪ Records demonstrate no reasonable complaints received about visual amenity are left unresolved.	▪ Meteorological masts or campsites located in areas that minimise visibility from residential, tourist development, or otherwise visually sensitive areas such as geoheritage sites.
	Rehabilitate land adversely affected by regulated activities	▪ Records of audits / inspections carried out in accordance with the decommissioning and rehabilitation plan demonstrate that land has been appropriately rehabilitated, including removal of surface structures and waste, re-contouring of the ground surface and revegetating (where required) consistent with pre-existing conditions (unless	▪ Final decommissioning and rehabilitation plan to be provided 6 months prior to decommissioning activities commencing within the OMP.

		alternative agreement is reached with the regulator and landowner). ▪ Decommissioning and rehabilitation activities are undertaken in accordance with a plan that has been approved by DEM	

5.2.8 Aboriginal heritage and non-Aboriginal heritage

Setting the context

Table 5-12 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to Aboriginal and non-Aboriginal heritage.

Table 5-12: Context summary for Aboriginal and non-Aboriginal heritage

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Aboriginal Heritage Act 1988 *Aboriginal and Torres Strait Islander Act 2005* *Native Title Act 1993* *Coroners Act 2003.* *Heritage Places Act 1993* *PDI Act – local heritage*	P&D Code Local Heritage listings and Heritage Zones	Aboriginal sites, objects and remains Traditional owners Heritage values Community

Impact events

The impact events relevant to Aboriginal and non-Aboriginal heritage are:

- Regulated activities result in damage or loss of known or unknown Aboriginal heritage.
- Regulated activities result in damage or loss of known or unknown non-Aboriginal heritage.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that expected impacts could vary between **Low-Moderate**. Potential impacts from the proposed activities are localised and small scale and readily manageable using standard control measures. Events such as damage or loss to heritage are unlikely to occur due to the control measures to be implemented.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Aboriginal heritage: *Impact ID #HER01*	
Impact event	**Regulated activities result in damage or loss of known or unknown Aboriginal heritage sites, objects or remains**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Vegetation clearance Earthworks for meteorological mast installation, construction of temporary laydowns and temporary access tracks, and constructing and/or installing any other project elements that require ground disturbance. Walk/drive over during field surveys, unauthorised off-road vehicle use and field surveys involving minor ground disturbance: groundwater sampling, UXO and geophysical surveys, contaminated land assessment. Decommissioning of project elements that require ground disturbance.	Disturbance	Aboriginal sites, objects and remains Traditional owners Aboriginal communities	Yes – Aboriginal heritage may intersect the project area	Construction Decommissioning	Consultation with Traditional Owners may identify sites of Aboriginal heritage within the Nominated Area. Surveys may find Aboriginal heritage not previously recorded or determined. The location of the activity area and proximity to identified Aboriginal heritage has not been ascertained.

Control measures	Uncertainties regarding likely effectiveness and control strategies
Cultural heritage risk assessment undertaken in consultation with Traditional Owners and/or by an anthropologist/archaeologist and a cultural heritage survey or 'work area clearance' s undertaken prior to land disturbing activities and other activities as required in accordance with relevant Native Title Agreement (if applicable). AAR central archives search is conducted and the area for construction is clear of any known Aboriginal heritage. Land disturbance is confined to areas subject to cultural heritage survey or work area clearance and undertaken in accordance with conditions of the survey or work area clearance where they have been undertaken. Procedures consistent with the relevant obligations under the Native Title Agreement (if applicable) and Aboriginal Heritage Act 1988 are in place to appropriately report and respond to any Aboriginal heritage discovered during activities. Any Aboriginal heritage discovered during operations are appropriately reported and responded to, consistent with any applicable Native Title Agreement, the Aboriginal Heritage Act 1988 and the Coroners Act 2003. Aboriginal Heritage Discovery Protocols (AAR, 2023) are adopted for the project and adhered to, e.g. via a relevant management plan. Known heritage sites are identified and protected from operations. Where necessary, Aboriginal heritage or	High certainty that proposed control measures will be effective.

exclusion zones in the vicinity of the activities are flagged and / or fenced off to prevent disturbance in line with a Cultural Heritage Management Plan (CHMP). Proponents and their contractors have a reporting system and stop work procedure in place for Aboriginal heritage discovered during activities. All survey personnel receive appropriate cultural heritage training prior to work commencing. (Note that cultural heritage clearances, work area clearances and cultural heritage management plans are not defined under or referenced by the Aboriginal Heritage Act 1988 and cannot authorise impacts to Aboriginal heritage.)	

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Unexpected finds may occur.		Expected impact: **Low – Moderate** (refer to Table 5-4) Control measures in place require desktop assessments and surveys to identify areas of Aboriginal heritage for avoidance and relevant unexpected finds procedures must be in place, including that works must cease in the event of an unexpected find. As such, impacts are managed to ALARP.
Frequency	**Low –** Control measures in place require desktop assessments and surveys to identify areas of Aboriginal heritage for avoidance, it is therefore not expected for unexpected finds to occur frequently.	Overall magnitude is moderate (refer Table 5-3).	
Duration	**Permanent –** Damage or loss of Aboriginal heritage is irreversible.		
Extent	**Localised –** Impacts would occur at the site of disturbance.		
Severity	**High –** Damage or loss of Aboriginal heritage, without appropriate authorisations, is a breach of the *Aboriginal Heritage Act 1988*.		
Cumulative	**Possible –** Depending on the scope of other projects in the area, but multiple incidents of damage or loss of heritage places will result in cumulative impacts.		
Sensitivity	**Low/High –** Aboriginal heritage has statutory protection and where undisturbed is expected to be intact. The sensitivity of the receiving environment may vary depending on the occurrence of landforms that have a higher likelihood of being associated with Aboriginal heritage and incidence of unexpected finds.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
	No damage, disturbance or interference to Aboriginal heritage and non-Aboriginal heritage unless authorised under the relevant legislation.	▪ Records of audits/inspections carried out in accordance with the OMP demonstrate no damage, disturbance or interference with any Aboriginal sites, objects and remains (all as defined under the *Aboriginal Heritage Act 1988*) unless authorisation has been obtained under the *Aboriginal Heritage Act 1988*. ▪ Any Aboriginal sites, objects and remains (together Aboriginal heritage) discovered	▪ Records demonstrate that activities are confined to areas subject to cultural heritage survey or work area clearance and undertaken in accordance with conditions of the survey or work area clearance. ▪ In the event the conditions of a cultural heritage survey or work area clearance(s) are not complied with, the incident is appropriately reported[18], investigated and remediated in consultation with the relevant Traditional Owners, Native Title holders and in accordance with any applicable Native Title

[18] This may include compliance with reporting obligations pursuant to s20 of the *Aboriginal Heritage Act 1988.*

SEO		during operations have been appropriately reported and responded to, consistent with any applicable Native Title Agreement, the *Aboriginal Heritage Act 1988* and *the Coroners Act 2003*. ▪ Records demonstrate that works have stopped in the vicinity of a discovery of Aboriginal heritage.	Agreement. ▪ Cultural heritage risk assessment undertaken in consultation with Traditional Owners and/or by an anthropologist/archaeologist and a cultural heritage survey or 'work area clearance' undertaken prior to land disturbing activities and other activities as required in accordance with relevant Native Title Agreement (if applicable). ▪ Where required, development of and adherence to a cultural heritage management plan in consultation with the relevant Traditional Owners. ▪ Records demonstrate that Taa Wika has been searched to identify and avoid the location of registered Aboriginal heritage sites. ▪ Procedures, systems and plans are in place if Aboriginal heritage is encountered.

Non-Aboriginal heritage: *Impact ID #HER02*	
Impact event	**Regulated activities result in disturbance, damage or loss of known or unknown non-Aboriginal heritage sites or artefacts**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Vegetation clearance and earthworks for meteorological mast installation and construction of temporary access track or laydowns impacts unknown non-Aboriginal heritage sites or artefacts Walk / drive over during field surveys, unauthorised off-road vehicle use and field surveys involving minor ground disturbance: groundwater sampling, UXO and geophysical surveys, contaminated land assessment. Visual disturbance at non-Aboriginal heritage sites	Disturbance	Geoheritage values and community	Yes – if unplanned event occurs. There are records of geoheritage within the Study Area and potential for unrecorded heritage.	Construction	The location of the activity site and proximity to identified sites, has not been determined. Unrecorded sites of heritage significance may be present.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Heritage site registers and P&D Code (and Heritage South Australia, DEW, where appropriate) are consulted regarding the location of heritage sites and any identified sites are avoided. Known heritage sites are identified and protected from operations in consultation with Heritage South Australia, DEW. Where necessary, heritage sites or exclusion zones in the vicinity of the activities are flagged and / or fenced off prior to commencement of work, to prevent disturbance as approved by Traditional Owners and/or in line with a CHMP. Proponents and their contractors have a reporting system in place for heritage sites or artefacts discovered during activities. No impact to heritage places, archaeology, and related objects protected under the *Heritage Places Act 1993* unless approval has been obtained under that Act. Any non-aboriginal sites or archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease and the Council will be notified, in accordance with the requirements of the *Heritage Places Act 1993*. Where it is known in advance (or there is reasonable cause to suspect) that significant archaeological artefacts may be encountered, a permit is required prior to commencing excavation works.	High certainty that proposed control measures will be effective.

Environmental significance assessment		Environmental significance assessment outcome
Avoidance	**No –** Unexpected finds may occur.	Expected impact**: Low** (refer to Table 5-4)

Frequency	**Low –** Control measures in place require identification of existing heritage places for avoidance, it is therefore not expected for unexpected finds to occur frequently.	Overall magnitude is moderate (refer Table 5-3).	Control measures in place require the identification of heritage places for avoidance and relevant unexpected finds procedures must be in place, including that works must cease in the event of an unexpected find and reported appropriately. As such, impacts are managed to ALARP.
Duration	**Permanent –** Damage or loss of heritage is irreversible.		
Extent	**Localised –** Impacts would occur at the site of disturbance.		
Severity	**High –** Damage or loss of heritage places, without appropriate authorisations, is a breach of the *Heritage Places Act 1993*.		
Cumulative	**Possible –** Depending on the scope of other projects in the area, but multiple incidents of damage or loss of heritage places will result in cumulative impacts.		
Sensitivity	**Low –** Non-aboriginal heritage has statutory protection and where undisturbed is expected to be intact. Determined by the presence of registered heritage sites in areas of interest for the regulated activities on a case-by-case basis. Registered heritage areas will be identified and protected from operations.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No damage, disturbance or interference to Aboriginal and non-Aboriginal heritage unless authorised under the relevant legislation	▪ Records of audits/inspections carried out in accordance with the OMP demonstrate no impact to non-Aboriginal heritage places and related objects protected under the Heritage Places Act 1993 unless approval has been obtained under the Heritage Places Act 1993. ▪ Records will demonstrate that if a non-indigenous site or archaeological artefact believed to be of heritage significance is encountered during excavation works, disturbance in the vicinity shall cease immediately and the South Australian Heritage Council will be notified in accordance with the *Heritage Places Act 1993.*	▪ Records demonstrate that heritage site registers (and Heritage South Australia, DEW, where appropriate) have been consulted regarding the location of non-Aboriginal heritage sites and any identified sites, including local heritage places, have been avoided. ▪ Procedures, systems and plans are in place if archaeological artefacts are encountered.

5.2.9 Social environment, land use and infrastructure

Setting the context

Table 5-13 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to social environment, land use and infrastructure.

Table 5-13: Context summary for social environment, land use and infrastructure

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Landscape South Australia Act 2019 *Biosecurity Act 2015 (Cth)* *Civil Aviation Safety Regulations* *Livestock Act 1997*	Guideline EPA 080/16 *Bunding and Spill Management* AS 1940 - The storage and handling of flammable and combustible liquids Australian Dangerous Goods Code *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended 2013)	Landholders Livestock

Impact events

The impact events relevant to social environment, land use and infrastructure are:

- Aerial surveys result in disturbance to stock or mustering activities
- Regulated activities disturb landholder infrastructure or activities
- Introduction and spread of weed(s), pest(s) and/or pathogen(s) impacts land use.
- Waste is created onsite during construction and decommissioning and is inappropriately handled.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that expected impacts were generally in the **Negligible-Low** category. Potential impacts from the proposed activities are localised and small scale and readily manageable using standard control measures. Events such as disturbance to landowner infrastructure and introduction of weeds and pests are unlikely to occur due to the control measures to be implemented.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.Socio-economic environment: *Impact ID #SOC01*	
Impact event	**Aerial surveys result in disturbance to stock or mustering activities**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Aircrafts and drones during aerial surveys	Aircraft and drone movements and noise	Landholders Livestock	Yes – Pastoralism is the primary land use in the region, with sheep and cattle livestock occurring in the Study Area	Operation	The location of the activity site and proximity to receptors has not been determined. Siting may reduce linkage

Control measures	Uncertainties regarding likely effectiveness of control strategies
Liaise with landowners and pastoral lease holders regarding notification and management of works and site issues including livestock management Aircraft avoid overflying concentrations of livestock, particularly at stockyards, trucking yards and watering-points. Aircraft and drone operations comply with the Civil Aviation Safety Regulations.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Disturbance cannot be avoided, but management system and design control measures are put in place to ensure disturbance to stock and mustering activities is kept as low as reasonably practicable.		Expected impact**: Negligible – Low** (refer to Table 5-4)
Frequency	**Low –** Authorised activities will only occur during construction, decommissioning or occasional maintenance.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Authorised activities will only occur during construction, decommissioning or occasional maintenance.		
Extent	**Localised –** Authorised activities to only be undertaken at the project location.		
Severity	**Low –** Management system and design control measures are put in place to ensure disturbance to stock and mustering activities is kept as low as reasonably practicable.		

Cumulative	**Possible –** Potential cumulative effects of operational activities depend on scope of other projects in the area but generally expected to be low.	
Sensitivity	**Low/Moderate –** Sensitivity of the receiving environment is low to moderate, given that access agreements covering the activities will be in place.	

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	Minimise disturbance to receptors, land use and infrastructure.	▪ Records demonstrate no reasonable complaints received about aerial surveys are left unresolved. ▪ Consultation with landowners undertaken prior to starting aerial surveys. ▪ Aircraft and drone operations comply with Civil Aviation Safety Authority regulations.	

Socio-economic environment: *Impact ID #SOC02*	
Impact event	**Regulated activities disturb landholder infrastructure or activities**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Operational activities including vehicle/worker movements and earthwork	Direct disturbance	Landholders	Yes –Pastoral residences and pastoral and mining activities are present.	Construction Operation Decommissioning	The location of the activity site and proximity to receptors has not been determined.

Control measures	Uncertainties regarding likely effectiveness of control strategies
Landowners and pastoral lease holders consulted prior to proposed authorised activities to advise them of the scope, schedule and duration and discuss any specific requirements. Access agreements in place with pastoral lease holders or other prescribed owners of land before undertaking authorised operations. Access, notification and compensation requirements of the access agreements complied with. Notice of Entry requirements of the HRE Act are complied with for other landowners and pastoral lease holders. Sites/routes are selected to minimize potential impacts to landowners and land use activities. Where practical, avoid periods critical to the pastoral business cycle such as lambing, mustering. Survey traverses are planned or deviated in the field to avoid homesteads, associated buildings, dams, and bores and tanks etc. Leave gates as found. Fences are not modified without landowner permission and are restored to a level satisfactory to the landowner. System is in place for logging complaints to ensure that issues are recorded, addressed as appropriate and complaints are resolved in a timely manner. Site induction for all employees and contractors covers pastoral, conservation, tourism, legislation and infrastructure issues. Properties accessed only sufficiently to acquire data. Obtain landowner consent prior to setting up a camp. All rubbish will be removed from camps and worksites. No pets are to be kept by the crew at camps or worksites. Restoration of land disturbances to be undertaken through consultation and agreement with the landowner and where relevant must also comply with any statutory management plans in place. Any infrastructure that the landowner would like to retain (e.g. meteorological mast pad, laydown or storage pads) must be requested through DEM and subject to relevant regulatory approvals.	High certainty that proposed control measures will be effective.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Due to the nature of authorised activities being undertaken on designated lands, activities may disturb landowner infrastructure or activities.		Expected impact**: Negligible – Low** (refer to Table 5-4)
Frequency	**Low –** Authorised activities will only occur during construction, decommissioning or occasional maintenance. Management system and design control measures are put in place to ensure disturbance to landowners, pastoral lease holders and local community is kept as low as reasonably practicable.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Authorised activities will only occur during construction, decommissioning or occasional maintenance. Management system and design control measures are put in place to ensure disturbance to landowners, pastoral lease holders and local community is kept as low as reasonably practicable.		
Extent	**Localised –** Authorised activities to only be undertaken at the project location.		
Severity	**Low –** Management system and design control measures are put in place to ensure disturbance to landowners, pastoral lease holders and local community is kept as low as reasonably practicable.		
Cumulative	**Possible –** Potential cumulative effects of activities on local community depends on scope of other projects in the area but is generally expected to be low.		
Sensitivity	**Low/Moderate –** Sensitivity of the receiving environment is low to moderate, given that access agreements covering the activities will be in place.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	Minimise disturbance to receptors, land use and infrastructure.	▪ The applicant must consult with landowners, pastoral lease holders, Traditional Owners, the Outback Communities Authority (OCA) or relevant council, any affected Government agencies and any potentially affected receptors on the potential impacts (including cumulative impacts) of the proposed activities and how they will be adequately managed prior to the approval of the OMP. ▪ The applicant must provide a report that details the result of the consultation, setting out the people consulted, any issues of concerns raised and the steps if any proposed	▪ Landowners are consulted prior to survey activities, and relevant control and management measures consistent with those identified in the EIR are implemented.

		to be taken to address those concerns in the OMP. ▪ Landowner / stakeholder complaints are documented, and reasonable steps taken to resolve them can be demonstrated.	
	Rehabilitate land adversely affected by authorised operations.	▪ Records of audits / inspections carried out in accordance with the decommissioning and rehabilitation plan demonstrates that land has been appropriately rehabilitated, including removal of surface structures and waste, re-contouring of the ground surface and revegetating (where required) consistent with pre-existing conditions (unless alternative agreement is reached with the regulator and landowner)	▪ Final decommissioning and rehabilitation plan to be provided 6 months prior to decommissioning activities commencing. Plan to be approved by DEM.

Socio-economic environment: *Impact ID #SOC03*	
Impact event	**Introduction and spread of weed(s), pest(s) and/or pathogen(s) impacts land use**

	Source	Pathway	Receptor	Confirmation of SPR	Project Phase	SPR uncertainties and assumptions
Potential impact	Weed/pathogen introduction and spread	Vehicle, equipment, materials and worker movements	Landholders Livestock	Yes – Designated land is susceptible to the introduction or spread of weeds, pests or pathogens. There are numerous records of introduced flora and fauna within the Study Area.	Construction Operation Decommissioning	The location of the activity site and proximity to the receptors is unknown

Control measures	Uncertainties regarding likely effectiveness of control strategies
Appropriate consultation regarding weeds, pathogens and pests is carried out with landholders and PIRSA / DEW / SAAL Landscape Board (where relevant). Environmental assessment undertaken during the planning stage to identify specific issues. Pathogen desktop assessment undertaken to determine potential threat of pathogens at the site. Phytophthora assessments undertaken in line with the risk assessment process outlined in the *Phytophthora (Dieback) Control Environmental Instruction* (DIT, 2022). Management procedures in place to prevent the spread of identified weeds / diseases / pathogens. Equipment that has been operating outside the State or in areas of known weed infestation must be cleaned (washed down where appropriate) before arrival at the survey location. All vehicles and equipment should generally be cleaned before arrival at site, and between properties where required, unless it is demonstrated that the risks are not significant. Cleaning of equipment must be carried out in accordance with pre-determined company procedures and/or industry standards. Details or logs of equipment cleaning are kept and are available for audit upon request. Disturbance of significant weeds, (e.g. weeds of National Significance) is avoided unless for their control. Records of detection (whether introduced by an operator or not), monitoring, eradication or control of introduced species are kept and shared with landscape boards.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Introduction or spread of weeds may occur due to on site activities.		Expected impact**: Low** (refer to Table 5-4)
Frequency	**Low –** Weed introduction or spread is likely to be associated with access to site and on site activities during	Overall magnitude is low (refer Table 5-3).	

	construction, decommissioning and occasional maintenance.		
Duration	**Short term –** Management procedures are in place to manage the spread of weeds, pests or pathogens if they occur to avoid long term impacts.		
Extent	**Localised –** Introduction or spread of weeds, pests or pathogens is only expected to occur within areas accessed to undertake authorised activities.		
Severity	**Moderate –** If the potential impact occurs, it would result in an increase in the occurrence of weeds, pests or pathogens and would require a high level of management.		
Cumulative	**Possible –** Where the spread of weeds, pests or pathogens occurs on multiple occasions at the same site, or has occurred at nearby sites, the potential for cumulative impacts exists.		
Sensitivity	**Moderate –** Sensitivity of the receiving environment is moderate as native vegetation and pastoral activities could be affected by introduction or spread of weeds. Control measures in place reduce the likelihood of the spread of weeds, pests or pathogens and where it may occur, management procedures are in place.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No introduction or spread of weeds, pest animals and pathogens as a consequence of regulated activities.	▪ Baseline weed and pest animal assessment undertaken by appropriately trained and experienced personnel prior to commencing operations. ▪ Pathogen desktop assessment undertaken to determine the potential of presence or spread of pathogens and the commensurate level of control required. ▪ Management and monitoring measures for any weeds, pest animals or pathogens are documented in an appropriate management and monitoring plan, in consultation with the relevant landscape board, where required. ▪ Records of audits/inspections carried out in accordance with the Operational Management Plan demonstrate that the presence of weeds, pest animals or pathogens is consistent with or better than pre-disturbance conditions and adjacent land.	▪ Records demonstrate that all equipment and vehicles are inspected, and cleaned where required, before arrival at the site.

		▪ Declared plants occurring within/adjacent to operational areas are reported and managed in accordance with relevant legislation and the SA Arid Lands Regional Landscape Plan.	

5.2.10 Public health and safety

Setting the context

Table 5-14 summarises legislation and non-legislated standards, views of affected parties and lists the key environmental receptors relevant to public health and safety.

Table 5-14: Context summary for public health and safety

Applicable legislation	Applicable non-legislated standards	Environmental receptor
Civil Aviation Act 1988 and Regulations 1988 *Fire and Emergency Services Act 2005* *Public Health Act 2011* *Work Health and Safety Act 2012* *Road Traffic Act 1961*	AS1940 - The storage and handling of flammable and combustible liquids Advisory Circular 139.E-05v1.1 – Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome National Airports Safeguarding Framework – Guideline D: Managing the risk to aviation safety of wind turbine and installations (wind farms)/ wind monitoring towers. International Electrotechnical Commission (IEC) standards relating to meteorological mast, e.g. EIC 61400-12-1 Australian Standards (AS) relating to meteorological mast, e.g. AS 1170.2.	Aircraft users Local and regional community Road users Public

Impact events

The impact events relevant to public health and safety are:

- Meteorological masts increase aviation hazard with potential for aircraft collision resulting in injuries or fatalities
- Fires caused by the regulated activities results in injuries or fatalities to members of the public and crew members within project areas.
- Project-related traffic increases road disturbance and/or safety hazard for local residents and other road users
- Regulated activities and associated infrastructure increase public safety hazard.

Impact assessment outcomes

The impact assessment detailed in the following tables indicated that expected impacts were generally in the **Negligible-Moderate** category. The magnitude of impact events has the potential to be high but with proposed control measures it is assessed as ALARP.

Environmental impact and significance assessment

The following tables detail the impact assessment for the identified impact events.

Public health and safety. ***Impact ID #SAF01***	
Impact event	**Meteorological masts increase aviation hazard with potential for aircraft collision resulting in injuries or fatalities**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Meteorological mast installation	Aircraft accident	Aircraft users	Yes – Aircraft landing areas and minor airstrips occur within the Study Area. Presence of pastoral stations means there is a potential for aerial mustering operations occurring in the study Area.	Operation	The location of the activity site and proximity to airstrips and landing areas has not been determined. Siting may reduce linkage.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Identification of nearby aerodromes, landing areas and airstrips. Consultation with nearby aerodrome / landing areas / airstrip owners and local pilots. Assessment of potential issues will be undertaken to inform siting of meteorological masts. Aeronautical risk assessment will be undertaken for meteorological masts taller than 150 m (in line with *Advisory Circular 139.E-05v1.1 – Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome)*. Notification to relevant CASA and other Commonwealth agencies (e.g. Department of Defence, RAAF, Air Services Australia) where required prior to construction. Registration of the meteorological masts on the RAAF Aeronautical Information Service database in accordance with *Advisory Circular 139.E-01v1.0 – Reporting of tall structures*. The top third of the meteorological masts will be painted in alternating contrasting bands of color. Marker balls or high visibility flags / sleeves placed on outside guy wires. Guy wire ground attachments points will have contrasting color to the surrounding environment. Use of markers or lights to increase meteorological mast visibility where required (e.g. visibility flags, flashing strobe light).	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Controls in place reduce hazards to aviation, however, don't completely remove the hazard.		Expected impact: **Moderate** (refer to Table 5-4) Control measures in place require the avoidance of infrastructure associated with aviation, e.g. aerodromes, landing strips and the meteorological mast must also be appropriately marked for safety and the location reported to the relevant
Frequency	**Low –** Meteorological masts will be sited avoiding areas of frequent aviation traffic.	Overall magnitude is moderate (refer	

Duration	**Long term –** Aviation hazard will exist while the meteorological mast is in place.	Table 5-3).	authorities for avoidance. As such, impacts are managed to ALARP.
Extent	**Localised –** Aviation hazard only exists at the site of the meteorological mast.		
Severity	**High –** Aviation hazards may result in injury or death. Control measures in place		
Cumulative	**Possible –** Where other tall structures, including other meteorological masts, exist within an area used for aviation, cumulative aviation hazard may occur.		
Sensitivity	**Moderate –** Meteorological masts are sited to avoid areas of aviation traffic. Occasional instances may occur where small aircraft are used in the area, of the meteorological mast, particularly in agricultural areas (e.g. agricultural spraying, stock management, or firefighting) where other tall structures may not be present. However, the masts are required to be appropriately marked for safety and the location reported to the relevant authorities for avoidance.		

	Proposed environmental objective	**Assessment criteria**	**Leading performance criteria**
SEO	No injuries, deaths or health impacts to the public, third parties, or on-site personnel from regulated activities that could have been reasonably prevented by the operator.	▪ Any notifiable incidents (as per s35 of the *Work Health and Safety Act 2012*) involving the public investigated by a suitably qualified independent third party.	▪ Guidance in the Advisory Circular 139.E-05v1.1 – Obstacles (including wind farms) outside the vicinity of a CASA certified aerodrome, is adhered to. ▪ Notification to CASA and other relevant agencies undertaken where required. ▪ Measures to ensure visibility of meteorological masts to aircraft, implemented, maintained and monitored.

Public health and safety. ***Impact ID #SAF02***	
Impact event	**Fires caused by the regulated activities results in injuries or fatalities to members of the public or on-site personnel.**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Use of equipment and machinery	Spread of fire	Local and regional community Native vegetation Native fauna	Yes – Risk Rating identified by the Bushfire Management Area Plan is up to medium in the Study Area = Machinery onsite that could cause accidental ignition which lead to fire.	Construction Operation Decommissioning	The location of the activity site and the fire risk rating at this location has not been determined.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Firefighting equipment available as appropriate for location and use during construction and decommissioning. *Fire and Emergency Services Act 2005* requirements complied with (e.g. permits for 'hot work' on total fire ban days). Ensure all vehicles are fitted with appropriate fire-fighting equipment and spark arrestors in areas of high fire risk and/or during fire danger season. Avoid driving over long dry grass. Identify and assess bushfire hazards across all project components, including risks from uncontrolled fire events, ember attack, burning debris, radiant heat and direct flame contact, and outline how these risks will be minimised. Ensure all project components comply with relevant requirements of the CFS Renewable Energy Facilities Guide and checklist, or as otherwise agreed with CFS. Design and construct buildings, structures and infrastructure or the alike using siting, layout and construction requirements that reduce bushfire impact and improve resistance to ember, heat and flame exposure. Assess the potential for fire ignition originating from the development itself, and evaluate associated risks to people, property and the environment. Implement measures to avoid and minimise bushfire risks during all stages of the project, including planning, construction, operation and maintenance. Procedures are in place to minimise the risk of initiating and propagating fire during periods of high temperatures and high winds. Hazard identification plan for immediate implementation on days of high temperatures and winds during construction and decommissioning. Meteorological masts are installed with lightning rods to direct lightning to a grounding system in the earth away from the structure and ignitable materials. Meteorological masts and operation equipment for other authorised activities are designed and maintained to applicable standards.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Response plan for the safety of crew personnel should a fire approaches, or be initiated by field crew. Crews are trained in use of firefighting equipment. Guides, codes and standards are available to provide appropriate prevention and management measures, as provided by the *Fire and Emergency Services Act 2005* and local Country Fire Service.	

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Unexpected fire may result from activities being undertaken.		Expected impact**: Moderate** (refer to Table 5-4)
Frequency	**Low –** Potential fire risk from regulated activities is only expected to occur during site access occurring on an infrequent basis, i.e. during construction, decommissioning and potential maintenance.	Overall magnitude is moderate (refer Table 5-3).	
Duration	**Short term –** Fire events as a result of authorised operations are only expected to occur during site access, i.e. construction, decommissioning and maintenance. Long term impacts are possible depending on the scale of the fire.		
Extent	**Moderate –** Impacts from a fire may extend beyond the project site and immediate surrounds but would not be expected to occur on a regional scale. Management system measures are put in place to prevent initiation of bushfire and ensure propagation of potential bushfire is quickly managed.		
Severity	**High –** Fires could result in injuries and death or damage to property.		
Cumulative	**Possible –** Depending on the existing environment, if fires have occurred in nearby areas or within the same area, additional fires may result in cumulative impacts. This should be considered on a case-by-case basis.		
Sensitivity	**Moderate –** Sensitivity of the receiving environment is moderate given the presence of native vegetation and land use of designated land in the Study Area. Meteorological masts and other authorised activities will be sited preferentially to avoid residents and townships. Meteorological masts and other authorised activities may be located in fire sensitive areas with high risk of ignition and where fire may not have occurred for some time. Control measures in place ensure that fire readiness is requisite to undertake authorised operations.		

SEO	**Proposed environmental objective**	**Assessment criteria**	**Leading performance criteria**

	No injuries, deaths or health impacts to the public, third parties, or on-site personnel from regulated activities that could have been reasonably prevented by the operator.	▪ No uncontrolled fires as a result of regulated activities. ▪ OMP includes an emergency response plan (or similar) that clearly outlines the response to a fire related incident, both caused by authorised activities and/or threatening authorised activities from offsite. ▪ Fire and Emergency Services Act 2005 requirements are complied with. ▪ Infrastructure, site design, and management plans comply with relevant requirements of the CFS Renewable Energy Facilities Guide and checklist, or as otherwise agreed with CFS.	▪ Fire prevention and firefighting equipment is present, certified and maintained in accordance with applicable standards during on-site works.

Public health and safety. ***Impact ID #SAF03***	
Impact event	**Project-related traffic increases road disturbances and/or safety hazard for local residents and other road users**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Increased traffic during: Meteorological masts installation Construction of temporary access tracks or laydown	Road accidents	Local community and road users	Yes – Road infrastructure with existing traffic occurs in the Study Area	Construction Decommissioning	The location of the activity site and access from roads has not been determined. Siting may reduce linkage.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Traffic impact assessment report developed to identify proposed access routes, anticipated vehicle types and volumes, and any potential impacts to DIT managed roads arising from activities undertaken under a REFL. Dilapidation reports are to be prepared both prior to commencement and upon completion of project activities where DIT managed road assets may be affected. Driver awareness training for all personnel. Existing access roads and turn-arounds used where possible.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Drive at appropriate speed to avoid undue disturbance. Traffic and journey management procedures followed. Warning signage erected during operations where necessary (e.g. where there is significant traffic accessing sites from public roads). Traffic management plan developed where required.	

Environmental significance assessment			Environmental significance assessment outcome
Avoidance	**No –** Roads must be used to undertake authorised activities.		Expected impact**: Low (**refer to Table 5-4)
Frequency	**Low –** Traffic increase is only expected to occur during construction, decommissioning and occasional maintenance activities. The number of vehicles and people required on site is generally expected to be low.	Overall magnitude is low (refer Table 5-3).	
Duration	**Short term –** Traffic increase is only expected to occur during construction, decommissioning and occasional maintenance. The number of vehicles and people required on site is generally expected to be low.		
Extent	**Localised –** Traffic increase is only expected to occur on roads with use or access for authroised activities. It is only expected that there will be minimal additional traffic to the local road networks. There may be increased traffic in townships depending on the project, where accommodation is required.		
Severity	**Low –** It is only expected that there will be minimal additional traffic to the local road networks, on an infrequent basis and only during discrete periods that require site access.		
Cumulative	**Possible –** Potential cumulative effects depending on the scope of other projects in the area. This should be considered through the relevant control measures, e.g. traffic management plan.		
Sensitivity	**Moderate –** Sensitivity of the receiving environment is moderate given the land use on designated land in the Study Area. Authorised operations are not expected to be undertaken in close proximity to townships and settlements where there higher existing traffic hazards exist.		

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No injuries, deaths or health impacts to the public, third parties, or on-site personnel from regulated activities that could have been reasonably prevented by the operator.	▪ Traffic-related incidents investigated by a suitably qualified independent third party show that the accident could not have been reasonably prevented by the Operator. ▪ Traffic impact assessment report developed to the satisfaction of DIT, where DIT managed roads are used for activities undertaken under a REFL. ▪ Dilapidation reports prepared both prior to commencement and upon completion of project	▪ Driver awareness training for all personnel. ▪ Traffic and journey management procedures followed ▪ All employees and contractors to comply with *the Road Traffic Act 1961*

		activities where DIT managed road assets may be affected.	

Public health and safety. ***Impact ID #SAF04***	
Impact event	**Regulated activities and associated infrastructure increase public safety hazard**

	Source	**Pathway**	**Receptor**	**Confirmation of SPR**	**Project Phase**	**SPR uncertainties and assumptions**
Potential impact	Regulated activities and associated infrastructure (e.g. meteorological masts and operation of equipment at activity location)	Direct disturbance	Public	Yes – Public (e.g. landowners, pastoral lease holders or tourists) could potentially access activity location.	Construction Operation Decommissioning	The location of the activity site and proximity to populated areas has not been determined. Siting may reduce linkage.

Control measures	**Uncertainties regarding likely effectiveness of control strategies**
Construct meteorological masts and conduct other authorised activities in accordance with relevant standards Restriction of public access (e.g. fencing where appropriate, anti-climb design) Undertake fitness for purpose assessments and audits of management systems to ensure operational and procedural safety at a frequency determined in the OMP. Signage to indicate restricted access to discourage third party access to infrastructure where appropriate.	High certainty that proposed control measures will be effective. Industry standard control measures that are well understood and that have been successfully implemented.

Environmental significance assessment			**Environmental significance assessment outcome**
Avoidance	**No –** Authorised activities (including the presence of infrastructure) are required to be undertaken that may result in increased public safety hazard.		Expected impact**: Negligible** (refer to Table 5-4)
Frequency	**Low –** It is not expected that the public will frequently access the work site.	Overall magnitude is low (refer Table 5-3).	
Duration	**Long term –** The presence of the meteorological masts, campsites and equipment of other authorised activities may occur over years.		
Extent	**Localised –** Public safety hazard occurs in relation to the site of the meteorological mast and other authorised activities.		
Severity	**Low –** Relevant controls in place (e.g. anti-climb design, fencing) ensure that the public cannot access the meteorological mast and equipment of other authorised activities.		
Cumulative	**Low –** It is not expected that multiple meteorological masts and authorised activities within an area would increase the risk to public safety where appropriate safety controls are in place.		
Sensitivity	**Low –** Sites of meteorological mast and other authorised activities will be preferentially sited away		

	from townships and residents and will generally be sited within areas of low population density and agricultural areas. Management systems in place and fitness for purpose assessments (as specified in the OMP), as well as relevant safety measures, reduce public safety hazards associated with meteorological masts and other authorised activities.	

	Proposed environmental objective	Assessment criteria	Leading performance criteria
SEO	No injuries, deaths or health impacts to the public, third parties, or on-site personnel from regulated activities that could have been reasonably prevented by the operator.	▪ Any notifiable incidents (as per s35 of the Work Health and Safety Act 2012) involving the public investigated by a suitably qualified independent third party. ▪ Certification of the design of meteorological mast and infrastructure of other authorised activities by a qualified structural engineer prior to construction ▪ Meteorological mast and infrastructure of other authorised activities constructed and verified for compliance with the certified design. ▪ Undertake fitness for purpose assessments and audits of management systems to ensure operational and procedural safety at a frequency as outlined in the OMP.	▪ Safety audits to be undertaken and any identified additional actions that could be reasonably implemented to reduce the risks to the public will be implemented.

6. Consultation

6.1 Consultation undertaken on this EIR and SEO

To inform the development of this EIR and SEO, DEM undertook consultation on the draft documents with relevant government agencies (generally referral bodies under the HRE Act) in April and May 2026 for a period of six weeks. Industry and stakeholder consultation was undertaken concurrently for an equivalent period. The responses received and how each submission has been addressed are available in **Appendix C**.

6.2 Consultation to be undertaken by the proponent for activities proposed pursuant to this EIR and SEO

It is conditioned through the Renewable Energy Feasibility Licence Activities in South Australia Statement of Environmental Objectives, that a proponent must undertake consultation prior to the approval of an Operational Management Plan under the HRE Act.

Proponents must consult with landowners, pastoral lease holders, Traditional Owners, the OCA or relevant council, any affected government agencies, and reasonably affected receptors.

An owner of land, or landowner, as defined under the HRE Act, includes:

- a person who holds a registered estate or interest in the land conferring a right to immediate possession of the land; or
- a native title holder in respect of the land; or
- a person who has, by statute, the care, control or management of the land; or
- a person who is lawfully in occupation of the land; or
- a person who holds a pastoral lease in respect of the land; or
- a person who holds a resources tenement in respect of the land; or
- the holder of an aquaculture lease or aquaculture licence under the Aquaculture Act 2001; or
- a person of a class brought within the ambit of this definition by the regulations;

Relevant government agencies that should be considered for consultation include but are not limited to:

- Attorney Generals Department – Aboriginal Affairs and Reconciliation
- Civil Aviation authority
- Commissioner of Highways
- Department for Environment and Water
- Department of Primary Industries and Regions South Australia
- Department for Infrastructure and Transport
- Department for Housing and Urban Development
- Environmental Protection Authority
- Native Vegetation Council
- Outback Communities Authority
- Relevant landscape board
- OCA
- South Australian Country Fire Service

Generic e-mail addresses for these agencies can generally be found within the Referral of matters to prescribed body under the Hydrogen and Renewable Energy Act 2023 guideline.

Affected receptors for consultation are generally identified through the impact assessment tables in Section 5.2, for example, neighbouring receptors where they may be visually impacted, or Traditional Owners of Aboriginal sites or objects on the land that the project may impact.

The consultation period is determined by the proponent, however, it must be demonstrated to DEM that sufficient time has been allowed such that meaningful consultation has been undertaken and that

stakeholders have been offered a reasonable opportunity to understand the proposed activities and to provide comment. At a minimum, it is suggested that four weeks consultation should be considered.

The matters of consultation must be focused on potential environmental impacts and management measures identified in this EIR (and accompanying SEO) and the specific management measures proposed by the proponent within their OMP to meet the EIR and SEO.

Prior to OMP approval, it must be demonstrated to DEM that consultation has been suitably undertaken through a report that details the persons consulted, any issues of concerns raised, and the steps, if any, proposed to be taken to address those concerns.

Licence holders are expected to engage and consult on any relevant management plans as necessary throughout the duration of the licence period.

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Appendix A PMST search

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 18-Mar-2026

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	32
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	22
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	17
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	14
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Amytornis merrotsyi pedleri		
Gawler Ranges Short-tailed Grasswren, Short-tailed Grasswren (Gawler Ranges) [86270]	Endangered	Species or species habitat known to occur within area
Amytornis modestus		
Thick-billed Grasswren [84121]	Vulnerable	Species or species habitat likely to occur within area
Amytornis textilis myall		
Western Grasswren (Gawler Ranges) [64454]	Vulnerable	Species or species habitat known to occur within area
Aphelocephala leucopsis		
Southern Whiteface [529]	Vulnerable	Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Leipoa ocellata Malleefowl [934]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pedionomus torquatus Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Polytelis alexandrae Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
[Rostratula australis](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
[Stagonopleura guttata](#) Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area
MAMMAL		
[Petrogale xanthopus xanthopus](#) Yellow-footed Rock-wallaby (SA and NSW) [66646]	Vulnerable	Species or species habitat known to occur within area
[Pseudomys australis](#) Plains Rat, Palyoora, Plains Mouse [108]	Vulnerable	Species or species habitat known to occur within area
[Sminthopsis psammophila](#) Sandhill Dunnart [291]	Endangered	Species or species habitat known to occur within area
PLANT		
[Brachyscome muelleri](#) Corunna Daisy [18836]	Endangered	Species or species habitat known to occur within area
[Caladenia tensa](#) Greencomb Spider-orchid, Rigid Spider-orchid [24390]	Endangered	Species or species habitat known to occur within area
[Frankenia plicata](#) [4225]	Endangered	Species or species habitat known to occur within area
[Hibbertia crispula](#) Ooldea Guinea-flower [15222]	Vulnerable	Species or species habitat likely to occur within area
[Limosella granitica](#) Granite Mudwort [6704]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pterostylis mirabilis		
Nodding Rufoushood [86228]	Vulnerable	Species or species habitat known to occur within area
Pterostylis xerophila		
Desert Greenhood [7997]	Vulnerable	Species or species habitat known to occur within area
Swainsona pyrophila		
Yellow Swainson-pea [56344]	Vulnerable	Species or species habitat known to occur within area
REPTILE		
Aprasia pseudopulchella		
Flinders Ranges Worm-lizard [1666]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus		
Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Charadrius veredus		
Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat may occur within area
Numenius madagascariensis		
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pandion haliaetus		
Osprey [952]		Species or species habitat may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Department of Defence	
Cultana Expansion Area [DD_0438]	SA
RAAF Base Woomera [AGPR3251]	SA
RAAF Base Woomera [AGPR3169]	SA

Commonwealth Land Name	State
RAAF Woomera [DD_1098]	SA

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Charadrius veredus Oriental Plover, Oriental Dotterel [882]		Species or species habitat may occur within area overfly marine area
Chroicocephalus novaehollandiae as Larus novaehollandiae Silver Gull [82326]		Breeding known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Pandion haliaetus		
Osprey [952]		Species or species habitat may occur within area
Rostratula australis as Rostratula benghalensis (sensu lato)		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area
Sterna striata		
White-fronted Tern [799]		Migration route may occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area

Extra Information

State and Territory Reserves		[Resource Information]
Protected Area Name	Reserve Type	State
Gawler Ranges	National Park	SA
Hiltaba Nature Reserve	Private Nature Reserve	SA
Ironstone Hill	Conservation Park	SA
Lake Gairdner	National Park	SA
Lake Gilles	Conservation Park	SA
Lake Torrens	National Park	SA
Moongi	Conservation Reserve	SA
Pinkawillinie	Conservation Park	SA
Unnamed (No.HA1167)	Heritage Agreement	SA
Unnamed (No.HA129)	Heritage Agreement	SA
Unnamed (No.HA1385)	Heritage Agreement	SA
Unnamed (No.HA1501)	Heritage Agreement	SA
Unnamed (No.HA472)	Heritage Agreement	SA
Unnamed (No.HA49)	Heritage Agreement	SA

Protected Area Name	Reserve Type	State
Unnamed (No.HA610)	Heritage Agreement	SA
Unnamed (No.HA8)	Heritage Agreement	SA
Unnamed (No.HA932)	Heritage Agreement	SA

EPBC Act Referrals

[Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
****			
Aurora Energy Project (AEP)	2025/10119		Referral Decision
Magnetite Expansion Project Stage 2 / SIMEC Mining	2024/09878		Assessment
Northern Water Desalination and Pipeline Infrastructure Project, SA	2023/09717		Assessment
Olympic Dam Resource Development Strategy	2019/8570		Completed
Olympic Dam Smelter Refinery Expansion (SRE) Project.	2024/10096		Referral Decision
Controlled action			
Expansion of the Cultana Training Area	2010/5316	Controlled Action	Post-Approval
Expansion of the Olympic Dam copper, uranium, gold and silver mine, processing plant and associated	2005/2270	Controlled Action	Post-Approval
Nava-1 Cable System	2001/510	Controlled Action	Completed
Wilcherry Hill Project	2010/5478	Controlled Action	Post-Approval
Not controlled action			
Carrapateena Deposit - Advanced Exploration Works, SA	2012/6494	Not Controlled Action	Completed
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Project Magnet	2004/1724	Not Controlled Action	Completed
Not controlled action (particular manner)			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action (particular manner)			
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix B BDBSA records of rare or threatened species within the Study Area[19]

BDBSA records of rare or threatened species within the Study Area

Scientific name	Common name	EPBC Act Status	NPW Act Status	Number of records
Threatened Flora				
Acacia iteaphylla	Flinders Ranges Wattle		R	16
Acacia montana	Mallee Wattle		R	7
Acacia toondulya			R	3
Anogramma leptophylla	Annual Fern		R	2
Anthocercis anisantha ssp. anisantha	Port Lincoln Ray-flower		R	1
Austrostipa echinata	Spiny Spear-grass		R	1
Brachyscome muelleri	Corunna Daisy	EN	E	10
Caladenia tensa	Inland Green-comb Spider-orchid	EN		1
Calandrinia sphaerophylla	Bead Purslane		R	1
Cardamine tenuifolia	Slender Bitter-cress		R	1
Centrolepis cephaloformis ssp. cephaloformis	Cushion Centrolepis		R	3
Ceratogyne obionoides	Wingwort		R	4
Christella dentata	Soft Shield-fern		R	1
Citrus glauca	Desert Lime		V	8
Commersonia craurophylla	Brittle-leaf Rulingia		V	1
Crassula exserta	Large-fruit Crassula		R	1
Elachanthus glaber	Shiny Elachanth		R	1
Elatine gratioloides	Waterwort		R	2
Embadium johnstonii	Johnston's Slipper-plant		R	1
Embadium stagnense	Arcoona Slipper-plant		R	3
Eremophila interstans ssp. interstans			R	13
Frankenia plicata		EN	V	4
Goodenia benthamiana	Bentham's Goodenia		R	2
Gratwickia monochaeta			R	38
Grevillea anethifolia			R	9
Leptorhynchos melanocarpus	Lake Acraman Button-daisy		V	1
Leptorhynchos scaber	Annual Buttons		R	2
Maireana suaedifolia	Lax Bluebush		R	2
Malacocera gracilis	Slender Soft-horns		V	1
Melaleuca armillaris ssp. akineta	Needle-leaf Honey-myrtle		R	16
Melaleuca leiocarpa	Pungent Honey-myrtle		R	1
Melaleuca oxyphylla	Pointed-leaf Honey-myrtle		R	2
Ophioglossum polyphyllum	Large Adder's-tongue		R	2
Orobanche cernua var. australiana	Australian Broomrape		R	8
Phyllangium sulcatum			V	5

[19] Note that the BDBSA is not a comprehensive repository of all the biological records that are likely to be found, partly due to a small number of samplings across the study area. This tool should be used in conjunction with DEW's biodiversity values mapping.

Scientific name	Common name	EPBC Act Status	NPW Act Status	Number of records
Podolepis decipiens			R*	3
Podolepis jaceoides (NC)	Showy Copper-wire Daisy		R	1
Podolepis muelleri	Button Podolepis		V	1
Prostanthera calycina	West Coast Mintbush	VU	V	1
Roepera humillima	Small-fruit Twinleaf		R	1
Santalum spicatum	Sandalwood		V	170
Senecio gawlerensis	Gawler Ranges Groundsel		R	61
Swainsona microcalyx	Wild Violet		R	2
Wurmbea stellata	Star Nancy		R	8
Threatened Fauna				
Acanthiza iredalei	Slender-billed Thornbill	ssp	ssp	1
Acanthiza iredalei iredalei	Slender-billed Thornbill (western)		R	66
Amytornis merrotsyi pedleri	Gawler Ranges Short-tailed Grasswren	EN	E	15
Amytornis textilis myall	Western Grasswren	VU	V	126
Aphelocephala leucopsis leucopsis	Southern Whiteface	sp		160
Ardeotis australis	Australian Bustard		V	1
Calidris acuminata	Sharp-tailed Sandpiper	VU		5
Cinclosoma castanotum	Chestnut Quailthrush (Chestnut-backed Quailthrush)		R	7
Cladorhynchus leucocephalus	Banded Stilt		V	2
Climacteris affinis	White-browed Treecreeper		R	3
Corcorax melanorhamphos	White-winged Chough		R	25
Dromaius novaehollandiae	Emu	ssp	ssp	847
Emblema pictum	Painted Finch		R	1
Falco hypoleucos	Grey Falcon	VU	R	2
Falco peregrinus macropus	Peregrine Falcon		R	4
Falco subniger	Black Falcon		R	1
Hamirostra melanosternon	Black-breasted Buzzard		R	2
Hieraaetus morphnoides	Little Eagle		V	2
Hylacola cauta	Shy Heathwren	ssp	ssp	1
Hylacola cauta cauta	Shy Heathwren (EP, YP, FR, MM, upper SE)		R	3
Leipoa ocellata	Malleefowl	VU	V	4
Limosa limosa melanuroides	Black-tailed Godwit	sp	R	1
Lophochroa leadbeateri	Major Mitchell's Cockatoo	ssp	R	9
Lophochroa leadbeateri mollis	Major Mitchell's Cockatoo (NW, EP)		SP	41
Manorina flavigula	Yellow-throated Miner	ssp	ssp	74
Melanodryas cucullata	Hooded Robin	ssp	ssp	6
Melithreptus brevirostris	Brown-headed Honeyeater	ssp		19
Microeca fascinans	Jacky Winter		ssp	95
Myiagra inquieta	Restless Flycatcher		R	8
Neophema chrysostoma	Blue-winged Parrot	VU	V	2
Neophema elegans elegans	Elegant Parrot		R	6
Neophema splendida	Scarlet-chested Parrot		R	2
Nephrurus deleani	Pernatty Knob-tailed Gecko		R	9

Scientific name	Common name	EPBC Act Status	NPW Act Status	Number of records
Nesoptilotis leucotis	White-eared Honeyeater	ssp		14
Northiella haematogaster (NC)	Bluebonnet (Eastern and Naretha)		ssp	33
Pachycephala inornata	Gilbert's Whistler		R	46
Pezoporus occidentalis	Night Parrot	EN	E	2
Stictonetta naevosa	Freckled Duck		V	2
Strepera versicolor	Grey Currawong		ssp	16
Tachyglossus aculeatus	Short-beaked Echidna	ssp	ssp	2
Trichosurus vulpecula	Common Brushtail Possum		R	1
Tringa nebularia	Common Greenshank	EN		3
Varanus rosenbergi	Heath Goanna		V	1

Appendix C Consultation outcomes

Stakeholder	Document ref	Comment	DEM response
Airservices Australia	General	At this time, Airport Developments has no comments on the proposed EIR or SEO.	Noted.
CFS	EIR pg 16, Section 3.1 Access tracks	Once the areas have been identified, the proposed access and egress routes should be designed to accommodate large emergency service vehicles, in accordance with the SACFS Renewable Energy Facilities Guide: https://www.cfs.sa.gov.au/plan-prepare/planning-building/renewable-energy-facilities/	Text added to state: *Where required, access and egress routes should be designed to accommodate large emergency service vehicles, in accordance with the SACFS Renewable Energy Facilities Guide.*
CFS	EIR pg 25, Section 3.8 Campsites	Any proposed campsites must meet bushfire planning requirements, including safe access and egress, adequate firefighting water supply, and appropriate Asset Protection Zones, while prioritising emergency management - acknowledging the heightened risks of remote locations, and emphasising the need for early evacuation.	Text included in Section 3.8 Campsites to reflect that campsites must meet bushfire planning requirements and to acknowledge the implication for remote locations.
CFS	EIR pg 102, Impact ID #BIO09, Control measures	Please consider adding the following control measures: • Identify and assess bushfire hazards across all project components, including risks from uncontrolled fire events, ember attack, burning debris, radiant heat and direct flame contact, and outline how these risks will be minimised. • Design and construct buildings, structures and infrastructure or the alike using siting, layout and construction requirements that reduce bushfire impact and improve resistance to ember, heat and flame exposure. • Ensure all project components comply with relevant CFS bushfire planning requirements, including appropriate siting, safe access and egress, Asset Protection Zones,	All control measures included under Impact ID BIO09.

		vegetation management, fire water supply, and building construction standards (or approved alternative arrangements). - Assess the potential for fire ignition originating from the development itself, and evaluate associated risks to people, property and the environment. • Implement measures to avoid and minimise bushfire risks during all stages of the project, including planning, construction, operation and maintenance.	
CFS	EIR pg 103, Impact ID #BIO09, Leading performance criteria	Adherence to the CFS Renewable Energy Facilities requirements: https://www.cfs.sa.gov.au/plan-prepare/planning-building/renewable-energy-facilities/	Updated as suggested.
CFS	EIR pg 129, Section 5.2.10 Public health and safety, Impact events, Dot point 2	And crew members within the project areas	Updated as suggested.
CFS	EIR pg 133, Impact ID #SAF02, Control measures	Consider adding recommended control measures as per comments made for "Flora and fauna: : *Impact ID #BIO09"*	Updated as suggested.
DEW Biodiversity Science Coasts and Information	General comment across both documents	It would be preferable for particularly sensitive areas to be excised from the release areas, or at least identified so that proponents are aware of the approval pathway challenges. It seems be inefficient and costly for proponents to potentially be scoping work in areas where high or major impacts cannot be avoided.	The REFL EIR and SEO are intended for projects with low impacts. Projects that are proposing activities in sensitive areas or have higher impacts for other reasons will have to develop their own SEO. Section 1.2.1 Exclusions and Constraints lists sensitive areas that are excluded from the EIR. The objectives, assessment criteria and leading performance criteria also guide licensees away from sensitive areas.
DEW Biodiversity Science Coasts and Information	Pages 14-15	For longevity of this document, would suggest that the Biodiversity Act needs to be listed here (given its imminent commencement).	Updated as suggested with a footnote noting that the Act is not yet in place.

DEW Biodiversity Science Coasts and Information	Page 31	Something seems to have gone wrong with the formatting for 4.4.2, with a sentence being mixed with the title. Presumably this is meant to be about threatened flora and fauna. In addition, a lot of the quoted information relates to old tool (PMST) and data (BDBSA) – the DEW biodiversity values mapping provides a more contemporary and comprehensive picture on biodiversity values.	Formatting error has been fixed. The EIR gives a broad description of the flora, fauna and biodiversity that can be found in the study area. The licensee will have to undertake micro siting for the specific license area. Section 4.1.1 Native Flora and Fauna refer to the biodiversity values identification project and details that licensees must use the tool in planning and assessment of their projects. This will capture the site-specifics within the licence-area.
DEW Biodiversity Science Coasts and Information	Page 31	The "DEW Biodiversity Values Identification Project" outputs not only cover threatened species, but also species that are likely to be at high-risk from development impacts (i.e. development would result in a species qualifying as nationally threatened). The summary information and distribution mapping for each individual value was provided to DEM (in 2024) for distribution to potential proponents. In addition, new field survey work has been undertaken since 2024 and DEW has fully re-run the biodiversity values analyses. These new outputs can be provided to DEM for provision to proponents; please provide us with a file transfer link to facilitate this.	Noted. Information about the project has been updated in section 4.1.1 Native Flora and Fauna. DEM has since obtained the updated mapping and included this within the EIR.
DEW Biodiversity Science Coasts and Information	Pages 35-37	This table is missing many listed threatened species known or predicted to occur within the study area. The data and layer for each of these additional values was provided top DEM in 2024.	Table 4-5 lists the threatened species listed in the PMST search (undertaken March 2026) that are listed as 'known', as noted in the table heading. The full PMST search is attached as Appendix A.
DEW Biodiversity Science Coasts and Information	Pages 81-103: flora, fauna and biodiversity	• Table 5-8 is missing 'threatened ecological communities', 'critical habitat' and 'listed ecological entities' as environmental receptors. These considerations need to be captured in all the relevant following tables.	• Updated as suggested

		• 'Impact events' misses habitat degradation / destruction outside of vegetation clearance. There are many non-vegetated habitats that could be impacted (ie rocky outcrops, stone pavements, soil cracks, etc) and should be covered, given they're currently covered under the EPBC Act and will be included in the Biodiversity Act. • The comments provided on the SEO on environmental objectives, assessment criteria and performance criteria (related to Objective 3) also need to be addressed in the EIR. This would significantly reduce duplicative or inconsistent information, improving clarity and coherence.	• Non-vegetated habitats added to Impact ID #BIO01 • The SEO has been updated to avoid duplications. However, it is deemed more appropriate to be able to follow the control measures, assessment criteria and leading performance criteria related to each impact event in the EIR even though it leads to some duplications. Therefore, the EIR has not been updated in the same way.
DEW Biodiversity Science Coasts and Information	Appendix B	Appendix B: The BDBSA list of threatened species recorded in the study area significantly under-represents the threatened species likely to be found within the area. BDBSA is not a comprehensive repository of all the biological records across the study area. Also, given the paucity of sampling across this area, there are many additional species that will be found in this area that have not been recorded. DEW biodiversity values mapping uses species distribution modelling to provide a more comprehensive representation of the species likely to occur across this area, where they would occur, and their legislative status.	Section 4.4.1 Native flora and fauna and Appendix B has been updated to include the following text: "Note that the BDBSA is not a comprehensive repository of all the biological records that are likely to be found, partly due to a small number of samplings across the study area. (…) This tool should be used in conjunction with DEW's biodiversity values mapping,"
DEW Crown Lands	General	The EIR and SEO should recognise that Crown land values include biodiversity, cultural heritage, landscape character and public	The study area occurs on Crown land. The EIR describes the environment (which is broadly defined under the

		benefit outcomes. Management measures should ensure temporary infrastructure and disturbances are consistent with Crown land management objectives.	HRE Act) that inherently considers these values and have been identified as being present within the study area, including the natural environment and cultural and social value. Proposed management measures that have been developed via impact assessment recognise the Crown land values.
DEW Crown Lands	General	As much of the release area occurs on Crown land, consideration should be given to ensuring temporary infrastructure, access tracks, laydown areas and rehabilitation outcomes maintain Crown land values, including biodiversity, landscape character, cultural heritage values and future public land management objectives. Clear rehabilitation standards should be incorporated within the SEO and associated management plans.	Noted. Objectives and subsequent assessment criteria and leading performance criteria covers topics such as biodiversity, landscape and visual amenity, cultural heritage and land use, to ensure adequate consideration and protection is given. One of the objectives relates to rehabilitation and the assessment criteria dictates that a rehabilitation plan (or similar) will need to be included in the Operational Management Plan.
DEW Heritage	Pages 118-119	Pages 118-119 adequately address impacts on non-Aboriginal Heritage.	Noted.
DEW Heritage	General	It is acknowledged that geoheritage exists within the identified study area and that there is potential for unrecorded sites as well. Listed sites include: ○ State Heritage Place 17062 Coralbignie (Houlderoo) Rocks – a site of geological significance ○ State Heritage Place 14454 Lake Acraman Impact – the largest known astrobleme in Australia These landscapes sites are at risk because of their remoteness and as landscape features, there lack of clear boundaries and may be difficult to recognise.	Noted. Coralbignie is already mentioned in section 4.8 Non-Aboriginal Heritage. The section has now been updated to include mention of Lake Acraman Impact. How impacts to geoheritage will be managed is described in Impact ID #HER02.

DEW Heritage	General	Control measures in the proposal include identifying and flagging or fencing off known sites to avoid disturbance and should be done prior to work in their vicinity and in consultation with Heritage SA.	Updated as suggested.
DEW Heritage	General	Geoheritage sites and geological monuments should be specifically recognised as sensitive receptors within impact assessment tables, rather than being addressed solely under generic non-Aboriginal heritage provisions.	Geoheritage sites have been added to Impact ID #VIS01 Landscape and Visual Amenity.
DEW Native Vegetation Branch	General	Study areas for the site includes direct and indirect impacts to areas of degraded native vegetation and moderately and highly intact vegetation. While the EIR states that there are limited records of threatened flora species in the study areas., this should be strengthened by ensuring a comprehensive list of the study areas and surrounding areas biodiversity values are considered to include all threatened species that could be directly and indirectly affected by vegetation disturbance.	The EIR gives a broad description of the flora, fauna and biodiversity that can be found in the study area. The licensee will have to undertake ecological assessments and micro siting for the specific license area which will give a more detailed and comprehensive overview of the areas biodiversity values and potential threatened species that needs to be considered.
DEW Native Vegetation Branch	General	The progressive degradation of native vegetation may not be captured fully as the impacts on native vegetation are considered activity by activity, rather than cumulatively considered.	New assessment criteria have been added to Impact ID #BIO01 (Objective 3): ▪ Ecological assessment by appropriately trained and accredited personnel demonstrates that cumulative impacts to native flora and fauna have been assessed and considered.
DEW Native Vegetation Branch	General	While the EIR and SEO mention 'no-go' areas as areas of sensitivity, it is not stated explicitly if these are intended to be exclusion zones containing high-quality native vegetation, intact chenopod or arid shrubland, TECs or if conserved in another way. To strengthen this, the inclusion of maps outlining the location of 'no-go' areas should be considered so that there is clear guidelines about where vegetation clearance and disturbance should not occur.	The assessment criteria referring to "areas of sensitivity or "no-go" areas", is purposefully kept open so that it applies to all potential licence areas. On-ground surveys are required to be undertaken to determine the character of native vegetation at any particular site, which DEM considers to be the primary mechanism for determining site suitability in relation to native vegetation and fauna and supported by useful tools like mapping.

			Section 1.2.1 Exclusions and Constraints lists sensitive areas that are excluded from the EIR. The objectives, assessment criteria and leading performance criteria are also in place as the key mechanisms to ensure that only suitable sites are selected.
DEW Native Vegetation Branch	General	There is a focus on the presence and absence of threatened flora species rather than vegetation condition, landscape connectivity, and potential cumulative impacts. Areas of good quality, common native vegetation have potential to be undervalued in decision making.	New assessment criteria have been added to Impact ID #BIO01 (Objective 3): Ecological assessment includes a description of weed management, landscape connectivity and vegetation condition. An assessment criteria has been added that states that the ecological assessment undertaken by licensees must consider cumulative impacts.
DEW Native Vegetation Branch	General	It is assumed that rehabilitation will return disturbed areas will be consistent with pre-existing conditions but does not acknowledge slower natural regeneration in arid and semi-arid vegetation communities. There are no requirements for seed collection, assisted regeneration, long-term monitoring, or an outline of what successful arid land and vegetation rehabilitation may look like.	The existing control measure for rehabilitation (Impact ID #BIO01) have been updated to state the following: "Any areas of clearance will be rehabilitated where necessary (e.g. by respreading vegetation or reseeding with local seed sources where appropriate). **Rehabilitation will consider the slower natural regeneration in arid and semi-arid vegetation communities**." The following assessment criteria have been added to Objective 10:

			"OMP includes a management plan that includes information on how revegetation is planned. DEW to be consulted where relevant."
DEW Pastoral	EIR pg 50, Section 4.10	The document states: "*Other population centres include pastoral leases such as Nonning Station, Yardea, Carriewerloo, Kootaberra, Whittata and Kallioota*." • Clarification is requested on the meaning and basis for identifying certain pastoral leases as "population centres." In particular, it is unclear why these locations have been categorised in this way. Additionally, it is noted that Whittata and Kallioota are not pastoral leases; rather, these names appear to relate to mining projects or exploration areas located within pastoral lease boundaries. • Further to this a greater recognition of cumulative disturbance to pastoral productivity, access tracks, grazing values and rehabilitation outcomes is recommended to be considered.	Text updated in Section 4.10 to clarify/remove terminology for population centres. The following assessment criteria for Objective 4 have been updated to state the following: "The applicant must consult with landowners, pastoral lease holders, Traditional Owners, the OCA or relevant council, any affected Government agencies and any potentially affected receptors on the potential impacts (**including cumulative impacts**) of the meteorological mast installation and other authorised activities, and how they will be adequately managed. "
DEW Water and River Murray	General comment across both documents	Surface water within the study area is considered a sensitive receptor due to the presence of ephemeral systems, salt lakes, and culturally and ecologically significant features. The extent of any impact will depend on the final siting of infrastructure and the effectiveness of control implementation.	Noted.
DEW Water and River Murray	EIR page 67-74, Section 5.2.2	Section 5.2.2 identifies a range of control measures. Acknowledging the early feasibility stage of the project, where specific locations and layouts have not yet been defined, there is a level of uncertainty in assessing site-specific impacts. At this stage, however, the assessment captures the key potential impact	Noted.

		pathways (including contamination, sedimentation, and alteration of drainage patterns) and proposes standard industry controls to minimise these risks. The level of residual risk to surface water will largely depend on how these controls are implemented through the Operational Management Plan and associated management plans. Overall, the proposed framework is consistent with maintaining natural drainage patterns and protecting surface water quality and quantity.	
DEW Water and River Murray	Page 29, Section 4.3.1	From a regional perspective, the study area is located within the southern Gawler bioregion, encompassing the Whyalla West and Gawler Ranges East release areas. The area is characterised by ephemeral watercourses, salt lakes, and other surface water features of ecological and cultural significance. While these systems are sensitive, they are relatively dispersed, and careful siting of activities will be important to minimise potential impacts.	Noted. Avoiding areas with permanent or ephemeral surface water is a key control measure.
DEW Water and River Murray	General	It is also noted that, based on current spatial datasets, the project area is not located within a Prescribed Water Resource Area or Prescribed Surface Water Area, does not contain any Prescribed Watercourse and is not located within a Water Affecting Activity Policy Area or within a Water Protection Area. Some key considerations for future implementation are outlined below. • does not contain any Prescribed Watercourse • is not located within a Water Affecting Activity Policy Area • is not located within a Water Protection Area	Noted.
DEW Water and River Murray	Page 68 : Section 5.2.2 - SWR01 –	Risk associated with accidental spills and runoff reaching surface water. Proposed mitigation measures include appropriate storage and handling of fuels/chemicals, avoidance of sensitive areas, and	Noted.

	Contamination from spills (fuel/chemicals).	implementation of spill response procedures. Residual impacts are expected to be localised and short-term, where controls are implemented.	
DEW Water and River Murray	Page 70 : Section 5.2.2 - SWR02 – Sedimentation from earthworks and vegetation disturbance:	Potential for sediment-laden runoff to affect surface water quality. Proposed controls include avoiding water features through site selection, obtaining relevant Water Affecting Activity permits where required, and implementing erosion and sediment control measures, with inspection and maintenance following rainfall events.	Noted.
DEW Water and River Murray	Page 72 : Section 5.2.2 - SWR03 – Alteration of natural drainage patterns:	Activities such as track construction or excavation may impede flows. Proposed controls include maintaining pre-existing drainage patterns, use of appropriate crossings (e.g. culverts), avoiding inundation areas, and rehabilitating disturbed areas.	Noted.
DIT	General	Upon preliminary review, DIT seeks further clarification. In particular, we request additional information regarding the following: **Traffic impact assessment requirements** — A Traffic Impact Assessment Report shall be provided to identify proposed access routes, anticipated vehicle types and volumes, and any potential impacts to DIT-managed roads arising from activities undertaken under a Renewable Energy Feasibility Licence (REFL). **Dilapidation reporting obligations** — Dilapidation reports are to be prepared both prior to commencement and upon completion of project activities where DIT-managed road assets may be affected.	Section 3.1.2 Use of existing tracks and roads has been added to the EIR and assessment criteria included under impact ID #SAF03. Section 3.5.8 updated to include reference to undertaking a traffic impact assessment and new assessment criteria included under impact ID #SAF03.

DHUD	General	The SEO and EIR are thorough and the proposed mitigation measures have carefully considered the potential impacts and identified methods generally in accordance with the relevant provisions of the SA Planning & Design Code (notably the Infrastructure and Renewable Energy General Development Policies).	Noted.
DHUD	General	*The Hydrogen and Renewable Energy Act 2023 (HRE Act)* establishes Australia's first dedicated licensing and regulatory framework for large-scale hydrogen and renewable energy projects, which is largely aligned with the intent of the *State Planning Policy 12:Energy*. Key policies from this to continue to consider include; ○ 12.1. *Development of energy assets and infrastructure (including ancillary facilities) where the impact on surrounding land uses, regional communities and the natural and built environment can be minimised.* ○ *12.2. Facilitate renewable sources of energy supply, such as solar and wind, at the local level.* ○ *12.3. Provide for strategic energy infrastructure corridors to support the interconnection between South Australia and the National Electricity Market.* ○ *12.4. Development in the vicinity of major energy infrastructure locations and corridors (including easements) is planned and implemented to maintain the safe and efficient delivery and function of the infrastructure.*	Noted.

		○ *12.5. Enable industries to reduce carbon emissions by supporting energy efficient urban and building designs.* ○ *12.6. Facilitate energy technologies that support a stable energy market and continued energy supply and do not adversely affect the amenity of regional communities.*	
NVC	General	The draft EIR and SEO only apply to non-designated land within South Australia, encompassing only those activities related to the feasibility of renewable energy projects located within the Study Area. The draft documents are intended to streamline the approval process for feasibility activities occurring within the Study Area. The draft EIR and SEO do not apply to any projects determined to require Level 4 vegetation clearance and will only apply to selective projects that require Level 3 vegetation clearance. The EIR and SEO also exclude activities deemed to have significant impact to Matters of National Environmental Significance (MNES). The Study Area excludes Native Vegetation Heritage Agreement and Significant Environmental Benefit Offset areas, as well as areas zoned under the Planning and Design Code's State Significant Native Vegetation Areas Overlay. The EIR and SEO refer to potential direct and indirect impact events that may affect native vegetation and biodiversity, as outlined below: o Direct: vegetation clearance and earthworks, introduction and spread of weed(s), pest(s) and/or pathogen(s), fire o Indirect: alteration of drainage patterns, dust generated during construction activities, deterioration of groundwater quality, increased water retention in borrow pits	Noted.

		The EIR recognises the potential impact of native vegetation clearance on the following receptors: o Native flora and fauna (including threatened flora) o Soil quality and quantity o Land users o Surface water o Threatened / migratory fauna o Heritage values and community o Traditional owners and Aboriginal communities Further detail regarding environmental management, mitigation strategies and weed/pest/pathogen control will be contained within project-specific draft Operational Management Plans. Such documents will also detail plans to mitigate previously noted impact events. Assessment criteria include: o Ecological assessment by appropriately trained and experienced personnel undertaken to determine baseline biodiversity of the site and to identify and avoid any areas of sensitivity or "no-go" areas. o Where vegetation clearance is required, records demonstrate that necessary approvals under the Native Vegetation Act have been obtained and 'significant environmental benefit' obligation has been satisfied. o Where vegetation and habitats may be sensitive to disturbance, consultation with relevant government departments carried out and location specific environmental management plan developed and implemented.	

		o Records (e.g. ecological assessments) demonstrate no listed threatened and/or migratory species will be significantly impacted (unless appropriate approval has been obtained). o All biodiversity data collected by an appropriately qualified professional and reported to the Biological Databases of South Australia (BDBSA) and DEM pursuant to HRE Regulation 32(2)(c). o Management and monitoring measures for any vegetation and or biodiversity impacts. o Records of audits/inspections carried out in accordance with the OMP demonstrate there has been no unauthorised clearing of native vegetation.	
NVC		When detailing the assessment criteria for project-related impacts to native vegetation and/or biodiversity, a Native Vegetation Clearance Data Report must be included wherever possible. The Data Report must be prepared by an accredited consultant. Furthermore, it must detail how the mitigation hierarchy was applied; the calculation of the Significant Environmental Benefit (SEB); and how the SEB is proposed to be achieved.	The feasibility licence is a prerequisite for undertaking the on-ground surveys needed to inform a Vegetation Clearance Data Report and will therefore not be available at the time of licence grant in most cases. Objective 3 and the related assessment criteria ensure that necessary approvals under the NVC Act are in place and that a potential SEB obligation has been satisfied. Proponents need to commit to fulfillment of these when adopting the SEO.
NVC		The Council will request that a reasonable attempt is made to provide an on-ground offset before a payment into the Native Vegetation Fund is accepted. Further, the Council will encourage the Proponent to secure any on-ground offset with a Native Vegetation Heritage Agreement (NVHA) where possible.	Noted. EIR updated to outline the clearance process and to include reference to the Guide for applications to clear native vegetation.
NVC		When discussing assessment criteria, the EIR and SEO both note the requirement to demonstrate that 'significant environmental benefit' obligation has been satisfied'. To ensure that said	Section 3.1.2 included within the EIR to describe requirements for application to the NVC.

		obligations have been met, the Council will require a copy of any scoresheet used to assess the adequacy of SEB calculations. Scoresheets must be appended to any applications for native vegetation clearance. Furthermore, assessment must be completed with a current version of the scoresheet. The current version of the scoresheet is dated 9 September 2025 at the time of writing. Scoresheets are available via the Department for Environment and Water (DEW) website.	
NVC		Under section 14(2) of the NV Act, the Council is required to take into account, and seek to further, the Principles of Clearance of native vegetation insofar as they are relevant in the particular circumstances. Further, under Schedule 1 of the NV Act, native vegetation should not be cleared if, in the opinion of the Council, it is seriously at variance with these Principles. Yet the EIR lacks information about this legislated requirement. The Council recommends including this requirement amongst the assessment criteria for the following proposed environmental objective: "No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained."	Section 3.1.2 included within the EIR to describe requirements for application to the NVC.
NVC		The Council notes that the following legislation and non-legislated instruments should be captured when summarising Flora and Fauna matters (see EIR section 5.2.4): o Applicable Government Legislation: *Biodiversity Act 2025* (SA) o Applicable Non-Legislated Instruments: Policy for a Significant Environmental Benefit.	Updated in section 5.2.4, Table 5-8.
NVC		EIR Table 4-5 only contains a small subset of species listed as 'Threatened' under the *Environment Protection and Biodiversity*	Table 4-5 lists the threatened species listed in the PMST search (undertaken March 2026) that are listed as

		Conservation Act 1999. Furthermore, it does not provide a comprehensive list of the Study Area's biodiversity values. The Council encourages Table 4-5 to reflect all Threatened species and biodiversity values noted throughout EIR section 4.4 and DEW's Biodiversity Values Mapping. If this is not feasible, the Council then encourages Table 4-5 to detail whether the listed species are known or likely to occur within the Study Area, thereby accounting for spatial and temporal data gaps.	'known', as noted in the table heading. The full PMST search is attached as Appendix A.
NVC		The EIR and SEO should recognise the indirect impacts of the following events on native flora/vegetation and biodiversity as a potential receptor: o Spills of fuel or chemicals result in deterioration of soil quality (impact ID #SOI01) o Inappropriate waste management results in localised soil contamination (impact ID #SOI03) o Disturbance of existing contaminated soil or acid sulfate soil, or UXO resulting in spread of contamination and/or reduction of soil or land quality (impact ID #SOI04) o Spills of fuel or chemicals result in a deterioration of surface water quality (impact ID #SWR01) o Civil construction works adversely impacts surface water resources (impact ID #SWR03)	Updated as suggested.
NVC		When discussing surface water management, the Council recommends incorporating buffer zones as a Control Measure for any sedimentation that may occur during the regulated activities, resulting in a deterioration of surface water quality (see impact ID #SWR02). Incorporating a buffer zone into the any project design will help to maintain downstream water quality, while also	Control measure included to capture implementation of a buffer zone from water courses/bodies.

		ensuring that remnant native vegetation has the space required to avoid damage and grow.	
NVC		The Council supports the inclusion of the following Control Measure for impact ID #BIO01: 'DEW biodiversity values mapping used in desktop component of ecological assessment where available' and encourages its inclusion amongst the Control Measures for impact IDs #BIO05 and #BIO07. However, the Council also urges the removal of the words 'where available', noting that DEW has previously provided spatial information regarding this Study Area.	EIR updated as suggested.
SAAL	EIR, Section 3.1, Pg. 16	No reference to water affecting activities. Section 3.1 about access tracks should refer to water affecting activities and that a permit may be needed from the relevant authority. While it is acknowledged that sensitive features like salt lakes will be avoided, culverts and structures in watercourses may trigger the need for a WAA permit.	Section 3.1.2 added to EIR to provide high-level information relating to water affecting activities/permitting.
SAAL	EIR, Section 5.2.4, Pg. 82	Surveys timed appropriately to detect threated fauna and flora. Ensure surveys are conducted at the right time to detect the threatened species. For example, the desert greenhood (*Pterostylis xerophila*) only flowers in September – October and cannot be identified at any other time. They also only generally flower after sufficient rainfall, so 2026 is an optimum time to perform targeted surveys for this threatened flora species.	Information included under Section 3.5.2 as an example regarding specific survey efforts.
Revera	EIR, Section 3.3 Meteorological mast	spelling	Updated.

	Pg 19, paragraph 9, *millimeters*		
Revera	EIR, pg 59, Impact ID #SOI02, Control measures, dot point	Formatting error/bullet point	Updated.
Revera	EIR, pg 89, Impact ID #BIO04, Control measures	Editing note: These control measures are bulleted, those in other sections re not	Updated.
Revera	EIR, pg 118, Impact ID #HER02, Control measures, Dot point 2	As approved by Traditional Owners/in line with an CHMP	Updated.
Windlab	Section 3.3 Meteorological mast	we recommend the EIR clarifies that meteorological masts taller than 150m may be installed, to align with higher nacelle heights available on the market. Section 3.3 of the EIR outlines the installation and use of temporary meteorological masts for wind monitoring in the designated release area. Section 3.3 outlines the following: *The height of the mast is generally aligned with the proposed wind turbine hub height, whose height may exceed 150 m.* It would be beneficial for the EIR to provide further clarity that meteorological masts taller than 150m may be installed under the REFL. Meteorological masts are typically installed at the anticipated nacelle heights to enable a thorough assessment of the wind resource. Based on Windlab's experience, such meteorological masts are commonly in the range 150-170m tall, reflecting the current nacelle heights being utilised. Given the duration of exploration activities and ongoing advancements in turbine technology, there is a clear trend toward higher nacelle and turbine heights. Over the past decade, turbine design and technology have made significant advancements in	Noted, EIR is not limiting or prescriptive of the met mast height and recognises that that the height of a met mast is generally determined by the nacelle/turbine hub height, which can be greater than 150m. EIR states that, *The height of the mast is generally aligned with the proposed wind turbine hub height, whose height may exceed 150 m.*

		increasing the height of the towers and the length of the blades, maximising wind resource capture. For example, lattice-based tower systems are coming into the market, such as Nabrawind which will be used to install turbines with a nacelle height of 188 m at the Nullagine Wind Project.1 While Windlab has not selected a turbine model or supplier for the Project, maintaining flexibility to accommodate future technology would be greatly beneficial and will ensure the project generates and delivers energy to the grid in an efficient and effective way. This flexibility requires higher hub heights and, therefore, meteorological mast heights.	
Windlab	Section 3.5.8 Traffic Survey	we recommend the scope of works includes other offsite road surveys such as route assessments and structural assessments etc. Section 3.5.8 of the EIR outlines potential traffic surveys covered under the REFL. It would be beneficial to broaden the scope of works here to include offsite road surveys, route assessments, structural assessments, and any other road assessments required to support the transport and traffic requirements of the project. These works are typically undertaken as part of the transport (oversize overmass transport route) and traffic impact assessment providing information on baseline conditions and what further works and upgrades required to support the needs of the project. This typically involves visual assessments of the areas and collection of data on the supporting road infrastructure.	Off-site road surveys are not considered an authorised operation and can be undertaken by proponents without the need for a license. Therefore, this is not covered in the scope of works in the EIR. However, to demonstrate how potential impacts with relation to traffic will be managed, proponents will submit a traffic management plan that will entail the described assessments, where necessary.
Windlab	Section 3.7 Groundwater Investigation	to include groundwater monitoring via Geotech boreholes which are not backfilled but instead are monitored via sensors.	Groundwater monitoring to be undertaken via fit-for-purpose groundwater wells as described within Section 3.7 Groundwater investigations.

		Section 3.7 of the EIR outlines activities related to groundwater investigations, to understand baseline or ambient conditions or the investigation of potential sources of water that could be used during construction. Windlab has undertaken groundwater monitoring in a different way to what has been described in Section 3.7. Often this monitoring occurs alongside the early geotechnical works (covered in Section 3.6), during this a borehole is not backfilled, instead a sensor is placed in the hole to monitor the groundwater level. Windlab suggests the section 3.7 is updated to include groundwater monitoring where a sense is used to monitor groundwater level.	
Windlab	Section 3.8 Campsites	to include short term accommodation for shorter onsite campaigns. Windlab agrees with the description that has been provided in relation to Section 3.8 Campsites of the EIR, and this aligns with our experience in developing renewable energy projects. In addition to this, we see value in expanding the definition of campsites to also cover smaller and more temporary accommodation like portable dongas. Some of the survey programs that are undertaken for the Project, such as geotechnical investigations and cultural heritage surveys are intensive and occur over the course of a few weeks to a few months and, as such, the inclusion of this shorter accommodation option adds a lot of value ultimately resulting in less ground-level disturbance, reducing commute times, enhancing safety through shorter survey durations and reducing the costs of the program.	Section 3.8 Campsites updated to include portable accommodation.

SEO comments			
Stakeholder	**Document ref**	**Comment**	**DEM response**
CFS	SEO pg 5, Section 3.1 Objectives	Please consider adding: Minimising bushfire hazard(s) to and from the site, including implementing measures to prevent spread of fire to the site, or environment as a result of the activities within the site.	Objectives are developed via the impact assessment undertaken in the EIR. Bushfire controls and management have been assessed under impact IDs SAF02 and BIO09, relating to the impact of fire resulting in injury or fatality to members of the public and to the loss of native vegetation respectively. Under each impact ID, relevant control measures are in place to mitigate the potential impact, including relevant controls for fire prevention and management. Objectives developed relating to these impact IDs are: - *No injuries, deaths or health impacts to the public, third parties, or on-site personnel from regulated activities that could have been reasonably prevented by the operator.* - *No clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained.*
CFS	SEO pg 12, Objective 3, Leading performance criteria dot point #10	Please consider adding: Ensure all project components comply with relevant CFS bushfire planning requirements, including appropriate siting, safe access and egress, Asset Protection Zones, vegetation	Wording included in SEO under Objective 3 to align with EIR, included as assessment criteria, to include this requirement: *Infrastructure, site design, and management plans comply with relevant requirements of the CFS*

		management, fire water supply, and building construction standards (or approved alternative arrangements).	*Renewable Energy Facilities Guide and checklist, or as otherwise agreed with CFS.*
CFS	SEO pg 15, Objective 8, Leading performance criteria, dot point #4	Please considering adding: Ensure all project components comply with relevant CFS bushfire planning requirements, including appropriate siting, safe access and egress, Asset Protection Zones, vegetation management, fire water supply, and building construction standards (or approved alternative arrangements).	Wording included in SEO under Objective 8 to align with EIR, included as assessment criteria, to include this requirement: *Infrastructure, site design, and management plans comply with relevant requirements of the CFS Renewable Energy Facilities Guide and checklist, or as otherwise agreed with CFS.*
DEW Biodiversity Science Coasts and Information	SEO pg 5, Objective 3	Objective 3 could be strengthened to go beyond focusing on seeking to ensure biodiversity impacts have legal approval. It may be more effective for the objective to seek to avoid (or at least mitigate) impacts in the first instance while ensuring legislative authorisations are obtained. To support the long-term relevance of the SEO and EIR, it could be beneficial to consider not only existing legislation (EPBC Act, Native Vegetation Act and National Parks and Wildlife Act) but also new legislation (the Biodiversity Act). In this context, a more appropriate objective would be framed to: ○ Avoid (or at least mitigate) impacts on biodiversity values, in addition to seeking and complying with any required regulatory approvals. Relevant biodiversity values under relevant legislation include: native vegetation, native flora and fauna (including threatened species and their critical habitats), threatened ecological communities, and listed ecological entities.	No update has been made. As described in the Environmental Impact Assessment Criteria Guideline, wording of environmental objectives should aim to be clear and unambiguous, such that each objective is capable of assessment. The existing assessment criteria and leading performance criteria are detailing protection of sensitive areas and species.

DEW Biodiversity Science Coasts and Information	Pg 10-12, Objective 3	Pages 10-12: The assessment criteria, performance criteria and controls contain for Objective 3 are either duplicative or inconsistent. Refinement to improve clarity is recommended. There appear to be accidental criteria for flora in the fauna section, which could cause confusing in the intent. To improve clarity and coherence this section should be rewritten to reduce duplication and repetition as well as where appropriate, combining the relevant biodiversity values into a single row and reflecting the holistic considerations. The DEW biodiversity values mapping is relevant to native vegetation, ecological communities, flora and fauna, so should be reflected as such. In addition, it is not just useful for the "desktop component of ecological assessment" but also provides insights on biodiversity values that should be considered for the design of on-ground surveys.	The SEO has been updated to make the document easier to follow by removing duplicates. Relevant assessment criteria and leading performance criteria have been updated to the following: "DEW biodiversity values mapping used in desktop component of ecological assessment and **for the design of on-ground surveys**."
DEW Biodiversity Science Coasts and Information	Page 19 Table 2	The scope and wording of Item 6 should be refined to be better aligned with recognised (legislative) biodiversity values and impacts. To improve clarity is should reflect existing legislation, and it would be more appropriate to refer to: ○ "Any destruction, damage, disturbance or other significant impact on threatened biodiversity values (including threatened flora, fauna, critical habitat, ecological communities or listed ecological entities) without appropriate permits and approvals."	No update has been made. Incidents should be clearly defined. The suggestion would need to better define what should constitute a significant impact to facilitate compliance. The incident definition in this SEO comes from Reg. 29 A in the Hydrogen and Renewable Energy Regulation. This wording has been formulated in consultation with DEW. The broad use of "flora and fauna" is intended to go beyond just capturing threatened flora and fauna.

DEW Biodiversity Science Coasts and Information	Page 20, Table 2	Given Table 2 (Item 6) relates to both State and Commonwealth regulatory matters, there should be a requirement for reporting to the relevant entities: ○ SA: Native Vegetation Council and Parks and Wilderness Council, and eventually the Biodiversity Council (when this becomes operational) ○ National: EPBC Act referral	The immediately reportable and reportable incidents set out the reporting requirements specifically for the applicant to report to DEM. Applicants have additional obligations, as set out in Section 4.2 of the SEO, which speaks to reporting requirements for other legislation.
DEW Water and River Murray	Page 8 : Table 1, Objective 2	Objective 2 provided adequate controls relating to spill prevention, erosion and sediment management, maintenance of flow paths, and relevant permitting requirements.	Noted.
NVC	SEO, Objective 3	Objective 3 (see section 3.1) states that there should be 'no clearance of native vegetation or disturbance to native fauna unless prior approval under the relevant legislation is obtained.' While the Council appreciates the inclusion of native vegetation, it notes the lack of reference to threatened flora species under the *National Parks and Wildlife Act 1972*. The Council strongly encourages the inclusion of threatened native flora in this objective, ensuring that these species are not disturbed or degraded without prior approval.	The objective broadly relates to all native vegetation, which includes threatened flora species under the NPW Act. Leading performance criteria referring to the avoidance of threatened flora species has been updated to clarify avoidance of threatened flora species listed under the NPW Act.
NVC	SEO, Objective 3	The Council encourages the inclusion of the following Assessment Criteria: o 'Any excavation or fill material surplus to the requirements of the development must be disposed of such that it will not adversely impact on native vegetation, contribute to erosion or sedimentation, or facilitate the spread of pest plant and pathogenic material.'	Added as an assessment criteria to Objective 3 and Objective 7.

NVC	SEO, Objective 3	When listing the Leading Performance Criteria for impact ID #BIO01, Objective 3 includes: 'DEW biodiversity values mapping used in desktop component of ecological assessment'. The Council identifies an opportunity to apply this criterion to impact IDs #BIO05 to #BIO07, ensuring that mapping tools are used when considering disturbance to fauna and threatened or migratory species. Furthermore, the Council also encourages the inclusion of this criterion amongst the Control Measures for EIR impact IDs #BIO05 and #BIO07.	Updated as suggested for #BIO5 and #BIO7.
NVC	SEO, Objective 10	The Leading Performance Criteria for SEO Objective 10 notes that 'Restoration of land disturbance to be approved by the landowner or in accordance with landowner's wishes.' While the Council appreciates efforts to repair land disturbance, the criterion lacks detail regarding legislative requirements for rehabilitation. To address this, the Council encourages the following amendment: o 'Restoration of land disturbance is done in accordance with legislative requirements and approved by the landowner or in accordance with landowner's wishes.' Furthermore, the use of native species should be prioritised over exotic species when restoring project sites. Prioritising native vegetation maximises biodiversity outcomes and contributes to mitigating the impacts of climate change. It also provides other benefits, such as habitat and food for common and threatened species, tourism opportunities, greater water quality, and enhanced wellbeing for all.	Objective 10 leading performance criteria updated as suggested (and moved to assessment criteria).

NVC	SEO, other objectives	The Council encourages greater specificity regarding the Proponent's approach to weed management, particularly with regard to any declared weeds. Further detail regarding appropriate management measures can be found on the Department of Primary Industries and Regions website.	Weed management to be considered at the site level and managed by a site-specific weed management plan developed by the applicant and submitted as part of the OMP. Added assessment criteria, *relevant management plan for weeds and pests is developed in consultation with PIRSA/DEW/SAAL*.
SAAL	SEO, Table 1 - Objective 3 Pg. 10	Surveys timed appropriately to detect threated fauna and flora. Ensure surveys are conducted at the right time to detect the threatened species. For example, the desert greenhood (*Pterostylis xerophila*) only flowers in September – October and cannot be identified at any other time. They also only generally flower after sufficient rainfall, so 2026 is an optimum time to perform targeted surveys for this threatened flora species.	Added an assessment criteria to state *Ecological surveys are timed appropriately to detect threatened flora and fauna where they may occur.*
Revera	SEO, Section 1 Abbreviations	A few missing abbreviations, e.g. ADG, GAS, BDBSA, HRE, AS, OMP, CASA	Updated.
Revera	SEO, Objective 1, Assessment criteria, dot point 1	Is there another clause after this one (the use of either suggests an 'or' and another clause.	Updated phrasing to clarify that spills of oil or fuel are to be immediately contained and/or removed.
Revera	SEO, Objective 1, dot point 1, *AGD*	Add to glossary/abbreviations table	Updated as suggested.
Revera	SEO, Objective 2, Leading performance criteria, dot point 4	Spills of?	Removed.

Revera	SEO, Objective 4, Assessment criteria, dot point 2	“Any issues or concerns”? Or “any issues of concern”	Updated phrasing to ‘or’.
Revera	SEO, Objective 4, Assessment criteria, dot point 6	Per above	Updated phrasing to ‘or’.
Revera	SEO, Objective 4, Assessment criteria, dot point 9	Additional assessment criteria besides complaints? E.g. Records of consultation re aerial survey flight paths and scheduling?	Assessment criteria updated to include consultation undertaken with landowners prior to starting aerial surveys.
Revera	SEO, Objective 4, Assessment criteria, dot point 10	spelling	Updated all instances of ‘authorized’ to ‘authorised’.
Revera	SEO, Objective 5, Leading performance criteria, dot point 2	Double full stop	Removed.
Revera	SEO, Objective 6, Leading performance criteria dot point 4	Developed in consultation with the relevant Traditional Owners	Updated as suggested.
Revera	SEO, Objective 10, Assessment criteria dot point 10	Additional bullet point - assume typo, not a missing criteria point.	Removed.

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