

Yadnarie PV Ultra (Solar Cogeneration) and Thermal Hydro Facility for Photon Energy Aus SPV 4

Native Vegetation Clearance

Data Report

Clearance under the *Native Vegetation Regulations 2017*

22 October 2024

Prepared by E. West – EBS Ecology



Yadnarie Solar Farm Native Vegetation Clearance Data Report

22 October 2024

Version 4

Prepared by EBS Ecology for Master Plan SA Pty Ltd on behalf of RayGen Resources Pty Ltd.

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Cover photograph: Linear remnant mallee woodland bordering two cropped paddocks.

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Glossary and abbreviations

%	Percent
<	Less than
>	More than
BAM	Bushland Assessment Method
BDBSA	Biological Database of South Australia (maintained by DEW)
BESS	Battery and Energy Storage System
CEMP	Construction Environmental Management Plan
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEW	Department for Environment and Water (South Australia)
EBS	Environment and Biodiversity Services Pty Ltd (trading as EBS Ecology)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPBGW	Eyre Peninsula Blue Gum Woodland
HA	Heritage Agreement
ha	Hectare(s)
Heliostats	Rotational mirror solar arrays
IBRA	Interim Biogeographical Regionalisation of Australia
km	Kilometre(s)
m	Metre(s)
mm	Millimetre(s)
MasterPlan	Master Plan SA Pty Ltd, the client
NatureMaps	Initiative of DEW that provides a common access point to maps and geographic information about South Australia's natural resources in an interactive online mapping format
Non-perennial watercourse	Non-perennial includes watercourses that flow only for a short time after rainfall events and intermittent rivers that regularly cease to flow for a period of time, leaving behind dry riverbeds and residual water bodies
NPW Act	<i>National Parks and Wildlife Act 1972</i>
NV Act	<i>Native Vegetation Act 1991</i>
NVC	Native Vegetation Council
PDI Act	<i>Planning, Development and Infrastructure Act 2016</i>
Photon Energy	Photon Energy AUS SPV 4 Pty Ltd, the proponent along with RayGen Resources Pty Ltd
PMST	Protected Matters Search Tool (under the EPBC Act; maintained by DCCEEW)
Project	Yadnarie Solar Farm
Project Area	The area of works, as outlined in Figure 1
RAM	Rangelands Assessment Method
RayGen	RayGen Resources Pty Ltd, the proponent along with Photon Energy
SA	South Australia(n)
Search Area	5 km buffer of the Project Area considered in the desktop assessment database searches
SEB	Significant Environmental Benefit
sp.	Species
spp.	Species (plural)
ssp.	Sub-species
STAM	Scattered Tree Assessment Method
TBS	Total Biodiversity score
TEC	Threatened Ecological Community
UBS	Unit Biodiversity Score
VA(s)	Vegetation Association(s)
var.	Variety (a taxonomic rank below that of species and subspecies, but above that of form)
WoNS	Weeds of National Significance

TABLE OF CONTENTS

1.	APPLICATION INFORMATION	1
2.	PURPOSE OF THE CLEARANCE.....	5
2.1.	Description.....	5
2.2.	General location map	5
2.3.	Background	7
2.4.	Details of the proposal	8
2.5.	Approvals required <i>or</i> obtained	11
2.5.1.	Native Vegetation Act 1991 (NV Act).....	11
2.5.2.	Planning, Development and Infrastructure Act 2016 (PDI Act).....	11
2.5.3.	Environment Protection and Biodiversity Conservation Act 1999 (EBPC Act)	11
2.5.4.	National Parks and Wildlife Act 1972 (NPW Act).....	12
2.5.5.	Landscapes South Australia Act 2019 (LSA Act)	12
2.5.6.	Aboriginal Heritage Act 1998	12
2.6.	Native Vegetation Regulation.....	12
2.7.	Development Application information (if applicable)	12
3.	METHODOLOGY	13
3.1.	Flora assessment	13
3.1.1.	Bushland Assessment Method	13
3.1.2.	Scattered Tree Assessment Method	13
3.1.3.	Provisional list of threatened ecosystems	14
3.2.	Fauna assessment	14
3.2.1.	Protected Matters Search Tool report	14
3.2.2.	Biological Database of South Australia data extract.....	15
3.2.3.	Fauna field survey.....	15
3.3.	Likelihood of occurrence.....	15
3.4.	Limitations	16
3.4.1.	Survey limitations	16
3.4.2.	Spatial data limitations.....	16
4.	ASSESSMENT OUTCOMES	17
4.1.	Vegetation assessment	17
4.1.1.	General description of the vegetation, the site and matters of significance.....	17
4.1.2.	Details of the vegetation associations proposed to be impacted	20
4.1.3.	Details of the scattered trees proposed to be impacted.....	29

4.1.4.	Site map showing areas of proposed impact.....	32
4.2.	Threatened Ecological Communities.....	34
4.3.	Threatened species assessment.....	34
4.3.1.	Threatened fauna.....	34
4.3.2.	Threatened flora.....	34
4.4.	Cumulative impacts.....	36
4.5.	Addressing the Mitigation Hierarchy	36
4.6.	Principles of Clearance (Schedule 1, <i>Native Vegetation Act 1991</i>).....	38
4.7.	Risk assessment	41
5.	CLEARANCE SUMMARY	42
6.	SIGNIFICANT ENVIRONMENTAL BENEFIT	45
7.	REFERENCES	46
8.	APPENDICES	48
8.1	Appendix 1 - Flora species recorded by the field survey	48
8.2	Appendix 2 - Fauna species recorded by the field survey	52
8.3	Appendix 3 – Likelihood of Occurrence Assessment	54
8.4	Appendix 4 - Previous design (supplied to EBS on 22/05/2023).	61

List of Tables

Table 1.	Application details.	1
Table 2.	Summary of the proposed clearance.	1
Table 3.	Summary of previous assessments for the Project.	8
Table 4.	Development Application information.	12
Table 5.	Criteria for the likelihood of occurrence of threatened species within the Project Area.	16
Table 6.	Vegetation associations (VAs) located within the Project Area.	20
Table 7.	Summary of VA 1.	21
Table 8.	Summary of VA 2.	22
Table 9.	Summary of VA 3.	23
Table 10.	Summary of VA 4.	24
Table 11.	Summary of VA 5.	25
Table 12.	Summary of VA 6.	26
Table 13.	Summary of VA 8.	27
Table 14.	Summary of VA 9.	28
Table 15.	Scattered trees assessed within the Project Area.	29
Table 16.	Summary of Tree 2.	30
Table 17.	Summary of Tree 4.	30
Table 18.	Summary of Tree 5.	31
Table 19.	Summary of Tree 9.	31

Table 20. Summary of Tree 11.	32
Table 21. Assessment against the Principles of Clearance.....	38
Table 22. Summary of the level of risk associated with the application.	41
Table 23. Clearance summary and total SEB obligations for vegetation associations impacted by the Project.....	43
Table 24. Clearance summary and total SEB obligations for scattered trees impacted by the Project.	44
Table 25. Summary of the total SEB obligations of the clearance.	44

List of Figures

Figure 1. Regional context of the Project Area.....	6
Figure 2. The current design of the Yadnarie Solar Farm, provided to EBS by MasterPlan on 15 August 2024.	1
Figure 3. Vegetation and scattered trees proposed to be impacted by the proposal.	33
Figure 4. NPW Act listed threatened species records and EPBC Act listed Threatened Ecological Communities within 5 km of the Project (since 1995, < 1 km reliability (DCCEEW 2024a, DEW 2024b).....	35

Attachments

Attachment 1 - Bushland Assessment Scoresheets (excel format)

Attachment 2 - Scattered Tree Assessment Scoresheet (excel format)

Attachment 3 – Spatial data package (shapefiles)

1. APPLICATION INFORMATION

Details of the native vegetation clearance applicant are summarised in Table 1 with a summary of the proposed clearance provided in Table 2.

Table 1. Application details.

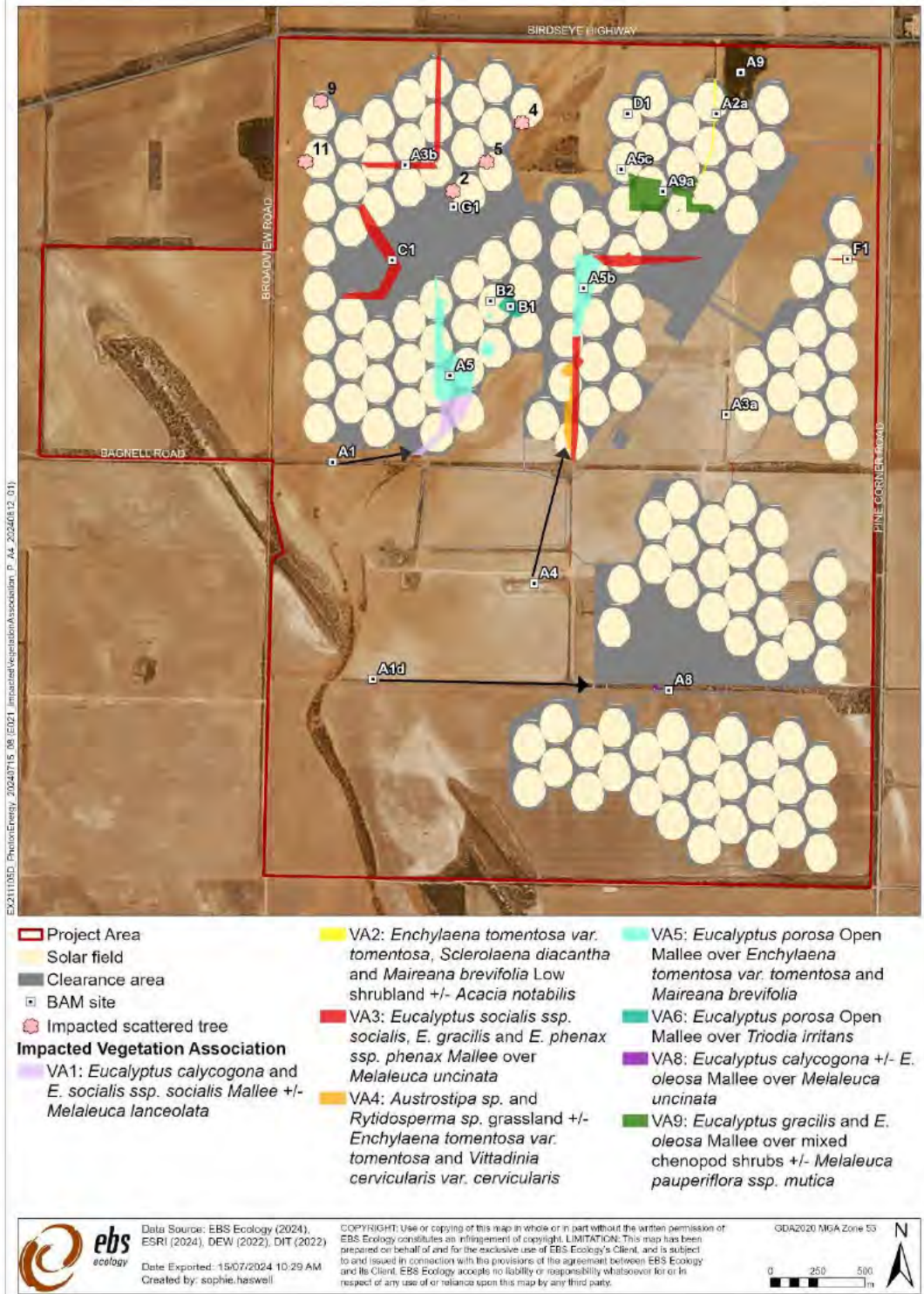
Applicant:	Master Plan SA Pty Ltd, on behalf of Photon Energy AUS SPV 4 Pty Ltd (Photon Energy) and RayGen Resources Pty Ltd (RayGen)		
Key contact:	Photon Energy Senior Project Manager Level Cleveland Street, Redfern NSW 2016 E P:		
Landowner:	R & K Quinn Superannuation Pty Ltd Third Street, Cleve SA 5640 PO Box , Cleve SA 5640		
Site Address:	4543 Birdseye Highway, Cleve South Australia		
Local Government Area:	District Council of Cleve	Hundred:	Yadnarie
Title ID:	CT/5940/707 CT/6205/513 CT/6274/890	Parcel ID	H533400 SE44 H533400 SE46 H533400 SE55 H533400 SE56 H533400 SE394 H533400 SE395 H533400 SE39 H533400 SE28

Table 2. Summary of the proposed clearance.

Purpose of clearance:	Native vegetation clearance is required for the construction of a renewable energy facility (PV Solar Cogeneration and Thermal Hydro Facility) west of Cleve, South Australia.
Native Vegetation Regulation:	Regulation 12, clause 34, Infrastructure
Description of the vegetation under application:	Nine Vegetation Associations (VAs): • VA 1: <i>Eucalyptus calycogona</i> and <i>E. socialis</i> ssp. <i>socialis</i> Mallee +/- <i>Melaleuca lanceolata</i>. • VA 2: <i>Enchylaena tomentosa</i> var. <i>tomentosa</i>, <i>Sclerolaena diacantha</i> and <i>Maireana brevifolia</i> Low shrubland +/- <i>Acacia notabilis</i>. • VA 3: <i>Eucalyptus socialis</i> ssp. <i>socialis</i>, <i>E. gracilis</i> and <i>E. phenax</i> ssp. <i>phenax</i> Mallee over <i>Melaleuca uncinata</i>. • VA 4: <i>Austrostipa</i> spp. and <i>Rytidosperma</i> sp. Grassland +/- <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> and <i>Vittadinia cervicalis</i> var. <i>cervicalis</i>. • VA 5: <i>Eucalyptus porosa</i> Open Mallee over <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> and <i>Maireana brevifolia</i>. • VA 6: <i>Eucalyptus porosa</i> Open Mallee over <i>Triodia irritans</i>. • VA 8: <i>Eucalyptus calycogona</i> +/- <i>E. oleosa</i> Mallee over <i>Melaleuca uncinata</i>.

	VA 9: <i>Eucalyptus gracilis</i> and <i>E. oleosa</i> Mallee over mixed chenopod shrubs +/- <i>Melaleuca pauperiflora</i> ssp. <i>mutica</i>. Five Scattered Trees, including three <i>Eucalyptus socialis</i> ssp. <i>socialis</i>, one <i>Eucalyptus petiolaris</i> and one <i>Eucalyptus porosa</i>.
Total proposed clearance – area (ha) and/or number of trees:	Five (5) Scattered Trees and 33.425 hectares (ha) of native vegetation is proposed to be cleared from the following VAs: VA 1: 2.915 ha. VA 2: 0.577 ha. VA 3: 11.892 ha. VA 4: 1.425 ha. VA 5: 10.575 ha. VA 6: 0.949 ha. VA 8: 0.132 ha. VA 9: 4.961 ha.
Level of clearance:	Level 4
Overlay (Planning and Design Code):	Native Vegetation

Map of proposed clearance area:



Mitigation Hierarchy:

Avoidance

The Project has undergone six design iterations following the receipt of ecological survey results and recommendations. Following the initial surveys and the identification of ecological constraints, it was concluded that the Project would need to be reduced in size (from an initial 300MW design) or that additional land would be required to increase the size of the Project Area. Surveys in the areas under consideration confirmed the presence of the EPBGW TEC, as highlighted in Figure 4. As such, the Project Area was not expanded as so to avoid impacting this EPBC Act listed TEC.

Photon Energy requested EBS' advice to highlight areas of high ecological value vegetation within the Project Area so avoidance could be considered. This resulted in further design iterations and the majority

	of infrastructure (i.e., heliostat fields, receiving towers, power plants and vehicle access tracks) being located within cropped paddocks and in areas devoid of native vegetation. The design of the Project, as submitted in the Development Application, has been reduced in size and now avoids structurally diverse woodlands, including the entirety of VA 7 (<i>Eucalyptus gracilis</i> and <i>E. incrassata</i> Mallee over <i>Callitris gracilis</i> +/- <i>Triodia irritans</i>). Further, under the current Project design, 116.391 ha of remnant vegetation and six scattered trees have been retained through the strategic positioning of infrastructure. Minimization Where possible, infrastructure has been placed in areas of more disturbed vegetation (e.g., VA 2 and VA 4), or vegetation with fewer habitat resources (i.e., upper storey vegetation, dense vegetation, and water sources). Where the clearance of more intact native vegetation has been deemed necessary (i.e., creating access points through contiguously tree-lined fence lines), micro-siting has been undertaken to select areas that are more disturbed or that contain vegetation in the poorest condition. Rehabilitation Restoration of vegetation will be permitted in the heliostat fields following the initial construction impact, including (re)generation of low grasses and shrubs under the installed heliostats and in alternate 'gap' corridors initially used for access. Rehabilitation of native vegetation is preferable for the project to reduce dust accumulation on the heliostats and associated maintenance. Locally native flora species will be planted along the perimeter of the Project Area to act as a visual screening barrier. Further, an area of approximately 50 ha adjacent to Broadview and Price Roads, and to the southwest of VA 1 (<i>Eucalyptus calycogona</i> and <i>E. socialis</i> ssp. <i>socialis</i> Mallee +/- <i>Melaleuca lanceolata</i>) is proposed to be revegetated. Offset The client proposes to pay the offset value into the Native Vegetation Fund.
SEB Offset proposal	The total SEB offset required for the clearance of 33.425 ha of native vegetation and five Scattered Trees is a payment of \$446,309.77, including an administrative fee payment of \$23,067.42.

2. PURPOSE OF THE CLEARANCE

2.1. Description

Photon Energy Australia (Photon Energy) and RayGen Resources Pty Ltd (RayGen) are proposing to construct the Yadnarie Solar Farm (the Project) on private land at 4543 Birdseye Highway (CT/5940/707, CT/6205/513, CT/6274/890). The land under application (the Project Area) is located approximately 8.9 kilometres (km) west of the township of Cleve in the Eyre Peninsula region of South Australia (SA).

EBS Ecology (EBS) were instructed by Master Plan SA Pty Ltd (MasterPlan), who have acted on behalf of RayGen, to undertake a native vegetation clearance assessment and prepare a clearance report for the proposed facility within a 1,530 hectare (ha) area (the Project Area, Figure 1).

Objectives

This native vegetation assessment, in accordance with the *Native Vegetation Act 1991* (NV Act) and *Native Vegetation Regulations 2017*, had the following objectives:

- To undertake a desktop assessment of the likelihood of occurrence of threatened ecological communities, flora and fauna protected under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the State *National Parks and Wildlife Act 1972* (NPW Act);
- To assess native vegetation within the Project Area by applying the Native Vegetation Council (NVC) endorsed Bushland Assessment Method (BAM) in accordance with the NV Act;
- To identify any "Declared" plants under the *Landscape South Australia Act 2019* or Weeds of National Significance (WoNS) that may be significant in relation to the Project requirements; and
- To calculate the Significant Environmental Benefit (SEB) offset requirements for the Project based on the client supplied impact footprint.

2.2. General location map

The Project Area is indicated on the map in Figure 1.

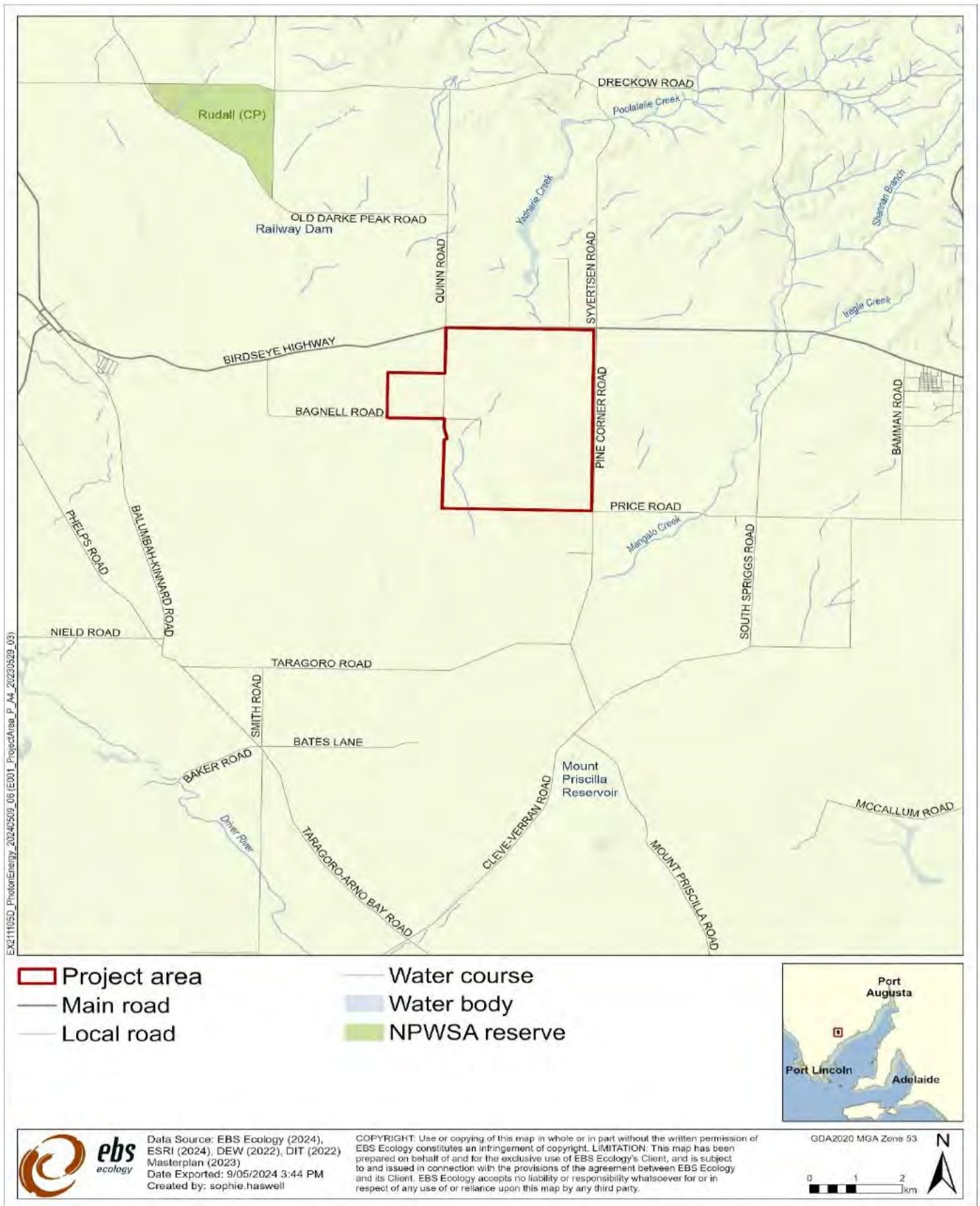


Figure 1. Regional context of the Project Area.

2.3. Background

Two terms are used to describe the location of the Project:

- Project Area – the area where native vegetation clearance is proposed (i.e. the footprint of the Project).
- Search Area – a 5-kilometre (km) buffer surrounding the Project Area and used for the desktop component of this clearance data report.

The Project has been proposed to be constructed in the District Council of Cleve within the Eyre Peninsula landscape management region and the Hundred of Yadnarie (DEW 2024a). Most of the Project Area has historically been cleared of vegetation and converted into agricultural land. The site receives approximately 343 millimetres (mm) of rainfall annually.



The closest National Parks and Wildlife Service South Australia estate to the Project Area is Rudall Conservation Park (357 ha), approximately 5.1 km to the northeast. There is one Heritage Agreement (HA) area, protected under the NV Act, within 5 km of the Project Area (HA 61) and is contiguous with Rudall Conservation Park. There is one fragmented SEB area (2012_2010) west of the land under application, with the closest pocket approximately 200 metres (m) away (DEW 2024a). There is also one Roadside Significant Site (1041) 1.5 km to the east on the righthand side of the Birdseye Highway (DEW 2024a). The Project, in its current form, will not impact any of the aforementioned areas protected under the NPW and NV Acts.

Interim Biogeographic Regionalisation of Australia

The Interim Biogeographic Regionalisation of Australia (IBRA) was designed to provide a framework for reporting on geographically distinct landscapes. These landscapes broadly describe areas of similar topography, geology, soil, and vegetation composition.

The Project Area falls across two IBRA associations, Cleve and Hambidge, which belong to the Eyre Hills and Eyre Mallee subregions, respectively. These IBRA entities are encompassed by the broader Eyre Yorke Block.

Approximately 16,696 ha (17 %) and 99,466 ha (28 %) of remnant native vegetation is mapped within the Cleve and Hambidge IBRA associations. Of this, only 279 ha (17 %) and 73,409 ha (74 %) are protected by conservation estates and by HA agreements. Outside formal conservation areas, remnant vegetation is largely concentrated along fence lines, road corridors, watercourses, disused paddocks, and as isolated scattered trees.

Previous assessments

The following assessments have been undertaken by ESB Ecology to identify ecological constraints associated with the Project (Table 3).

Table 3. Summary of previous assessments for the Project.

Project name	Year	Field dates	Report type	EBS Project Code and reference
Photon Energy Solar Storage Project Desktop assessment	2021	-	Desktop report outlining ecological constraints for the Project	EX211105 (EBS Ecology 2021)
Photon Energy Solar Storage Ecological Assessment	2022	28 February to 3 March & 21 to 25 November	Ecological report highlighting on-ground vegetation condition and outline of constraints	E211105 (EBS Ecology 2022a)
Desktop letter for EPBC threatened species	2022	-	Letter memo investigating potential threatened species within a new area.	EX211105B (EBS Ecology 2022b)
Yadnarie Solar Farm Ecological Assessment	2024	25 August 2023	Updates to the Ecological Report with a new Project Area	EX240519 (EBS Ecology 2024)
Yadnarie Solar Farm Native Vegetation Clearance Data Report	2024	-	Native Vegetation Clearance Data report, with the impact area and Significant Environmental Benefit calculation to Offset the Project.	This report

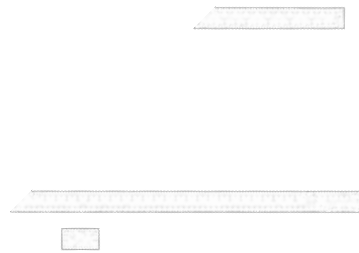
2.4. Details of the proposal

The Project will include the development of a solar farm with the capacity to generate 150 megawatts (MW) of renewable energy, a 90 MW grid connection, at least 720 MW hours of storage (and eight hours of dispatchable energy), with connection to the Yadnarie substation or 132 kilovolt overhead transmission line and ancillary infrastructure.

The solar farm will involve the construction of 150 fields of rotational mirrors (heliostats) orientated north. Each field comprises 273 individual heliostats. Each heliostat is approximately between 2.6 and 5.6 metres above the ground and mounted on a steel post. Heliostat heights will vary throughout the day as they track the sun. Each field has one receiver mounted on a tower 40-45 metres high. The receiver faces the field of mirrors in a southward direction. Each receiver has electrical switchgear and water pumping infrastructure at the base of its tower. For every two fields, there is one inverter for a total of 75 inverters. Additional project components include:

- Three (3) thermal hydro units, with each comprising:
 - Three (3) cold pits (each pit/tank is 28,000 square metres) with a height above ground level of 3 m.
 - Three (3) hot pits (each pit/tank is 28,000 square metres) with a height above ground level of 3 m.
- Three (3) thermal hydro plants, with each comprising an Organic Rankine Cycle engine and generator, heat exchangers, water tanks, pumps, pipework and transformers.
- Underground electrical cable reticulation.
- Switchyard and connection via overhead transmission lines to the Yadnarie substation.
- Operations and maintenance building and compound.

- Temporary construction compound.
- Security fencing around the perimeter of the Project Area.
- Internal access roads.



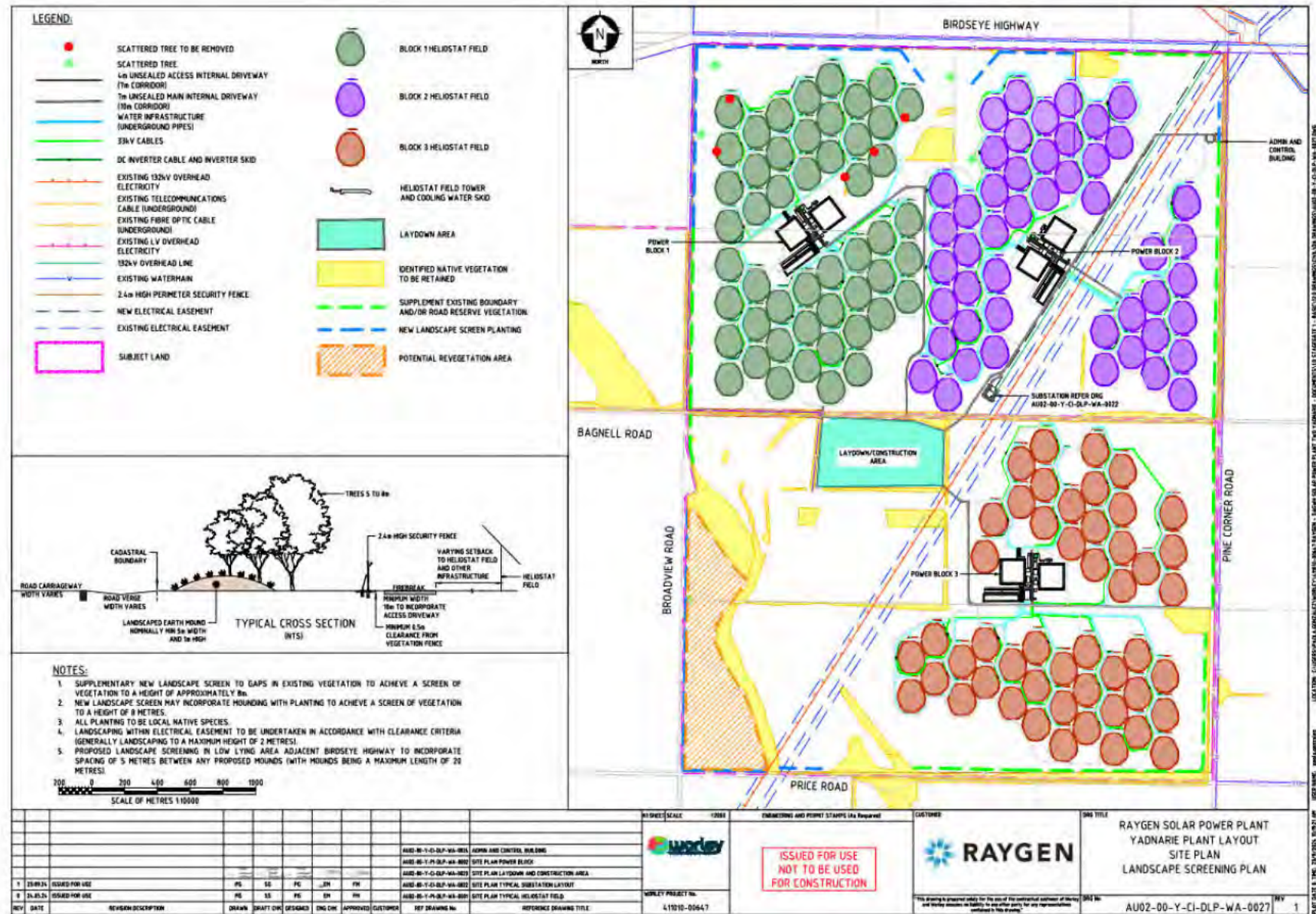


Figure 2. The current design of the Yadnarie Solar Farm, provided to EBS by MasterPlan on 24 September 2024.

2.5. Approvals required or obtained

2.5.1. *Native Vegetation Act 1991 (NV Act)*

The Project is subject to the NV Act, which is the subject of this Data Report, and fulfils the requirements of the NV Act to clear native vegetation.

2.5.2. *Planning, Development and Infrastructure Act 2016 (PDI Act)*

This Data Report is in support of a Development Application being prepared by MasterPlan.

2.5.3. *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*

EBS were instructed by MasterPlan, on behalf of RayGen, to undertake an EPBC Self-assessment to inform whether any Matters of Environmental Significance (MNES) listed under the EPBC Act would be significantly impacted (as per the *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*) by the Project (EBS 2024). Through the preparation of a Protected Matters Search Tool (PMST) report, the EPBC Self-assessment identified the seven MNES entities as 'likely' to occur in the Project Area. Some of these MNES are also threatened under the State *National Parks and Wildlife Act 1972*. The relevant MNES are listed below:

- Two EPBC Act listed threatened flora species:
 - o *Caladenia tensa* (Greencomb Spider-orchid) – nationally Endangered.
 - o *Pterostylis mirabilis* (Nodding Rufoushood) – nationally and State Vulnerable.
- Five EPBC Act listed threatened fauna species (four birds and one mammal):
 - o Blue-winged Parrot (*Neophema chrysostoma*) – nationally and State Vulnerable.
 - o Diamond Firetail (*Stagonopleura guttata*) – nationally and State Vulnerable.
 - o Malleefowl (*Leipoa ocellata*) – nationally and State Vulnerable.
 - o Sandhill Dunnart (*Sminthopsis psammophila*) – nationally Endangered and State Vulnerable.
 - o Southern Whiteface (*Aphelocephala leucopsis*) – nationally Vulnerable.

The EPBC Self-assessment concluded that there would be no significant impact to any MNES resulting from the proposed Project.

2.5.4. National Parks and Wildlife Act 1972 (NPW Act)

The flora and fauna survey conducted as part of this native vegetation clearance application was undertaken by EBS under Scientific Research License K25613-23.

2.5.5. Landscapes South Australia Act 2019 (LSA Act)

All landowners have a responsibility to promote sustainable management of the State's landscape, which includes minimising occurrence, transport and spread of weeds including those listed as Declared under the LSA Act. Standard procedures, such as those outlined in a Construction Environmental Management Plan (CEMP) should be in place to prevent the encroachment of weeds and other potential environmental impacts.

2.5.6. Aboriginal Heritage Act 1998

Approval will be required if any items of cultural significance are uncovered during construction works. A 'Stop Work' procedure should be in place if any items of this nature are located.

2.6. Native Vegetation Regulation

The proposed clearance will be assessed under Regulation 12, clause 34, Infrastructure.

2.7. Development Application information (if applicable)

A review of the South Australian Property and Planning Atlas found that the Project Area falls within the Rural zone and is located within the Hazards (Bushfire – Regional) and Native Vegetation overlays. DA information that is relevant to this native vegetation clearance application is listed in Table 4.

Table 4. Development Application information.

Local Government Area	District Council of Cleve
Hundred	Yadnarie
Parcel	H533400 SE44 H533400 SE55 H533400 SE56 H533400 SE394 H533400 SE395 H533400 SE39 H533400 SE28
Title	CT/5940/707, CT/6205/513, CT/6274/890
Zone	Rural
Overlays	Hazards (Bushfire – Regional) Key Outback and Rural Routes Native Vegetation Water Resources
DA number	DA 24017660

3. METHODOLOGY

3.1. Flora assessment

Two separate flora assessments were undertaken by EBS for the Project:

- From 28 February to 3 March 2022 by Ecologists E. West and N. Piscioneri; and
- From 21 to 25 November 2022 by Ecologist E. West and NVC accredited consultant E. Tremain.

All flora assessments were performed in accordance with the Bushland Assessment Method (BAM) (NVC 2020a) and the Scattered Tree Assessment Method (STAM) (NVC 2020b).

3.1.1. Bushland Assessment Method

The BAM is derived from the Nature Conservation Society of South Australia's Bushland Condition Monitoring methodology (Croft *et al.* 2007, 2008a, 2008b, 2009; Milne and Croft 2012; Milne and McCallum 2012). The BAM is used to assess areas of native vegetation requiring clearance and calculate the SEB requirements.

Details of site selection/stratification and assessment protocols, and the biodiversity value components assessed and the factors that influence these components are outlined in the *Bushland Assessment Manual* (NVC 2020a).

The Conservation Significance Scores were calculated from direct observations of flora and direct and historical observations of fauna species of conservation significance. All fauna identified as known or likely to occur in the PMST, and fauna with Biological Database of South Australia (BDBSA) records since 1995 and with a spatial reliability of less than 1 km, within 5 km of the Project Area, were included in the BAM scoresheets. Species determined as unlikely to occur within the Project Area will be removed by the Native Vegetation Branch if the finding is supported. Marine and/or wetland species were omitted from the scoresheets given the entire Project Area is terrestrial and there are no permanent watercourses or wetlands present.

3.1.2. Scattered Tree Assessment Method

The STAM is derived from the *Scattered Tree Clearance Assessment in South Australia: Streamlining, Guidelines for Assessment and Rural Industry Extension* report (Cutten and Hodder 2002). The STAM is suitable for assessing scattered trees in the following instances:

- Individual scattered trees (i.e., canopy does not overlap). The spatial distribution of trees may vary from approaching what would be considered their original distribution (pre-European) through to single isolated trees in the middle of a paddock; or
- Dead trees (when a dead tree is considered native vegetation); or
- Clumps of trees (contiguous overlapping canopies) if the clump is small (approximately <0.1 ha); and

- For both scattered trees and clumps:
- The ground layer comprises wholly or largely of introduced species;
- Some scattered colonising native species may be present, but represent <5% of the ground cover; and
- The area around the trees consists of introduced pasture or crops.

Details of the scattered tree Point Scoring System are outlined in the *Scattered Tree Assessment Manual* (NVC 2020b). The numbers of uncommon and threatened scattered tree using fauna species entered into the Scattered Tree Scoresheet were calculated by cross-referring the BDBSA data extract (see Section 3.2.2) and the lists of scattered trees using fauna in the *Scattered Tree Assessment Manual* (NVC 2020). The resource use of each species identified was considered when determining each tree's suitability for threatened fauna species (e.g., species that only use hollows in scattered trees were only assigned to scattered trees containing hollows).

3.1.3. Provisional list of threatened ecosystems

The *Provisional List of Threatened Ecosystems* (Department for Environment and Heritage 2005) was reviewed to determine whether any vegetation associations impacted meet the criteria for listing as a threatened ecosystem at the State level.

3.2. Fauna assessment

A desktop assessment was undertaken to determine the potential for any threatened fauna species and TECs to occur within the Project Area. This included species listed under both the EPBC Act and the NPW Act.

The search was undertaken by applying a 5 km buffer around the Project Area, referred to as the Search Area. The following databases were searched to obtain records of threatened species:

- PMST Report generated by the Department of Climate Change, Energy, Environment and Water (DCCEEW) to identify any MNES that may or are known to occur in the search Area.
- BDBSA data extract obtained from the Department for Environment and Water (DEW) that identifies the location of historical records of flora and fauna in the Search Area.

3.2.1. Protected Matters Search Tool report

A PMST report was generated on 3 June 2024 to identify flora, fauna and TECs listed under the EPBC Act as threatened or migratory (DCCEEW 2024a). Only species and TECs identified in the PMST report as known to occur within the Search Area were assessed for their likelihood of occurrence within the Project Area. A complete threatened species assessment can be seen in Appendix 3.

3.2.2. Biological Database of South Australia data extract

A data extract from the BDBSA was obtained from DEW to identify flora and fauna species that have been recorded within 5 km of the Project Area (data extracted 11/06/2024; DEW 2024a Recordset number: DEWNRBDBSA2406211-2).

The BDBSA is comprised of an integrated collection of species records from the South Australian Museum, conservation organisations, private consultancies, Birds SA, Birdlife Australia, and the Australasian Wader Study Group, which meet the DEW's standards for data quality, integrity, and maintenance. Only species with records since 1995 and a spatial reliability of less than 1 km were assessed for their likelihood of occurrence.

All threatened fauna identified by the BDBSA extract were entered into the scoresheets for the purposes of calculating the threatened fauna score, conservation significance score and SEB obligations of the clearance. Species assessed as unlikely to occur in the Project Area may be removed by the NVC during the approvals process.

3.2.3. Fauna field survey

Fauna surveys were conducted in conjunction with the vegetation assessment. Weather conditions during the survey were favourable. All native and exotic fauna species opportunistically encountered (directly observed, or tracks, scats, burrows, nests, and other signs of presence) during the native vegetation clearance assessment were recorded. Potential fauna refuge sites, such as hollows, were noted as an indication of availability of suitable habitat. Particular attention was paid to identifying habitat for threatened species identified in the desktop assessment. For each opportunistic fauna observation, the species, number of individuals, GPS location, detection methodology (sight, sound, or sign) and habitat were recorded.

3.3. Likelihood of occurrence

Threatened species and TECs that were identified by the desktop assessment were assessed for their likelihood of occurrence in the Project Area. All species with historical records since 1995 with a spatial reliability of < 1 km and species listed as 'known to occur' by the PMST report were assessed.

The assessment was based on recency or records, habitat preferences and the results of the field survey, with criteria for the likelihood of occurrence described in Table 5.

Table 5. Criteria for the likelihood of occurrence of threatened species within the Project Area.

Likelihood	Criteria
Highly Likely/Known	Recorded in the last 10 years, the species does not have highly specific niche requirements, the habitat is present and falls within the known range of the species distribution or; The species was recorded as part of field surveys.
Likely	Recorded within the previous 20 years, the area falls within the known distribution of the species and the area provides habitat or feeding resources for the species.
Possible	Recorded within the previous 20 years, the area falls inside the known distribution of the species, but the area provides limited habitat or feeding resources for the species. Recorded within 20 - 40 years, survey effort is considered adequate, habitat and feeding resources present, and species of similar habitat needs have been recorded in the area.
Unlikely	Recorded within the previous 20 years, but the area provides no habitat or feeding resources for the species, including perching, roosting or nesting opportunities, corridor for movement or shelter. Recorded within 20 - 40 years; however, suitable habitat does not occur, and species of similar habitat requirements have not been recorded in the area. No records despite adequate survey effort.

3.4. Limitations

3.4.1. Survey limitations

Flora and fauna records were retrieved from the PMST and BDBSA extract. The BDBSA only includes verified flora and fauna records submitted to DEW or partner organisations. It is recognised that information is imperfectly captured, and it is possible that significant species may occur in the Project Area that are not reflected by database records. Although much of the BDBSA data has been through a variety of validation processes, the lists may contain errors and should be used with caution. DEW gives no warranty that the data is accurate or fit for any particular purpose of the user or any person to whom the user discloses the information.

No species-specific targeted flora or fauna surveys were undertaken.

3.4.2. Spatial data limitations

All spatial data has been captured or converted to the following coordinate reference system.

Datum: Geocentric Datum of Australia 2020 (GDA2020).

Projection: Map Grid of Australia 2020 (MGA2020), Zone 53.

All location coordinates listed in this report are expressed using this system. Spatial data converted from other coordinate reference systems may have accuracy limitations.

4. ASSESSMENT OUTCOMES

4.1. Vegetation assessment

4.1.1. General description of the vegetation, the site and matters of significance

The dominant landform in the Project Area is a plain that has been extensively cleared for agriculture and which continues to be cropped. Consequently, remnant vegetation is largely concentrated along paddock boundaries and fence lines (Figure). Outside of these areas remnant vegetation is comprised of small, discontinuous pockets of mallee woodland and scattered trees. In some areas, where cropping has ceased, there has been some natural regeneration by degraded grassland and chenopod communities.

Vegetation condition reflects historical land use and ranges from high-quality intact mallee woodland (i.e., VA 1) to degraded mallee with a high rate of exotic incursions (i.e., VA 6).

The field surveys mapped 149.816 ha of native vegetation across the Project Area, assigned to nine vegetation associations:

- VA 1 *Eucalyptus calycogona* and *E. socialis* ssp. *socialis* Mallee +/- *Melaleuca lanceolata*
- VA 2 *Enchylaena tomentosa* var. *tomentosa*, *Sclerolaena diacantha* and *Maireana brevifolia* Low shrubland +/- *Acacia notabilis*
- VA 3 *Eucalyptus socialis* ssp. *socialis*, *E. gracilis* and *E. phenax* ssp. *phenax* Mallee over *Melaleuca uncinata*
- VA 4 *Austrostipa* sp. and *Rytidosperma* sp. Grassland +/- *Enchylaena tomentosa* var. *tomentosa* and *Vittadinia cervicalis* var. *circularis*
- VA 5 *Eucalyptus porosa* Open Mallee over *Enchylaena tomentosa* var. *tomentosa* and *Maireana brevifolia*
- VA 6 *Eucalyptus porosa* Open Mallee over *Triodia irritans*
- VA 7 *Eucalyptus gracilis* and *E. incrassata* Mallee over *Callitris gracilis* +/- *Triodia irritans*
- VA 8 *Eucalyptus calycogona* +/- *E. oleosa* Mallee over *Melaleuca uncinata*
- VA 9 *Eucalyptus gracilis* and *E. oleosa* Mallee over mixed chenopod shrubs +/- *Melaleuca pauperiflora* ssp. *mutica*.

A total of 11 Scattered Trees is located across the Project Area, consisting of:

- 5 *Eucalyptus socialis* (Beaked Red Mallee)
- 3 *E. porosa* (Mallee Box)
- 1 *E. petiolaris* (Eyre Peninsula Blue Gum)
- 1 *E. leptophylla* (Narrow-leaf Red Mallee)

- 1 *E. gracilis* (Yorrell)

A total of 148 flora species were recorded, as listed in 8.1 Appendix 1 - Flora species recorded by the field survey, including 115 native and 33 introduced species. Of these, seven are Declared under the LSA Act and three are also listed as WoNS:

- *Asparagus asparagoides* f. (Bridal Creeper) – Declared and WoNS;
- *Echium plantagineum* (Salvation Jane) – Declared;
- *Gazania linearis* (Gazania) – Declared;
- *Gazania* sp. (African Daisy) – Declared; [REDACTED]
- *Lycium ferocissimum* (African Boxthorn) – Declared and WoNS;
- *Marrubium vulgare* (Horehound) – Declared;
- *Solanum elaeagnifolium* (Silver-leaved Nightshade) – Declared and WoNS; and [REDACTED]
- *Tribulus terrestris* (Caltrop) – Declared.

No wetlands are present in the Project Area, although there are three unnamed non-perennial watercourses located in the south (Figure 1). These did not contain water the time of the field surveys. Soils across the site were of a clay-loam constitution.

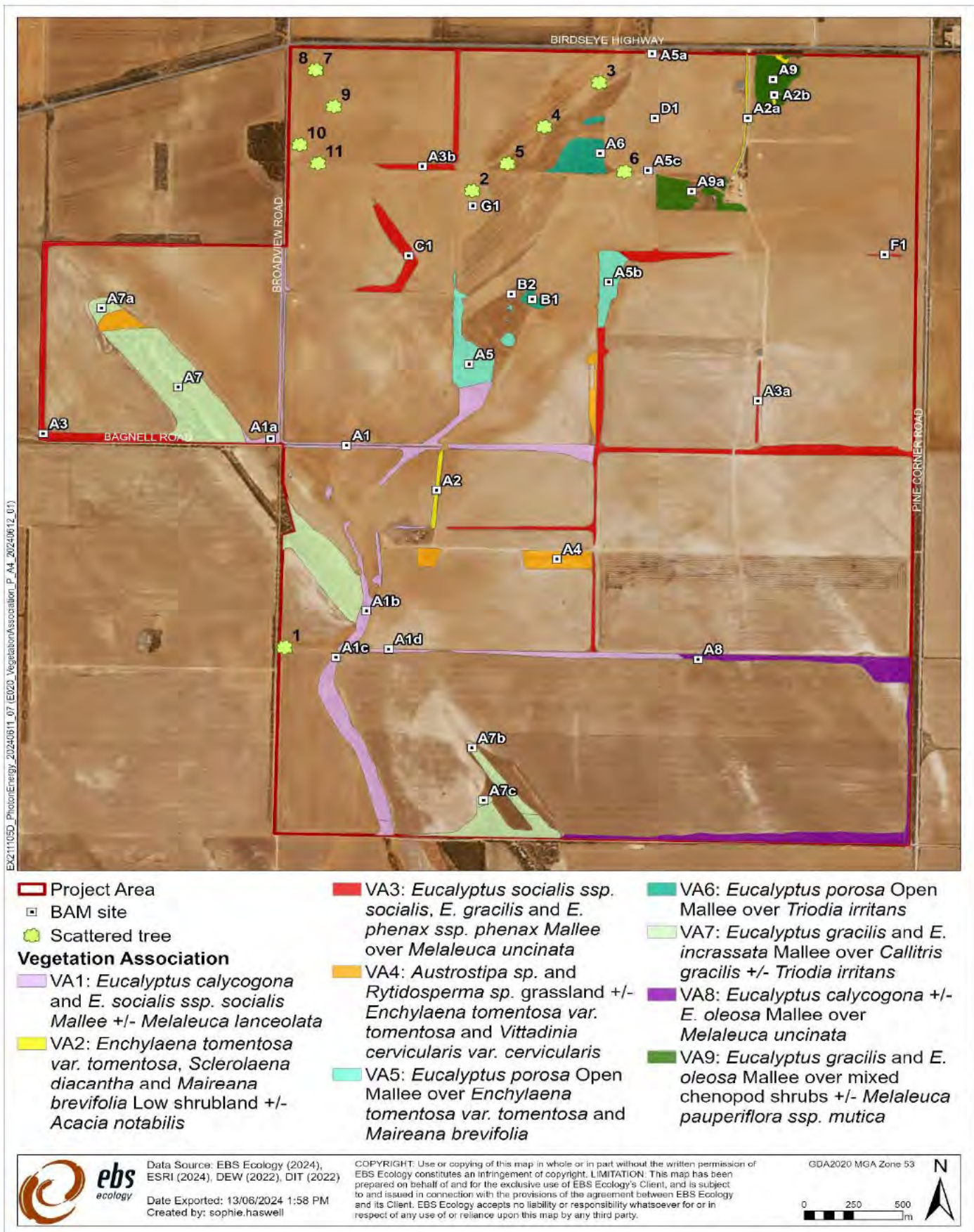


Figure 3. Distribution of vegetation associations across the Project Area, scattered trees and the location of BAM survey sites.

4.1.2. Details of the vegetation associations proposed to be impacted

Through the strategic positioning of infrastructure in areas of bare earth (i.e., cropped paddocks), the Project will require the clearance of 33.425 ha (~22.3 %) of native vegetation present within the Project Area (Table 6).

Table 6. Vegetation associations (VAs) located within the Project Area.

VA	Description	Area (ha) across the Project Area	Area (ha) impacted	Reference
VA 1	<i>Eucalyptus calycogona</i> and <i>E. socialis</i> ssp. <i>socialis</i> Mallee +/- <i>Melaleuca lanceolata</i>	28.122	2.915	Table 7
VA 2	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> , <i>Sclerolaena diacantha</i> and <i>Maireana brevifolia</i> Low shrubland +/- <i>Acacia notabilis</i>	2.144	0.577	Table 8
VA 3	<i>Eucalyptus socialis</i> ssp. <i>socialis</i> , <i>E. gracilis</i> and <i>E. phenax</i> ssp. <i>phenax</i> Mallee over <i>Melaleuca uncinata</i>	30.005	11.892	Table 9
VA 4	<i>Austrostipa</i> sp. and <i>Rytidosperma</i> sp. Grassland +/- <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> and <i>Vittadinia cervicalis</i> var. <i>cervicalis</i>	8.173	1.425	Table 10
VA 5	<i>Eucalyptus porosa</i> Open Mallee over <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> and <i>Maireana brevifolia</i>	10.699	10.575	Table 11
VA 6	<i>Eucalyptus porosa</i> Open Mallee over <i>Triodia irritans</i>	5.758	0.949	Table 12
VA 7	<i>Eucalyptus gracilis</i> and <i>E. incrassata</i> Mallee over <i>Callitris gracilis</i> +/- <i>Triodia irritans</i>	40.098	0	-
VA 8	<i>Eucalyptus calycogona</i> +/- <i>E. oleosa</i> Mallee over <i>Melaleuca uncinata</i>	15.034	0.132	Table 13
VA 9	<i>Eucalyptus gracilis</i> and <i>E. oleosa</i> Mallee over mixed chenopod shrubs +/- <i>Melaleuca pauperiflora</i> ssp. <i>mutica</i>	9.784	4.961	Table 14
TOTAL (ha)		149.816	33.425	

As per Table 6, eight of the nine mapped VAs within the Project Area will be impacted as a result of the Project. These VAs are described in further detail in Table 7 to Table 14, which include descriptions of the condition, composition and structure of these communities. The relevant BAM scoresheets are provided as [Attachment 1](#).

Table 7. Summary of VA 1.

Vegetation Association	<i>Eucalyptus calycogona</i> and <i>E. socialis</i> ssp. <i>socialis</i> Mallee +/- <i>Melaleuca lanceolata</i> .				
Benchmark Community	EP 6.2 Mallee with Open Shrub Understorey on Clay loam Soil Flats.				
 VA 1 (BAM site G1) facing east. Coordinates: Easting 627373, Northing 6270416.					
General Description	Mallee dominated by <i>Eucalyptus calycogona</i> (Ridge-fruited Mallee) and <i>E. socialis</i> ssp. <i>socialis</i> (Beaked Mallee). Other tree species present include <i>E. phenax</i> ssp. <i>phenax</i> (White Mallee) and <i>E. gracilis</i> (Yorrell). Open, low chenopod and shrub understorey with <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Ruby Saltbush), <i>Sclerolaena diacantha</i> (Grey Bindyi) and <i>Maireana brevifolia</i> (Short-leaf Bluebush). Isolated tall shrubs of <i>Acacia halliana</i> (Hall's Wattle), <i>Melaleuca lanceolata</i> (Dryland Tea-tree) and <i>Santalum acuminatum</i> (Quandong) are also present. Ground strata is dominated by <i>Austrostipa</i> sp. (Spear-grass), <i>Enneapogon</i> sp. (Bottle-washers/Nineawn) and <i>Atriplex crassipes</i> var. <i>crassipes</i>. Weed intrusions were predominately represented by <i>Lycium ferocissimum</i> (African Boxthorn), <i>Brassica</i> spp. (Mustard), and <i>Carrichtera annua</i> (Ward's Weed). The VA occurs in the southern to central part of the Project Area on clay loam soil flats.				
	Over storey	Mid storey		Under storey	
	<i>Eucalyptus calycogona</i> <i>E. socialis</i> ssp. <i>socialis</i> <i>E. phenax</i> ssp. <i>phenax</i> <i>E. gracilis</i>	<i>Acacia halliana</i> <i>Melaleuca lanceolata</i> <i>Santalum acuminatum</i>		<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> <i>Atriplex crassipes</i> var. <i>crassipes</i> <i>Sclerolaena diacantha</i> <i>Maireana brevifolia</i> <i>Salsola australis</i> <i>Vittadinia cuneata</i> var. <i>cuneata</i>	
Threatened Species or Community	This VA did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Block A					
Landscape Context Score	1.1	Vegetation Condition Score	32.04	Conservation Significance Score	1
Unit Biodiversity Score	35.56	Area (ha)	2.893	Total Biodiversity Score	102.88
Block G					
Landscape Context Score	1.09	Vegetation Condition Score	35.10	Conservation Significance Score	1
Unit Biodiversity Score	38.26	Area (ha)	0.023	Total Biodiversity Score	0.88

Table 8. Summary of VA 2.

Vegetation Association	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> , <i>Sclerolaena diacantha</i> and <i>Maireana brevifolia</i> Low shrubland +/- <i>Acacia notabilis</i> .				
Benchmark Community	EP 8.1 Mallee & Low Woodlands with Open Sclerophyll Shrub & Chenopod Understorey.				
					
VA 2 (site A2a) facing south. Coordinates: Easting 628768, Northing 6270911.					
General Description	Historical clearance has resulted in the degradation of the Mallee resulting in what now exists as a low open shrubland of <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Ruby Saltbush), <i>Sclerolaena diacantha</i> (Grey Bindyi) and <i>Maireana brevifolia</i> (Short-leaf Bluebush) with scattered tall shrubs of <i>Pittosporum angustifolium</i> (Native Apricot). Ground strata is dominated by <i>Austrostipa</i> spp. (Spear-grass), <i>Rytidosperma caespitosum</i> (Common Wallaby-grass) and <i>Enneapogon</i> sp. (Bottle-washers/Nineawn). Weed cover at this VA was high with dominance from <i>Carrichtera annua</i> (Ward's Weed) with some other weed intrusions. The VA occurs in the north, east and southwest parts of the Project Area amongst planted vegetation and adjacent intact mallee.				
	Over storey	Mid storey		Under storey	
	N/A	<i>Acacia notabilis</i>		<i>Maireana brevifolia</i> <i>Sclerolaena diacantha</i> <i>Salsola australis</i> <i>Atriplex crassipes</i> var. <i>crassipes</i> .	
Threatened Species or Community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Landscape Context Score	1.11	Vegetation Condition Score	20.70	Conservation Significance Score	1
Unit Biodiversity Score	22.98	Area (ha)	0.577	Total Biodiversity Score	13.26

Table 9. Summary of VA 3.

Vegetation Association	<i>Eucalyptus socialis</i> ssp. <i>socialis</i> , <i>E. gracilis</i> and <i>E. phenax</i> ssp. <i>phenax</i> Mallee over <i>Melaleuca uncinata</i> .				
Benchmark Community	EP 5.2 Mallee on Sandy Loams of inland swales and low dunes.				
 VA 3 (site C1) facing south. Coordinates: Easting 627048, Northing 6270135.					
General Description	Mallee dominated by <i>Eucalyptus socialis</i> ssp. <i>socialis</i> (Beaked Red Mallee), <i>E. gracilis</i> (Yorrell) and <i>E. phenax</i> ssp. <i>phenax</i> (White Mallee). Other tree species present include <i>E. incrassata</i> (Ridge-fruited Mallee) and <i>E. porosa</i> (Mallee box). Open, low chenopod and shrub understorey with <i>E. tomentosa</i> var. <i>tomentosa</i> (Ruby Saltbush), <i>Maireana brevifolia</i> (Short-leaf Bluebush) and <i>Atriplex</i> spp. (Saltbush) Isolated tall shrubs of <i>Pittosporum angustifolium</i> (Native Apricot), <i>Melaleuca uncinata</i> (Broombush) and <i>Callitris verrucosa</i> (Scrub Cypress Pine) are also present. Ground strata is dominated by <i>Dysphania cristata</i> (Crested Crumbweed) and <i>Austrostipa</i> spp. (Spear-grass) with weed species <i>Galenia pubescens</i> (Coastal Galenia) and <i>Mesembryanthemum crystallinum</i> (Common Iceplant) also common. The VA is scattered across the Project Area boarding cropping paddocks.				
	Over storey	Mid storey		Under storey	
	<i>Eucalyptus socialis</i> ssp. <i>socialis</i> <i>E. phenax</i> ssp. <i>phenax</i> <i>E. gracilis</i>	<i>Pittosporum angustifolium</i> <i>Melaleuca uncinata</i> <i>Callitris verrucosa</i> <i>Santalum acuminatum</i>		<i>Triodia irritans</i> <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> <i>Maireana brevifolia</i>	
Threatened species or community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Block A					
Landscape Context Score	1.11	Vegetation Condition Score	22.06	Conservation Significance Score	1
Unit Biodiversity Score	24.49	Area (ha)	7.844	Total Biodiversity Score	192.08
Block C					
Landscape Context Score	1.09	Vegetation Condition Score	37.89	Conservation Significance Score	1
Unit Biodiversity Score	41.30	Area (ha)	3.90	Total Biodiversity Score	161.07
Block F					
Landscape Context Score	1.09	Vegetation Condition Score	21.60	Conservation Significance Score	1
Unit Biodiversity Score	23.54	Area (ha)	0.147	Total Biodiversity Score	3.46

Table 10. Summary of VA 4.

Vegetation Association	Austrostipa sp. and Rytidosperma sp. grassland +/- Enchylaena tomentosa var. tomentosa and Vittadinia cervicalis var. cervicalis.				
Benchmark Community	EP 8.1 Mallee & Low Woodlands with Open Sclerophyll Shrub & Chenopod Understorey.				
					
VA 4 (site A4) facing south. Coordinates: Easting 627800, Northing 6268422.					
General Description	Grassland dominated by Austrostipa sp. (Spear-grass), and Rytidosperma sp. (Wallaby-grass) with species Chloris truncata and Enneapogon sp. (Bottle-washers/Nineawn) also present. Open, isolated chenopod and shrub understorey with Acacia rigens (Nealie), Melaleuca lanceolata (Dryland Tea-tree), Enchylaena tomentosa var. tomentosa (Ruby Saltbush), Atriplex spp. (Saltbush) and Vittadinia cervicalis var. cervicalis (Waisted New Holland Daisy). The VA occurs in the southern, western, and central parts of the Project Area.				
	Over storey	Mid storey		Under storey	
	N/A	Acacia rigens Melaleuca lanceolata Atriplex spp.		Chloris truncata Rytidosperma sp. Austrostipa spp. Enneapogon sp.	
Threatened species or Community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Block A					
Landscape Context Score	1.11	Vegetation Condition Score	22.10	Conservation Significance score	1
Unit biodiversity Score	24.53	Area (ha)	1.425	Total Biodiversity Score	34.96

Table 11. Summary of VA 5.

Vegetation Association	<i>Eucalyptus porosa</i> Open Mallee over <i>Enchylaena tomentosa</i> and <i>Maireana brevifolia</i> .				
Benchmark Community	EP 8.1 Mallee & Low Woodlands with Open Sclerophyll Shrub & Chenopod Understorey.				
 VA 5 (site A5) facing northeast. Coordinates: Easting 627355, Northing 6269523.					
General Description	Open mallee dominated by <i>Eucalyptus porosa</i> (Mallee Box) and open, low chenopod and shrub understorey with <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Ruby Saltbush), <i>Maireana brevifolia</i> (Short-leaf Bluebush) and <i>Salsola australis</i> (Buckbush). Isolated tall shrubs of <i>Alectryon oleifolius</i> ssp. <i>canescens</i> (Bullock Bush), <i>Acacia notabilis</i> (Notable Wattle) and <i>Acacia halliana</i> (Hall's Wattle) are also present. Large patches of this VA were isolated within the centre of the Project Area, with smaller isolated patches located towards the north.				
	Over storey	Mid storey		Under storey	
	<i>Eucalyptus porosa</i>	<i>Alectryon oleifolius</i> ssp. <i>canescens</i> <i>Acacia notabilis</i> <i>A. halliana</i>		<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> <i>Maireana brevifolia</i> <i>Salsola australis</i> <i>Austrostipa</i> sp. <i>Tragus australianus</i>	
Threatened Species or Community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Block A					
Landscape Context score	1.11	Vegetation Condition Score	32.01	Conservation Significance score	1
Unit biodiversity Score	35.53	Area (ha)	10.432	Total Biodiversity Score	370.69
Block B					
Landscape Context Score	1.09	Vegetation Condition Score	30.98	Conservation Significance score	1
Unit Biodiversity Score	33.76	Area (ha)	0.142	Total Biodiversity Score	4.79

Table 12. Summary of VA 6.

Vegetation Association	<i>Eucalyptus porosa</i> Open Mallee over <i>Triodia irritans</i> .				
Benchmark Community	EP 8.1 Mallee & Low Woodlands with Open Sclerophyll Shrub & Chenopod Understorey.				
					
	VA 6 (site B1). Coordinates: Easting 627675, Northing 6269889.				
General Description	Very open mallee dominated by <i>Eucalyptus porosa</i> (Mallee Box) with an open, low chenopod, shrub and hummock grass understorey consisting of <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Ruby Saltbush), <i>Triodia irritans</i> (Spinifex) and <i>Maireana brevifolia</i> (Short-leaf Bluebush). Isolated tall shrubs of <i>Acacia halliana</i> (Hall's Wattle), <i>A. ligulata</i> (Umbrella Bush) and <i>Pittosporum angustifolium</i> (Native Apricot). Ground strata is dominated by native grasses such as <i>Chloris truncata</i> (Windmill Grass), <i>Rytidosperma caespitosum</i> (Common Wallaby-grass) and <i>Austrostipa</i> spp. (Spear-grass) with some weed intrusions. The VA occurs in the centre of the Project Area on sand-loam soils.				
	Over storey	Mid storey		Under storey	
	<i>Eucalyptus porosa</i>	<i>Acacia halliana</i> <i>A. ligulata</i> <i>Pittosporum angustifolium</i>		<i>Triodia irritans</i> <i>Rytidosperma caespitosum</i> <i>Austrostipa</i> spp. <i>Enneapogon</i> sp. <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> <i>Maireana brevifolia</i> .	
Threatened Species or Community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Block B					
Landscape Context Score	1.09	Vegetation Condition Score	19.91	Conservation Significance Score	1
Unit Biodiversity Score	21.70	Area (ha)	0.886	Total biodiversity Score	19.22
Block D					
Landscape Context Score	1.09	Vegetation Condition Score	18.43	Conservation Significance Score	1
Unit biodiversity Score	20.08	Area (ha)	0.063	Total Biodiversity Score	1.27

Table 13. Summary of VA 8.

Vegetation Association	<i>Eucalyptus calycogona</i> +/- <i>E. oleosa</i> Mallee over <i>Melaleuca uncinata</i> .				
Benchmark Community	EP 8.1 Mallee & Low Woodlands with Open Sclerophyll Shrub & Chenopod Understorey.				
					
VA 8 (site A8) facing northwards.					
General Description	This mallee has a medium vegetation condition score with a mixture of life forms varying from shrubs, forbs, and vines with a number of regenerating species. Exotic species counts for these VAs has high with cover of <i>Galenia pubescens</i> var. <i>pubescens</i> (Coastal Galenia) and <i>Mesembryanthemum crystallinum</i> (Common Iceplant). This VA was found along the outside of cropping paddocks in the northeast of the Project Area.				
	Over storey	Mid storey		Under storey	
	<i>Eucalyptus oleosa</i> ssp. <i>oleosa</i> <i>E. calycogona</i> <i>E. socialis</i> ssp. <i>socialis</i>	<i>Melaleuca lanceolata</i> <i>M. uncinata</i> <i>Callitris verrucosa</i>		<i>Maireana brevifolia</i> <i>Enchylaena tomentosa</i> var. <i>Sclerolaena diacantha</i>	
Threatened Species or Community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area.				
Landscape Context Score	1.11	Vegetation Condition Score	40.84	Conservation Significance Score	1
Unit Biodiversity Score	45.33	Area (ha)	0.132	Total Biodiversity Score	5.98

Table 14. Summary of VA 9.

Vegetation Association	<i>Eucalyptus gracilis</i> and <i>E. oleosa</i> Mallee over mixed chenopod shrubs +/- <i>Melaleuca pauperiflora</i> ssp. <i>mutica</i> .				
Benchmark Community	EP 8.1 Mallee & Low Woodlands with Open Sclerophyll Shrub & Chenopod Understorey.				
					
VA 9 (site A9) facing northwards. Coordinates: Easting 628896, Northing 6271129.					
General description	Mallee dominated by <i>Eucalyptus oleosa</i> (Red Mallee) and <i>E. gracilis</i> (Yorrell). Open, low mixed chenopod and shrub understorey with <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Ruby Saltbush), <i>Maireana brevifolia</i> (Short-leaf Bluebush) and <i>Sclerolaena diacantha</i> (Grey Bindyi). Isolated tall shrubs of <i>Geijera linearifolia</i> (Sheep Bush), <i>Pittosporum angustifolium</i> (Native Apricot) and <i>Melaleuca pauperiflora</i> ssp. <i>mutica</i> (Boree) are also present but not common. Ground strata is dominated by <i>Austrostipa</i> spp. (Spear-grass) and <i>Ptilotus seminudus</i> (Rabbit-tails) with dominance from weed species such as, <i>Aizoon pubescens</i> (Coastal Galenia) and <i>Mesembryanthemum crystallinum</i> (Common Iceplant). The VA mostly occurs in the northeastern part of the Project Area.				
	Over storey	Mid storey		Under storey	
	<i>Eucalyptus oleosa</i> <i>E. gracilis</i>	<i>Geijera linearifolia</i> <i>Pittosporum angustifolium</i> <i>Melaleuca pauperiflora</i> ssp. <i>mutica</i>		<i>Enchylaena tomentosa</i> var. <i>tomentosa</i> <i>Maireana brevifolia</i> <i>Sclerolaena diacantha</i> <i>Salsola australis</i>	
Threatened Species or community	This vegetation association did not meet the requirements of a TEC. No species have been identified as 'Known' by the PMST or have BDBSA records within the Search Area, to occupy this vegetation community.				
Landscape Context score	1.11	Vegetation Condition Score	37.02	Conservation Significance Score	1
Unit Biodiversity Score	41.09	Area (ha)	4.961	Total Biodiversity Score	203.84

4.1.3. Details of the scattered trees proposed to be impacted

As per Table 15, five of the 11 Scattered Trees will be impacted as a result of the Project. These trees are described in further detail in Table 16 to Table 20. The STAM scoresheet is provided as [Attachment 2](#).

Table 15. Scattered trees assessed within the Project Area.

Tree #	Scientific name	Common name	No in clump	Height (m)	Diameter (cm)	Dieback (%)	Hollows (s, m, l)	Impact action	Reference
1	<i>Eucalyptus gracilis</i>	Yorrell	1	7.0	37	40	0	Not impacted	-
2	<i>E. socialis</i>	Beaked Red Mallee	1	6.5	44	55	10, 2, 2	Impacted	Table 16
3	<i>E. porosa</i>	Mallee Box	1	8.0	61	60	5, 2, 2	Not impacted	-
4	<i>E. petiolaris</i>	Eyre Peninsula Blue Gum	1	5.0	80	8	0	Impacted	Table 17
5	<i>E. porosa</i>	Mallee Box	1	6.5	45	30	2	Impacted	Table 18
6	<i>E. porosa</i>	Mallee Box	1	6.5	32	2	0	Impacted	-
7	<i>E. leptophylla</i>	Narrow-leaf Red Mallee	1	7.0	105	40	5, 3, 2	Not impacted	-
8	<i>E. socialis</i>	Beaked Red Mallee	1	7.0	100	40	5, 3, 2	Not impacted	-
9	<i>E. socialis</i>	Beaked Red Mallee	1	8.0	45	50	0	Impacted	Table 19
10	<i>E. socialis</i>	Beaked Red Mallee	1	7.0	110	60	5, 2, 0	Not impacted	-
11	<i>E. socialis</i>	Beaked Red Mallee	1	6.5	32	40	0	Impacted	Table 20

Hollow code: s = small, m = medium, l = large.

Table 16. Summary of Tree 2.

Tree ID – Tree 2	
Tree spp. – <i>Eucalyptus socialis</i>	
Number of Trees – 1	
Height (m) – 6.5	
Hollows – 14 (10 small, 2 medium, 2 large)	
Diameter (cm) – 44	
Canopy Dieback (%) – 55	
Total Biodiversity Score – 1.94	
Coordinates: Easting 627371, Northing 6270503.	

Table 17. Summary of Tree 4.

Tree ID – Tree 4	
Tree spp. – <i>Eucalyptus petiolaris</i> (recorded as <i>E. leucoxylon</i> ssp. <i>megalocarpa</i>)	
Number of Trees – 1	
Height (m) – 5.0	
Hollows – 0	
Diameter (cm) – 80	
Canopy Dieback (%) – 8	
Total Biodiversity Score – 2.12	
Coordinates: Easting 627736, Northing 6270864.	

Table 18. Summary of Tree 5.

Tree ID – Tree 5	
Tree spp. – <i>Eucalyptus porosa</i>	
Number of Trees – 1	
Height (m) – 6.5	
Hollows – 2 small	
Diameter (cm) – 45	
Canopy Dieback (%) – 30	
Total Biodiversity Score – 1.35	
Coordinates: Easting 627549, Northing 6270658.	

Table 19. Summary of Tree 9.

Tree ID – Tree 9	
Tree spp. – <i>Eucalyptus socialis</i>	
Number of Trees – 1	
Height (m) – 8	
Hollows – 0	
Diameter (cm) – 45	
Canopy Dieback (%) – 50	
Total Biodiversity Score – 1.43	

Coordinates: Easting 626669, Northing 6270979.

Table 20. Summary of Tree 11.

Tree ID – Tree 11	
Tree spp. – <i>Eucalyptus socialis</i>	
Number of Trees – 1	
Height (m) – 6.5	
Hollows – 0	
Diameter (cm) – 32	
Canopy Dieback (%) – 40	
Total Biodiversity Score – 0.64	
Coordinates: Easting 626589, Northing 6270658	

4.1.4. Site map showing areas of proposed impact

The proposed impacts associated with the Project are provided in Figure 3 on the next page. The map shows both patches of native vegetation and scattered trees.

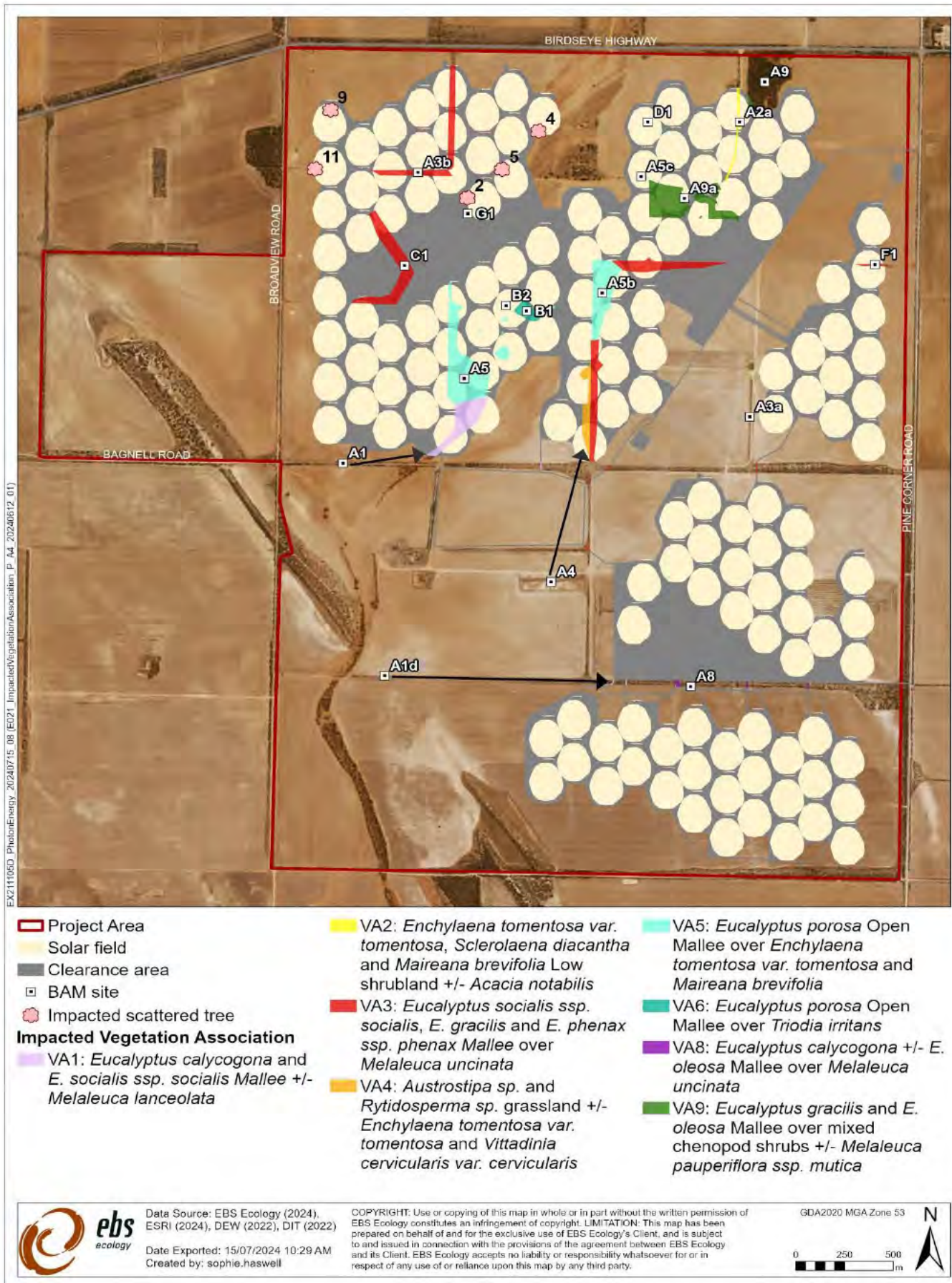


Figure 3. Vegetation and scattered trees proposed to be impacted by the proposal.

4.2. Threatened Ecological Communities

The PMST search identified one TEC that could potentially occur within the Project Area:

- Endangered Ecological Community Eyre Peninsula Blue Gum (*Eucalyptus petiolaris*) Woodland (EPBGW).

This TEC was not observed within the Project Area. Database searches found the community mapped in the Search Area (Figure 4).

4.3. Threatened species assessment

The desktop database searches identified 27 threatened species (12 flora and 15 fauna) within the Search Area. Of these, 23 are listed as threatened under the EPBC Act and 21 under the NPW Act (8.3 Appendix 3 – Likelihood of Occurrence Assessment). The PMST report did not identify any threatened species as 'known to occur'.

4.3.1. Threatened fauna

The PMST report did not identify any threatened species as 'known to occur'. The BDBSA did not return any threatened fauna records that were less than 1 km spatial reliability and greater than 1995.

4.3.2. Threatened flora

The BDBSA search identified a threatened species within the Search Area (Figure 4) this includes:

- *Eucalyptus cretata* (Darke Peak Mallee) – State Rare.

Despite having records in the local area, the field surveys did not record *E. cretata*. As a tree with clear diagnostic features (i.e., fruiting structures) it was confirmed absent from the Project Area.

A total of 148 flora and 30 fauna species were recorded across the Project Area (8.1 Appendix 1 - Flora species recorded by the field survey and 8.2 Appendix 2 - Fauna species recorded by the field survey). The field survey, however, did not encounter any species listed as threatened under the EPBC and/or NPW Acts.

The full likelihood assessment for all threatened and migratory species identified by the database searches is provided in 8.3 Appendix 3 – Likelihood of Occurrence Assessment.

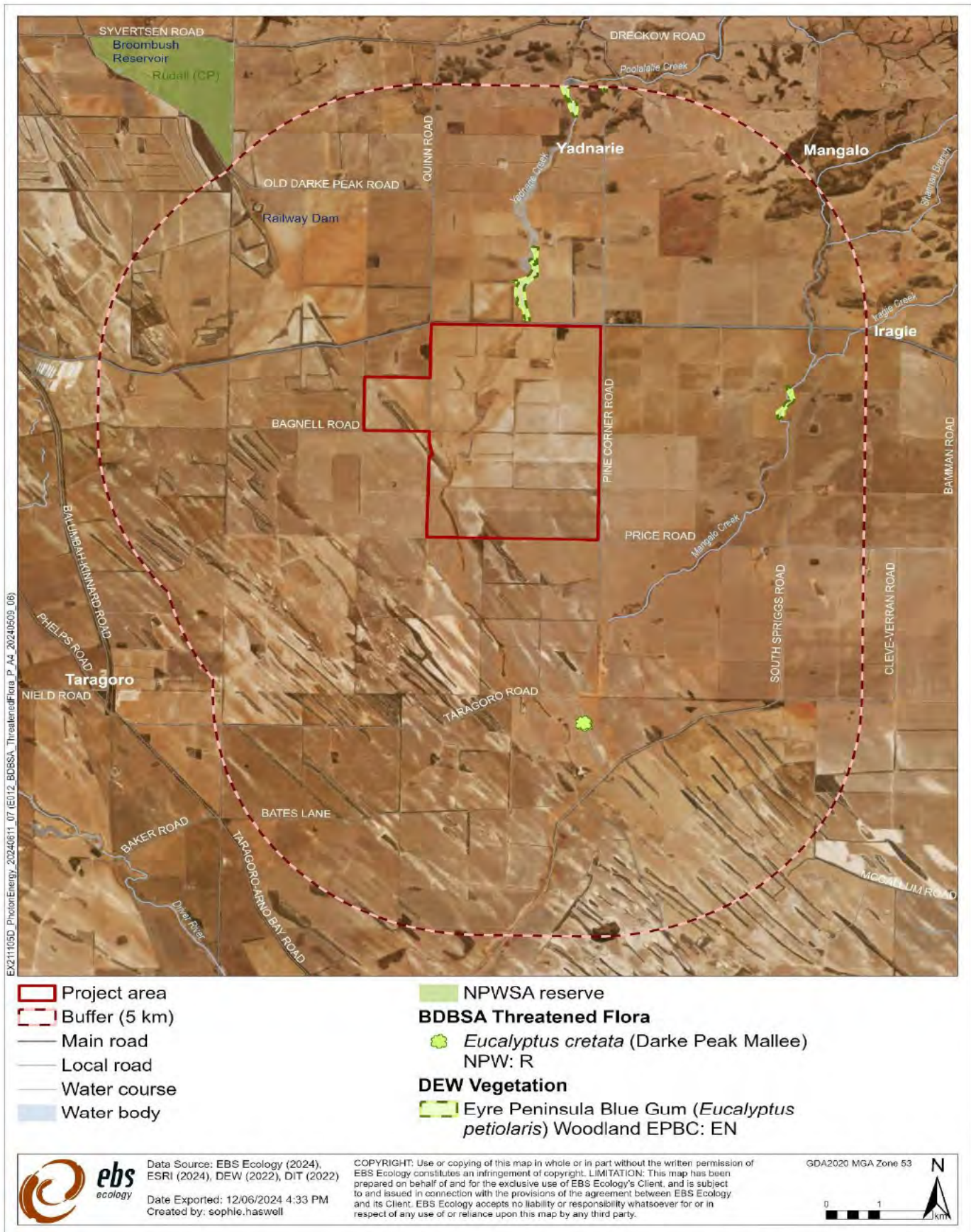


Figure 4. NPW Act listed threatened species records and EPBC Act listed Threatened Ecological Communities within 5 km of the Project (since 1995, < 1 km reliability (DCCEEW 2024a, DEW 2024b).

4.4. Cumulative impacts

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must consider the potential cumulative impact, both direct and indirect, that is reasonably likely to result from a proposed clearance activity.

The Project will require the removal of up to 33.425 ha of native vegetation and 5 scattered trees for the following purposes:

- Construction of heliostat arrays, power blocks and associated infrastructure (i.e., receivers, inverters, etc);
- Heavy vehicle access onto the Project Area;
- Development of laydown areas and access tracks; and
- Cable trenching.

Indirect impacts to native vegetation and fauna may include:

- Potential increases in dust deposition from clearance associated with project infrastructure installation (until a time when the understory vegetation regenerates);
- Altered hydrology, sunlight and heat radiation from infrastructure changing the composition of retained vegetation communities; and
- The dispersal and importation of weed species through earthworks and the attachment of seeds and other propagules to machinery and vehicles.

4.5. Addressing the Mitigation Hierarchy

When exercising a power or making a decision under Division 5 of the Native Vegetation Regulations 2017, the NVC must have regard to the mitigation hierarchy. The NVC will also consider, with the aim to minimize, impacts on biological diversity, soil, water and other natural resources, threatened species or ecological communities under the EPBC Act or listed species under the NPW Act.

a) Avoidance – outline measures taken to avoid clearance of native vegetation

The Project has undergone six design iterations following the receipt of ecological survey results and recommendations. Following the initial surveys and the identification of ecological constraints, it was concluded that the Project would need to be reduced in size (from an initial 300MW design) or that additional land would be required to increase the size of the Project Area. Surveys in the areas under consideration confirmed the presence of the EPBGW TEC, as highlighted in Figure 4. As such, the Project Area was not expanded as so to avoid impacting this EPBC Act listed TEC.

Photon Energy requested EBS' advice to highlight areas of high ecological value vegetation within the Project Area so avoidance could be considered. This resulted in further design iterations and the majority of infrastructure (i.e., heliostat fields, receiving towers, power plants and vehicle access tracks) being located within cropped paddocks and in areas devoid of native vegetation.

The design of the Project, as submitted in the Development Application, has been reduced in size and now avoids structurally diverse woodlands, including the entirety of VA 7 (*Eucalyptus gracilis* and *E. incrassata* Mallee over *Callitris gracilis* +/- *Triodia irritans*). Further, under the current Project design, 116.391 ha of remnant vegetation and six scattered trees have been retained through the strategic positioning of infrastructure.

b) Minimization – if clearance cannot be avoided, outline measures taken to minimize the extent, duration and intensity of impacts of the clearance on biodiversity to the fullest possible extent (whether the impact is direct, indirect or cumulative).

Where possible, infrastructure has been placed in areas of more disturbed vegetation (e.g., VA 2 and VA 4), or vegetation with fewer habitat resources (i.e., upper storey vegetation, dense vegetation, and water sources). Where the clearance of more intact native vegetation has been deemed necessary (i.e., creating access points through contiguously tree-lined fence lines), micro-siting has been undertaken to select areas that are more disturbed or that contain vegetation in the poorest condition.

c) Rehabilitation or restoration – outline measures taken to rehabilitate ecosystems that have been degraded, and to restore ecosystems that have been degraded, or destroyed by the impact of clearance that cannot be avoided or further minimized, such as allowing for the re-establishment of the vegetation.

Rehabilitation and restoration of vegetation will be permitted in the heliostat fields following their initial construction. This may include the regeneration of low grasses and shrubbery under the installed solar panels and in alternate 'gap' corridors initially used for access and construction. Rehabilitation of native vegetation during operation is preferable for solar farm projects to reduce dust accumulation on panels and associated maintenance.

d) Locally native species will be planted along the perimeter of the Project Area as a visual screening tool. Further, an area of approximately 50 ha adjacent to Broadview and Price Roads, and to the southwest of VA 1 (*Eucalyptus calycogona* and *E. socialis* ssp. *socialis* Mallee +/- *Melaleuca lanceolata*) is proposed to be revegetated. **Offset – any adverse impact on native vegetation that cannot be avoided or further minimized should be offset by the achievement of a significant environmental benefit that outweighs that impact.**

Any adverse impact on native vegetation or ecosystems that cannot be avoided or minimised will be offset by implementing an SEB that outweighs that impact. The applicant will mitigate in the form of a payment to the Native Vegetation Fund.

The NVC will only consider an offset once avoidance, minimization and restoration have been documented and fulfilled.

The SEB Policy explains the biodiversity offsetting principles that must be met.

4.6. Principles of Clearance (Schedule 1, Native Vegetation Act 1991)

The Native Vegetation Council will consider Principles 1(b), 1(c) and 1(d) when assigning a level of Risk under Regulation 16 of the Native Vegetation Regulations. The Native Vegetation Council will consider all the Principles of clearance of the Act as relevant, when considering an application referred under the Planning, Development and Infrastructure Act 2016.

The clearance is assessed against the Principles of Clearance as set out in Table 21.

Table 21. Assessment against the Principles of Clearance.

Principle of clearance	Considerations
Principle 1(a) – it comprises a high level of diversity of plant species	<u>Relevant information</u> The Project Area contained 148 plant species, of which 115 were native. Native Plant Species Diversity Score: A1: 16 A2: 14 A3: 9 A4: 18 A5: 13.33 A8: 20 A9: 14 B1: 14 B2: 14 C1: 14 D1: 9 F1: 9 G1: 15
	<u>Assessment against the principles</u> <u>Seriously at Variance</u> Not Seriously at Variance <u>At Variance</u> A1, A2, A4, A5, A8, A9, B1, B2, C1 and G1
	<u>Moderating factors that may be considered by the NVC</u> The NatureMaps SA Native Vegetation layer indicated that there is 5 % native vegetation coverage within 5 km of the site (DEW 2024a). As the clearance of 33.425 ha represents only 8.5 % of an approximate 392.85 ha of vegetation within a 5 km radius, this moderating factor may apply.
Principle 1(b) – significance as a habitat for wildlife	<u>Relevant information</u> No species have been identified as “known” by the PMST. No threatened fauna records were identified by the BDBSA. Therefore, the likelihood assessment has deemed all threatened species as unlikely based on Table 5. This has resulted in a threatened fauna score of 0 for all the BAM sites. The field surveys did not encounter any threatened fauna species at the Project Area. A total of 30 non-threatened native fauna species were recorded. All were species common in disturbed, largely cleared agricultural landscapes. The Project Area contains habitat features that would provide valuable fauna habitat, including hollow/nest-bearing trees, fallen timber deposits, ephemeral watercourses, and structurally diverse vegetation. Within the Project Area there are networks of contiguous vegetation corridors along fence lines that allow for the movement of animals without exposure in cleared paddocks. Other instances of remnant vegetation remaining in the Project Area are patchy and occur in isolated patches surrounded by cropping land.

Principle of clearance	Considerations		
	Site	Threatened Fauna Score	Unit Biodiversity Score
	A1	0	35.56
	A2	0	22.98
	A3	0	24.49
	A4	0	24.53
	A5	0	35.53
	A8	0	45.33
	A9	0	41.09
	B1	0	21.70
	B2	0	33.76
	C1	0	41.30
	D1	0	20.08
	F1	0	23.54
	G1	0	38.26
	A total of 19 species of least concern (uncommon) were identified during the field survey. These species are also scattered tree utilising species (Appendix 2), resulting in a threatened fauna score of 1.		
	STAM	Threatened Fauna Score	Unit Biodiversity Score
	Tree 2	1	2.15
	Tree 4	1	2.33
	Tree 5	1	2.00
Tree 9	1	2.11	
Tree 11	1	1.07	
<u>Assessment against the principles</u> <u>Seriously at Variance</u> Not Seriously at Variance <u>At Variance</u> Trees 2, 4, 5, 9, 11			
<u>Moderating factors that may be considered by the NVC</u> There are no threatened fauna species records within the 5 km Search Area with records from 1995 and a spatial reliability < 1 km or listed as 'known' by the PMST. As such, it is unlikely for any of the aforementioned species to be impacted by the Project. Areas of higher quality vegetation have been avoided.			
Principle 1(c) – plants of a rare, vulnerable or endangered species	<u>Relevant information</u> No threatened plant species were recorded by the survey. None of the scattered trees under application are threatened species. Given the disturbed nature of the Project Area, it is unlikely that any other threatened plant species occur that were not detected during the field survey. Threatened Flora Score(s) - 0		

Principle of clearance	Considerations												
	<u>Assessment against the principles</u> <u>Seriously at Variance</u> Not Seriously at Variance <u>At Variance</u> Not at Variance <u>Moderating factors that may be considered by the NVC</u> Not applicable.												
Principle 1(d) – the vegetation comprises the whole or part of a plant community that is Rare, Vulnerable or endangered	<u>Relevant information</u> No Threatened Ecological Communities are present at the Project Area. Threatened Community Score - 1												
	<u>Assessment against the principles</u> <u>Seriously at Variance</u> Not Seriously at Variance <u>At Variance</u> Not at Variance												
	<u>Moderating factors that may be considered by the NVC</u> Not applicable.												
Principle 1(e) – it is significant as a remnant of vegetation in an area which has been extensively cleared	<u>Relevant information</u> The Project Area contains two IBRA associations, Cleve and Hambidge, which belong to the Eyre Hills and Eyre Mallee subregions, respectively. Vegetation within these IBRA associations has been extensively cleared for agriculture, with remnant vegetation largely concentrated in conservation reserves, heritage agreement areas and road corridors. <table><tr><th>Subregion</th><th>Remnancy</th><th>Association</th><th>Remnancy</th></tr><tr><td>Eyre Hills</td><td>338,248 ha (29 %)</td><td>Cleve</td><td>16,696 ha (17 %)</td></tr><tr><td>Eyre Mallee</td><td>877,417 ha (37 %)</td><td>Hambidge</td><td>99,496 (28 %)</td></tr></table>	Subregion	Remnancy	Association	Remnancy	Eyre Hills	338,248 ha (29 %)	Cleve	16,696 ha (17 %)	Eyre Mallee	877,417 ha (37 %)	Hambidge	99,496 (28 %)
	Subregion	Remnancy	Association	Remnancy									
	Eyre Hills	338,248 ha (29 %)	Cleve	16,696 ha (17 %)									
	Eyre Mallee	877,417 ha (37 %)	Hambidge	99,496 (28 %)									
	The vegetation that is proposed to be cleared consists of mallee woodland, chenopod shrublands and grasslands. All of these communities are common in the vicinity of the Project Area (i.e., road corridors, disused paddocks, and along fence lines). Total Biodiversity Score – 1,140.95												
<u>Assessment against the principles</u> <u>Seriously at Variance</u> All VAs and Scattered Trees.													
<u>Moderating factors that may be considered by the NVC.</u> The majority of the Project Area has been historically cleared for agriculture and lacked native vegetation coverage (541.184 ha). By concentrating infrastructure in these areas, the current design retains 116.381 ha (77.69 %) of native vegetation mapped within the Project Area. The Project will reduce remnant vegetation within the Cleve association by 33.293 ha (by 0.20 %) and within the Hambidge association by 0.132 ha (by < 0.01 %). As such, this moderating factor may apply.													
Principle 1(f) – it is growing in, or in	<u>Relevant information</u> No wetlands were identified during the field assessment.												

Principle of clearance	Considerations
association with, a wetland environment	<u>Assessment against the principles</u> <u>Seriously at Variance</u> Not Seriously at Variance <u>At Variance</u> Not at Variance <u>Moderating factors that may be considered by the NVC</u> Not applicable.
Principle 1(g) – it contributes significantly to the amenity of the area in which it is growing or is situated	<u>Relevant information</u> The Project Area is situated off the Birdseye Highway, 8.9 km west of Cleve. It is adjacent to an existing substation and extensively cleared agricultural land. The road corridor of the Birdseye Highway is intermittently lined with remnant mallee woodland. Access points along this road will be concentrated in areas without timbered vegetation, thereby not impacting the amenity value of the area. <u>Assessment against the principles</u> <u>Seriously at Variance</u> Not Seriously at Variance <u>At Variance</u> Not at Variance <u>Moderating factors that may be considered by the NVC.</u> Not applicable.

Principles of Clearance (h-m) will be considered by comments provided by the local NRM Board or relevant Minister. The Data Report should contain information on these principles where relevant and where sufficient information or expertise is available.

4.7. Risk assessment

The level of risk associated with this clearance application is presented in Table 22.

Table 22. Summary of the level of risk associated with the application.

Total clearance	No. of trees	5
	Area (ha)	33.425
	Total biodiversity Score	1,145.49
Seriously at variance with principle 1(b), 1(c) or 1 (d)		N/A
Risk assessment outcome		Level 4

5. CLEARANCE SUMMARY

Clearance summary tables for the clearance application are shown in Table 23 (native vegetation patches) and Table 24 (scattered trees). These summary tables indicate the SEB points and SEB payment obligations associated with this clearance.

The total SEB obligations of the clearance are summarised in Table 25.

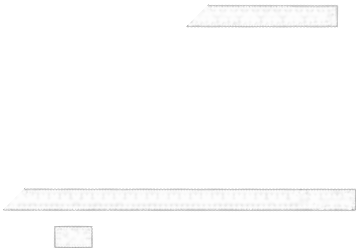


Table 23. Clearance summary and total SEB obligations for vegetation associations impacted by the Project.

Block	Site	Species diversity score	Threatened Ecological community Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity score	Loss factor	Loadings	Reductions	SEB Points required	SEB payment(\$)	Admin Fee (\$)
A	A1	24	1	0	0	56.75	2.893	164.16	1	-	-	172.37	62,669.92	3,446.85
	A1d	8	1	0	0	14.37	2.893	41.59	1	-	-	43.66	15,784.07	868.12
	A1 Mean	16	1	0	0	35.56	2.893	102.88	1	-	-	108.02	39,227.00	2,157.49
	A2a	14	1	0	0	22.98	0.577	13.26	1	-	-	13.92	4,988.44	274.36
	A3a	6	1	0	0	12.99	7.844	101.87	1	-	-	106.96	38,330.30	2,108.17
	A3b	12	1	0	0	35.99	7.844	282.29	1	-	-	296.41	106,217.11	5,841.94
	A3 Mean	9	1	0	0	24.49	7.844	192.08	1	-	-	201.69	72,273.71	3,975.06
	A4	18	1	0	0	24.53	1.425	34.96	1	-	-	36.70	13,153.03	723.42
	A5	14	1	0	0	36.42	10.432	379.95	1	-	-	398.95	142,963.67	7,863.00
	A5b	14	1	0	0	41.04	10.432	428.15	1	-	-	449.56	161,099.63	8,860.48
	A5c	12	1	0	0	29.14	10.432	303.96	1	-	-	319.16	114,370.93	6,290.40
	A5 Mean	13.3	1	0	0	35.53	10.432	370.69	1	-	-	389.22	139,478.08	7,671.29
	A8	20	1	0	0	45.33	0.132	5.98	1	-	-	6.28	1,838.25	101.10
	A9	22	1	0	0	59.51	4.961	295.25	1	-	-	310.01	111,091.13	6,110.01
	A9a	6	1	0	0	22.66	4.961	112.42	1	-	-	118.04	42,301.00	2,326.56
	A9 Mean	14	1	0	0	41.09	4.961	203.84	1	-	-	214.03	76,696.07	4,218.29
B	B1	14	1	0	0	21.70	0.886	19.22	1	-	-	20.19	7,233.45	397.84
	B2	14	1	0	0	33.76	0.142	4.79	1	-	-	5.03	1,803.94	99.22
C	C1	14	1	0	0	41.30	3.900	161.07	1	-	-	169.13	60,606.43	3,333.35
D	D1	9	1	0	0	18.43	0.063	1.27	1	-	-	1.33	476.07	26.18
F	F1	9	1	0	0	23.54	0.147	3.46	1	-	-	3.63	1,302.25	71.62
G	G1	15	1	0	0	38.26	0.023	0.88	1	-	-	0.92	331.10	18.21
						Total	33.425	1,114.37				1,169.86	419,407.80	23,067.42

Table 24. Clearance summary and total SEB obligations for scattered trees impacted by the Project.

Tree Number	Number of Trees	Fauna Habitat Score	Threatened Flora Score	Biodiversity Score	Loss Factor	SEB Points Required	SEB Payment (includes admin fee)
2	1	1	0	2.15	1	2.25	\$851.93
4	1	1	0	2.33	1	2.45	\$925.61
5	1	1	0	2.00	1	2.10	\$793.49
9	1	1	0	2.11	1	2.21	\$836.95
11	1	1	0	1.07	1	1.13	\$426.56
Scattered Tree SEB Total				31.12		10.14	\$3,834.55

Table 25. Summary of the total SEB obligations of the clearance.

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	1,145.49	1180.00	\$423,242.35	\$23,267.42	\$446,309.77
Economies of Scale Factor				0.35	
Rainfall (mm)				343	

6. SIGNIFICANT ENVIRONMENTAL BENEFIT

A SEB is required for approval to clear under Division 5 of the *Native Vegetation Regulations 2017*. The NVC must be satisfied that as a result of the loss of vegetation from the clearance that an SEB will result in a positive impact on the environment that is over and above the negative impact of the clearance.

ACHIEVING AN SEB

Indicate how the SEB will be achieved by ticking the appropriate box and providing the associated information:

- ☐ Establish a new SEB Area on land owned by the proponent.
- ☐ Use SEB Credit that the proponent has established.
- ☐ Apply to have SEB Credit assigned from another person or body.
- ☐ Apply to have an SEB to be delivered by a Third Party.
- ☒ Pay into the Native Vegetation Fund.

PAYMENT SEB

If a proponent proposes to achieve the SEB by paying into the Native Vegetation Fund, summary information must be provided on the amount required to be paid and the manner of payment:

The total SEB payment for the clearance of 33.425 ha of native vegetation and five Scattered Trees, with a combined Total Biodiversity Score of **1,145.49**, is **\$446,309.77** (including an administration fee of **\$23,067.42**).

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8. APPENDICES

8.1 Appendix 1 - Flora species recorded by the field survey

Scientific Name (* indicates an introduced species)	Common Name	Conservation Status	
		EPBC Act	NPW Act
<i>Acacia burkittii</i>	Pin-bush Wattle	-	-
<i>Acacia halliana</i>	Hall's Wattle	-	-
<i>Acacia ligulata</i>	Umbrella Bush	-	-
<i>Acacia notabilis</i>	Notable Wattle	-	-
<i>Acacia oswaldii</i>	Umbrella Wattle	-	-
<i>Acacia rigens</i>	Nealie	-	-
<i>Acacia sclerophylla</i> var. <i>sclerophylla</i>	Hard-leaf Wattle	-	-
<i>Agave</i> *		-	-
<i>Aira</i> sp.*	Hair-grass	-	-
<i>Aizoon pubescens</i> * (also known as <i>Galenia pubescens</i>)	Coastal Galenia	-	-
<i>Alectryon oleifolius</i> ssp. <i>canescens</i>	Bullock Bush	-	-
<i>Allocasuarina verticillata</i>	Drooping Sheoak	-	-
<i>Alyxia buxifolia</i>	Sea Box	-	-
<i>Arctotheca calendula</i> *	Cape Weed	-	-
<i>Asparagus asparagoides</i> f.*	Bridal Creeper	-	-
<i>Asphodelus fistulosus</i> *	Onion Weed	-	-
<i>Atriplex acutibractea</i> ssp.	Pointed Saltbush	-	-
<i>Atriplex crassipes</i> var. <i>crassipes</i>		-	-
<i>Atriplex semibaccata</i>	Berry Saltbush	-	-
<i>Austrostipa elegantissima</i>	Feather Spear-grass	-	-
<i>Austrostipa nitida</i>	Balcarra Spear-grass	-	-
<i>Austrostipa nodosa</i>	Tall Spear-grass	-	-
<i>Austrostipa scabra</i> ssp. <i>scabra</i>	Rough Spear-grass	-	-
<i>Austrostipa</i> sp.	Spear-grass	-	-
<i>Avena barbata</i> *	Bearded Oat	-	-
<i>Avena fatua</i> *	Wild Oat	-	-
<i>Brassica</i> sp.*		-	-
<i>Bromus diandrus</i> *	Great Brome	-	-
<i>Callitris glaucophylla</i>	White Cypress Pine	-	-
<i>Callitris gracilis</i>	Southern Cypress Pine	-	-
<i>Callitris verrucosa</i>	Scrub Cypress Pine	-	-
<i>Calytrix</i> sp.	Fringe Myrtle	-	-
<i>Carpobrotus rossii</i>	Native Pigface	-	-
<i>Carrichtera annua</i> *	Ward's Weed	-	-
<i>Cassytha</i> sp.	Dodder-laurel	-	-
<i>Chenopodium album</i>	Fat Hen	-	-

Scientific Name (* indicates an introduced species)	Common Name	Conservation Status	
		EPBC Act	NPW Act
<i>Chenopodium curvispicatum</i>	Cottony Goosefoot	-	-
<i>Chenopodium desertorum</i> ssp. <i>microphyllum</i>	Small-leaf Goosefoot	-	-
<i>Chenopodium</i> sp.	Goosefoot	-	-
<i>Chloris truncata</i>	Windmill Grass	-	-
<i>Chrysocephalum apiculatum</i>	Common Everlasting	-	-
<i>Citrullus</i> sp.*	Wild Melon	-	-
<i>Clematis microphylla</i>	Old Man's Beard	-	-
<i>Clematis</i> sp.		-	-
<i>Conyza bonariensis</i> *	Flax-leaf Fleabane	-	-
<i>Cucumis myriocarpus</i> ssp. <i>myriocarpus</i> *	Paddy Melon	-	-
<i>Cymbopogon ambiguus</i>	Lemon-grass	-	-
<i>Dianella brevicaulis</i>	Short-stem Flax-lily	-	-
<i>Dodonaea bursariifolia</i>	Small Hop-bush	-	-
<i>Dysphania cristata</i>	Crested Crumbweed	-	-
<i>Echium plantagineum</i> *	Salvation Jane	-	-
<i>Ehrharta calycina</i> *	Perennial Veldt Grass	-	-
<i>Einadia nutans</i> ssp.	Climbing Saltbush	-	-
<i>Einadia nutans</i> ssp. <i>oxycarpa</i>	Pointed-fruit Climbing Saltbush	-	-
<i>Enchylaena tomentosa</i> var.	Ruby Saltbush	-	-
<i>Enneapogon nigricans</i>	Black-head Grass	-	-
<i>Enneapogon</i> sp.	Bottle-washers/Nineawn	-	-
<i>Eucalyptus brachycalyx</i>	Gilja	-	-
<i>Eucalyptus calycogona</i> ssp.	Square-fruit Mallee	-	-
<i>Eucalyptus cladocalyx</i> ssp. <i>cladocalyx</i>	Sugar Gum	-	-
<i>Eucalyptus gracilis</i>	Yorrell	-	-
<i>Eucalyptus incrassata</i>	Ridge-fruited Mallee	-	-
<i>Eucalyptus oleosa</i> ssp. <i>ampliata</i>	Red Mallee	-	-
<i>Eucalyptus oleosa</i> ssp. <i>oleosa</i>	Red Mallee	-	-
<i>Eucalyptus petiolaris</i>	Eyre Peninsula Blue Gum	-	-
<i>Eucalyptus phenax</i> ssp. <i>phenax</i>	White Mallee	-	-
<i>Eucalyptus porosa</i>	Malleebox	-	-
<i>Eucalyptus socialis</i> ssp.	Beaked Red Mallee	-	-
<i>Eucalyptus</i> sp.		-	-
<i>Euphorbia</i> sp.		-	-
<i>Euphorbia terracina</i> *	False Caper	-	-
<i>Gazania linearis</i> *	Gazania	-	-
<i>Gazania</i> sp.*	African Daisies	-	-
<i>Geijera linearifolia</i>	Sheep Bush	-	-
<i>Gnaphalium</i> sp.	Cudweed	-	-
<i>Grevillea huegelii</i>	Comb Wattle	-	-
<i>Hakea cycloptera</i>	Elm-seed Hakea	-	-

Scientific Name (* indicates an introduced species)	Common Name	Conservation Status	
		EPBC Act	NPW Act
<i>Hakea leucomelaena</i> ssp. <i>leucomelaena</i>	Silver Needlewood	-	-
<i>Halgania andromedifolia</i>	Scented Blue-flower	-	-
<i>Heliotropium europaeum</i> *	Common Heliotrope	-	-
<i>Hibbertia</i> sp.	Guinea-flower	-	-
<i>Homoranthus wilhelmii</i>	Wilhelm's Homoranthus	-	-
<i>Hordeum vulgare</i> *	Barley Grass	-	-
<i>Hybanthus floribundus</i> ssp. <i>floribundus</i>	Shrub Violet	-	-
<i>Lasiopetalum behrii</i>	Pink Velvet-bush	-	-
<i>Leptospermum coriaceum</i>	Dune Tea-tree	-	-
<i>Lolium perenne</i> *	Perennial Ryegrass	-	-
<i>Lomandra effusa</i>	Scented Mat-rush	-	-
<i>Lomandra leucocephala</i> ssp. <i>robusta</i>	Woolly Mat-rush	-	-
<i>Lycium ferocissimum</i> *	African Boxthorn	-	-
<i>Maireana brevifolia</i>	Short-leaf Bluebush	-	-
<i>Maireana erioclada</i>	Rosy Bluebush	-	-
<i>Malva parviflora</i> *	Small-flower Marshmallow	-	-
<i>Malva</i> sp.*	Mallow	-	-
<i>Marrubium vulgare</i> *	Horehound	-	-
<i>Medicago</i> sp.*	Medic	-	-
<i>Melaleuca acuminata</i> ssp. <i>acuminata</i>	Mallee Honey-myrtle	-	-
<i>Melaleuca lanceolata</i>	Dryland Tea-tree	-	-
<i>Melaleuca pauperiflora</i> ssp. <i>mutica</i>	Boree	-	-
<i>Melaleuca uncinata</i>	Broombush	-	-
<i>Mesembryanthemum crystallinum</i> *	Common Iceplant	-	-
<i>Minuria cunninghamii</i>	Bush Minuria	-	-
<i>Olearia brachyphylla</i>	Short-leaf Daisy-bush	-	-
<i>Oxalis perennans</i>	Native Sorrel	-	-
<i>Oxalis pes-caprae</i> *	Soursob	-	-
<i>Pimelea micrantha</i>	Silky Riceflower	-	-
<i>Pittosporum angustifolium</i>	Native Apricot	-	-
<i>Podolepis capillaris</i>	Wiry Podolepis	-	-
<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed	-	-
<i>Ptilotus seminudus</i>	Rabbit tails	-	-
<i>Ptilotus spathulatus</i>	Pussy-tails	-	-
<i>Reichardia tingitana</i> *	False Sowthistle	-	-
<i>Rhagodia preissii</i> ssp. <i>preissii</i>	Mallee Saltbush	-	-
<i>Rhagodia</i> sp.	Saltbush	-	-
<i>Roepera glauca</i>	Pale Twinleaf	-	-
<i>Rumex hypogaeus</i> *	Three-corner Jack	-	-
<i>Rytidosperma auriculatum</i>	Lobed Wallaby-grass	-	-
<i>Rytidosperma caespitosum</i>	Common Wallaby-grass	-	-

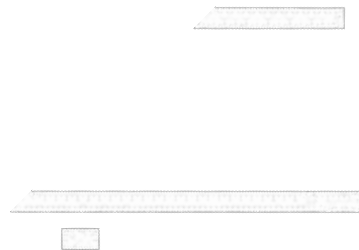
Scientific Name (* indicates an introduced species)	Common Name	Conservation Status	
		EPBC Act	NPW Act
<i>Rytidosperma</i> sp.	Wallaby-grass	-	-
<i>Salsola australis</i>	Buckbush	-	-
<i>Salvia verbenaca</i> var.*	Wild Sage	-	-
<i>Santalum acuminatum</i>	Quandong	-	-
<i>Sclerolaena diacantha</i>	Grey Bindyi	-	-
<i>Sclerolaena paralleliscuspis</i>	Western Bindyi	-	-
<i>Senna artemisioides</i> ssp. <i>artemisioides</i>	Desert Senna	-	-
<i>Senna artemisioides</i> ssp. <i>filifolia</i>	Fine-leaf Desert Senna	-	-
<i>Senna artemisioides</i> ssp. <i>petiolaris</i>	Desert Senna	-	-
<i>Senna artemisioides</i> ssp. <i>X coriacea</i>	Broad-leaf Desert Senna	-	-
<i>Senna</i> sp.	Senna	-	-
<i>Sida intricata</i>	Twiggy Sida	-	-
<i>Sisymbrium</i> sp.*	Wild Mustard	-	-
<i>Solanum elaeagnifolium</i> *	Silver-leaf Nightshade	-	-
<i>Solanum nigrum</i> *	Black Nightshade	-	-
<i>Sonchus oleraceus</i> *	Common Sow-thistle	-	-
<i>Spyridium stenophyllum</i> ssp. <i>stenophyllum</i>	Forked Spyridium	-	-
<i>Templetonia rossii</i>	Flat Mallee-pea	-	-
<i>Themeda triandra</i>	Kangaroo Grass	-	-
<i>Thinopyrum elongatum</i> *	Tall Wheat-grass	-	-
<i>Thryptomene micrantha</i>	Ribbed Thryptomene	-	-
<i>Tragus australianus</i>	Small Burr-grass	-	-
<i>Tribulus terrestris</i> *	Caltrop	-	-
<i>Trifolium arvense</i> var. <i>arvense</i> *	Hare's-foot Clover	-	-
<i>Triodia irritans</i>	Spinifex	-	-
<i>Triodia scariosa</i>	Porcupine Grass	-	-
<i>Vittadinia cervicalis</i> var. <i>circularis</i>	Waisted New Holland Daisy	-	-
<i>Vittadinia cuneata</i> var. <i>cuneata</i>	Fuzzy New Holland Daisy	-	-
<i>Vulpia</i> sp.*	Fescue	-	-
<i>Wahlenbergia stricta</i> ssp. <i>stricta</i>	Tall Bluebell	-	-

Conservation Status: EPBC Act (Environment Protection and Biodiversity Conservation Act 1999). NPW Act: South Australia (National Parks and Wildlife Act 1972). **Conservation codes:** CE: Critically Endangered. EN/E: Endangered. VU/V: Vulnerable. R: Rare.

8.2 Appendix 2 - Fauna species recorded by the field survey

Scientific Name	Common Name	Scattered Tree Using wildlife		
		Conservation status in the EP	Resource use	Habitat/status
AVES				
<i>Acanthagenys rufogularis</i>	Spiny-cheeked Honeyeater	LC	P,F	w
<i>Acanthiza apicalis</i>	Inland Thornbills			
<i>Alauda arvensis</i> *	Eurasian Skylark			
<i>Anthochaera carunculata</i>	Red Wattlebird	LC	P,F	w/r
<i>Anthus novaeseelandiae</i>	Australasian Pipit			
<i>Aquila audax</i>	Wedge-tailed Eagle	RA	P,N	w
<i>Artamus cinereus</i>	Black-faced Woodswallow	NT	P	w
<i>Barnardius zonarius barnardi</i>	Mallee Ringneck	LC	P,H,F	w
<i>Cincloramphus cruralis</i> *	Brown Songlark			
<i>Colluricincla harmonica</i>	Grey Shrikethrush	LC	F	w
<i>Corvus coronoides</i>	Australian Raven	LC	P,N	w
<i>Corvus mellori</i>	Little Raven	LC	P,N	w/r
<i>Eolophus roseicapilla</i>	Galah	LC	P,H	w/r
<i>Falco berigora</i>	Brown Falcon	LC	P,N	w/r
<i>Falco cenchroides</i>	Nankeen Kestrel	LC	P,N	w/r
<i>Gavicalis virescens</i>	Singing Honeyeater	LC	P,F	w
<i>Grallina cyanoleuca</i>	Maggielark	LC	P,N	w/r
<i>Gymnorhina tibicen</i>	Australian Magpie	LC	P,N	r
<i>Manorina flavigula</i>	Yellow-throated Miner	LC	P,F	w
<i>Melopsittacus undulatus</i>	Budgerigar	NT	P,H	s
<i>Nymphicus hollandicus</i>	Cockatiels	RA	P,H	s
<i>Ocyphaps lophotes</i>	Crested Pigeon	LC	P,N	w/r
<i>Pardalotus striatus</i>	Striated Pardalote	LC	P,F	w/s
<i>Passer domesticus</i> *	House Sparrows			
<i>Phaps chalcoptera</i>	Common Bronzewing			
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	LC	P,F	w
<i>Platycercus elegans</i>	Crimson Rosella			
<i>Psephotus haematonotus</i>	Red-rumped Parrot	RA	P,H	w/r
<i>Psephotus varius</i>	Mulga Parrot	LC	P,H	w/r
<i>Rhipidura leucophrys</i>	Willie Wagtail	LC	P,N,F	w/r
<i>Smicronis brevirostris</i>	Weebill	LC	P,F	w
<i>Sturnus vulgaris</i> *	Common Starling			
MAMMALIA				
<i>Macropus (Osphranter) rufus</i>	Red Kangaroo			
<i>Oryctolagus cuniculus</i> *	European Rabbit			
<i>Vulpes vulpes</i> *	Red Fox			
REPTILIA				
<i>Tiliqua rugosa</i>	Sleepy Lizard			

Conservation status: **LC**=Least Concern (Common), **NT**=Near Threatened (Uncommon), **RA**=Rare, **VU**=Vulnerable, **EN**=Endangered, **CR**=Critically Endangered. **Resource Use:** **P**=perching/roosting, **N**=nesting, **H**=using hollow for nesting/roosting, **F**=feeding. **Habitat/status:** **s**=seasonal (includes waterbirds using trees near seasonal wetlands, seasonal and nomadic species), **w**=woodland birds that occasionally use adjacent scattered trees, **r**=species that can reside in scattered trees.



8.3 Appendix 3 – Likelihood of Occurrence Assessment

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
Flora							
<i>Acacia enterocarpa</i>	Jumping-jack Wattle	EN	E	1	May occur	<i>Acacia enterocarpa</i> occurs in SA and Victoria. It is found in distinct sub-populations on the EP, YP and SE in South Australia. Found in open woodland, to open forest on sandy alkaline and hard neutral yellow duplex soils. Often associated with <i>Eucalyptus</i> spp. such as <i>Eucalyptus phenax</i> and <i>Eucalyptus incrassata</i> (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although associated <i>Eucalyptus</i> vegetation communities are present (i.e., <i>Eucalyptus phenax</i> ssp.), the species was not identified during the field survey.
<i>Acacia praemorsa</i>	Senna Wattle	VU	E	1	Likely to occur	Is endemic to SA where it is confined to the EP in localised populations north-east of Cleve. Occurs in mallee woodlands, open scrubs, open heath scrubs and on the lower slopes of small gullies in low, rocky ranges (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although associated mallee woodlands were present, the species was not identified during the field survey.
<i>Acacia rheticarpa</i>	Neat Wattle, Resin Wattle	VU	V	1	Likely to occur	Located in disjunct locations on the EP where it is confined in scattered areas around Kimba, Cleve and Lock. Normally associated with <i>Eucalyptus</i> spp. such as <i>Eucalyptus dumosa</i> (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although associated open mallee habitat was present, the species was not identified during the field survey.
<i>Caladenia brumalis</i>	Winter Spider-orchid	VU	V	1	May occur	Occurs on the YP and EP areas of South Australia. A highly localised species due to loss of habitat. Commonly found in association with <i>Melaleuca uncinata</i> in Carapee Hill CP and <i>Allocasuarina verticillata</i> or <i>Eucalyptus diversifolia</i> ssp. in disturbed areas. (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. However, suitable habitat was present within the Project Area and the field surveys fell outside of the species flowering window (i.e., June – September), where

Yadnarie Solar Farm Native Vegetation Clearance Data Report

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
							thereafter it dies back to its perennial tuber. As such, it may have been present and overlooked.
<i>Caladenia tensa</i>	Greencomb Spider-orchid	EN		1	Likely to occur	Occurs in numerous mallee and woodland vegetation associations such as Cypress Pine and Yellow Gum Woodland. Widespread species but uncommon (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although suitable habitat was present within the Project Area, the third field survey fell within the species flowering window (August – October) and did not identify the species. As such, the species is likely absent.
<i>Eucalyptus cretata</i>	Dark Peak Mallee		R	2	2013	Known only to occur on the EP in South Australia. Particularly common in Darke Peak and Carapee Hill and often associated with <i>Eucalyptus</i> spp. such as <i>Eucalyptus calycogona</i> , and <i>Eucalyptus porosa</i> over <i>Melaleuca</i> spp. (DCCEEW 2024c).	Unlikely – Although there are records from within the last 20 years and suitable habitat was present, the field survey did not encounter this tall mallee (up to 4 m in height).
<i>Limosella granitica</i>	Granite Mudwort	VU	V	1	May occur	This species is confined to seasonally wet rock-pools (gnamma holes). the depth and water quality of these pools affect habitat quality for this species. It occurs in areas of winter- dominant annually variable rainfall (180–300 mm/year) in areas of hot summers and mild winters (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area and the field surveys did not identify any appropriate habitat features (i.e., gnamma holes).
<i>Olearia pannosa</i> ssp. <i>pannosa</i>	Silver Daisy-bush	VU	V	1	Likely to occur	Widespread but rare species occurring on the FP, YP and in 2 main sub populations on the EP in South Australia. Found in association with <i>Eucalyptus</i> spp. such as <i>Eucalyptus phenax</i> ssp. <i>phenax</i> (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although associated Eucalyptus vegetation communities are present (i.e., <i>Eucalyptus phenax</i> ssp.), the species was not

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
							identified during the field survey.
<i>Pterostylis mirabilis</i>	Nodding Rufoushood	VU	V	1	Likely to occur	Endemic to the EP in South Australia where it occurs in the 300mm rainfall zone between Cleve and Kimba. Found in stony brown loam soils and among rocks with <i>Melaleuca uncinata</i> (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area and the Project Area receives more rainfall (343 mm) than typically associated with the species. The second field survey was held during the species flowering window (late October – early January) and did not record the species. As such it is likely absent.
<i>Pterostylis sp. Hale</i> (R. Bates 21725)	Hale Dwarf Greenhood	EN	V	1	May occur	Endemic to SA where it occurs on the EP, Southern Lofty Ranges and Murraylands. Grows in mallee on the EP (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although suitable habitat was present within the Project Area, the second field survey fell within the species flowering window (August – October) and did not identify the species. As such, it is likely absent.
<i>Pterostylis xerophila</i>	Desert Greenhood	VU	V	1	May occur	Occurs in many areas of inland SA and VIC including the EP. Grows in generally remote locations in semi-desert environments in rocky outcrops under low shrubland (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area and no suitable habitat (rocky outcrops).
<i>Swainsona pyrophila</i>	Yellow Swainson-pea	VU	R	1	May occur	Occurs across SA, NSW and VIC and is present in a number of areas on the EP. Grows in association with <i>Eucalyptus oleosa</i> over <i>Melaleuca uncinata</i> tall shrubland (DCCEEW 2024c).	Unlikely – There are no historical records within the Search Area. Although suitable habitat was present within the Project Area, the second field survey fell within the species flowering window (July – October) and did not identify

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
							the species. As such, it is likely absent.
Aves							
<i>Actitis hypoleucos</i>	Common Sandpiper	Mi (W)	R	1	May occur	Uses a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. Has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags (DCCEEW 2024c).	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Aphelocephala leucopsis</i>	Southern Whiteface	VU		1	Likely to occur	The Southern Whiteface occurs in open woodland and shrubland habitat with an understorey of grasses and / or low shrubs. Suitable habitat is usually dominated by Acacia spp. or Eucalyptus spp. on ranges, foothills, lowlands and plains (DCCEEW 2024c).	Unlikely –No historical records within the Search Area. However, suitable habitat was recorded within the Project Area.
<i>Apus pacificus</i>	Fork-tailed Swift	Mi (M)		1	Likely to occur	Widespread but almost exclusively aerial. Mostly occur over inland plains, over cliffs and beaches and sometimes well out to sea or in dry or open habitats (DCCEEW 2024c).	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	VU, Mi (W)		1	May occur	During the non-breeding season most of the world population of Sharp-tailed Sandpipers occurs in Australia. In SA, numbers are generally highest between January and early February. In Gulf St Vincent, SA, some arrive during September–October, with the greatest numbers during December. Movements occur during the non-breeding period where birds appear to be dispersive, moving to temporary or flooded	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.

Yadnarie Solar Farm Native Vegetation Clearance Data Report

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
						wetlands and leaving them when they dry. On migration, they forage and roost on rocky and sandy beaches, freshwater habitats and inland saltwater habitats.	
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE, Mi (W)	E	1	May occur	Migratory species which prefers tidal mudflats, saltmarsh, salt fields and fresh, brackish or saline wetlands. (Pizzey and Knight, 2007)	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Calidris melanotos</i>	Pectoral Sandpiper	Mi (W)	R	1	May occur	Shallow fresh to saline wetlands. Coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands (Pizzey and Knight, 2007).	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Charadrius veredus</i>	Oriental Plover, Oriental Dotterel	Mi (W)		1	May occur	Shallow fresh to saline wetlands. Coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Falco hypoleucos</i>	Grey Falcon	VU	R	1	May occur	The species occurs in arid and semi-arid Australia, including the Murray-Darling Basin, Eyre Basin, central Australia and WA. Preferred habitat includes lightly treed inland plains, sand ridges and pastoral plains. (Pizzey and Knight, 2007)	Unlikely –There are no historical records within the Search Area.
<i>Gallinago hardwickii</i>	Latham's Snipe, Japanese Snipe	VU, Mi (W)	R	1	May occur	Preferred habitat includes open, freshwater wetlands with low, dense vegetation. Saline or brackish water, modified or artificial habitats, and in habitats located close to humans or human activity.	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Grantiella picta</i>	Painted Honeyeater	VU	R	1	May occur	Sparsely distributed from southern Victoria and south-eastern SA to far northern QLD and eastern Northern Territory Forest, woodland, dry scrub, often with abundant mistletoe.	Unlikely - There is no suitable habitat present in Project Area, including no <i>Amyema</i> sp., and no historical records in the Search Area.
<i>Leipoa ocellata</i>	Malleefowl	VU	V	1	Likely to occur	Inhabits semi-arid regions of southern Australia. In SA, the Malleefowl is distributed from the south-	Unlikely –No historical records within the Search Area.

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
						east, north to the Murray-Mallee region and west to Streaky Bay. Occupies shrublands and low woodlands that are dominated by mallee vegetation. It also occurs in other habitat types including eucalypt or native pine <i>Callitris</i> woodlands, <i>Acacia</i> shrublands, or coastal heathlands.	
<i>Motacilla cinerea</i>	Grey Wagtail	Mi (T)		1	May occur	European and Asian species. Migrates south in winter, usually to Indonesia and NG. Rarely reaches Australia, but when it does, favours habitat near freshwater streams.	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Motacilla flava</i>	Yellow Wagtail	Mi (T)		1	May occur	Open country near swamps, salt marshes, sewage ponds, grassed surrounds to airfields, bare ground.	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Neophema chrysostoma</i>	Blue-winged Parrot	VU	V	1	Likely to occur	Prefers grasslands and grassy woodlands but will inhabit a range of habitats from coastal, sub-coastal and inland areas, right through to semi-arid zones.	Unlikely – No historical records within the Search Area, although suitable habitat was recorded within the Project Area.
<i>Pedionomus torquatus</i>	Plains-wanderer	CE	E	1	May occur	Present in very small numbers in SE South Australia occurring in sparse, treeless native grasslands and/or low shrubland (Pizzey and Knight, 2007)	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Rostratula australis</i>	Australian Painted Snipe	EN	E	1	Likely to occur	The Australian Painted Snipe is most common in eastern Australia and has been recorded in south-eastern SA. It generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans with rank emergent tussocks of grass, sedges, rushes or reeds with scattered clumps of lignum.	Unlikely - There is no suitable habitat present in Project Area and no historical records in the Search Area.
<i>Stagonopleura guttata</i>	Diamond Firetail	VU	V	1	Likely to occur	Reside in a wide range of Eucalypt dominated vegetation communities that have a grassy	Unlikely – No historical records within the Search Area, suitable

Scientific Name	Common Name	Conservation status		Source of Information	PMST / Date of last record	Habitat Preferences	Likelihood of occurrence within Project Area
		EPBC Act	NPW Act				
						understorey, including woodland, forest, and mallee. Most occur on the inland slopes of the Great Dividing Ranges, with only small pockets near the coast.	habitat was recorded within the Project Area.
Mammalia							
<i>Sminthopsis psammophila</i>	Sandhill Dunnart	EN	V	1	Likely to occur	The sandhill dunnart occurs in isolated sandy arid and semi-arid areas in the Great Victoria Desert and the Eyre Peninsula. It occurs in vegetation dominated by hummock (<i>Triodia</i>) grassland.	Unlikely – No historical records within the Search Area, although suitable habitat (i.e., <i>Triodia</i> sp.) was recorded within the Project Area.

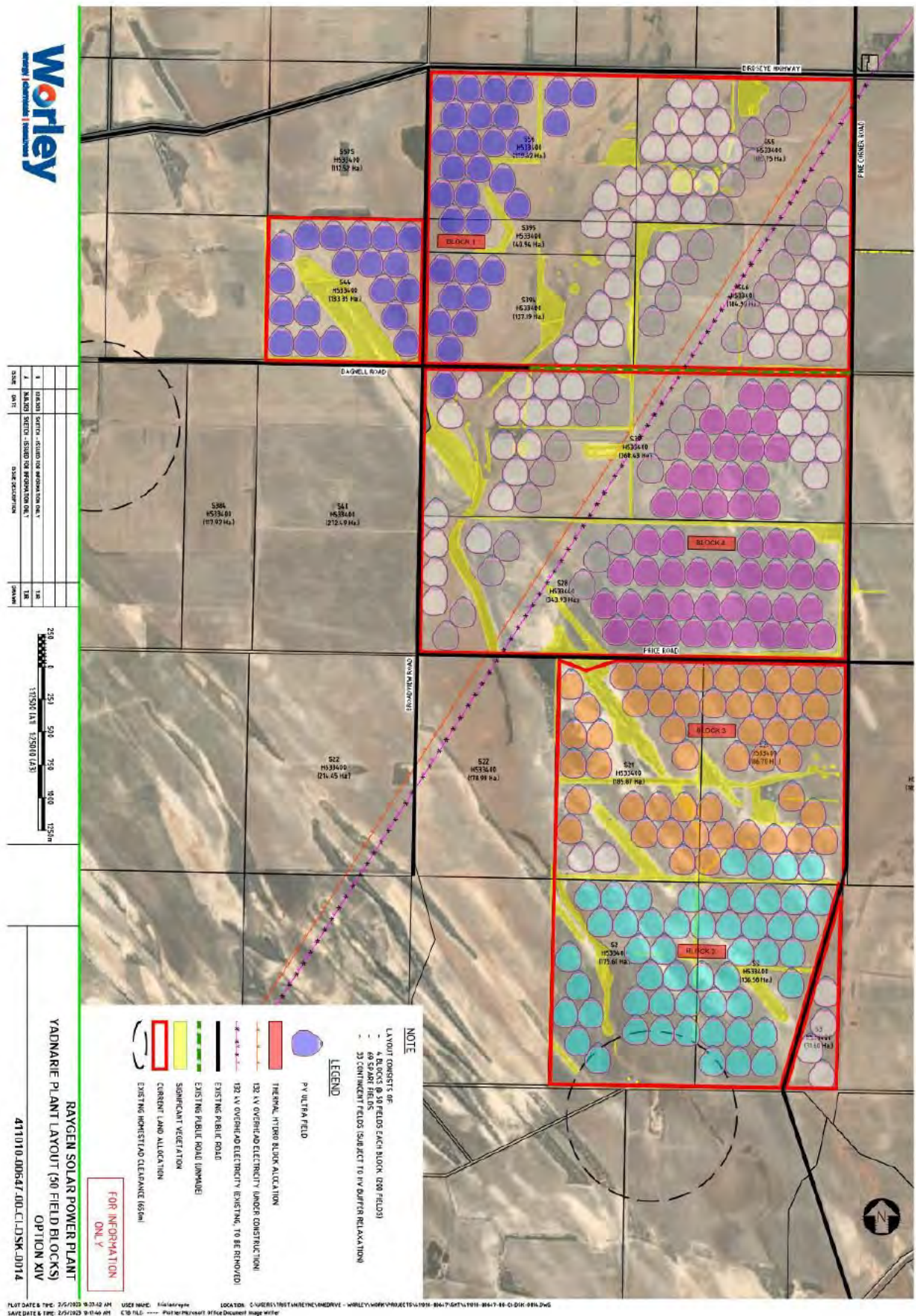
Conservation status

EPBC Act (*Environment Protection and Biodiversity Conservation Act 1999*). **NPW Act** (*National Parks and Wildlife Act 1972*). **Conservation Codes:** **CE:** Critically Endangered. **EN/E:** Endangered. **VU/V:** Vulnerable. **R:** Rare. **Mi:** listed as migratory under the EPBC Act. **Ma:** listed as marine under the EPBC Act.

Source of Information

1. EPBC Act Protected Matters Report (DCCEEW 2024) – 5 km buffer applied to Project Area.
2. Biological Database of South Australia data extract (DEW 2024b) - 5 km buffer applied to Project Area.

8.4 Appendix 4 - Previous design (supplied to EBS on 22/05/2023).





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