

Native Vegetation Clearance

Andromeda Land Division

Data Report

Clearance under the Section 28 of the *Native Vegetation Act 1991*

04/11/2022

Prepared by J. Skewes – EBS Ecology (NVC Accredited Consultant)



Native Vegetation Clearance Andromeda Land Division Data Report

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Cover photograph: *Eucalyptus porosa* Mixed Mallee Woodland vegetation association within the Project Area.

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Glossary and abbreviations

Andromeda	Andromeda Metals Limited
BAM	Bushland Assessment Method
BDBSA	Biological Database of South Australia (maintained by DEW)
CP	Conservation Park
DA	Development Application
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Commonwealth)
DEM	Department of Energy and Mining (SA)
DEW	Department for Environment and Water (South Australia)
EBS	Environment and Biodiversity Services Pty Ltd (trading as EBS Ecology)
EP	Eyre Peninsula (South Australia)
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
GWKP	Great White Kaolin Project (to establish an open pit mine to access kaolin clay (ore)).
ha	Hectare(s)
IBRA	Interim Biogeographical Regionalisation of Australia
km	Kilometre(s)
LMR	Landscape Management Region
ML	Mining Lease
MNES	Matters of National Environmental Significance protected under the EPBC Act.
MPL	Miscellaneous Purposes Licence
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
NPW Act	<i>National Parks and Wildlife Act 1972</i>
NV Act	<i>Native Vegetation Act 1991</i>

NVC	Native Vegetation Council
PEPR	Program for Environment Protection and Rehabilitation
PMST	Protected Matters Search Tool (under the EPBC Act; maintained by DCCEEW)
Project	Acquisition and boundary realignment (division) of land to secure land access for mining operations associated with Mining Lease 6532 and Miscellaneous Purposes Licence 163 and 164.
Project Area	Mining Lease 6532, Miscellaneous Purposes Licence 163 and 164 and adjoining parcel of land (allotment 204) to the south.
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
TEC	Threatened Ecological Community
UBS	Unit Biodiversity Score
var.	Variety (a taxonomic rank below that of species and subspecies, but above that of form)

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Attachments

Attachment 1 – BAM Scoresheets associated with the application (Excel).

Attachment 2 – Shapefiles associated with the application (zipped folder).

1. Application information

Table 1. Application details.

Applicant:	Andromeda Metals Limited (Andromeda)		
Key contact:			
Landowner:	RA Carey and Sons Pty Ltd. SG & PE Carey Pty Ltd.		
Site Address:	RA Carey and Sons Pty Ltd: 288 Parla Peak Road Chandada, 5680, South Australia SG & PE Carey Pty Ltd: Lot 14 Inkster Road, Chandada, 5680, South Australia		
Local Government Area:	District Council of Streaky Bay	Hundred:	Inkster
Title ID:	<u>RA Carey and Sons Pty Ltd:</u> CT/5762/604 CT/5804/980 CT/5845/97 <u>SG & PE Carey Pty Ltd:</u> CT/5985/370	Parcel ID	<u>RA Carey and Sons Pty Ltd:</u> F217986 Q100 H651000 S32 D56584 A102 <u>SG & PE Carey Pty Ltd:</u> H651000 S14

Table 2. Summary of the proposed clearance.

Purpose of clearance:	<p>Potential clearance associated with creation of several new property boundaries (land division), for three new land parcels.</p> <p>This report accounts for future clearance that could potentially be undertaken on new boundaries under Regulation 8 (14) - <i>Fences</i>, that is in addition to the mining footprint clearance accounted for in the SEB calculations in the Great White Kaolin Project's Program for Environment Protection and Rehabilitation (PEPR) under the <i>Mining Act 1971</i>.</p>
Description of the vegetation under application:	<p><u>Size, type and general condition of vegetation under application:</u></p> <ul style="list-style-type: none"> • 1.82 hectares (ha) of <i>Eucalyptus porosa</i> / <i>Eucalyptus diversifolia</i> Mallee Woodland over Sclerophyllous shrubs in moderate to good condition; • 0.19 ha of <i>Eucalyptus oleosa</i> ssp. <i>oleosa</i> Mallee over Mixed Sclerophyllous shrubs; • 0.05 ha of <i>E. porosa</i> Grassy Open Mallee Woodland in moderate condition; • 0.07 ha of <i>Austrostipa</i> spp. / <i>Avena barbata</i> Grassland with emergent <i>E. porosa</i> in poor to fair condition; and • 0.07 ha of <i>Austrostipa vickeryana</i> / <i>Avena barbata</i> grassland in poor to fair condition.

<p>Total proposed clearance – area (ha) and/or number of trees:</p>	<p>2.20 hectares of native vegetation including Mallee Woodland and Grassland are under application. This extent of clearance is not currently proposed, however the application is to cover possible future clearance which would be allowed under Native Vegetation Regulation 8 (14), for clearance to establish a fence along new boundaries.</p>
<p>Level of clearance:</p>	<p>Level 4</p>
<p>Overlay (Planning and Design Code):</p>	<p>Native Vegetation Overlay, State Significant Native Vegetation Overlay (relevant to project due to 50 m buffer of adjacent Heritage Agreement areas).</p>
<p>Map of proposed clearance area:</p>	<p>The map displays three new parcels: New parcel 201, New parcel 202, and New parcel 204. Each parcel is divided into different vegetation associations, color-coded according to the legend. A 5m clearance boundary is shown as a red dashed line, and a 10m clearance boundary is shown as a red solid line. The legend identifies various vegetation associations such as A1: Eucalyptus porosa / Eucalyptus diversifolia Mixed Mallee over Mixed Sclerophyll Shrubs, A2: Eucalyptus oleosa ssp. oleosa Mallee over Mixed Sclerophyll Shrubs, A3: Eucalyptus porosa Grassy Open Mallee Woodland, A4: Austrostipa spp. / Avena barbata Grassland with Emergent Eucalyptus porosa, A5: Eucalyptus porosa Open Mallee over Mixed Sclerophyll Shrubs / Austrostipa nichophylla, A6: Eucalyptus spp. Mixed Very Open Mallee over Mixed Sclerophyll Shrubs / Austrostipa spp., C1: Eucalyptus gracilis +/- Eucalyptus phoenax ssp. phoenax Mixed Mallee over Austrostipa spp. / Exotics, C2: Eucalyptus oleosa ssp. oleosa Open Mallee over Austrostipa exilis Exotics, C3: Eucalyptus porosa Open Mallee over Mixed Sclerophyll Shrubs / Austrostipa spp. / Exotics, C4: Austrostipa vickeryana / Avena barbata Grassland with Emergent Eucalyptus porosa, C5: Austrostipa vickeryana / Avena barbata Grassland, and C6: Eucalyptus porosa / Eucalyptus oleosa ssp. oleosa Open Mixed Mallee over Mixed Sclerophyll Shrubs / Austrostipa spp. / Exotics. A note indicates that C1 is Crupping. The map also shows land division boundaries and a 50m buffer of adjacent Heritage Agreement areas. The EBS Ecology logo is present in the bottom right corner.</p>
<p>Seriously at variance with the Principles of clearance?</p>	<p>Site A1, A2 and A3 are considered seriously at variance with the Principles of Clearance 1a and 1b.</p>
<p>Substantially intact</p>	<p>Overall, the vegetation strata in sites A1, A2 and A3 are assessed as substantially intact, however the actual areas of impact could be considered to not be substantially intact due to agricultural impacts and reduced tree density on the western boundary of new parcel 204, and the clearance that will occur immediately adjacent to the other new boundaries as a result of operations approved under the <i>Mining Act 1971</i>.</p>
<p>Mitigation Hierarchy:</p>	<p>Avoid</p> <p>The proposed location of the land division boundaries has been negotiated with the existing landholders (RA Carey & Sons Pty Ltd and SG & PE Carey Pty Ltd) to encompass the Mining Lease (ML) boundary and minimise loss of productive agricultural land. The new parcel 204 was negotiated with current owner SG & PE Carey Pty Ltd to provide potential future alternative access from Tootla Road / Poochera – Port Kenney Road. The</p>

	<p>ability to avoid native vegetation was limited by these negotiations and the location of the kaolin deposit.</p> <p><u>Minimise</u></p> <ul style="list-style-type: none"> • Clearance for new boundaries is not currently proposed to occur. The application is required to account for possible future clearance should the property owners (on either side) decide to clear, as allowed under Regulation 8(14) – Fences. • A significant portion of the boundary occurs on agricultural cropping land and requires no native vegetation clearance. • Where possible, boundaries have been aligned with existing fences or boundaries. • New subdivision boundaries also align as far as possible with the boundaries (and associated disturbance) of the ML and MPL. <p><u>Mitigate</u></p> <p>No rehabilitation or restoration measures are currently proposed. Mitigation will be in the form of Payment into the Native Vegetation Fund.</p>
SEB Offset proposal	Payment of \$45,512.38 (including \$2,372.69 , administration fee).

2. Purpose of clearance

2.1. Description

Andromeda Metals Limited (Andromeda) is planning to develop the Great White Kaolin Project (GWKP – the Project) on Eyre Peninsula (EP). Andromeda holds Mining Lease (ML) 6532 and Miscellaneous Purpose Licences (MPL) 163 and MPL 164 over the area of the project and has recently submitted a Program for Environment Protection and Rehabilitation (PEPR) for the proposed mining operation. The PEPR includes a native vegetation clearance assessment and Significant Environmental Benefit (SEB) calculations for mining and associated operations on the ML and MPLs in accordance with relevant Department for Energy and Mining and Native Vegetation Council (NVC) guidelines.

To secure land access for the mining operations, Andromeda has obtained agreement from the landholders to sell the relevant land to Andromeda (Figure 1) and includes an additional parcel of land outside of the existing ML to secure potential secondary access to existing roads (Figure 2). Consequently, a development application (DA) to subdivide the land to create three new land parcels has been prepared (Figure 3).

The subdivision involves creation of several new property boundaries. Although Andromeda does not propose to clear along these new boundaries, their presence would allow future clearance along them under the *Native Vegetation Regulations 2017* (particularly Regulation 8 (14) – *Fences*). Consequently, this data report assesses the potential clearance to establish fences along these new boundaries and calculates the resulting SEB Offset requirements.

EBS Ecology has been engaged by JBS&G on behalf of Andromeda to prepare a native vegetation clearance data report to accompany the development application for subdivision of the land. Further detail is provided in Section 2.4.

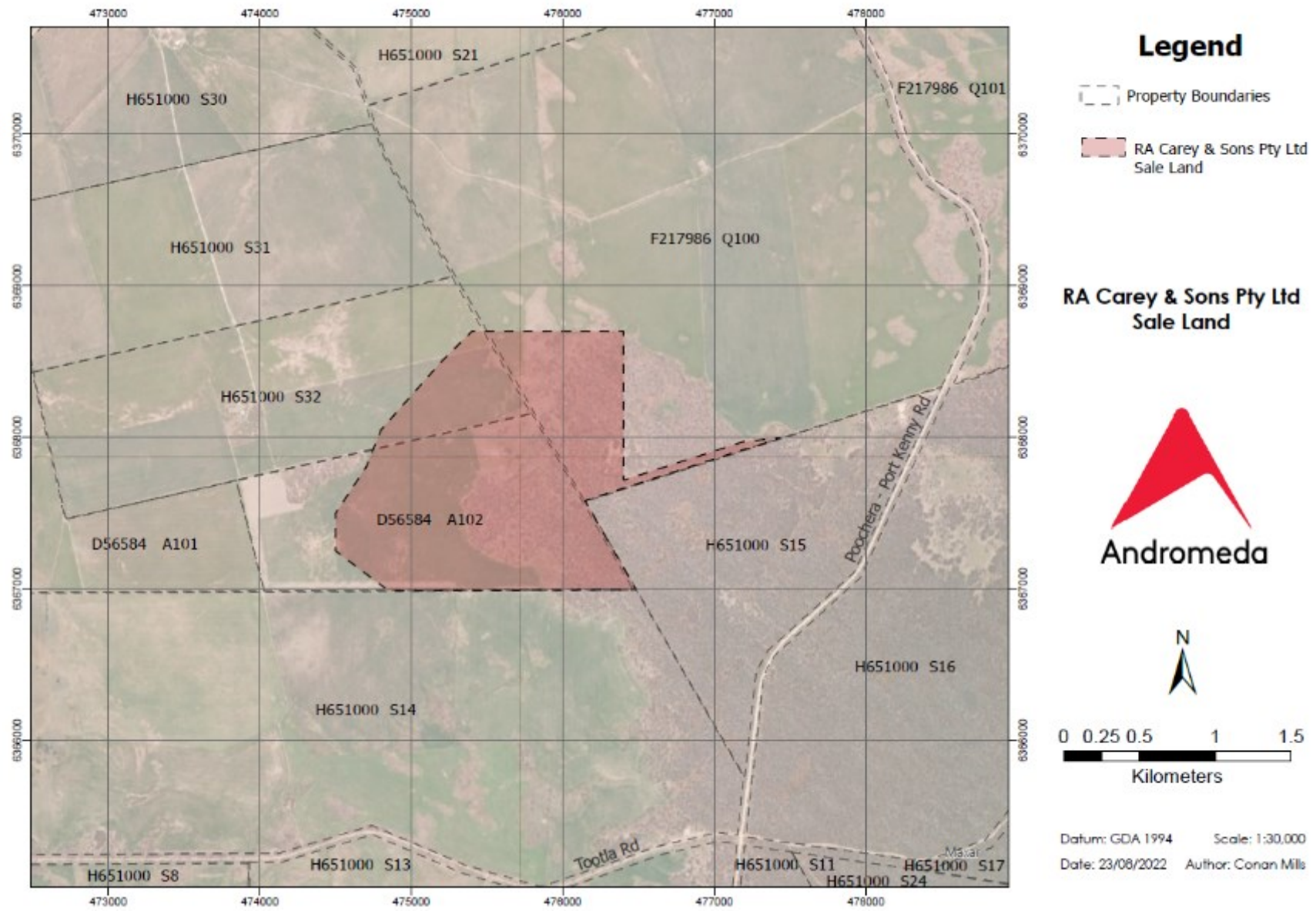


Figure 1. RA Carey & Sons Pty Ltd ML sale land for acquisition of ML (as provided by JBS&G on 24/08/2022).

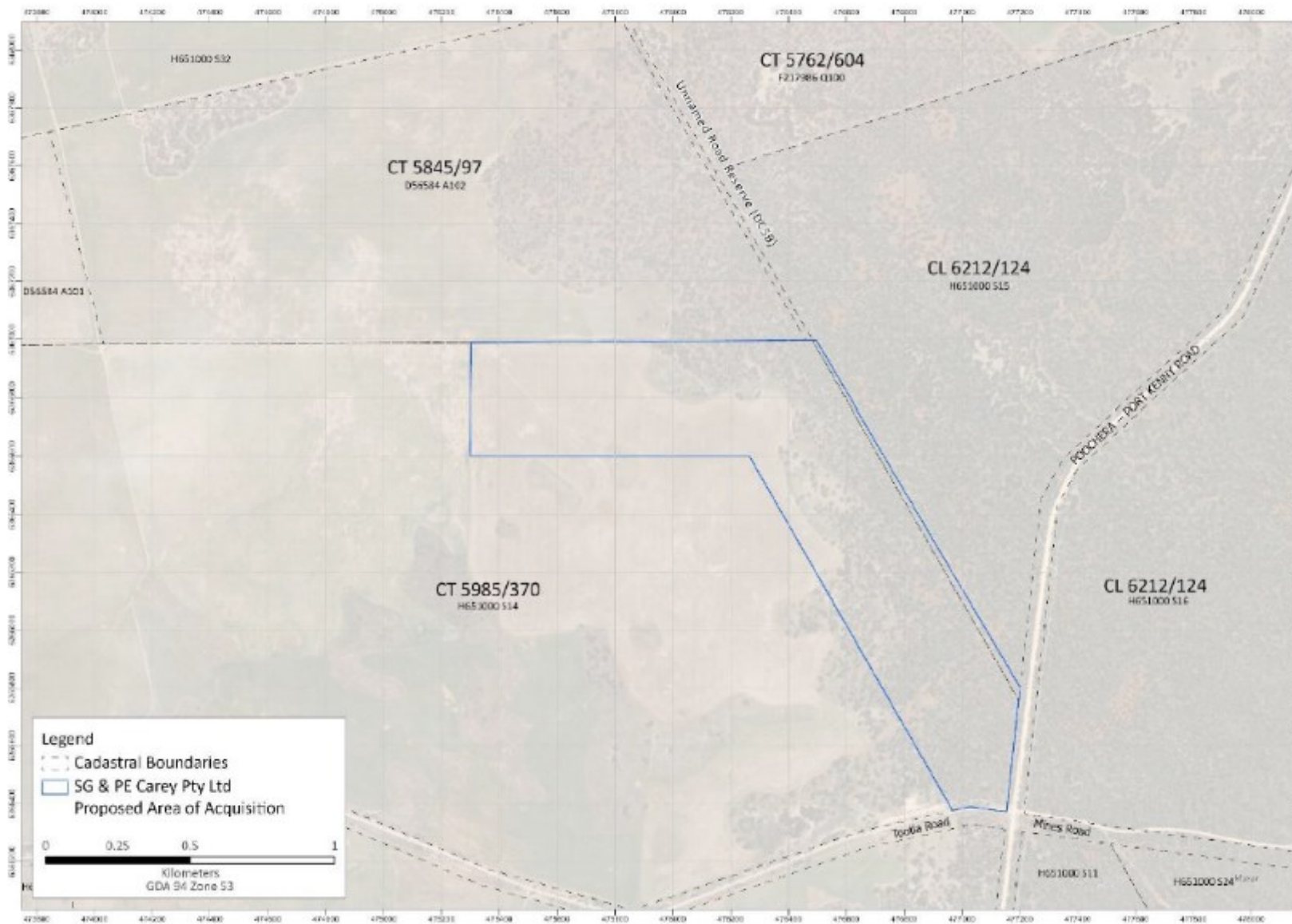


Figure 2. Map showing proposed area of acquisition, partially outside of the ML (provided by JBS&G, 24/08/2022).

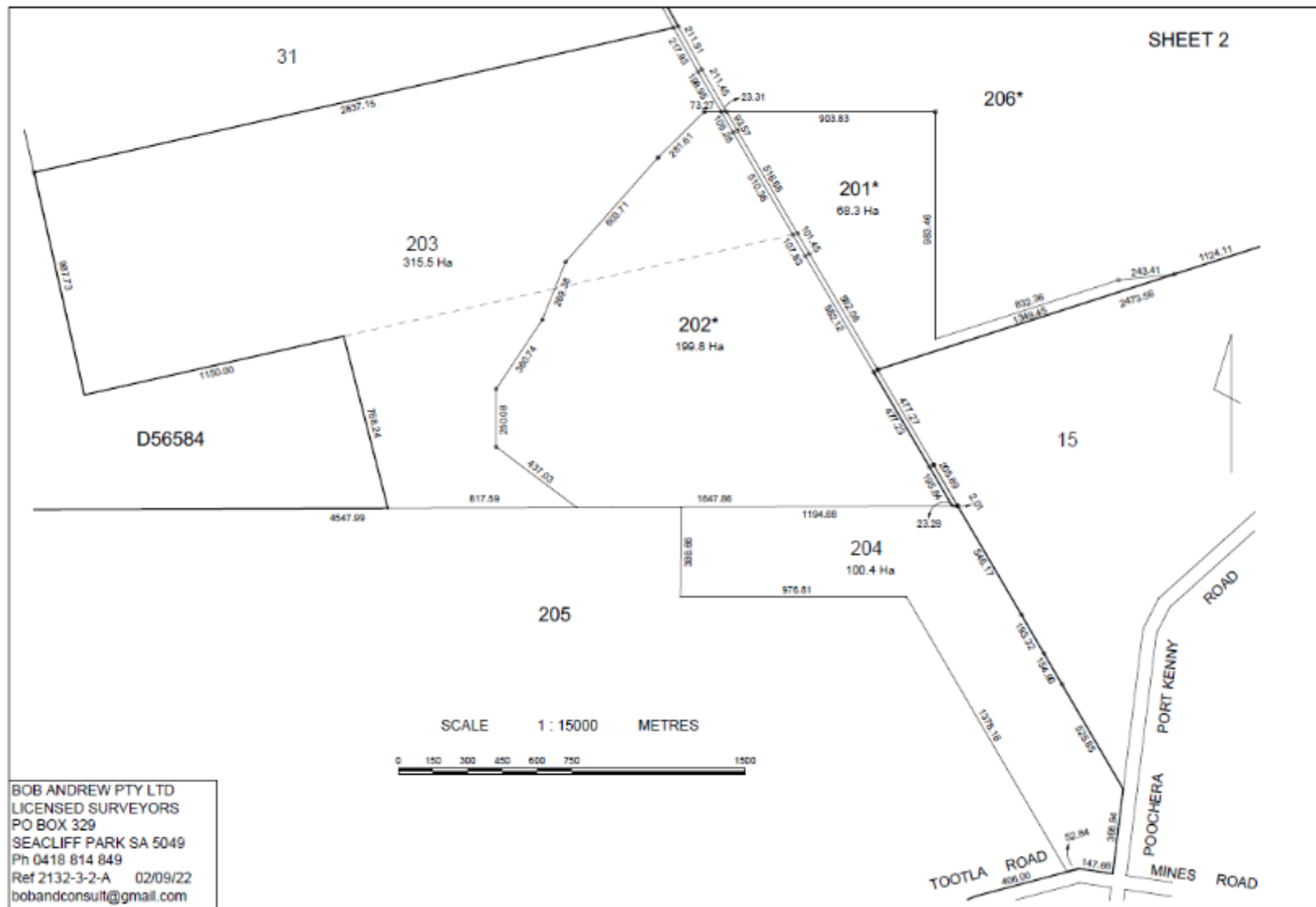


Figure 3. Draft survey plan showing proposed subdivision details including three new parcels: 201 and 202, 204 (provided by JBS&G, 24/08/2022).

2.2. Background

The site is located approximately 18 km by road, southwest of the small township of Poochera. Poochera is located on the Eyre Highway, approximately 635 km by road from Adelaide and 65 km east of Streaky Bay. The Development is located within the Eyre Peninsula Landscape Management Region (LMR), Inkster hundred, and the District Council of Streaky Bay (DEW, 2022).

The land subject to subdivision is freehold land, which is used for cropping and broad acre grazing, and is partially vegetated with native vegetation. The ML and MPLs were granted by the South Australian Department for Energy and Mining (DEM) on 17th December 2021, following assessment of the Mining Proposal, which was submitted in February 2021.

2.4. Details of the proposal

Figure 5 shows the proposed subdivision as well as the ML and mining footprint that are covered in the PEPR's Significant Environmental Benefit (SEB) calculations. It also indicates the sections of the subdivision that involve new property boundaries (noting that a proportion of the boundaries of the new parcels are aligned along existing boundaries).

A reconciliation of the new boundaries against the mining footprint used in the PEPR's SEB calculations has been undertaken to identify what additional future clearance could potentially be undertaken under Regulation 8 (14) - *Fences*, and therefore needs to be covered in this data report. This reconciliation has indicated the following (as shown in Figure 5):

- Regulation 8(14) allows clearance of 5 m either side of a boundary fence (total 10 m clearance).
- Clearance outside the new boundaries was not included in the PEPR, and therefore an allowance of 5 m for clearance outside new boundaries has been included in this data report.
- Most of the new boundaries are immediately adjacent to the mining footprint used for the SEB calculations in the PEPR¹. Clearance along the inside of the new boundaries in these areas has therefore already been accounted for in the PEPR.
- In the section of the new parcel 204 to the south of the ML where the new boundary is not adjacent to the ML or MPL boundary, an allowance of 5 m inside the new boundary has also been included in this data report. This has resulted in an allowance for 10 m clearance along this new boundary.

The resulting clearance footprint that is addressed in this data report is detailed in Figure 6 .

It is noted that the location of the subdivision boundaries has been determined by the location of the mineral resource and the approved ML. As noted in the PEPR, the components within the ML (and the ML as a whole) have aimed to minimise disturbance to native vegetation within the constraints of the pit location and environmental, land ownership, terrain, and haul distance considerations.

¹ In the SEB calculations in the PEPR, most of the ML has a nominal 10 m clearance footprint inside the ML boundary for a perimeter access road and fence, and the remainder of the ML and MPL has a 5 m clearance footprint on the inside of the ML/MPL boundary for a fence.

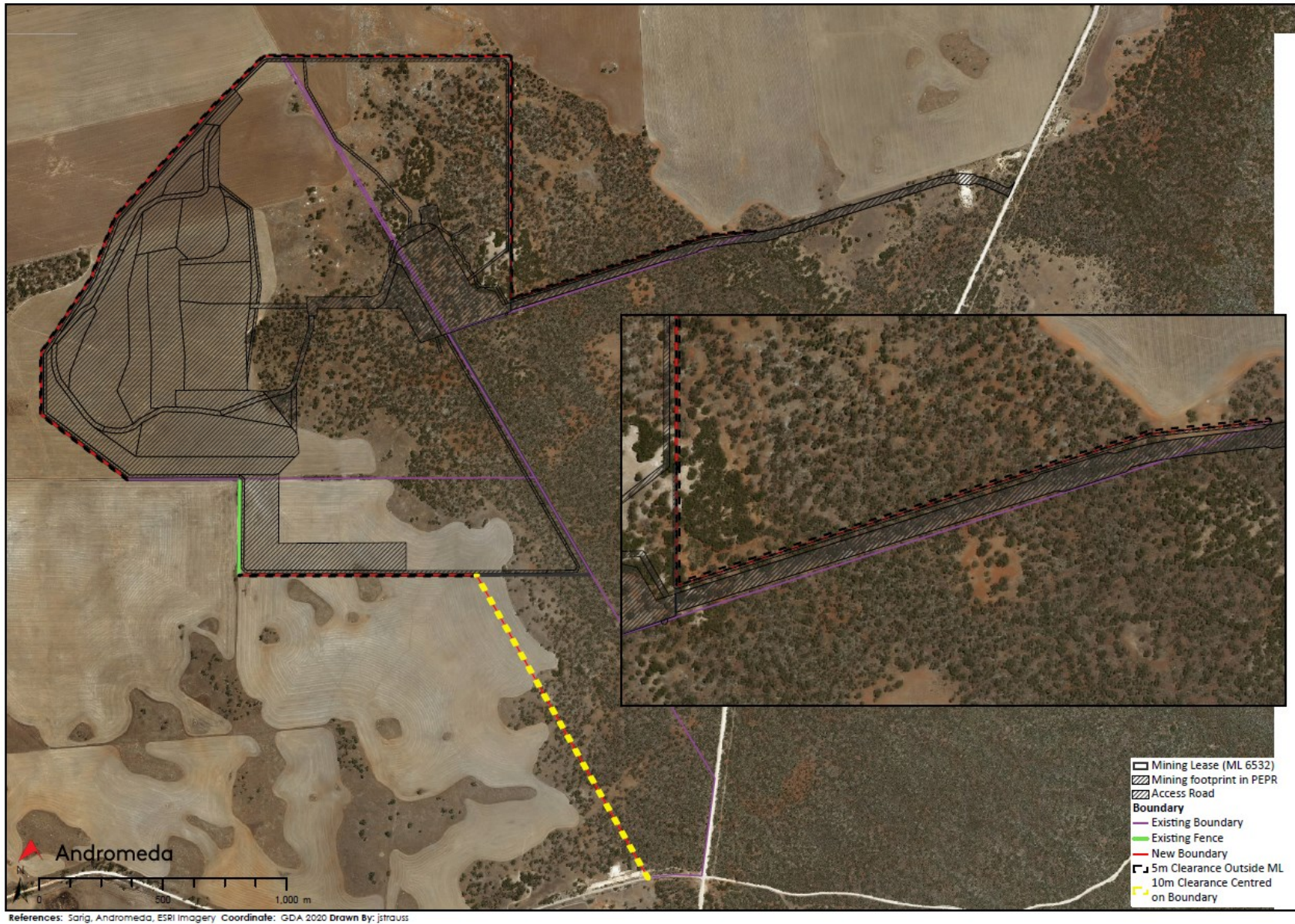


Figure 5. Mining Lease boundary, infrastructure footprint, existing and proposed new boundaries (provided by JBS&G, 27/10/2022).

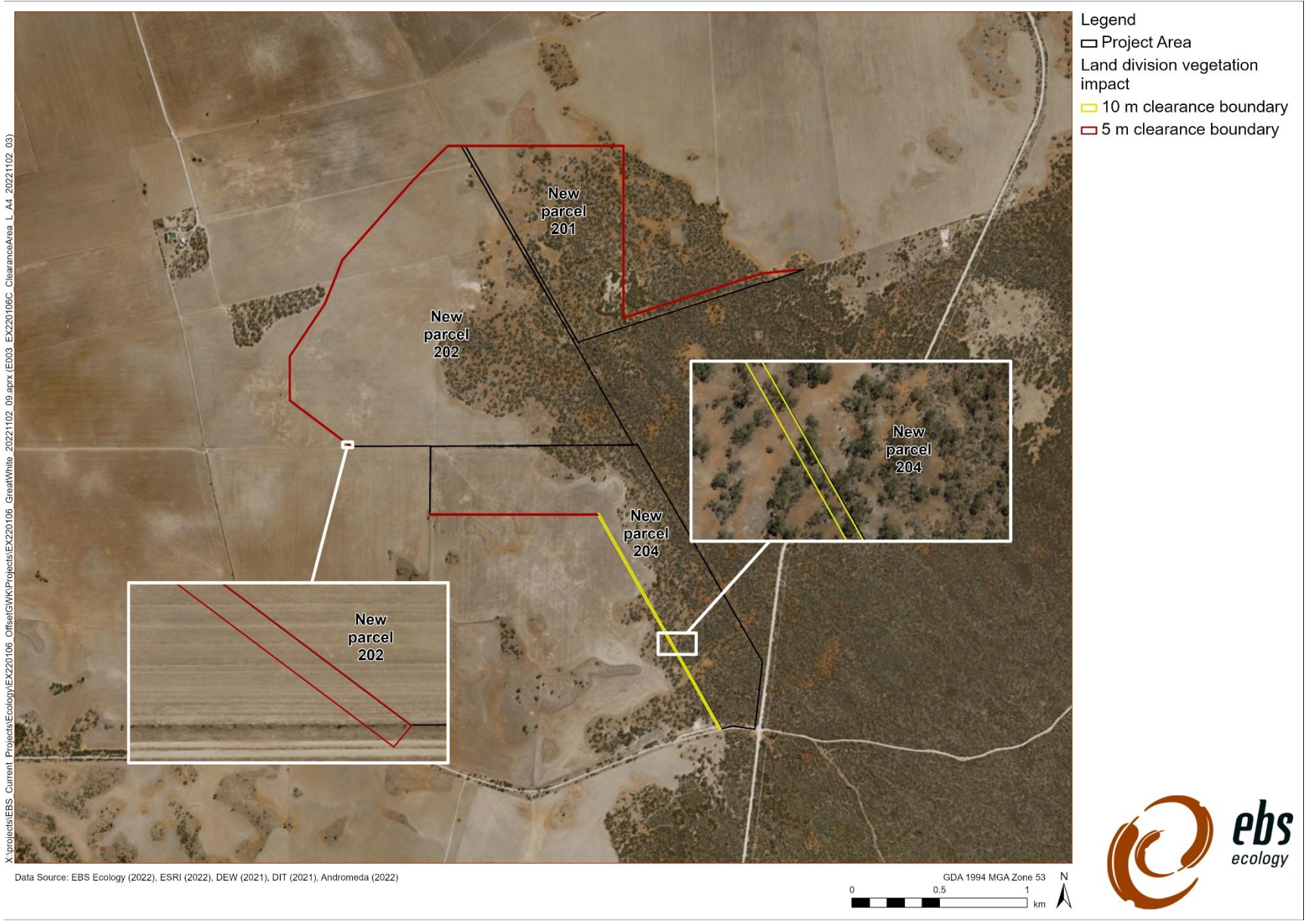


Figure 6. Potential clearance areas associated with new subdivision boundaries.

2.5. Approvals required or obtained

South Australian Mining Act 1971

The principal legislation relevant to the Great White Kaolin Project is the South Australian *Mining Act 1971*. The first stage of the two-stage Mining Act approval process has been completed (grant of the mining tenements following submission of the Mining Proposal in February 2021). The second stage is in progress – the PEPR was submitted in August 2022 and is currently under assessment.

The PEPR includes a native vegetation clearance assessment and SEB calculations for mining and associated operations on the ML and MPLs (prepared in accordance with relevant Department for Energy and Mining and NVC guidelines). This clearance would be approved by DEM under delegation as a part of the PEPR approval (should the PEPR be approved).

Native Vegetation Act 1991 (NV Act) (provide details of any previous approvals that are relevant)

This report is provided in support of the NV Act to address future clearance that could potentially be undertaken on new boundaries under Regulation 8 (14) - *Fences*.

As noted above, clearance for mining and associated operations on the ML and MPLs would be approved by DEM under delegation as a part of the PEPR approval (should the PEPR be approved).

Planning, Development and Infrastructure Act 2016 (PDI Act)

Subdivision of the land to secure land access for the mining operations requires development approval under the PDI Act. This data report has been prepared to accompany the development application.

Water Resources Act 1997 (e.g. a water license)

No waterways are being impacted as part of this proposal and therefore a water licence is unlikely to be required.

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) (impacts on MNES)

Andromeda has undertaken an EPBC Self-assessment of the Project against Matters of National Environmental Significance (MNES), which indicated that the project is not likely to have a significant impact on MNES.

National Parks and Wildlife Act 1972 (NPW Act) (e.g. flora collection permit)

All flora and fauna surveys conducted as part of the native vegetation clearance application were undertaken by EBS Ecology under Scientific Research Licence K25613-20.

Landscapes South Australia Act 2019 (e.g. water affecting activity permit)

All landowners have a responsibility to manage pest plants and animals on their land.

Aboriginal Heritage Act 1988

A 'Stop Work' procedure should be in place if any items of cultural significance are encountered during construction works.

2.6. Development Application information (if applicable)

The Native Vegetation Overlay applies to the entire area under application. The State Significant Vegetation Overlay applies to Heritage Agreement 511 (HA511) which occurs on an allotment adjoining the Project Area and contains a 50 m buffer zone which is covered under the overlay. The area under application is not within the 50 m State Significant Vegetation Overlay buffer.

3. Method

3.1. Flora assessment

A flora assessment was undertaken by NVC Accredited Consultant M. Launer of BlackOak Environmental from 2 to 9 October 2019 in accordance with the Bushland Assessment Method (BAM) and Scattered Tree Assessment Method (STAM)(NVC, 2020a and NVC, 2020b). A follow up field assessment was undertaken by EBS Ecology NVC Accredited Consultants M. Laws and J. Carpenter from 2 to 6 March 2020 in accordance with BAM and STAM.

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 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 to occur in the Protected Matters Search Tool (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. BAM scoresheets were updated to the most recent NVC supplied BAM scoresheet (October 2021) and an updated BDBSA and PMST search was completed on 20 September 2022 to account for any changes which may have occurred since field work was completed in 2019 and 2020. 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 Project Area is terrestrial.

3.2. Fauna assessment

Fauna assessment for the Project included a both a desktop assessment and field survey. The desktop assessment was used to determine the potential for any threatened fauna species and Threatened Ecological Communities (TECs) (both Commonwealth and State listed) to occur within the Project Area. This was achieved by undertaking database searches using a 5 km buffer of the Project Area (Search Area). The field survey aimed to confirm if suitable habitat for threatened species occurred, and to record any fauna observed in the Project Area or surrounds during the field survey.

3.2.1. Protected Matters Search Tool report

A PMST report was generated on 20 September 2022 to identify nationally threatened flora and fauna, migratory fauna and TECs under the EPBC Act relevant to the Project Area (DCCEEW 2022). Only species and TECs identified in the PMST report that are likely or known to occur within the Search Area were assessed for their likelihood of occurrence within the Project Area. Species listed as 'known to occur' were included in BAM scoresheets to contribute to the SEB offset required.

3.2.2. Biological Database of South Australia data extract

A data extract from the BDBSA was obtained from NatureMaps to identify flora and fauna species that have been recorded within 5 km of the Project Area (data extracted 20/09/2022; DEW 2022). 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 Department for Environment and Water's (DEW) 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.

3.2.3. Field survey

All native and exotic fauna species encountered (directly observed, or tracks, scats, burrows, nests and other signs of presence) during the field survey were recorded during the March 2020 field survey. Potential fauna refuge sites, such as hollows, rock crevices and creek lines were noted as an indication of availability of suitable habitat. Particular attention was paid to identifying habitat for threatened species. For each fauna opportunistic observation, the species, number of individuals, GPS location, detection methodology (sight, sound or sign) and habitat were recorded. No formal trapping survey was undertaken.

A bird survey was undertaken at each BAM sample point location. Surveys used the area search method whereby each 1 ha vegetation survey site was searched for a period of 20 minutes using a random meander pattern of searching throughout the site. Each site was searched once only, at varying times throughout the day. Each species of bird that could be identified by sight or call within the site was recorded, as well as the number of individuals seen. Birds observed outside the survey sites were recorded as incidental sightings.

A targeted Malleefowl (*Leipoa ocellata*) survey was undertaken using Lidar (Aditi Pty Ltd, 2020) and on-ground surveys by during spring 2020 (Ecological Horizons, 2020) to search for presence of nest mounds and / or birds. Information collected was utilised to inform an EPBC Significant Impact Self-Assessment for potential impacts to the Malleefowl.

3.2.4. Likelihood of occurrence

The criteria for the likelihood of occurrence of threatened species within the Project Area are described in Table 3

Table 3. 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.

4. Assessment outcomes

4.1. Vegetation assessment

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

Landform, geography and soils

The Interim Biogeographical Regionalisation of Australia (IBRA) identifies geographically distinct bioregions based on common climate, geology, landform, native vegetation and species information. The bioregions are further refined into subregions and environmental associations (DotE 2012). The Proposed Development Area is located in the Eyre Yorke Block IBRA bioregion, Talia IBRA subregion and Inkster IBRA environmental association, which are summarised in Appendix 1 – IBRA landscape summary. The area is characterised by plains and gently undulating rises of calcrete overlain by calcerous sandy loams, with moderate to heavy surface limestone and some small patches of deep sands.

Overview of vegetation under application

Vegetation was largely comprised of mixed Mallee over mixed sclerophyll shrubs, interspersed with small sections of grassy open Mallee woodland and open grasslands where the vegetation intersected agricultural land. Five vegetation associations described, mapped, and assessed as BAM sites across the Development Area are proposed to be impacted by the new land division alignment:

- A1: *Eucalyptus porosa* / *Eucalyptus diversifolia* Mixed Mallee over Sclerophyll Shrubs
- A2: *Eucalyptus oleosa* ssp. *oleosa* Mallee over Mixed Sclerophyll Shrubs
- A3: *Eucalyptus porosa* Grassy Open Mallee Woodland
- A4: *Austrostipa* ssp. / *Avena barbata* Grassland with Emergent *Eucalyptus porosa*
- C5: *Austrostipa vickeryana* / *Avena barbata* Grassland.

Vegetation associations mapped across the Development Area, including those which have been surveyed, but are not being impacted as part of this application are displayed in Section 4.1.3, Figure 12. Vegetation associations mapped across the development area, including those to be potentially impacted as part of the proposed boundary realignment. Figure 12.

Multiple BAM sites were surveyed within each VA, however the representative BAM with the highest Unit Biodiversity Score (UBS) has been utilised to account for a worst-case scenario clearance outcome for this report.

Vegetation condition


Generally, vegetation was of higher quality the further it occurred from the edge, with less weed encroachment and more typical pre-European density of trees.

Landscape context

Native vegetation within the Project Area forms part of a larger contiguous patch of vegetation, comprising a network of heritage agreements (HAs) and conservation areas. Including Kulliparu Conservation Park (CP) (45,312 ha), Heritage Agreement (HA) 273 (712 ha), HA 452 (2,896 ha), HA 487 (1,578 ha), HA 511 (1,345 ha), HA 536 (1,551 ha), HA 602 (1,606 ha), HA 605 (3,368 ha), HA 618 (1,262 ha), HA 811 (398 ha), HA 843 (2,914 ha), HA 863 (3,616 ha), HA 885 (2006 ha), HA 1001 (584 ha) and HA 1535 (565 ha), which protect a total area of 69,713 ha.


4.1.2. Details of the vegetation associates/scattered trees proposed to be impacted

Table 4. Summary of Vegetation Association A1.

<p>Vegetation Association</p>	<p>A1: <i>Eucalyptus porosa</i> / <i>Eucalyptus diversifolia</i> Mixed Mallee over Sclerophyll Shrubs</p>
	
<p>Figure 7. Representative photo of Site A1; Location E: 477151, N: 6366279.</p>	
<p>General description</p>	<p>VA A1 is the dominant vegetation association across the Project Area, including within the ML and on adjoining land, comprising HA 511. Vegetation condition was generally better within the denser interior of the site, with increased cover of weeds occurring on the edges as the intergraded with cropping / agricultural land.</p> <p>Overstorey of <i>Eucalyptus porosa</i> (Mallee Box), <i>Eucalyptus diversifolia</i> (Coastal White Mallee) and <i>Callitris gracilis</i> (Southern Cypress Pine).</p> <p>Midstorey of <i>Beyeria lechenaultii</i> (Pale Turpentine Bush), <i>Dodonaea</i> spp. (Hop-bushes), <i>Melaleuca</i> spp. (Tea-trees), <i>Pittosporum angustifolium</i> (Native Apricot) and <i>Senna</i> spp. (Sennas).</p> <p>Understorey of <i>Acrotriche patula</i> (Prickly Ground-berry), <i>Austrostipa</i> spp. (Spear-grasses), <i>Enchylaena tomentosa</i> (Ruby Saltbush), <i>Roepera apiculata</i> (Pointed Twinleaf), and <i>Rytidosperma caespitosa</i> (Common Wallaby-grass).</p> <p>Habitat features included hollow-bearing trees, leaf litter and rocky outcrops.</p> <p>Dominant weeds included <i>Avena barbata</i> (Bearded Oat) and <i>Carrichtera annua</i> (Wards Weed).</p>


Threatened species or community	<p>No Threatened Ecological Communities were found to be present within the Project Area. State Rare Scarlet-chested Parrot (<i>Neophema splendida</i>) was observed in this VA during the field assessment.</p> <p>Other threatened flora and fauna species which were found to have nearby records and / or the Project Area is within their known distribution and habitat is considered suitable include:</p> <p><u>Likely / known fauna</u></p> <ul style="list-style-type: none"> • <i>Corcorax melanorhamphos</i> (White-winged Cough), NPW Act Rare; • <i>Lophochroa leadbeateri mollis</i> (Major Mitchell's Cockatoo), NPW Act Rare. • <i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater) NPW Act Rare; • <i>Neophema splendida</i> (Scarlet-chested Parrot), NPW Act Rare; • <i>Pachycephala inornata</i> (Gilbert's Whistler), NPW Act Rare; and • <i>Turnix varius</i> (Painted Buttonquail), NPW Act Rare. <p><u>Possible fauna</u></p> <ul style="list-style-type: none"> • <i>Leipoa ocellata</i> (Malleefowl); EPBC Act Vulnerable <p><u>Likely / known flora</u></p> <ul style="list-style-type: none"> • <i>Austrostipa tenuifolia</i>; NPW Act Rare • <i>Austrostipa vickeryana</i>; NPW Act Rare <p><u>Possible flora</u></p> <ul style="list-style-type: none"> • <i>Caladenia tensa</i> (Inland Greencomb Spider Orchid); EPBC EN • <i>Swainsona pyrophila</i> (Yellow Swainson-pea); EPBC Vulnerable 				
	Landscape context score	1.14	Vegetation Condition Score	62.44	Conservation significance score
Unit biodiversity Score	75.45	Area (ha)	1.82	Total biodiversity Score	137.32

Table 5. Summary of Vegetation Association A2.

<p>Vegetation Association</p>	<p>A2: <i>Eucalyptus oleosa</i> ssp. <i>oleosa</i> Mallee over Mixed Sclerophyll Shrubs</p>
	
<p>Figure 8. Representative photo of VA2; Location - E: 477503, N: 6367449.</p>	
<p>General description</p>	<p>VA2 occurred in small patches scattered throughout the ML and adjacent land, and was of higher quality within HA511.</p> <p><i>Eucalyptus oleosa</i> ssp. <i>oleosa</i> (Red Mallee) was the dominant overstorey species, with a midstorey comprising <i>Acacia sclerophylla</i> (Hard-leaf Wattle), <i>Eremophila</i> spp. (Emubushes), <i>Geijera linearifolia</i> (Sheep Bush) and <i>Pittosporum angustifolium</i> (Native Apricot) and understorey of <i>Austrostipa</i> ssp. (Spear-grasses) and <i>Roepera ovata</i> (Dwarf Twin-leaf).</p> <p>Habitat features included hollow-bearing trees, leaf litter and structural diversity.</p> <p>Dominant weeds included <i>Avena barbata</i> (Bearded Oat) and <i>Carrichtera annua</i> (Wards Weed).</p>
<p>Threatened species or community</p>	<p>No Threatened Ecological Communities were found to be present within the Project Area.</p> <p>State Rare, Gilbert’s Whistler (<i>Pachycephala inornata</i>) was observed in this VA during the field assessment.</p> <p>Other threatened flora and fauna species which were found to have nearby records and / or the Project Area is within their known distribution and habitat is considered suitable include:</p> <p>Likely / known fauna</p> <ul style="list-style-type: none"> • <i>Corcorax melanorhamphos</i> (White-winged Cough), NPW Act Rare; • <i>Lophochroa leadbeateri mollis</i> (Major Mitchell’s Cockatoo), NPW Act Rare. • <i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater) NPW Act Rare; • <i>Neophema splendida</i> (Scarlet-chested Parrot), NPW Act Rare; • <i>Pachycephala inornata</i> (Gilbert’s Whistler), NPW Act Rare; and • <i>Turnix varius</i> (Painted Buttonquail), NPW Act Rare. <p>Possible fauna</p> <ul style="list-style-type: none"> • <i>Leipoa ocellata</i> (Malleefowl); EPBC Act Vulnerable

	<p>Likely / Known</p> <ul style="list-style-type: none"> • <i>Austrostipa tenuifolia</i>; NPW Act Rare • <i>Austrostipa vickeryana</i>; NPW Act Rare <p>Possible</p> <ul style="list-style-type: none"> • <i>Caladenia tensa</i> (Inland Greencomb Spider Orchid); EPBC EN • <i>Swainsona pyrophila</i> (Yellow Swainson-pea); EPBC Vulnerable 				
Landscape context score	1.14	Vegetation Condition Score	57.53	Conservation significance score	1.06
Unit biodiversity Score	69.51	Area (ha)	0.19	Total biodiversity Score	13.21

Table 6. Summary of Vegetation Association A3.

<p>Vegetation Association</p>	<p>A3: <i>Eucalyptus porosa</i> Grassy Open Mallee Woodland</p>
	
<p>Figure 9. Representative photo of site A3; Location – E: 475839; N: 6368478.</p>	
<p>General description</p>	<p><i>Eucalyptus porosa</i> Grassy Open Mallee Woodland occurred primarily on the outskirts of native vegetation patches, where woodland merged into grassland and / or cropping and agricultural land. A scattered overstorey of <i>E. porosa</i> (Mallee Box) occurred with sparse midstorey of <i>Pittosporum angustifolium</i> (Native Apricot) and an <i>Austrostipa</i> spp. (Spear-grasses) <i>Gahnia lanigera</i> (Black Grass Saw-sedge) <i>Rytidosperma caespitosa</i> (Common Wallaby-grass). Habitat features include hollow-bearing trees and a patchy litter layer. Dominant weeds included <i>Avena barbata</i> (Bearded Oat), <i>Carrichtera annua</i> (Ward’s Weed), and <i>Marrubium vulgare</i> (Horehound).</p>
<p>Threatened species or community</p>	<p>No Threatened Ecological Communities were found to be present within the Project Area. State Rare, Painted Buttonquail (<i>Turnix varius</i>) was observed in the Project Area during the field assessment.</p> <p>Other threatened flora and fauna species which were found to have nearby records and / or the Project Area is within their known distribution and habitat is considered suitable include:</p> <p>Likely / known fauna</p> <ul style="list-style-type: none"> • <i>Corcorax melanorhamphos</i> (White-winged Chough), NPW Act Rare; • <i>Lophochroa leadbeateri mollis</i> (Major Mitchell’s Cockatoo), NPW Act Rare. • <i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater) NPW Act Rare; • <i>Neophema splendida</i> (Scarlet-chested Parrot), NPW Act Rare; • <i>Pachycephala inornata</i> (Gilbert’s Whistler), NPW Act Rare; and <p>Possible fauna</p> <ul style="list-style-type: none"> • <i>Leipoa ocellata</i> (Malleefowl); EPBC Act Vulnerable (A3 is considered fringe habitat and is unlikely to constitute important habitat for this species). <p>Likely / known flora</p>

	<ul style="list-style-type: none"> • <i>Austrostipa tenuifolia</i>; NPW Act Rare • <i>Austrostipa vickeryana</i>; NPW Act Rare <p>Possible flora</p> <ul style="list-style-type: none"> • <i>Caladenia tensa</i> (Inland Greencomb Spider Orchid); EPBC EN • <i>Swainsona pyrophila</i> (Yellow Swainson-pea); EPBC Vulnerable 				
Landscape context score	1.14	Vegetation Condition Score	47.74	Conservation significance score	1.04
Unit biodiversity Score	56.60	Area (ha)	0.05	Total biodiversity Score	2.72

Table 7. Summary of Vegetation Association A4.

Vegetation Association	A4: <i>Austrostipa</i> ssp. / <i>Avena barbata</i> Grassland with Emergent <i>Eucalyptus porosa</i>				
					
<p>Figure 10. Representative photos of Site VA4. Location – E: 475798; N:6368834.</p>					
General description	<p>Site A4 comprised <i>Austrostipa</i> ssp. and <i>Avena barbata</i> Grassland with sparsely emergent <i>E. porosa</i> and was generally in poor condition with evidence of tree loss via death or removal (i.e. stumps). Native understorey species included <i>Austrostipa</i> spp. (Spear-grasses), <i>Gahnia lanigera</i> (Black Grass Saw-sedge) and <i>Rytidosperma caespitosa</i> (Common Wallaby-grass) with a weedy component of <i>Avena barbata</i> (Bearded Oat), <i>Carrichtera annua</i> (Ward’s Weed), and <i>Marrubium vulgare</i> (Horehound).</p> <p>Habitat features included rocky outcrops as pictured in Figure 10.</p>				
Threatened species or community	<p>No Threatened Ecological Communities were found to be present within the Project Area. Other threatened flora and fauna species which were found to have nearby records and / or the Project Area is within their known distribution and habitat is considered suitable include:</p> <p>Likely / Known</p>				

	<ul style="list-style-type: none"> • <i>Corcorax melanorhamphos</i> (White-winged Chough), NPW Act Rare; • <i>Lophochroa leadbeateri mollis</i> (Major Mitchell's Cockatoo), NPW Act Rare. • <i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater) NPW Act Rare; • <i>Neophema splendida</i> (Scarlet-chested Parrot), NPW Act Rare; • <i>Pachycephala inornata</i> (Gilbert's Whistler), NPW Act Rare; and • <i>Turnix varius</i> (Painted Buttonquail), NPW Act Rare. <p>Likely / Known</p> <ul style="list-style-type: none"> • <i>Austrostipa tenuifolia</i>; NPW Act Rare • <i>Austrostipa vickeryana</i>; NPW Act Rare <p>Possible</p> <ul style="list-style-type: none"> • <i>Caladenia tensa</i> (Inland Greencomb Spider Orchid); EPBC EN • <i>Swainsona pyrophila</i> (Yellow Swainson-pea); EPBC Vulnerable 				
Landscape context score	1.14	Vegetation Condition Score	15.38	Conservation significance score	1.04
Unit biodiversity Score	18.23	Area (ha)	0.07	Total biodiversity Score	1.26

Table 8. Summary of Vegetation Association C5.


Vegetation Association	C5: <i>Austrostipa vickeryana</i> / <i>Avena barbata</i> Grassland.				
					
General description	<p>Vegetation was generally in poor condition and sparsely present on rocky soil at the time of the survey, with State Rare grass <i>Austrostipa vickeryana</i> (Vickery's Spear-Grass) occurring with a dominant cover of <i>Avena barbata</i> (Oat Grass). Scattered herbaceous species occurred including <i>Ptilotus seminudus</i> (Rabbit-tails), <i>Vittadinia megacephala</i> (Giant New Holland Daisy) and <i>Wahlenbergia communis</i> (Tufted Bluebell).</p> <p>Significant weeds included <i>Avena barbata</i> (Oat Grass), and <i>Carrichtera annua</i> (Wards Weed), with scattered occurrence of <i>Marrubium vulgare</i> (Horehound).</p>				

Figure 11. Representative photo of VA C5; Location E: 474932, N: 6365955.

Threatened species or community	<p>No Threatened Ecological Communities were found to be present within the Project Area. State Rare, Painted Buttonquail (<i>Turnix varius</i>) was observed during the field assessment. Other threatened flora and fauna species which were found to have nearby records and / or the Project Area is within their known distribution and habitat is considered suitable include:</p> <p><u>Likely / Known fauna</u></p> <ul style="list-style-type: none"> • <i>Corcorax melanorhamphos</i> (White-winged Chough), NPW Act Rare; • <i>Lophochroa leadbeateri mollis</i> (Major Mitchell's Cockatoo), NPW Act Rare. • <i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater) NPW Act Rare; • <i>Neophema splendida</i> (Scarlet-chested Parrot), NPW Act Rare; • <i>Pachycephala inornata</i> (Gilbert's Whistler), NPW Act Rare; and <p><u>Likely / Known flora</u></p> <ul style="list-style-type: none"> • <i>Austrostipa tenuifolia</i>; NPW Act Rare • <i>Austrostipa vickeryana</i>; NPW Act Rare 				
	Landscape context score	1.11	Vegetation Condition Score	15.96	Conservation significance score
Unit biodiversity Score	19.14	Area (ha)	0.067	Total biodiversity Score	1.28

4.1.3. Site map showing areas of proposed impact

See following page.

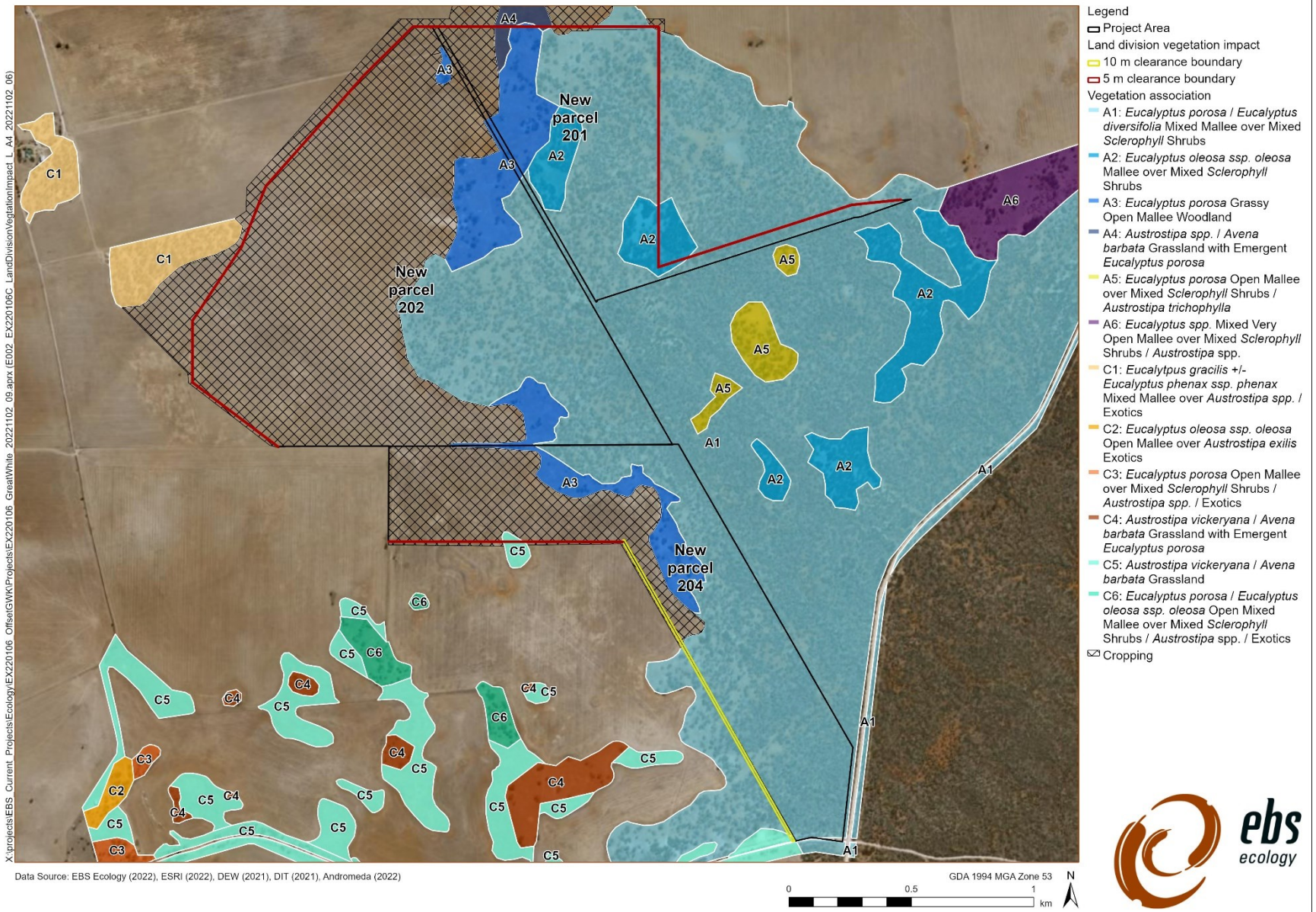


Figure 12. Vegetation associations mapped across the development area, including those to be potentially impacted as part of the proposed boundary realignment.

4.2. Threatened species assessment

The desktop assessment was used to determine if any additional fauna species of concern had been recorded within 5 km of the Project Area since the initial assessment in 2020. Threatened fauna species with records (listed as known to occur) in the PMST or those with records within 5 km of the Project Area since 1995 with less than 1 km locational reliability, must be included in the BAM scoresheets and may contribute to the overall SEB offset required.

The PMST found seven nationally threatened fauna species including six birds and one mammal which may occur within the Project Area, all of which had previously been identified, with six considered 'unlikely' to occur within the Project Area based on their niche habitat requirements and one, the Malleefowl (*Leipoa ocellata*), considered possible:

- *Pedionomus torquatus* (Plains Wanderer), EPBC Act Critically Endangered;
- *Numenius madagascariensis* (Far Eastern Curlew), EPBC Act Critically Endangered;
- *Calidris ferruginea* (Curlew Sandpiper), EPBC Act Critically Endangered;
- *Pezoporus occidentalis* (Night Parrot), EPBC Act Endangered;
- *Sminthopsis psammophila* (Sandhill Dunnart), EPBC Act Endangered;
- *Falco hypoleucos* (Grey Falcon), EPBC Act Vulnerable; and
- *Leipoa ocellata* (Malleefowl), EPBC Act Vulnerable.

All nine EPBC listed migratory species identified within the PMST were birds and considered unlikely to occur within the Project Area. One, *Apus pacificus* (Fork-tailed Swift) is a EPBC listed marine bird and may occur as a fly-over only; seven were EPBC listed migratory wetland birds with no wetland habitat present in the Project Area; and one, *Motacilla cinerea* (Grey Wagtail) has no suitable wetland or irrigated grass habitat within the Project Area.

Additionally, the PMST found three EPBC listed plant species which may occur within the Project Area:

- *Caladenia tensa* (Greencomb Spider Orchid), EPBC Act Endangered;
- *Pterostylis xerophila* (Desert Greenhood) EPBC Act Vulnerable; and
- *Swainsona pyrophila* (Yellow Swainson-pea) EPBC Act Vulnerable.

None of these three plant species were identified in the Project Area during the field survey despite being surveyed in October when all species should be flowering or nearing the end of flowering. None of the three plant species were found to have BDBSA records within 5 km of the Project Area and therefore these database PMST records do not have an additional impact of the BAM scores or SEB offset. Due to the size of the Project Area, the whole area was not searched in its entirety and therefore it remains possible that these species may occur within the Project Area in suitable habitat.

A NatureMaps search within 5 km of the Project Area found two State (NPW Act) threatened fauna species and one nationally listed (EPBC Act) species with records since 1995 including:

- *Corcorax melanorhamphos* (White-winged Chough), NPW Act Rare;
- *Leipoa ocellata* (Malleefowl), EPBC Act Vulnerable; and
- *Lophochroa leadbeateri mollis* (Major Mitchell's Cockatoo), NPW Act Rare.

Records of three other state listed fauna species were found within the 5 km buffer, however all records were from 1986 and are therefore not included in the BAM scoresheets.

A NatureMaps search within 5 km of the Project Area found one State (NPW Act) threatened flora species with records since 1995, *Austrostipa tenuifolia* (Spear Grass), (NPW Act Rare). This species was not observed during the field survey. One State Rare species, *Austrostipa vickeryana* (NPW Act Rare), was observed during the field assessment.

Four State Rare bird species (which did not have previous records within 5 km of the Project Area) were detected during the field survey on land adjoining the Project Area, and it is considered likely that they would therefore also utilise habitat within the Project Area:

- *Lichenostomus cratitius occidentalis* (Purple-gaped Honeyeater);
- *Neophema splendida* (Scarlet-chested Parrot);
- *Pachycephala inornata* (Gilbert's Whistler); and
- *Turnix varius* (Painted Buttonquail).

Species observed on site or recorded within 5 km of the application area since 1995, or the vegetation is considered to provide suitable habitat are presented in Table 9.

Table 9. Likelihood of occurrence of threatened species identified in the desktop assessment. The data source and threat levels are described in the table footer. Known/highly likely/likely species are shaded in green.

Species (common name)	EPBC Act	NPW Act	Data source	Date of last record / PMST likelihood	Species known habitat preferences	Likelihood of use for habitat – Comments
FAUNA						
<i>Apus pacificus</i> (Fork-tailed Swift)	Mi		3	Likely	More common in coastal and sub-coastal areas but regularly occurs in inland Australia. Almost exclusively aerial in Australia, flying over a range of habitats including open plains, forests, and built-up areas	Possible – flyover only. Will not be impacted by Project.
<i>Corcorax melanorhamphos</i> (White-winged Chough)		RA	2	2021	Widespread across southern South Australia. Occurs in Eucalypt woodlands, preferring wetter areas, with leaf litter for feeding and available mud for nest building. Recorded by Rural Solutions SA (2011).	Likely – records from within Project Area, suitable habitat available.
<i>Leipoa ocellata</i> (Malleefowl)	VU	V	3	Likely, 2020 (inactive nest)	Occurs in scattered locations throughout the semi-arid rangelands and dry-land cropping zones of the SE, MU, YP and EP. Principally found in	Possible – inactive nests in areas adjacent to the Project Area suggest that Malleefowl could

Species (common name)	EPBC Act	NPW Act	Data source	Date of last record / PMST likelihood	Species known habitat preferences	Likelihood of use for habitat – Comments
					Mallee woodland and scrub with a sandy substrate and abundance of leaf litter. Suitable habitat observed during the field survey. BDBSA record within 20 km of the Proposed Development Area within previous 10 years (DEW 2019). Subsequent survey of potential mounds using LIDAR found multiple inactive nests adjacent the Project Area.	utilise suitable habitat within the Project Area for foraging and dispersal. An EPBC Self-Assessment by Andromeda (including targeted surveys) found the impact was unlikely to be significant to this species.
<i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater)		R	4	2020	Insect and nectar eating honeyeater occurring in Mallee, open woodland and heath (Birdlife Australia, 2022).	Highly likely – observed in connected vegetation outside of the Project Area during the field survey.
<i>Lophochroa leadbeateri mollis</i> (Major Mitchell's Cockatoo)		RA	2	2019	Distributed across north-western SA down to northern EP. Inhabits Eucalypt and Acacia woodlands, requiring mature trees that support hollows large enough for nesting (Birdlife Australia, 2022). BDBSA record within 5 km of the Proposed Development Area.	Likely – recent nearby records and suitable habitat available in Project Area.
<i>Neophema splendida</i> (Scarlet-chested Parrot)		RA	4	2020	Nomadic inhabitant of arid and semi-arid parts of southern Australia, where it is found in open woodlands of eucalypts, she-oak, mulga with spinifex and saltbush. Feeding on the ground or in low vegetation (Birdlife Australia, 2022).	Highly likely – observed in mallee vegetation during the field survey.
<i>Pachycephala inornata</i> (Gilberts Whistler)		RA	4	2020	Secretive inhabitant of semi-arid southern Australia, where it utilises mallee or box-ironbark <i>Eucalyptus</i> , <i>Acacia</i> , cypress-pine or Belah shrublands and woodlands usually with dense	Highly likely – observed in mallee vegetation during the field survey.

Species (common name)	EPBC Act	NPW Act	Data source	Date of last record / PMST likelihood	Species known habitat preferences	Likelihood of use for habitat – Comments
					understorey of shrubs (Birdlife Australia, 2022).	
<i>Turnix varius</i> (Painted Buttonquail)		RA	4	2020	Widespread but uncommon, occurring in forests and woodlands, preferring closed canopies with understorey and deep leaf litter on the ground.	Highly likely – observed during the field survey.
FLORA						
<i>Austrostipa tenuifolia</i>		RA	2	1999	Distributed in the Mount Lofty Ranges, Murray, upper Southeast and Eyre Peninsula (eFlora SA 2022). Occurs in sandy soils in grassland or grassy woodland associated with <i>Callitris</i> or <i>Allocasuarina</i> . Recorded in Project Area by Rural Solutions SA (2011). BDBSA record within Proposed Development Area from 1999.	Likely – records within Project Area and nearby, suitable habitat occurs.
<i>Austrostipa vickeryana</i> Vickery's Spear-grass)		RA	4	Observed during field survey.	Distributed in central South Australia down to northern Eyre Peninsula (eFlora SA 2022). Occurs on sand associated with limestone and gypsum in inland saline areas. Recorded during the current survey and by Rural Solutions SA (2011).	Known – records within Project Impact Area.
<i>Caladenia tensa</i> (Inland Greencomb Spider Orchid)	EN		3	May occur	Widespread in South Australia including on Eyre Peninsula (eFlora SA 2022). Occurs in dry woodland, Mallee-heath, low scrub and about rock outcrops in a variety of soil types.	Possible – not observed on field survey and no records within 5 km since 1995, however, habitat is considered suitable and survey effort may not have been adequate to detect this species.
<i>Pterostylis xerophila</i>	VU		3	May occur	Scattered records across SA. Occurs singly on in small populations in fertile soils on or around granite or quartzite	Unlikely – no preferred habitat in Project Area

Species (common name)	EPBC Act	NPW Act	Data source	Date of last record / PMST likelihood	Species known habitat preferences	Likelihood of use for habitat – Comments
					rock outcrops, and less commonly on fertile alluvial flats in low rainfall areas (<200mm) (eFlora SA, 2022).	and no nearby records.
<i>Swainsona pyrophila</i> (Yellow Swainson-pea)	VU		3	Likely	A post-disturbance coloniser, the species occurs from the northern EP, east to north-western Victoria and central-western NSW generally within the 250-400mm rainfall zone. In SA it occurs in mallee woodland, sometimes with Broombush (<i>Melaleuca uncinata</i>) shrubland (Tonkinson and Robertson, 2010).	Possible – not observed on field survey and no records within 5 km since 1995, however, habitat is considered suitable and survey effort may not have been adequate to detect this species

Source; 1- BDBSA, 2 – NatureMaps, 3 – PMST, 4 – Observed/recorded in the field, 5 – others
 NPW Act; E= Endangered, V = Vulnerable, R= Rare
 EPBC Act; Ex = Extinct, CR = Critically endangered, EN = Endangered; VU = Vulnerable

Malleefowl

All Malleefowl records were the result of a targeted survey (Ecological Horizons, 2020) undertaken within the ML during spring 2020 using LIDAR and on-ground surveys, to determine the likelihood of Malleefowl occurring within the Project Area. All records relate to Malleefowl nests (inactive) only, in areas adjacent to the Project Area, with no physical sightings of Malleefowl recorded. The presence of Malleefowl mounds in adjacent areas, suggests that Malleefowl could utilise suitable habitat within the Project Area for foraging and dispersal. An EPBC Act Self-assessment was conducted by Andromeda Metals Limited (Pers. Comm, D. Klingner, 2022) which assessed the Project as unlikely to have a significant impact on Malleefowl.

4.3. Presence of Substantially Intact Vegetation

If the vegetation is considered to represent a substantially intact stratum, the NVC cannot approve clearance, unless for the purpose of harvesting native vegetation (section 27(3)).

Pre-European density of vegetation

Four pre-European benchmark communities (Milne, Croft, Pedler, 2008) were identified as occurring within the Project Area:

- EP 3.1 – Woodlands with a grassy OR low sedge understorey (Site A3 and A4);
- EP 3.2 – Grasslands (Site C5);

- EP 5.1 – Mallee on inland sand dunes and deep sands (A2); and
- EP 11.1 – Inland Mallee and Low Woodlands with mid-dense sclerophyll shrub understorey on limestone soils (A1).

Table 10 lists each vegetation association along with a comparison of its surveyed score for each indicator, with comparison to its benchmark score. The scores provide an indication of whether:

- Plants within the stratum are growing at original (pre-European density for that community) (Mature Tree Score);
- It contains a diversity of species similar to original (pre-European) vegetation of that community (Species Diversity);
- It is part of a contiguous area of vegetation consisting of the stratum (size of patch > 1 ha); and
- It contains introduced perennial species occupying greater than 20% within the stratum under consideration.

BAM scores utilized in Table 10 are the highest scores recorded from BAM sites undertaken in each vegetation association and are therefore likely to be of higher quality / condition than actual vegetation proposed to be impacted. For example, vegetation on the western boundary of the new parcel 204 (vegetation association A1) occurs in more open and degraded vegetation than the BAM site utilized for vegetation association A1, which was within a HA511.

Table 10. Indicator scores from BAM scoresheets compared with benchmark community, boxes in red indicate a VA which does not meet requirements for intact stratum.

Indicator	A1 (EP 11.1)	A2 (EP 5.1)	A3 (EP 3.1)	A4 (EP 3.1)	C5 (EP 3.2)
Species diversity	26	22	22	18	12
Benchmark Score	Good (22-31)	Good (16-24)	Good (22-31)	Good (16-24)	Mod. (9-13)
Weed abundance and threat	15	9	19	24	23
Benchmark Score	Moderate (12-17)	Good (9-13)	Moderate (18-25)	Moderate (18-25)	Moderate (18-25)
Weed cover (estimated) (ground cover unless otherwise stated)	6-25%	1-5%	6-25%	26-50%	51-75%
Introduced perennial species present in stratum?	No	No	No	No	No
Mature Tree Score	8	8	6	2	NA
Benchmark Score (based on field observations compared to descriptions of Benchmark Communities listed in Milne, Croft, Pedler, 2008).	75-100% pre-European density*	75-100% pre-European density	50-75% pre-European density	0-25% pre-European density	NA (naturally treeless community)
Size of patch > 1ha?	Yes, vegetation connected to / within large remnant patch > 1ha in size.				No – area to be impacted is small isolated patch.

Intact Assessment	Yes	Yes	Yes	No	No
* Tree density visibly is reduced (aerial imagery) on the western boundary of parcel 204 in VA A1 and may represent a lower mature tree score in this area.					

Provide information on whether the native vegetation has been subject to degradation within the past 20 years.

The vegetation under application occurs as part of a larger contiguous tract of vegetation, which incorporates multiple Heritage Agreement areas. All vegetation under application is within an area which has been utilized for dryland agriculture including cropping and grazing, in particular the western, cleared edge of the native vegetation has been utilized for cropping. Some impacts from this agricultural use are evident, particularly in the edges of vegetation which adjoin this agricultural land, such as on the western boundary of the new parcel 204. Interior vegetation was generally in good condition, with intact upper stratum and varying levels of impact to the understorey with distance from managed edge.

The majority of the Project Area comprises a Mining Lease and will undergo human induced changes as a result of mining activities in future, including through building of infrastructure including a perimeter fence, access tracks, haul roads, a process plant, as well as directly through mining activities, following approval of the PEPR. The southern portion of the new parcel 204 will not be directly impacted by mining activities, however it will be subject to ongoing impacts from grazing and adjacent agricultural practices. It is noted that the new boundary on the west of this traverses vegetation that has reduced tree density and is more degraded than other areas of VA A1.

Provide a key finding on whether any or all of the area of impact could be considered as substantially intact.

Overall, VA A1, A2 and A3 are intact, with 50-100% of their pre-European density, mid and understorey vegetation in good condition, and low to moderate weed scores. These VAs form part of a larger contiguous patch of vegetation greater than one hectare in size, and have not been subjected to fragmentation, modification or changing abiotic factors in the past 20 years, other than ongoing impacts from grazing and agricultural practices on the margins, including in the areas where new boundaries are located. Although the vegetation strata in sites A1, A2 and A3 are substantially intact overall, the actual areas where new boundaries are located could be considered to not be substantially intact due to ongoing grazing and agricultural impacts, reduced tree density on the western boundary of new parcel 204, and the clearance that will occur immediately adjacent to the other new boundaries as a result of operations approved under the *Mining Act 1971*.

VA C5 is a small, fragmented patch of native grasses (on rocky soil), surrounded by cropping, and has been heavily impacted by weed encroachment and grazing, with annual weed species taking up 50-75% of the ground cover. It is not considered to be substantially intact.

VA A4 was highly degraded, with a low density of trees in the upper stratum, and evidence of significant impact to this stratum (either through felling or dieback). It is not clear when this degradation occurred, however weed cover in this VA was also quite high, resulting in a degraded understorey stratum. This VA is not considered to be substantially intact.

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

If the clearance is seriously at variance with one or more of the principles, the NVC cannot approve clearance, however, the Act provides the NVC with a degree of discretion in certain situations

Table 11. Assessment against the Principles of Clearance.

Principle of clearance	Considerations																								
Principle 1(a) – it comprises a high level of diversity of plant species	<p><u>Relevant information</u></p> <table border="1" data-bbox="319 562 1235 819"> <thead> <tr> <th>VA</th> <th>Native</th> <th>Introduced</th> <th>Diversity Score (Max. 30)</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>38</td> <td>8</td> <td>26</td> </tr> <tr> <td>A2</td> <td>24</td> <td>7</td> <td>22</td> </tr> <tr> <td>A3</td> <td>22</td> <td>14</td> <td>22</td> </tr> <tr> <td>A4</td> <td>17</td> <td>10</td> <td>18</td> </tr> <tr> <td>C5</td> <td>9</td> <td>16</td> <td>12</td> </tr> </tbody> </table>	VA	Native	Introduced	Diversity Score (Max. 30)	A1	38	8	26	A2	24	7	22	A3	22	14	22	A4	17	10	18	C5	9	16	12
	VA	Native	Introduced	Diversity Score (Max. 30)																					
	A1	38	8	26																					
A2	24	7	22																						
A3	22	14	22																						
A4	17	10	18																						
C5	9	16	12																						
<p><u>Assessment against the principles</u></p> <p><u>Seriously at Variance</u> (native plant diversity score of >20) A1, A2, A3</p> <p><u>At Variance</u> – (native plant diversity score of 10-20) A4, C5</p>																									
<p><u>Moderating factors that may be considered by the NVC</u></p> <p>Amount of clearance related to area of remnant Where only a very small area of vegetation will be impacted relative to the amount of vegetation within the local vicinity (less than 0.25% of the native vegetation within a 5 km radius to be impacted), this may reduce the impact from 'Seriously at variance' to 'At variance', or 'At variance' to 'Not at variance'.</p> <p>Clearance within the Project Area totals 2.20 hectares. Within the entire Project Area (i.e., ML and land under acquisition) this constitutes 1.07% of the total area of native vegetation which currently occurs (~206.22 hectares). Within 5 km of the Project Area, native vegetation extent is estimated to be approximately 6,500 hectares, with the clearance associated with the development comprising 0.03% of this extent.</p>																									
Principle 1(b) – significance as a habitat for wildlife	<p><u>Relevant information</u></p> <p>Six State threatened fauna species were recorded within the Project Area during field survey and/or within 5 km of the Project Area since 1995. and considered likely to occur:</p> <p><u>Likely / Known</u></p> <ul style="list-style-type: none"> • <i>Corcorax melanorhamphos</i> (White-winged Chough), NPW Act Rare; • <i>Lophochroa leadbeateri mollis</i> (Major Mitchell's Cockatoo), NPW Act Rare. 																								

Principle of clearance	Considerations
	<ul style="list-style-type: none"> • <i>Lichenostomus cratitius occidentalis</i> (Purple-gaped Honeyeater) NPW Act Rare; • <i>Neophema splendida</i> (Scarlet-chested Parrot), NPW Act Rare; • <i>Pachycephala inornata</i> (Gilbert's Whistler), NPW Act Rare; and • <i>Turnix varius</i> (Painted Buttonquail), NPW Act Rare. <p>One EPBC Act Vulnerable species, <i>Leipoa ocellata</i> (Malleefowl) was found to have records of inactive mounds in adjacent areas, following a dedicated survey effort using Lidar. Based on these records and the potentially suitable mallee habitat (including areas of dense leaf litter), it is considered that this species may occur within the Project Area. A significant impact assessment undertaken by Andromeda, found that the level of clearance associated with the ML is considered unlikely to have a significant impact.</p> <p>The vegetation under application is predominantly located on the edge of a larger contiguous patch of vegetation to the east. No additional clearance is proposed to occur along the new boundary lines. In the south, the existing boundary to Section 15 is unchanged and able to be cleared 5 m from the boundary (Regulation 8 (14) - <i>Fences</i>). Some additional fragmentation between a ~20-hectare patch of mallee (Figure 13) and the adjacent vegetation would be created (if the new boundary was to be cleared) however, it is noted that the vegetation is relatively open in this area, and the narrow width of the proposed clearance and low intensity of land use (i.e. not proposed to be a trafficked thoroughfare), would limit fragmentation impacts. Clearing along the north-eastern boundary would represent fragmentation between new parcel 201 and Section 15. However, it should be noted that fragmentation will already be occurring due to the 50 m-wide Miscellaneous Purposes Licence (MPL) 164 and the all-weather access road to the mine which will be constructed within that MPL under the <i>Mining Act 1971</i> (indicated in Figure 5).</p>

Principle of clearance	Considerations
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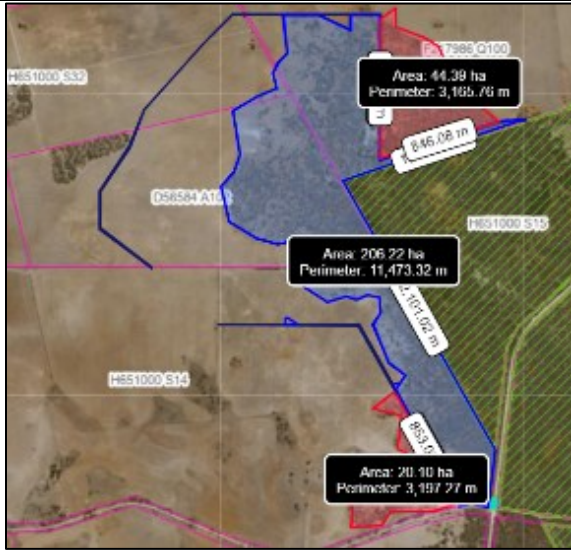


Figure 13. Possible fragmentation which may occur as a result of clearance along boundaries (indicated in red).

Vegetation at present does not provide a corridor for movement between other areas of native vegetation, and the impact area is situated towards the existing edge of the patch. The narrow, linear nature of the clearance means that dispersal between patches, particularly as all threatened fauna species considered likely to occur are highly mobile and unlikely to be directly impacted as a result of the potential clearance.

Assessment against the principles

Table 12. Threatened Fauna Score and Unit Biodiversity Score of VAs under application.

VA	Threatened Fauna Score	Unit Score	Biodiversity	At Variance	Seriously at Variance
A1	0.06	75.45	-	-	Yes
A2	0.06	69.51	-	-	Yes
A3	0.04	56.60	-	-	Yes
A4	0.04	18.23	Yes	Yes	No
C5	0.04	19.14	Yes	Yes	No


Moderating factors that may be considered by the NVC

Impact Significance

Is an impact likely to:

- Lead to a long-term decrease in the size of a population, or
- Reduce the area of occupancy of the species, or
- Fragment an existing population into two or more populations, or
- Adversely affect habitat critical to the survival of a species, or

Principle of clearance	Considerations								
	<ul style="list-style-type: none"> • Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or • Result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat, or • Interfere with the recovery of a species. <p><u>Non-essential habitat</u></p> <p>If the clearance is of non-essential habitat for threatened species and the clearance will have a negligible impact on that species local population over the long term (i.e. next 20 to 50 years), it may be reduced to 'At variance'.</p>								
<p>Principle 1(c) – plants of a rare, vulnerable or endangered species</p>	<p><u>Relevant information</u> Threatened flora species which have potential to occur within the Project Area include species which were found to have records within 5 km of the Project Area since 1995:</p> <p>Likely / Known</p> <ul style="list-style-type: none"> • <i>Austrostipa tenuifolia</i>; NPW Act Rare • <i>Austrostipa vickeryana</i>; NPW Act Rare <p>Two EPBC listed species were listed in the PMST search as may or likely to occur within the Project Area, though no nearby records were found to occur. Habitat for these species was considered potentially suitable, and due to the size of the Project Area, not all areas were searched in their entirety.</p> <p>Possible</p> <ul style="list-style-type: none"> • <i>Caladenia tensa</i> (Inland Greencomb Spider Orchid); EPBC EN • <i>Swainsona pyrophila</i> (Yellow Swainson-pea); EPBC Vulnerable <p>VA C5 comprises a small patch of highly degraded grassland containing State Rare species, <i>Austrostipa vickeryana</i>. This species was found to sparsely occur (in 2019 surveys) within a series of patches further to the south of the area under application. Vegetation in C5 was highly degraded, and isolated.</p> <p><u>Assessment against the principles</u></p> <p>Table 13. Threatened Fauna Score and Unit Biodiversity Score of VAs under application.</p> <table border="1" data-bbox="316 1861 1098 2004"> <thead> <tr> <th>VA</th> <th>Threatened Flora Score</th> <th>At Variance</th> <th>Seriously at Variance</th> </tr> </thead> <tbody> <tr> <td>A1</td> <td>0</td> <td>No</td> <td>No</td> </tr> </tbody> </table>	VA	Threatened Flora Score	At Variance	Seriously at Variance	A1	0	No	No
VA	Threatened Flora Score	At Variance	Seriously at Variance						
A1	0	No	No						

Principle of clearance	Considerations			
	A2	0	No	No
	A3	0	No	No
	A4	0	No	No
	C5	0.04	Yes	No
	<p><u>Moderating factors that may be considered by the NVC</u> <u>Impact Significance</u></p> <p>Is an impact likely to:</p> <ul style="list-style-type: none"> • Lead to a long-term decrease in the size of a population, or • Reduce the area of occupancy of the species, or • Fragment an existing population into two or more populations, or • Adversely affect habitat critical to the survival of a species, or • Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or • Result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat, or • Interfere with the recovery of a species. <p><u>Number of plants to be cleared</u></p> <p>If less than 1% of the individual plants are affected within the immediate vicinity (within a 1 km radius) of the proposed clearance, or the affected individuals can be transplanted or replaced easily, the proposed clearance may be tempered to 'At variance'.</p>  <p>Figure 14. Depicting the size of the isolated patch to be impacted in relation to a more significant network of patches containing this species further to the south.</p>			
Principle 1(d) – the vegetation	<p><u>Relevant information</u> No threatened ecological communities were found to occur within the Project Area.</p>			

Principle of clearance	Considerations						
comprises the whole or part of a plant community that is Rare, Vulnerable or endangered	<p><u>Assessment against the principles</u> <u>Seriously at Variance</u> NA</p> <hr/> <p><u>Moderating factors that may be considered by the NVC</u> NA</p>						
Principle 1(e) – it is significant as a remnant of vegetation in an area which has been extensively cleared	<p><u>Relevant information</u></p> <table border="1" data-bbox="320 524 892 633"> <thead> <tr> <th></th> <th>Remnancy</th> </tr> </thead> <tbody> <tr> <td>Inkster Association</td> <td>58</td> </tr> <tr> <td>Talia Subregion</td> <td>56</td> </tr> </tbody> </table> <p>A large portion of remnant vegetation within the immediate vicinity is protected within Heritage Agreements. See section 4.1 for more details.</p> <p>Total Biodiversity Score – 155.79</p>		Remnancy	Inkster Association	58	Talia Subregion	56
	Remnancy						
Inkster Association	58						
Talia Subregion	56						
Principle 1(e) – it is significant as a remnant of vegetation in an area which has been extensively cleared	<p><u>Assessment against the principles</u> <u>Seriously at Variance</u> NA</p> <p><u>At Variance</u> All (Biodiversity score of 5-500, remnancy >30%)</p>						
Principle 1(e) – it is significant as a remnant of vegetation in an area which has been extensively cleared	<p><u>Moderating factors that may be considered by the NVC</u></p> <p><u>Impact significance</u></p> <p>If an action has, will have, or is likely to have a significant impact on a remnant in a highly cleared landscape if it does, will, or is likely to:</p> <ul style="list-style-type: none"> • Impact on a vegetation community that has been selectively removed within the IBRA Association or IBRA Subregion and are therefore underrepresented in the vegetation that remains. • Impact on a remnants in relatively good condition, particularly if the vegetation within the IBRA Association or IBRA Subregion where vegetation has largely been degraded. 						
Principle 1(f) – it is growing in, or in association with, a wetland environment	<p><u>Relevant information</u> NA</p> <hr/> <p><u>Assessment against the principles</u> <u>Seriously at Variance</u> NA</p> <p><u>At Variance –</u> NA</p>						

Principle of clearance	Considerations
	<u>Moderating factors that may be considered by the NVC</u>
Principle 1(g) – it contributes significantly to the amenity of the area in which it is growing or is situated	<u>Relevant information</u> Vegetation occurs in a privately owned rural / agricultural landscape and as such, does not provide significant additional amenity to the public.
	NA
	<u>Moderating factors that may be considered by the NVC</u> NA

[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.

4.5. 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 NP&W Act.

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

The proposed location of the land division boundaries have been negotiated with the existing landholders (RA Carey & Sons Pty Ltd and SG & PE Carey Pty Ltd) to encompass the ML boundary and minimise loss of productive agricultural land. The new parcel 204 was negotiated with current owner SG & PE Carey Pty Ltd to provide potential future alternative access from Tootla Road / Poochera – Port Kenny Road. Ability to avoid native vegetation was limited by these negotiations and the location of the kaolin deposit.

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).

- Clearance for new boundaries is not currently proposed to occur, however the application is required to account for possible future clearance should the property owners (on either side) decide to clear, as allowed under *Regulation 8(14) – Fences*.
- A significant portion of the boundary occurs on agricultural cropping land and requires no native vegetation clearance.
- Where possible, boundaries have been aligned with existing fences or boundaries (such as in the south-west corner) to minimise possible clearance required for boundary fence construction and ongoing access and maintenance.
- The subdivision boundaries follow the ML and MPL boundaries (except in the southern section of new parcel 204). There is no sensible or logical location for the subdivision boundary around the ML and MPL other than on the approved ML and MPL boundaries. Fencing along the ML and MPL boundary would be carried out under the PEPR, independent of the subdivision. Although an allowance of 10 m clearance has been accounted for to cover potential future clearance under Regulation 8, actual clearance along these boundaries will be restricted to the minimum necessary for a fence and perimeter access track.
- The boundaries of new parcel 204 were agreed with the landowner in 2020, prior to the location of the mine access road to site (MPL 164) being finalised. When concluding negotiations for the purchase of land in 2022, the landowner stated they were a reluctant participant in the sale of the land, sought to minimise the amount of arable land lost and that the proposed boundaries (of new parcel 204) were the only terms on which they were prepared to negotiate a sale. The boundary of this parcel was agreed with the landholder in order to:

- include the majority of the native vegetation in this part of their land; and
 - exclude the cropped (arable) land as far as possible; whilst
 - maintaining a boundary location that was logical and appropriately orientated in relation to adjacent boundaries; and
 - providing potential site access from Tootla Road / Poochera – Port Kenny Road in the event that access to site via Crown Land (H651000 S15) was denied, or if alternative access to the site was desirable.
- Although an allowance of 10 m clearance has been included in the data report to cover potential future clearance along this boundary under Regulation 8, actual clearance along the boundary will be restricted to the minimum necessary to construct the fence.
 - The new land parcel 204 abuts the road reserve of Tootla Rd and therefore does not require the opening of a road reserve for access (and the consequent potential for impact to vegetation).
- 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.***

The southern section of the new parcel 204 is currently used for grazing sheep. It is noted that the land parcel, once fenced, is not currently intended to be stocked, which may allow an increase in vegetation quality in this area. No other rehabilitation or restoration measures are currently proposed.

d) *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.*

The southern section of the new parcel 204 was initially proposed as potential access to site from Tootla Road / Poochera – Port Kenney Road. Although the SEB for the mining activities under the current PEPR will now be obtained by payment not the Native Vegetation Fund, the new land parcel does provide opportunities for an SEB for future mining activities, if the resource was to be mined further, under a subsequent PEPR (and alternative access is not required).

4.6. Risk assessment

The level of risk associated with the application is presented in Table 14 based on the risk assessment pathway outlined in Table 15.

Table 14. Summary of the level of risk associated with the application.

Total clearance	No. of trees	0
	Area (ha)	2.20
	Total biodiversity Score	155.79
Seriously at variance with principle 1(b), 1(c) or 1 (d)		VA A1, A2 and A3 are seriously at variance with principle 1(b)
Risk assessment outcome		Level 4

Table 15. Risk assessment matrix utilised in determining the clearance level.

	Agricultural (EP, GA, H&F, KI, LC, M&R and N&Y Landscape Management Regions plus Port Augusta city Council and the Flinders Ranges Council).		Pastoral (SAAL and AW Landscape Management Regions excluding Port Augusta city Council and the Flinders Ranges Council).		Escalating matters Clearance assessment will be raised to the next level if;
	Patches - clearance	Trees - clearance	Patches - clearance	Trees - clearance	
Level 1	0.05ha or less	5 trees or less	3ha or less	5 trees or less	The site contains a listed species or contains a threatened community under either the NP&W Act or EPBC Act Or Clearance of any trees of the specified circumference.
	And clearance does not involve any trees with a trunk circumference measured at 1m above the ground of (for multi stemmed trees, measure the largest trunk/stem): - 50cm or more for Agricultural zone, or - 30cm of more for the Pastoral zone,				
Level 2	>0.05 ha to 0.5ha	6 - 20 trees	>3ha to 10 ha	6 - 20 trees	Clearance is seriously at variance with Principle of Clearance 1(b), 1(c) or 1(d).
Level 3	Total Biodiversity Score of less than or equal to 250		Total Biodiversity Score of less than or equal to 2500 .		Clearance is seriously at variance with Principle of Clearance 1(b), 1(c) or 1(d).
Level 4	Total Biodiversity Score of greater than 250		Total Biodiversity Score of greater than 2500		

5. Clearance summary

Clearance Area(s) Summary table

Block	Site	Species diversity	TEC Score	Threatened plant score	Threatened fauna score	UBS	Area (ha)	Total Biodiversity	Loss factor	Loadings	Reductions	SEB Points required	SEB payment	Admin Fee
A	1	26	1	0	0.06	75.45	1.82	137.32	1			144.18	\$38,027.46	\$2,091.51
A	2	22	1	0	0.06	69.51	0.19	13.21	1			13.87	\$3,657.55	\$201.17
A	3	22	1	0	0.04	56.60	0.05	2.72	1			2.85	\$752.33	\$41.38
A	4	18	1	0	0.04	18.23	0.07	1.26	1			1.32	\$348.31	\$19.16
C	5	12	1	0.04	0.04	19.14	0.067	1.28	1			1.35	\$354.04	\$19.47
Total							2.20	155.79				163.57	\$43,139.69	\$2,372.69

Totals summary table

	Total Biodiversity score	Total SEB points required	SEB Payment	Admin Fee	Total Payment
Application	155.79	163.57	\$43,139.69	\$2,372.69	\$45,512.38

Economies of Scale Factor	0.29
Rainfall (mm)	340

6. Significant Environmental Benefit

A Significant Environmental Benefit (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. Provide the SEB Credit Ref. No. _____
- Apply to have SEB Credit assigned from another person or body. The [application form](#) needs to be submitted with this Data Report.
- Apply to have an SEB to be delivered by a Third Party. The [application form](#) needs to be submitted with this Data Report.
- 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:

A payment of **\$45,512.38** (including **\$2,372.69** Administration fee) will be paid into the NV Fund.

7. References

- Anditi Pty Ltd (2020). Poochera Malleefowl Mound Detection via Lidar. Available at: <https://sarigbasis.pir.sa.gov.au/WebtopEw/ws/samref/sarig1/image/DDD/MP4963928A-V3.pdf> [Accessed: 17/10/2022].
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- Croft S.J., Pedler J.A., and Milne T.I. (2008b). Bushland Condition Monitoring Manual – Southern Mt Lofty Ranges Region. Nature Conservation Society of South Australia, Adelaide.
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8. Appendices

Appendix 1 – IBRA landscape summary

Eyre Yorke Block IBRA bioregion	
<p>Archaean basement rocks and Proterozoic sandstones overlain by undulating to occasionally hilly calcarenite and calcrete plains and areas of Aeolian quartz sands, with Mallee woodlands, shrublands and heaths on calcareous earths, duplex soils and calcareous to shallow sands, now largely cleared for agriculture.</p>	
Talia IBRA subregion	
<p>This subregion is comprised predominantly of undulating to hilly plains on calcarenite with local rises and occasional steep-sided hills on quartzite on the west side of Eyre Peninsula. Dunes are restricted to the coastal fringe where they occur in association with lagoons and lakes. Shallow brownish sands with many calcarenite outcrops occur throughout the subregion and support a woodland of <i>Melaleuca lanceolata</i> (Dryland Tea-tree) and <i>Allocasuarina verticillata</i> (Drooping Sheoak) in the south or <i>Eucalyptus socialis</i> (Beaked Red Mallee), <i>E. gracilis</i> (Yorrell) and <i>E. diversifolia</i> (Coastal White Mallee) Mallee in the north. Much of this region is used for grazing livestock and rotation cereal cropping.</p>	
Remnant vegetation	Approximately 56% (607,704 ha) of the subregion is mapped as remnant native vegetation, of which 32% (191,707 ha) is formally conserved.
Landform	Low limestone dune ridges, small granitic islands with dunes.
Geology	Ripon Calcrete, Loveday soil in Aeolian sand sheets, dune sand, red soils (terra rossa).
Soil	Sands soils of minimal pedologic development, brown calcareous earths, brown sand soils, shallow red brown sandy soils, sandy soils with yellow clayey mottled subsoil.
Vegetation	Mallee heath and shrublands.
Conservation significance	95 species of threatened fauna, 85 species of threatened flora. 7 wetlands of national significance.
Inkster IBRA environmental association	
Remnant vegetation	Approximately 58% (187,005 ha) of the association is mapped as remnant native vegetation, of which 33% (61,892 ha) is formally conserved
Landform	Undulating calcrete plains with sand dunes and isolated granite hills.
Geology	Calcrete, sand and granite.
Soil	Red weakly structured sandy soils, brownish sands and dense brown loams.
Vegetation	Open scrub of coastal Mallee and tall shrubland of hopbush.
Conservation significance	15 species of threatened fauna, 20 species of threatened flora. 0 wetlands of national significance.



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