



## CLEARING PERMIT

*Granted under section 51E of the Environmental Protection Act 1986*

<b>Purpose Permit number:</b>	CPS 8632/2
<b>Permit Holder:</b>	Process Minerals International Pty Ltd
<b>Duration of Permit:</b>	From 12 January 2020 to 12 January 2030

The permit holder is authorised to clear *native vegetation* subject to the following conditions of this permit.

### **PART I – CLEARING AUTHORISED**

**1. Clearing authorised (purpose)**

The permit holder is authorised to clear *native vegetation* for the purpose of mineral production and associated infrastructure.

**2. Land on which clearing is to be done**

Mining Lease 15/717  
Mining Lease 15/1000  
Miscellaneous Licence 15/220  
Miscellaneous Lease 15/360  
Miscellaneous Lease 15/376  
Miscellaneous Lease 15/392  
Lot 105 on Deposited Plan 40396, Karramindie  
Coolgardie-Esperance Highway road reserve (PIN: 11331602), Karramindie

**3. Clearing authorised**

The permit holder must not clear more than 600 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

**4. Period during which clearing is authorised**

The permit holder must not clear any *native vegetation* after 12 January 2025.

**5. Staged Clearing**

The permit holder shall not clear native vegetation unless the purpose for which the clearing is authorised is enacted within three months of the clearing being undertaken.

**6. Application**

This permit allows the permit holder to authorise persons, including employees, contractors and agents of the permit holder, to clear native vegetation for the purposes of this permit subject to compliance with the conditions of this permit and approval from the permit holder.

**PART II – MANAGEMENT CONDITIONS**

**7. Avoid, minimise, and reduce impacts and extent of clearing**

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending order of preference:

- (a) avoid the clearing of *native vegetation*;
- (b) minimise the amount of *native vegetation* to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

**8. Weed management**

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *weed*-affected soil, *mulch*, *fill*, or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

**9. Directional clearing**

The permit holder must conduct clearing activities in a slow, progressive manner towards adjacent *native vegetation* to allow fauna to move into adjacent *native vegetation* ahead of the clearing activity.

**10. Malleefowl management**

- (a) Prior to undertaking any clearing authorised under this permit, the permit holder shall engage a *fauna specialist* to conduct a *fauna survey* within the area cross-hatched red in Figure 1 of Schedule 1 to identify *Leipoa ocellata* (malleefowl) mounds and *Leipoa ocellata* (malleefowl) *critical habitat*.
- (b) Prior to undertaking any clearing authorised under this permit, the permit holder shall provide the results of the *fauna survey* in a report to the *CEO*.
- (c) The *fauna survey* report must include;
  - (i) the location of each *Leipoa ocellata* (malleefowl) mound, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the *CEO*.

- (ii) the location of the *Leipoa ocellata* (malleefowl) *critical habitat*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings or decimal degrees, to the *CEO*.
  - (iii) the methodology used to survey the Permit Area and to establish the *Leipoa ocellata* (malleefowl) *critical habitat* and identify the mound/s;
  - (iv) the extent of the *critical habitat* of the *Leipoa ocellata* (malleefowl) shown on a map; and
  - (v) a description of the *critical habitat* found.
- (d) Where *Leipoa ocellata* (malleefowl) mounds are identified under Condition 10(a) of this permit, the permit holder shall ensure that no clearing of *critical habitat* of the identified *Leipoa ocellata* (malleefowl) mounds occurs, unless first approved by the *CEO*.

## 11. **Revegetation and rehabilitation**

Within Lot 105 on Deposited Plan 40396, Karramindie, the permit holder shall:

- (a) retain the vegetative material and topsoil removed by clearing authorised under this permit and stockpile the vegetative material and topsoil in an area that has already been cleared;
- (b) within six months following clearing authorised under this permit within Lot 105 on Deposited Plan 40396, Karramindie, *revegetate* and *rehabilitate* the areas that are no longer required for the purpose for which they were cleared under this permit by:
  - (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land;
  - (ii) laying the vegetative material and topsoil retained under Condition 11(a) on the cleared area; and
  - (iii) ripping the ground on the contour to remove soil compaction.
- (c) within 4 years of undertaking *revegetation* and *rehabilitation* in accordance with Condition 11(b) of this permit:
  - (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
  - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under Condition 11(c)(i) of this permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

## PART III - RECORD KEEPING AND REPORTING

### 12. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

**Table 1: Records that must be kept**

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> <li>(a) the species composition, structure, and density of the cleared area;</li> <li>(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA2020), expressing the geographical coordinates in Eastings and Northings;</li> <li>(c) the date that the area was cleared;</li> <li>(d) the size of the area cleared (in hectares);</li> <li>(e) the direction of clearing;</li> <li>(f) the date that mineral production and associated infrastructure activities commenced following clearing;</li> <li>(g) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 7; and</li> <li>(h) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance with condition 8.</li> </ul>
2.	In relation to malleefowl management pursuant to condition 10	<ul style="list-style-type: none"> <li>(a) the <i>fauna survey</i> report;</li> <li>(b) dates <i>fauna survey</i> report finding provided to the <i>CEO</i>; and</li> <li>(c) dates of <i>CEO</i> approval in accordance with condition 10(d).</li> </ul>
3.	In relation to the <i>revegetation</i> and <i>rehabilitation</i> of areas pursuant to Condition 11	<ul style="list-style-type: none"> <li>(a) the location of any areas <i>revegetated</i> and <i>rehabilitated</i>, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 2020 (GDA20), expressing the geographical coordinates in Eastings and Northings or decimal degrees;</li> <li>(b) a description of the <i>revegetation</i> and <i>rehabilitation</i> activities undertaken;</li> <li>(c) the size of the area <i>revegetated</i> and <i>rehabilitated</i> (in hectares); and</li> <li>(d) any remedial actions undertaken in accordance with condition 11(c)(ii).</li> </ul>

### 13. Reporting

- (a) The permit holder must provide to the *CEO* on or before 31 July of each year, a written report demonstrating adherence to all conditions of this permit, and setting out the records required under Condition 12 of this permit in relation to clearing carried out between 1 July and 30 June of the previous financial year.
- (b) If no clearing authorised under this permit was undertaken between 1 July and 30 June of the previous financial year, a written report confirming that no clearing under this permit has been carried out must be provided to the *CEO* on or before 31 July each year.
- (c) Prior to 12 October 2029, the permit holder must provide to the *CEO* a written report of records required under condition 12 of this permit where these records have not already been provided under condition 13(a) of this permit.

### DEFINITIONS

In this permit, the terms in Table have the meanings defined.

**Table 2: Definitions**

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
critical habitat	means any part of the Permit Area comprising of the habitat of flora or fauna species and its population, that is critical for the health and long term survival of the flora or fauna species and its population.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
direct seeding	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.
EP Act	<i>Environmental Protection Act 1986</i> (WA).
fauna specialist	means a person who holds a tertiary qualification specializing in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the <i>Biodiversity Conservation Act 2016</i> and Biodiversity Conservation Regulations 2018.
fauna survey	means a field-based investigation, including a review of established literature, of the biodiversity of fauna and/or fauna habitat of the Permit Area. Where conservation significant fauna are identified in the Permit Area, the survey should also include sufficient surrounding areas to place

Term	Definition
	the Permit Area into local context.
fill	means material used to increase the ground level, or to fill a depression.
local provenance	means native vegetation seeds and propagating material from natural sources within 200 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared.
mulch	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
planting	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.
<i>rehabilitate/ed/ion</i>	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
<i>revegetate/ed/ion</i>	means the re-establishment of a cover of <i>local provenance</i> native vegetation in an area using methods such as natural <i>regeneration</i> , <i>direct seeding</i> and/or <i>planting</i> , so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant – <ul style="list-style-type: none"> <li>(a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or</li> <li>(b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or</li> <li>(c) not indigenous to the area concerned.</li> </ul>

---

## END OF CONDITIONS



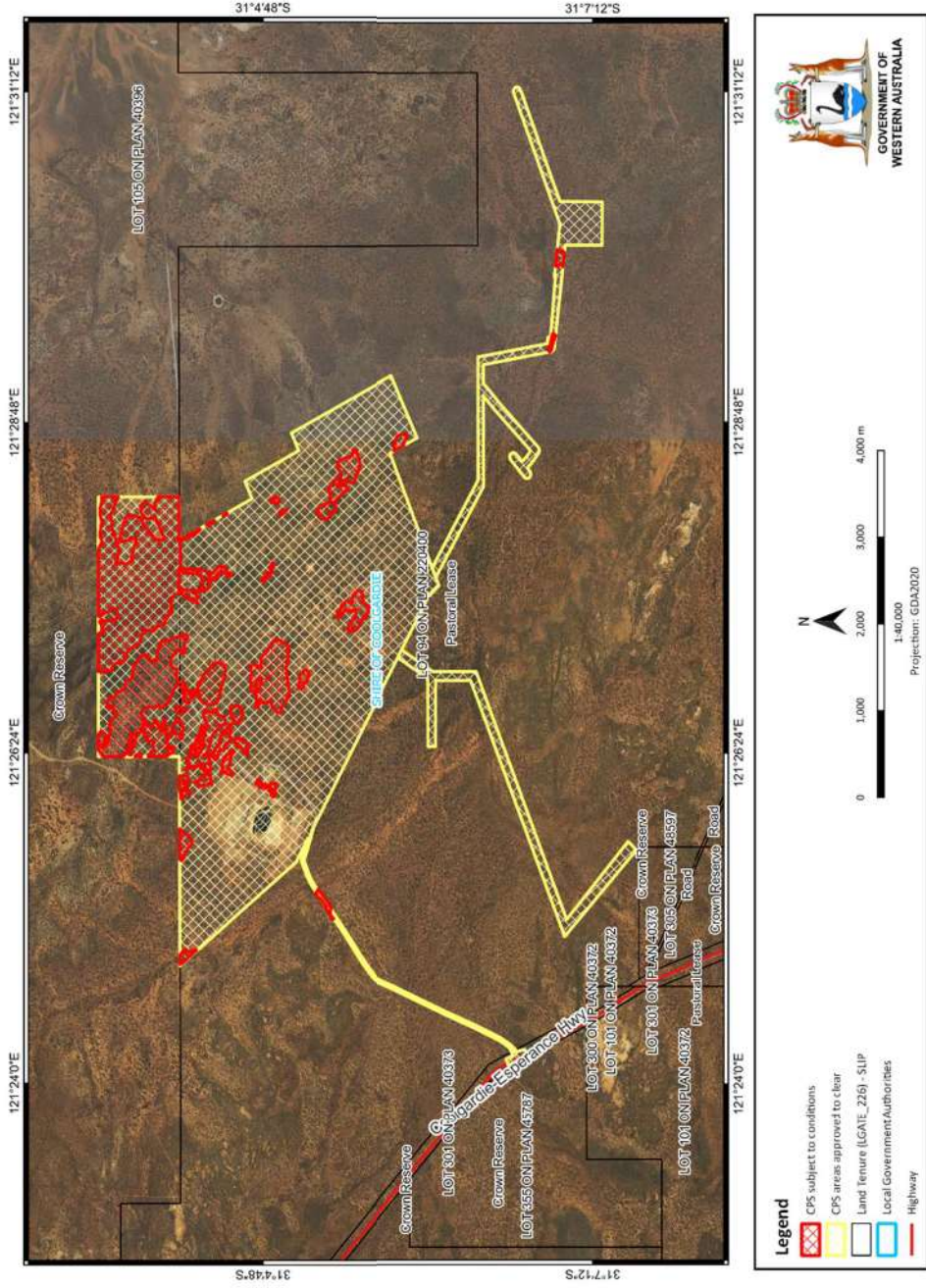
Mathew Gannaway  
MANAGER  
NATIVE VEGETATION REGULATION

*Officer delegated under section 20  
of the Environmental Protection Act 1986*

4 May 2023

# Schedule 1 Plan 8632/2

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).



**Figure 1: Map of the boundary of the area within which clearing may occur. Area in which conditions apply in red.**



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 8632/2  
Permit type: Purpose Permit

### 1.2. Applicant details

Applicant's name: Process Minerals International Pty Ltd  
Application received date: 13 December 2022

### 1.3. Property details

Property: Coolgardie-Esperance Highway road reserve (PIN: 13331602), Karramindie  
Lot 105 on Deposited Plan 40396, Karramindie  
Mining Lease 15/717  
Mining Lease 15/1000  
Miscellaneous Lease 15/220  
Miscellaneous Lease 15/360  
Miscellaneous Lease 15/376  
Miscellaneous Lease 15/392  
Local Government Authority: Shire of Coolgardie  
Localities: Karramindie

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
600		Mechanical Removal	Mineral production

### 1.5. Decision on application

Decision on Permit Application: Granted  
Decision Date: 4 May 2023  
Reasons for Decision: CPS 8632/1 allowed for the clearing of 600 hectares within a larger 1901 hectare footprint. This amendment is to increase the clearing footprint to 1907 hectares for the purpose of road widening along the main access road. Records indicate that 136.79 hectares of clearing has been undertaken under CPS 8632/1, since the commencement of the permit in 2019.

This clearing permit amendment application was submitted, accepted, assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for 14 days and no submissions were received.

A review of current environmental information identified that the environmental values present within the permit area remain largely unchanged since the previous assessment of the permit in 2019. In making this decision, the Delegated Officer had regard for the site characteristics, relevant datasets (see Appendix A.1), the findings of biological surveys, the clearing principles set out in Schedule 5 of the EP Act, relevant planning instruments and any other matters considered relevant to the assessment (see Section 3).

The Delegated Officer also took into consideration the additional flora survey that found *Acacia websteri* (P1) within the application area. However, due to the presence of large numbers of this species outside the application area it was not likely to be a significant impact. The additional fauna survey that covered part of the application area also found a more recent malleefowl mound that was estimated to be 1-5 years old, confirming that malleefowls may potentially nest in the application area. The Delegated Officer determined that the existing permit conditions were sufficient to ensure impacts were not likely to be significant.

Through assessment it has been determined that the proposed clearing may impact habitat for malleefowl (*Leipoa ocellata*, Vulnerable under the *Biodiversity Conservation Act 2016*) and cause appreciable land degradation via wind erosion. A malleefowl management condition requiring targeted surveys prior to clearing will minimise impacts to malleefowl. The implementation of one-directional clearing to allow fauna to move into adjacent habitat will assist in mitigating impacts to other fauna species. A condition requiring clearing to occur not more than three months prior to the implementation of the proposed land use will mitigate the potential for wind erosion.

The assessment identified that the proposed clearing will impact on vegetation growing in



association with a watercourse. These impacts are not likely to be significant.

The applicant has avoided and minimised impacts through design and utilising existing cleared areas where possible to minimise the requirement for additional clearing.

Given the above, the Delegated Officer decided to grant a clearing permit subject to staged clearing, weed management, fauna management and revegetation and rehabilitation conditions.

## 2. Site Information

### Clearing Description

The amended application is to clear 600 hectares of native vegetation within a 1907 hectare clearing footprint for the purpose of mineral production, within the properties listed under Section 1.3, of which 150 hectares has previously been approved under CPS 6770/2 (Figure 1). The amendment was for the purpose of increasing the clearing footprint to allow for road widening along the main access road to provide safer and improved access and to support anticipated increased traffic as a result of expansions to the camp site and production capacity.

### Vegetation Description

There are five Beard vegetation associations mapped within the application area:

- 9: Medium woodland; coral gum (*Eucalyptus torquata*) & Goldfields blackbutt (*Eucalyptus lesouefii*);
- 128: Bare areas; rock outcrops;
- 522: Medium woodland; redwood (*Eucalyptus transcontinentalis*) & merrit (*Eucalyptus flocktoniae*);
- 936: Medium woodland; salmon gum; and
- 1413: Shrublands; Acacia, Casuarina & Melaleuca thicket (Shepherd et al., 2001).

Seven flora and vegetation surveys were undertaken from 2012 to 2022 by Native Vegetation Solutions (NVS) and Ecologia, each survey covering a different section of the survey area encompassing approximately 9,762 hectares (NVS, 2019; Ecologia, 2022). Vegetation groups mapped by NVS and Ecologia within the survey area are as follows (NVS, 2019; Ecologia 2022):

- Transitional Eucalyptus woodland over mixed shrubland (a)
- *Eucalyptus oleosa* and *Eucalyptus lesouefii* over *Melaleuca sheathiana* and *Cratystylis conocephala* (aa)
- *Eucalyptus oleosa* over *Eremophila interstans* over sclerophyll shrubland (ab)
- *Eucalyptus oleosa* over *Triodia scariosa* (ac)
- *Eucalyptus salubris* woodland (ad)
- Mixed Eucalyptus woodland over sclerophyll shrubland on undulating hills (b)
- *Acacia acuminata* shrubland with emergent *Eucalyptus griffithsii* (c)
- Open *Eucalyptus salmonophloia* woodland (d)
- *Eucalyptus salmonophloia* woodland over *Maireana sedifolia* shrubland (e)
- *Eucalyptus salmonophloia* woodland over mixed shrubland (f)
- *Eucalyptus lesouefii* and *E. gracilis* woodland on rocky hill slopes (g)
- Mixed Eucalyptus woodland over *Melaleuca sheathiana* shrubland (h)
- *Eucalyptus ravida* woodland (i)
- *Eucalyptus stricklandii* over Acacia and sclerophyll shrubland (j)
- Mixed Eucalyptus woodland over sclerophyll shrubland with *Diocirea acutifolia* (P3) on undulating hills (k)
- *Melaleuca sheathiana* shrubland with *Eucalyptus oleosa* over *Cratystylis conocephala* (l)
- *Eucalyptus lesouefii* woodland (m)
- *Eucalyptus gracilis* woodland (n)
- *Eucalyptus stricklandii* woodland over Tecticornia open shrubland (o)
- *Eucalyptus transcontinentalis* and *E. campaspe* woodland over *Melaleuca sheathiana* shrubland (p)
- *Casuarina pauper* shrubland with *Eucalyptus lesouefii* over mixed shrubland across greenstone hills (q)
- *Eucalyptus griffithsii* woodland (r)
- *Eucalyptus campaspe* and *E. gracilis* woodland (s)
- *Eucalyptus stricklandii* and *E. lesouefii* woodland over *Beyeria sulcata* (t)
- Transitional Eucalyptus woodland over *Diocirea acutifolia* (u)
- *Acacia gibbosa* shrubland over *Prostanthera grylloana* (w)
- *Acacia quadrimarginea* over *Allocasuarina* shrubland (x)

- Revegetation Shrubland (y)
- *Eucalyptus oleosa* and *E. griffithsii* woodland (z)
- *Eucalyptus griffithsii* open woodland; *Acacia acuminata*, *Acacia resinosa*, *Prostanthera grylloana* sparse shrubland; *Triodia scariosa*, *Goodenia occidentalis*, *Eriachne pulchella* sparse grass/herbland (EW02)
- *Eucalyptus griffithsii*, *Eucalyptus ?platycorys* open woodland; *Senna artemisioides* subsp. *filifolia*, *Eremophila scoparia*, *Olearia muelleri* sparse shrubland; *Sclerolaena diacantha*, *Austrostipa scabra* subsp. *scabra* sparse herb/grassland (EW04)
- *Eucalyptus griffithsii*, *Eucalyptus ?oleosa* open woodland; *Acacia ?enervia*, *Grevillea acuaria*, *Eremophila ionantha* sparse shrubland; *Maireana georgei*, *Austrostipa scabra* subsp. *scabra* sparse herb/grassland (EW05)

**Vegetation Condition**

The application has been mapped (NVS, 2019; Ecologia, 2022) as being in an Excellent to Degraded condition, described as:

- Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).;
- Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

**Soil type**

The application area is mapped within the following soil systems:

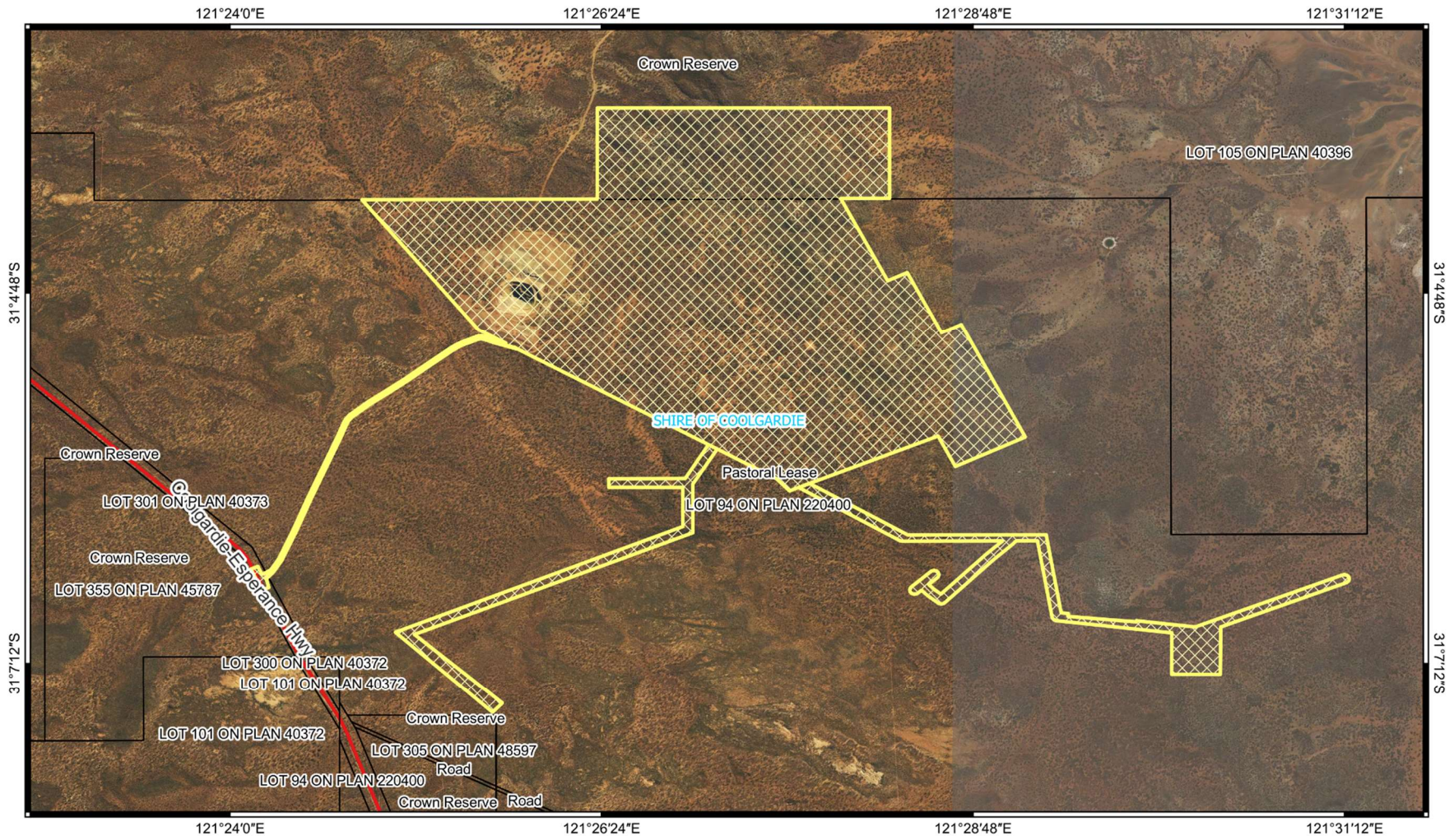
- My154: Undulating country on acid volcanic rocks and sedimentary materials;
- BB5: Rocky ranges and hills of greenstones-basic igneous rocks;
- Mx41: Flat to undulating pediments marginal to unit AC1; granitic rock outcrop; some low escarpments;
- Mx42: Broad flat to undulating valleys with isolated granitic rock outcrops and some low escarpments; some seasonal lakes and claypans; and
- Mx43: Gently undulating valley plains and pediments; some outcrop of basic rock.

**Local Area**

The local area referred to in the assessment of this application is defined as a 20-kilometre (km) radius measured from the perimeter of the application area.

**Comment**


The vegetation condition was determined via flora and vegetation surveys conducted within the application area (NVS, 2019; Ecologia 2022). The application area includes previously cleared areas currently used for mineral production activities.



**Legend**


- CPS areas approved to clear
- Land Tenure (LGATE\_226) - SLIP
- Local Government Authorities
- Highway

Landgate\_Subscription\_Imagery/W



0 1,000 2,000 3,000 4,000 m

1:40,000  
Projection: GDA2020



**GOVERNMENT OF  
WESTERN AUSTRALIA**

Figure 1. The areas crosshatched yellow indicates the areas authorised to be cleared under the granted amended clearing permit

### 3. Avoidance and mitigation measures

The Permit Holder has advised that 136.79 ha has been cleared under CPS 8632/1 to date. The Permit Holder indicated that the existing footprint needed to be increased to allow for road widening along the main access road with a 10 m extension of the clearing permit footprint on either side totalling 6.93 ha. This would increase the footprint from 1901 ha to 1907 ha.

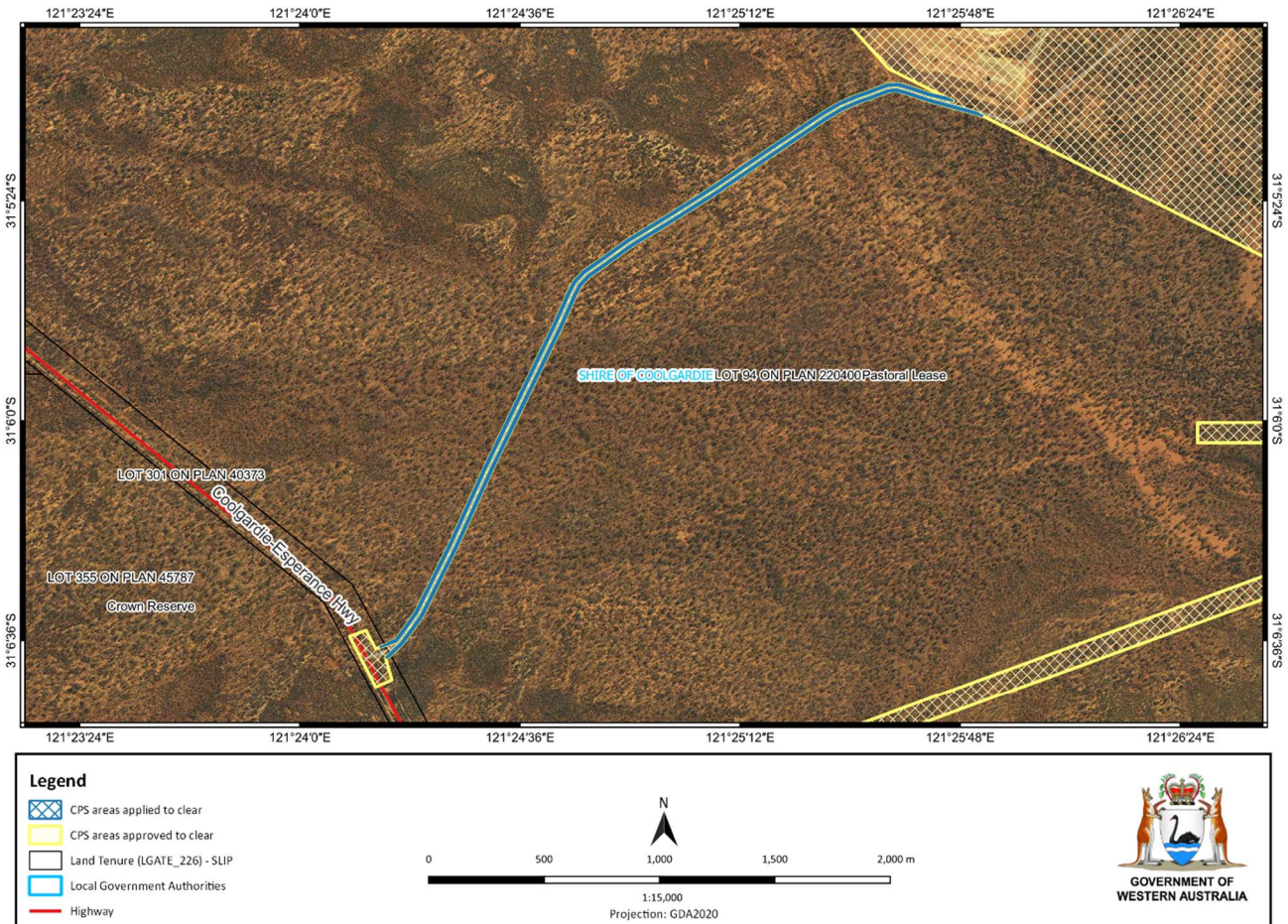


Figure 2. Increase of footprint along main access road CPS 8632/2 (cross-hatched blue) in comparison to previously authorised clearing area under CPS 8632/1 (cross-hatched yellow)

### 4. Assessment of application against clearing principles

A review of current environmental information indicates that the environmental values present within the existing permit area remain largely unchanged from the previous assessment of the permit and can be found in the Decision Report prepared for CPS 8632/1.

#### High level of biodiversity

The application area occurs in the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This bioregion is comprised of mallees and shrublands on sandplains, and is rich in endemic eucalypts on low greenstone hills, valley alluvials and calcareous plains, and endemic acacias in the east (Grant et al., 2002). Flora and vegetation surveys conducted by NVS of the application area and its surroundings (the flora survey area) recorded a total of 38 families, 84 genera and 198 species (NVS, 2019). Thirty major vegetation groups were recorded in the flora survey area, and all were considered to be common, widespread and well represented in the Eastern Goldfields subregion (NVS, 2019). In the reconnaissance Flora and Vegetation survey conducted by Ecologia (2022) (comprising of 62 percent of the amended application area and its surroundings), a total of 41 families, 94 genera and 173 species were recorded (Ecologia, 2022). Seven vegetation types were recorded. One vegetation type (EW03) that was not recorded in the amended application area was considered significant due to the restricted local extent of that vegetation type (Ecologia, 2022).

The flora and vegetation surveys undertaken by NVS recorded 28 populations of Priority 3 flora species *Diocirea acutifolia* (NVS, 2019). This species is both widespread and occurs in large numbers throughout the local and regional area and is well documented from previous flora surveys (NVS, 2019). Recorded locations range from Coolgardie, Norseman, Kambalda, Widgiemooltha and Madoonia Downs. Priority 3 flora species are poorly known but do not appear to be under imminent threat, and the proposed clearing is therefore not likely to impact the conservation of *Diocirea acutifolia*. Since the previous assessment in 2019, *Acacia websteri* (P1) was recorded in a flora and vegetation survey undertaken by Ecologia (2022). It was identified post survey but recorded at 5-32% cover in the SH02 vegetation type (Ecologia, 2022; Figure 3). This species seems to be common when found. Out of the 1227.47 ha of the SH02 vegetation type recorded in the survey, only 11.19 ha or 0.91 per cent of the vegetation type occurs in the proposed clearing area. However, this vegetation type may be more widespread given only 92 ha out of 1906.9 ha clearing footprint was covered in the reconnaissance survey (Ecologia, 2022). Given this, the proposed clearing is therefore not likely to impact the conservation of *Acacia websteri* or its presence at a local or regional level.

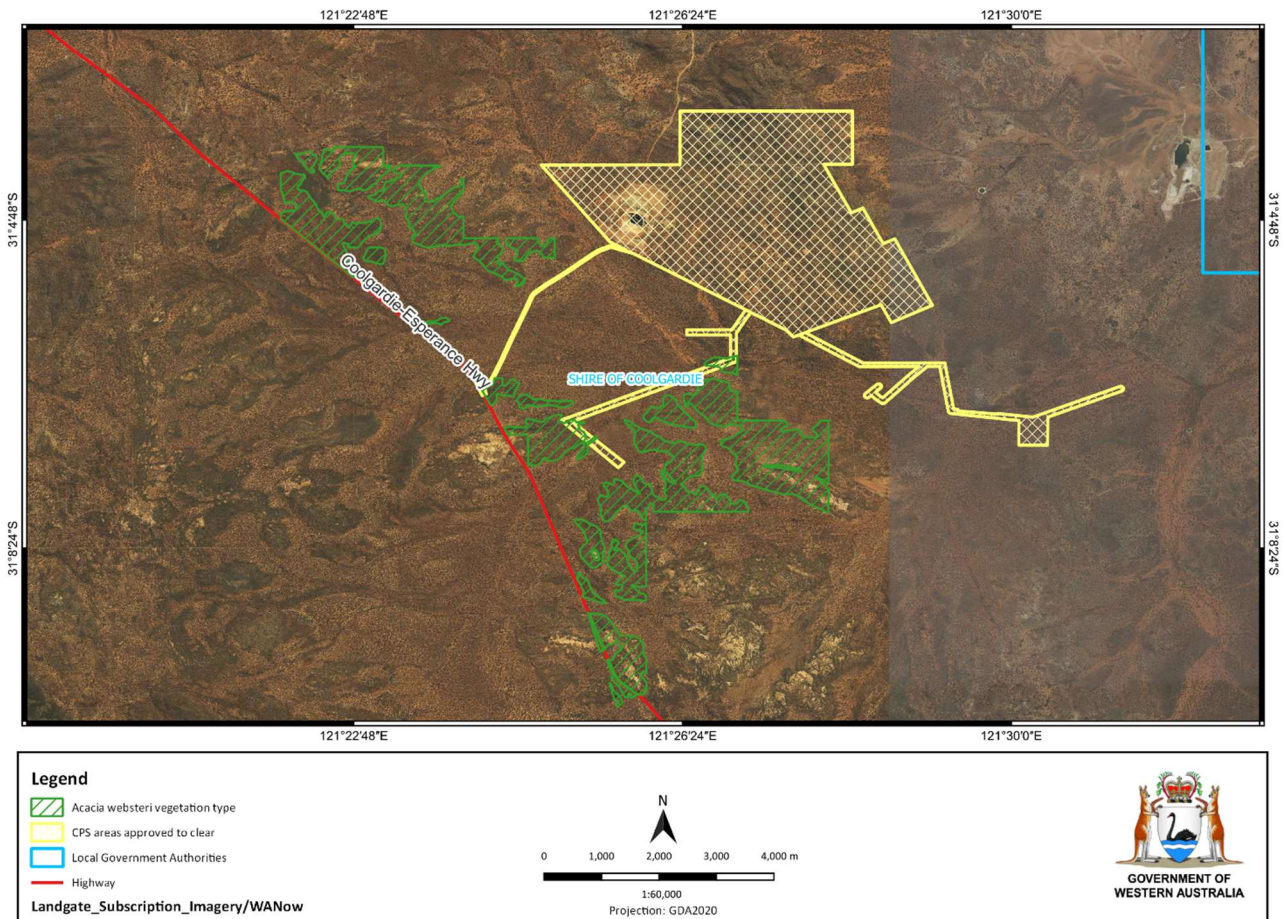


Figure 3. Vegetation type with *Acacia websteri*

A review of previous fauna assessments within the application area and its surroundings conducted by Bamford Consulting Ecologists (BCE) identified eight fauna habitats within the area (BCE, 2019). Fauna surveys of the application area have recorded 95 species, including one frog, 12 reptiles, 66 birds, 10 native mammals and six introduced mammals (BCE, 2019; BCE, 2022). The malleefowl, a conservation significant fauna species, has been recorded within the application area based on the finding of mounds. Mounds are most likely to be constructed in shrublands and thickets where dense vegetation provides leaf litter for the mounds, and where the soil is free-draining to some extent (BCE, 2019). Suitable habitat for malleefowl mounds occurs in three of the eight fauna habitats recorded, including:

- Mixed Eucalypt Woodland on Greenstone hills;
- Dense Acacia shrubland in gullies and slopes of Greenstone hills; and
- Mixed Eucalyptus woodland over sclerophyll shrubland with *Diocirea acutifolia* on undulating hills.

The fauna habitats suitable for malleefowl mounds cover 336.31 hectares of the application area, of which 155.69 hectares are proposed to be undisturbed (BCE, 2019). Potential impacts to malleefowl may be minimised by the implementation of targeted surveys prior to clearing activities, ensuring that critical habitat for this species is not cleared.

No priority or threatened ecological communities (PEC/TEC) have been recorded within the local area (20 kilometre radius). Flora and vegetation surveys (NVS, 2019; Ecologia, 2022) within the application area did not record any PECs or TECs.

Given the above, the Delegated Officer determined that the assessment of impacts to biodiversity remains unchanged. Based on the size of the application area (600 hectares within a footprint of approximately 1,907 hectares) which encompasses numerous vegetation types and fauna habitats, the presence of priority flora species and the potential occurrence of conservation significant fauna species, the proposed clearing may be at variance with Principle (a).

### Conservation significant fauna

A desktop assessment and review of previous fauna assessments within the application area and its surroundings was undertaken by Bamford Consulting Ecologists (BCE) (2019). Eight fauna habitats were identified within the application area (BCE, 2019):

- Mixed Eucalypt Woodland on Greenstone hills;
- Dense Acacia shrubland in gullies and slopes of Greenstone hills;
- Eucalypt Woodland over mixed shrubs on clay-loam flats;
- Mixed Eucalypt woodland over *Melaleuca sheathiana* on gravelly rises;
- Dense Mallee and Eucalypt woodland associated with minor drainage lines;
- Dense Acacia and Allocasuarina shrubland on sandy clay flats;
- Mixed Eucalyptus woodland over sclerophyll shrubland with *Diocirea acutifolia* on undulating hills; and
- *Casuarina pauper* shrubland with *Eucalyptus lesouefii* over mixed shrubland across greenstone hills.

Based on a desktop assessment and the findings of the previous fauna assessments, 289 vertebrate fauna species have been identified as potentially occurring in the application area. These fauna species include five frogs, 85 reptiles, 164 birds, 25 native and ten introduced mammals. Fauna surveys of the application area have recorded 95 species, including one frog, 12 reptiles, 66 birds, 10 native mammals and six introduced mammals (BCE, 2019; BCE, 2022). The fauna surveys indicate that the area is not noted for high biodiversity relative to the surrounding region (BCE, 2019).

The malleefowl (*Leipoa ocellata*) has been recorded within the application area based on several old to very old mounds (BCE, 2019). Since the previous assessment in 2019, one recent (1-5 years old) malleefowl mound was recorded ~800 m outside of the application area (Bamford, 2022). The nature of these mounds suggest that malleefowl may potentially nest in the application area as well as using the area for foraging (BCE, 2019; Bamford, 2022). As assessed within Principle (a), three of the eight fauna habitats recorded within the area may be suitable for malleefowl mounds. Potential impacts to malleefowl may be minimised by the implementation of targeted surveys prior to clearing activities, ensuring that critical habitat for this species is not cleared.

Roads within the application area may limit movement of small, terrestrial fauna species. However, these effects are localised within the application area and impacts are expected to be negligible to minor.

Most of the application area comprises of intact Eucalypt woodland or mallee over a range of understorey types, ranging from Melaleuca and Acacia thickets, Eremophila shrublands or sparsely vegetated. The habitats recorded within the application area provide fauna habitat and the Eucalypt woodland in particular would provide connectivity between the surrounding woodlands, with fauna being likely to move across the landscape. The implementation of one-directional clearing to allow fauna to move into adjacent habitat will assist in mitigating impacts to fauna species. Given the above, the Delegated Officer determined that the assessment of impacts to conservation significant fauna species remains unchanged and that the proposed clearing may be at variance with Principle (b).

### Threatened flora

According to available databases, there are no known records of Threatened flora within the application area. The flora and vegetation surveys of the application area and surroundings did not record any species of Threatened flora (NVS, 2019).

The vegetation groups recorded in the application area were all considered to be common, widespread and well represented in the Eastern Goldfields subregion (NVS, 2019). The vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora. Given the above, the Delegated Officer determined that the assessments of impacts to conservation significant flora species remains unchanged and that the proposed amendment is unlikely to result in significant impacts to threatened flora or to result in long-term impacts to habitat that is critical for the continuation for any threatened or priority flora species. Therefore, the proposed clearing is not likely to be at variance with Principle (c).

### Threatened and priority ecological communities

According to available databases, there are no TECs within the local area (20 kilometre radius). The vegetation surveys did not identify any vegetation communities considered to be a TEC within the application area (NVS, 2019). Given the above, as it is unchanged from the previous assessment in 2019, the proposed clearing is not likely to be at variance with Principle (d).

### Conservation areas and significant remnant vegetation

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area lies within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 98 per cent of the pre-European vegetation remains (Government of Western Australia, 2018). The vegetation of the application area has been broadly mapped as Beard vegetation associations 9, 128, 522, 936 and 1413. These vegetation associations have not been extensively cleared at both a State and bioregional level (Government of Western Australia, 2018). While a number of clearing permits have been granted for the purpose of mineral exploration and production within the local area (20 kilometre radius), the local area has not been extensively cleared and the application area is not likely to be a significant remnant of native vegetation. Given the above, while the current extent has reduced from the previous assessment in 2019 but is still approximately 97 per cent pre-European vegetation remaining, the proposed clearing is not at variance with Principle (e).

Table 1: Vegetation extents (Government of Western Australia, 2019)

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current Extent in All DBCA-Managed Land (proportion of Current Extent) (%)	Current Extent in All DBCA-Managed Land (proportion of Pre-European Extent) (%)
<b>IBRA bioregion</b>					
Coolgardie	12,912,204.35	12,648,491.39	97.96	16.72	16.37
<b>Beard vegetation association</b>					
BINNERINGE_9	104,235.51	103,041.47	98.85	3.90	3.86
COOLGARDIE_9	98,770.16	95,687.65	96.88	11.32	10.97
COOLGARDIE_128	4,636.82	4,618.96	99.61	14.26	14.21
COOLGARDIE_522	15,219.64	14,975.49	98.40	17.17	16.89
COOLGARDIE_936	57,830.44	57,458.80	99.36	8.66	8.60
COOLGARDIE_1413	8,339.47	8,259.57	99.04	12.22	12.10
<b>Local area</b>					
20 km	190980.40	187722.10	98.29	-	-

The application area is not located within any conservation areas. The closest conservation area, the Yallari Timber Reserve (the Reserve), occurs to the west of the application area, approximately 24 metres from the proposed mine disturbance footprint. The Reserve is located on the western side of the Coolgardie-Esperance Highway, while the access road to the Mt Marion lithium mine is on the eastern side. The Reserve has a gazetted reserve area of 6,075 hectares. While it is in close proximity to the access road, the proposed clearing is not likely to further impact the environmental values of the Reserve beyond those impacts attributed to the current disturbance from the Coolgardie-Esperance Highway. A weed management condition may assist in managing potential impacts to the environmental values to the Reserve. Given the above, as it is unchanged from the previous assessment in 2019, the proposed clearing is not likely to be at variance with Principle (h).

### **Land and water resources**

There are no permanent watercourses within the application area. There are five minor, non-perennial watercourses which intersect the application area. Vegetation associated with the minor, non-perennial watercourses is not confined to the application area and not growing exclusively in association with the watercourses (NVS, 2019).

Based on the presence of native vegetation within mapped watercourses within the application area, the proposed clearing is at variance with Principle (f). However, given that the watercourses within the application area are minor and non-perennial, the proposed clearing of vegetation associated with watercourses is not likely to have a significant environmental impact to either the watercourses or the quality of surface water.

The application area is mapped within the following soil systems:

- My154: Undulating country on acid volcanic rocks and sedimentary materials;
- BB5: Rocky ranges and hills of greenstones-basic igneous rocks;
- Mx41: Flat to undulating pediments marginal to unit AC1; granitic rock outcrop; some low escarpments;
- Mx42: Broad flat to undulating valleys with isolated granitic rock outcrops and some low escarpments; some seasonal lakes and claypans; and
- Mx43: Gently undulating valley plains and pediments; some outcrop of basic rock.

Land degradation risk has not been mapped over the application area, however, the surrounding area is associated with the Graves, Gumland and Moriarty land systems, which may be susceptible to wind and water erosion if vegetative cover is removed, especially within watercourses (Pringle et al., 1994). Given the above, the proposed clearing may be at variance with Principle (g). A condition requiring the cleared area to be used for the purpose of mineral production within three months of the clearing, will decrease the risk of land degradation via wind erosion.

As assessed within Principle (e), the local area retains approximately 98 per cent native vegetation. The application area is characterised by saline groundwater of between 14,000 to 35,000 milligrams/litre total dissolved solids. Given the extent of native vegetation within the local area and the hypersaline nature of groundwater in the area, the proposed clearing is not likely to deteriorate the quality of groundwater.

The nearest weather station to the application area is located at Coolgardie, approximately 25 kilometres from Karamindie. Climate statistics from the Bureau of Meteorology (BoM, 2023) show that the region receives an average annual rainfall of 270 millimetres, with rainfall spread throughout the year and each month receiving between 13 and 29 millimetres of rainfall. Given the low likelihood of extreme rainfall events and the presence of permeable sandy and loamy soils mapped within the application area (DPIRD, 2019), the proposed clearing is not likely to cause or increase the incidence or intensity of flooding. Based on the above, the proposed clearing is not likely to be at variance to Principle (j).

### **Conclusion**

The proposed amendment to CPS 8632/1 is for the purpose of road widening along the main access road. A review of current environmental databases indicates that the environmental values within the permit area remain largely unchanged since the previous assessment of the permit in 2019 and it is not considered likely that future clearing within the permit area will significantly alter the impacts of the clearing approved under CPS 8632/1. Given the above, the Delegated Officer determined that the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or other land and water resource values remains unchanged from the previous assessments of the permit and can be found in the Decision Report prepared for CPS 8632/1.

### **Planning instruments and other relevant matters.**

The Mt Marion lithium mine previously operated under clearing permit CPS 6770/2, allowed the clearing of 450 hectares for mineral production. The current amended clearing permit application (CPS 8632/2) includes 150 hectares previously approved under CPS 6770/2, with 450 hectares of proposed new clearing to support future development and mine expansion. Relevant approvals for the proposed activity have been obtained under the *Mining Act 1978*, *Environmental Protection Act 1986* and *Rights in Water and Irrigation Act 1914* (PMI, 2019).

There is one native title claim by Marlinyu Ghoorlie (WC2017/007) over the application area (National Native Title Tribunal, 2023). No Aboriginal sites of significance have been mapped within the application area. It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972* (WA) and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

The clearing permit amendment application was advertised on the DWER website on 16 March 2023 with a 14 day submission period. No public submissions have been received in relation to this application.

## Appendix A. Sources of information

### A.1. GIS databases

Publicly available GIS Databases used (sourced from [www.data.wa.gov.au](http://www.data.wa.gov.au)):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

### A.2. References

- Bamford Consulting Ecologists (2019) Review of fauna assessments within the Mt Marion Lithium Application area. Unpublished report prepared by Bamford Consulting Ecologists for Mineral Resources Limited, 3 July 2019.
- Bamford Consulting Ecologists (2020) Mount Marion Lithium Project Malleefowl Survey. Unpublished report prepared by Bamford Consulting Ecologists for Mineral Resources Limited, 9 January 2020.
- Bamford Consulting Ecologists (2022) Mt Marion Fauna Assessment: Hamptons Lease Area 53, L15/353, M15/999 and East E15/1599. Unpublished report prepared by Bamford Consulting Ecologists for Mineral Resources Limited, 20 January 2022.
- BoM (2023) Climate statistics for Australian locations, Coolgardie. Bureau of Meteorology.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra. [http://www.bom.gov.au/climate/averages/tables/cw\\_012018.shtml](http://www.bom.gov.au/climate/averages/tables/cw_012018.shtml) (Accessed December 2019).
- Department of Primary Industries and Regional Development (DPIRD) (2019) NRMInfo (Natural Resource Management) Portal. Department of Agriculture and Food Western Australia. URL: <http://maps.agric.wa.gov.au/nrminfo/>. Accessed November 2019.
- Ecologia Environmental (2022) Mt Marion Project Reconnaissance Flora and Vegetation Assessment. Unpublished report prepared by Ecologia Environmental for Mineral Resources Limited, May 2022.
- Government of Western Australia (2018) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth.



- Grant, M., Comer, S., Gilfillan, S., Tiedemann, K. and Barrett, S. (2002) Coolgardie 1 (COO1 - Mardabilla subregion). In A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 (eds J. E. May & N. L. McKenzie). Department of Conservation and Land Management, WA.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- National Native Title Tribunal (2023) Register of Native Title Claims Details WC2017/007 – Marlinyu Ghoorlie. URL: [http://www.nntt.gov.au/searchRegApps/NativeTitleRegisters/Pages/RNTC\\_details.aspx?NNTT\\_FileNo=WC2017%2F007](http://www.nntt.gov.au/searchRegApps/NativeTitleRegisters/Pages/RNTC_details.aspx?NNTT_FileNo=WC2017%2F007) (Accessed March 2023).
- NVS (2019) Reconnaissance Flora and Vegetation survey for the Mt Marion Application area. Unpublished report prepared by Native Vegetation Solutions for Minerals Resources Ltd, June 2019.
- PMI (2019) Clearing permit application and supporting documents for CPS 8632/1. DWER ref: A1810804.
- Pringle, H.J.R., Van Vreeswyk, A.M.E., & Gilligan, S.A. (1994) An inventory and condition survey of rangelands in the northeastern Goldfields, Western Australia. Department of Agriculture, South Perth.