



# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	10451/1
Permit type:	Purpose Permit
Applicant name:	Golden Grove Operations Pty Ltd
Application received:	11 December 2023
Application area:	143.5 hectares
Purpose of clearing:	Construction, commissioning and operation of a new Tailings Storage Facility
Method of clearing:	Mechanical Removal
Tenure:	Mining Leases 59/3, 59/89, 59/90, 59/363
Location (LGA area):	Shire of Yalgoo
Colloquial name:	Golden Grove Mine TSF4

### 1.2. Description of clearing activities

Golden Grove Operations proposes to clear up to 143.5 hectares of native vegetation within a boundary of approximately 176 hectares, for the purpose of construction, commissioning and operation of a new Tailings Storage Facility (TSF) (Golden Grove 2023). The project is located approximately 50 kilometres south-east of Yalgoo, within the Shire of Yalgoo (GIS Database).

The application is to allow for the construction, commissioning and operation of a new Tailings Storage Facility (TSF4) due to expanding mining operations (29 Metals, 2023).

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	6 January 2024
Decision area:	143.5 hectares of native vegetation

### 1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) on 11 December 2023. DEMIRS advertised the application for public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), supporting information provided by the applicant, including the results of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora;
- impacts to conservation significant fauna;
- the loss of native vegetation that is suitable habitat for malleefowl (*Leipoa ocellata*); and
- potential land degradation in the form of wind erosion.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

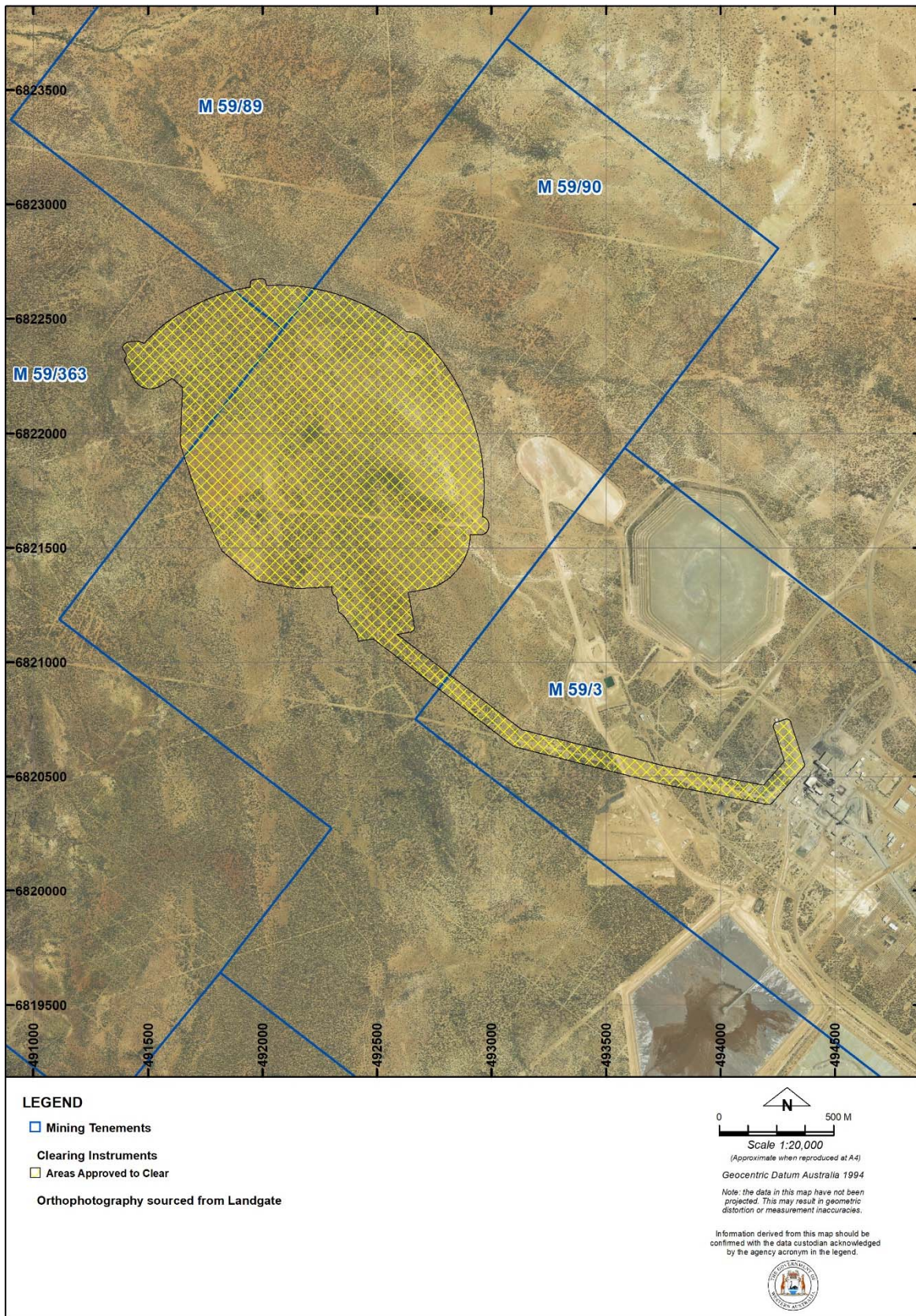
The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- staged clearing to minimise wind erosion;

- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity; and
- pre-clearance inspection for active Malleefowl mounds and placement of appropriate buffers.

### 1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.



**Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.**

## 2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

Golden Grove (2023) have outlined they maintain the following internal databases, and avoidance and mitigation measures:

- the tailings storage facility has been designed to minimise the clearing of Priority 1 flora *Petrophile vana*;
- identified Malleefowl mounds will be avoided;
- internal environmental management measures (Land and Biodiversity Management Plan, Malleefowl Management Plan, Land Clearing Rehabilitation Procedure) will be adhered to;
- reduces speed limits during operations and construction to reduce the incidence of fauna strikes;
- a spotter will be present during the clearing to identify any signs of Malleefowl;
- conduct pre-clearing fauna surveys to identify Malleefowl mounds;
- no clearing will be conducted during windy conditions; and
- protected flora will be clearly demarcated.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

### 3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles identified that the impacts of the proposed clearing present a risk to biological values (flora, vegetation and fauna). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

#### 3.2.1. Biological values (vegetation and flora) - Clearing Principles (a) and (c)

##### Assessment

Flora and fauna surveys identified 117 species of flora from 67 genera and 29 families occurring within the survey areas (Maia, 2022; 2023; Phoenix, 2021; 2022). No threatened flora or fauna species were recorded, however two Priority Flora species were recorded within the survey area (Maia, 2022; 2023).

*Petrophile vana*, Priority 1, is a shrub growing up to 1.5 metres high, this species is recorded in shallow, white, gritty clay-soil pockets, and laterite soils on breakaways (Western Australian Herbarium, 1998-). It has been recorded within the Murchison and Yalgoo Interim Biogeographic Regionalisation for Australia (IBRA) bioregions from five locations (Western Australian Herbarium, 1998-). One individual of this species was recorded within the application area (Maia, 2022). The targeted survey identified 98 individuals from two locations outside of the application area (approximately 300 metres to the west) (Maia, 2023). The removal of one individual would therefore not have a significant impact to this species as there is suitable habitat available within bioregion and multiple records were identified outside the application area.

*Acacia speckii*, Priority 4, is a bushy, rounded shrub or tree growing up to 1.5-3 metres high, this species is recorded in rocky soils over granite, basalt or dolerite on rocky hills or rises (Western Australian Herbarium, 1998-). It has been recorded within the Gascoyne, Murchison and Yalgoo IBRA bioregions from 39 locations (Western Australian Herbarium, 1998-). Six individuals were recorded within the application area and a further 80 individuals were recorded outside the application area (Maia, 2022).

The clearing of six individuals is not considered to have a significant impact to this species as there is suitable habitat available within bioregion and multiple records were identified outside the application area.

Ten additional Priority flora species are considered to potentially occur within the application area (Maia, 2022; GIS Database). These species were not recorded during the flora surveys and as suitable habitat is available within the surrounding areas, the clearing is not considered to have a significant impact.

An estimated 108.96 hectares (75.9 percent) of the application area is mapped within the Priority Ecological Community (PEC) 'Minjar and Chulaar Hills vegetation assemblages (banded ironstone formation)' (Priority 1) (29 Metals, 2023; Maia, 2022; GIS Database). This Priority 1 PEC is mapped over approximately 25,154 hectares, comprising of 7,909 hectares of the Talling Land System, 523 hectares of the Violet Land System and 2,270 hectares of the Watson Land System (29 Metals, 2023; Maia, 2022). All the four vegetation types mapped within the application area either wholly or partially fall within the boundaries of this PEC (29 Metals, 2023; Maia, 2022). The proposed clearing of 143.5 hectares will result in the removal of the 108.96 hectares of the PEC that falls within the application area. This comprises 0.43% of the total mapped PEC and is not considered a significant impact (29 Metals, 2023; Maia, 2022).

#### Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on conservation significant flora can be managed by avoiding and minimising disturbance and by taking steps to minimise the risk of the introduction and spread of weeds.

#### Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Avoid, minimise to reduce the impacts and extent of clearing; and
- Take hygiene steps to minimise the risk of the introduction and spread of weeds.

### **3.2.2. Biological values (fauna) - Clearing Principle (b)**

#### Assessment

The application area was surveyed by Phoenix Environmental Sciences in August of 2020 (Phoenix, 2021) and November of 2021 (Phoenix, 2022). A total 38 terrestrial vertebrate species representing 29 families and 36 genera were recorded within the application area (Phoenix, 2021; 2022). No conservation significant fauna were recorded within the application area, however a Malleefowl (*Leipoa ocellata*) chick was recorded approximately 380 metres south of the application area (Phoenix, 2022).

Malleefowl (*Leipoa ocellata*), Vulnerable, are found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee and/or acacias (DCCEEW, 2024). This species requires a sandy substrate with an abundance of leaf litter for breeding (DCCEEW, 2024). Three old, severely degraded Malleefowl mounds were recorded within 600 metres of the application area (Phoenix, 2022). Malleefowl is known to occur in the region and may utilise the area for foraging, but it is not likely to represent significant habitat for this species as similar habitat is available to the north, south, east and west of the project area (GIS Database). As the species is known to occur within 0.3 kilometres from the application area, measures should be taken to identify the presence of any active malleefowl mounds.

Four other conservation significant fauna species have the potential to occur within the application area, however, targeted searches for priority and threatened flora did not identify any conservation significant species and similar habitat is available in the surrounding areas (GIS Database).

#### Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on conservation significant fauna can be managed by undertaking a pre-clearance survey for active Malleefowl mounds and slow progressive clearing.

#### Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Fauna Management – Malleefowl: inspection for active Malleefowl mounds and placement of appropriate buffers; and
- Undertake slow progressive clearing to allow fauna to move into adjacent environments.

### **3.3. Relevant planning instruments and other matters**

The clearing permit application was advertised on 4 January 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (Yamatji Nation – WC2019/008) over the area under application (DPLH, 2024). This claim has been determined by the Federal Court on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are two registered Aboriginal Sites of Significance within the application area (DPLH, 2024). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

**End**

**A.1. Site characteristics**

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia (GIS Database). The area is located within the Talling subregion of the Yalgoo Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Talling subregion primary land uses include grazing, nature conservation and mining leases (Phoenix, 2021).
Ecological linkage	The application area is not known to be an important ecological linkage (GIS Database).
Conservation areas	There are no conservation areas located within the area proposed to be cleared (GIS Database). The nearest conservation area (Thundelarra Conservation Park – R 53971) is located approximately 12 kilometres east of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <ul style="list-style-type: none"> <li>• 202: Shrublands; mulga &amp; <i>Acacia quadrimarginea</i> scrub; and</li> <li>• 402: Shrublands; heath on coastal limestone (GIS Database).</li> </ul> <p>A flora and vegetation survey was conducted over the application area by Maia Environmental Consultancy during November, 2021. The following vegetation associations were recorded within the application area (Maia, 2022):</p> <ul style="list-style-type: none"> <li>• ATLS (2): <i>Acacia</i> Tall Sparse Shrubland to Open Shrubland. Tall Sparse Shrubland to Tall Open Shrubland of <i>Acacia ramulosa</i> var. <i>ramulosa</i>, <i>A. effusifolia</i> and / or <i>A. caesaneura</i> (narrow phyllode variant) with a mixed Open Shrubland mainly of <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>E. latrobei</i> subsp. <i>latrobei</i> and <i>Philothea sericea</i> and Isolated Low Trees of <i>Acacia caesaneura</i> (narrow phyllode variant);</li> <li>• ATLS (4): <i>Acacia</i> Tall Open Shrubland. Mixed <i>Acacia</i> Tall Open Shrubland mainly of <i>Acacia ramulosa</i> var. <i>ramulosa</i>, <i>A. caesaneura</i> and <i>A. umbraculiformis</i> with a mixed Open Shrubland mainly of <i>Thryptomene costata</i>, <i>Aluta aspera</i> subsp. <i>hesperia</i> and <i>Eremophila forrestii</i> subsp. <i>forrestii</i>;</li> <li>• MTSL (1): Mixed Tall Open Shrubland. Mixed Tall Open Shrubland mainly of <i>Acacia burkittii</i>, <i>A. ramulosa</i> var. <i>ramulosa</i> and <i>Hakea recurva</i> subsp. <i>arida</i> with Isolated mixed Low Shrubs mainly of <i>Solanum lasiophyllum</i>, <i>Maireana villosa</i> and <i>Ptilotus obovatus</i>; and</li> <li>• MTSL (2): Mixed Tall Open Shrubland. Tall Open mixed Shrubland mainly of <i>Acacia ramulosa</i> var. <i>ramulosa</i>, <i>Acacia sibina</i> and <i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i> with a mixed Open Shrubland mainly of <i>Acacia exocarpoides</i>, <i>Eremophila forrestii</i> subsp. <i>forrestii</i> and <i>Aluta aspera</i> subsp. <i>Hesperia</i>.</li> </ul>
Vegetation condition	<p>The vegetation survey (Maia, 2022) indicates the vegetation within the proposed clearing area is in 'Excellent' to 'Completely Degraded' (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>• Excellent: Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.</li> <li>• Very good: Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.</li> <li>• Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.</li> <li>• Completely degraded: The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.</li> </ul> <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The climate of the Talling subregion is characterised as semi-arid to Mediterranean (Phoenix, 2022). The area experiences an average rainfall of 251.2 millimetres (BoM, 2024).
Soil Description and Land degradation risk	<p>The soils within the application area are mapped as:</p> <ul style="list-style-type: none"> <li>• Talling Land System (270Ta): Prominent ridges and hills of banded ironstone, dolerite and sedimentary rocks supporting bowgada and other acacia shrublands.</li> <li>• Violet Land System (270Vi): Gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and patchy halophytic shrublands.</li> </ul>

Characteristic	Details
	<ul style="list-style-type: none"> <li>Watson Land System (270Wa): Hills, rises and gravelly plains on sedimentary rocks supporting bowgada shrublands with non-halophytic undershrubs (DPIRD, 2023).</li> </ul> <p>The Tallering, Violet and Watson Land Systems may experience erosional surfaces following removal of stone mantles (Payne et al., 1998).</p>
Waterbodies	The desktop assessment and aerial imagery indicated that there are no surface water features within the application area (GIS Database).
Hydrogeography	The application area is not mapped within a proclaimed public drinking water area (GIS Database). The area is mapped within the Gascoyne Groundwater Area, proclaimed under the Rights in Water Irrigation (RIWI) Act (GIS Database).
Flora	No threatened flora have been recorded within the application area (Maia, 2022; 2023; GIS Database). Two priority flora were recorded within the application area (Maia, 2022; 2023).
Ecological communities	The application area is not located within any known or mapped Threatened Ecological Community (TEC) (Maia, 2022a; GIS Database). The majority of the application area is mapped as the "Minjar and Chulaar Hills vegetation complexes (banded ironstone formation)' Priority 1 Priority Ecological Community (Maia, 2022; GIS Database).
Fauna	No conservation significant fauna have been recorded within the application area (Phoenix 2021; 2022; GIS Database).
Fauna habitat	Three broad habitat types were identified within the permit area: <ul style="list-style-type: none"> <li>Mulga shrublands on hills and plains (MHP);</li> <li>Mulga shrublands on undulating stony plains (MUP); and</li> <li>Mulga shrublands on BIF (MBIF) (Phoenix, 2022; 2023).</li> </ul>

## A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion Yalgoo	5,057,325.85	4,923,840.47	97.36	1,576,718.27	31.18
IBRA Subregion Tallering	3,498,943.53	3,387,092.96	96.80	827,723.40	23.66
Local Government Yalgoo	2,794,946.37	2,733,268.13	97.79	628,939.11	22.50
<b>Beard vegetation associations - State</b>					
Veg Assoc No. 202	448,529.31	448,343.80	99.96	102,759.63	22.91
Veg Assoc No. 420	859,632.11	830,216.12	96.58	121,279.06	14.11
<b>Beard vegetation associations - Bioregion</b>					
Veg Assoc No. 202	45,096.14	45,011.91	99.81	18,076.44	40.08
Veg Assoc No. 420	621,396.05	620,265.57	99.82	101,785.89	16.38
<b>Beard vegetation associations - subregion</b>					
Veg Assoc No. 202	45,096.14	45,011.91	99.81	18,076.44	40.08
Veg Assoc No. 420	615,816.17	614,685.69	99.82	101,785.89	16.53

Government of Western Australia (2019)

## A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix D.1), and biological survey information (Maia, 2022; 2023; Phoenix, 2021; 2022), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Acacia speckii</i>	4	Y	0	39
<i>Amanita lesueurii</i>	2	Y	<20	6
<i>Calotis</i> sp. Perrinvale Station (R.J. Cranfield 7096)	3	Y	<10	24
<i>Chamelaucium</i> sp. Yalgoo (Y. Chadwick 1816)	1	N	<20	11
<i>Drummondita fulva</i>	3	Y	<5	19
<i>Grevillea globosa</i>	3	Y	<5	48
<i>Haegiela tatei</i>	4	Y	<5	22
<i>Micromyrtus trudgenii</i>	3	Y	<5	38
<i>Petrophile vana</i>	1	Y	0	5
<i>Persoonia pentasticha</i>	3	N	<10	51
<i>Polianthion collinum</i>	3	Y	<5	23
<i>Psammomoya implexa</i>	3	Y	<10	24
<i>Rhodanthe collina</i>	3	Y	<10	40
<i>Stylidium scintillans</i>	T	Y	<10	23

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

#### A.4. Fauna analysis table

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
<i>Cyclodomorphus branchialis</i>	gilled slender blue-tongue	VU	<20	Y
<i>Egernia stokesii badia</i>	western spiny-tailed skink	VU	<20	Y
<i>Falco peregrinus</i>	peregrine falcon	OS	<20	N
<i>Idiosoma clypeatum</i>	northern shield-backed trapdoor spider	P3	<10	Y
<i>Leipoa ocellata</i>	malleefowl	VU	<5	Y
<i>Tyto novaehollandiae novaehollandiae</i>	masked owl (southwest)	3	<5	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

#### Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p>Principle (a): "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>Flora and fauna surveys identified 117 species of flora from 67 genera and 29 families (Maia, 2022; 2023; Phoenix, 2021; 2022). No threatened flora or fauna species were recorded, however two Priority Flora species were recorded within the survey area (Maia, 2022; 2023). The application area consists of four vegetation associations and three Land Systems (Maia, 2022). A portion of the application area is mapped as the 'Minjar and Chulaar Hills vegetation assemblages (banded ironstone formation)' (Priority 1) priority ecological community (PEC) (Maia, 2022).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>



Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (b):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared may contain foraging habitat for several conservation significant fauna species (Phoenix, 2021; 2022; GIS Database).</p>	May be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Maia, 2022; 2023).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (d):</u> <i>“Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.”</i></p> <p><u>Assessment:</u></p> <p>There are no known Threatened Ecological Communities (TECs) located within the application area and the flora and vegetation survey did not identify any TECs (Maia, 2022; 2023; GIS Database).</p>	Not likely to be at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia, 2001). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas (GIS Database).</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>There are no permanent watercourses or wetlands within the area proposed to be cleared (GIS Database).</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The application area is mapped within the Talling, Violet and Watson Land Systems, which may experience erosional surfaces following removal of stone mantles (Payne et al., 1998). Land degradation may be managed by implementing a staged clearing condition.</p>	May be at variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given no water courses / wetlands / Public Drinking Water Sources Areas are recorded within the application area, the proposed clearing is unlikely to impact surface or ground water quality (GIS Database).</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j):</u> "Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."</p> <p><u>Assessment:</u></p> <p>The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding (GIS Database).</p>	Not likely to be at variance	No

## Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.

### Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

## Appendix D. Sources of information

### D.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- Contours (DPIRD-073)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Interim 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 Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

## D.2. References

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- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: [http://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey\\_Dec13.pdf](http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf)
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## 4. Glossary

### Acronyms:

<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i> , Western Australia
<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DCCEEW</b>	Department of Climate Change, Energy, the Environment and Water, Australian Government
<b>DBCA</b>	Department of Biodiversity, Conservation and Attractions, Western Australia
<b>DEMIRS</b>	Department of Energy, Mines, Industry Regulation and Safety

<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DEMIRS)
<b>DoEE</b>	Department of the Environment and Energy (now DCCEEW)
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora (now known as Threatened Flora)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

### **Definitions:**

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

#### **T            Threatened species:**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

**Threatened fauna** is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

**Threatened flora** is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

#### **CR            Critically endangered species**

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

#### **EN            Endangered species**

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

#### **VU            Vulnerable species**

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

### **Extinct Species:**

#### **EX            Extinct species**

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

**EW**

**Extinct in the wild species**

Species that “is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

**Specially protected species:**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

**MI**

**Migratory species**

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**CD**

**Species of special conservation interest (conservation dependent fauna)**

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**OS**

**Other specially protected species**

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**P**

**Priority species:**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

**P1**

**Priority One - Poorly-known species**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or

otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

**P2 Priority Two - Poorly-known species**

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

**P3 Priority Three - Poorly-known species**

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

**P4 Priority Four - Rare, Near Threatened and other species in need of monitoring**

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

**Principles for clearing native vegetation:**

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.