

# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

<b>Permit number:</b>	7246/4
<b>Permit type:</b>	Purpose Permit
<b>Applicant name:</b>	Ngungaju Lithium Operations Pty Ltd
<b>Application received:</b>	26 April 2023
<b>Application area:</b>	454.58 hectares
<b>Purpose of clearing:</b>	Mineral Production
<b>Method of clearing:</b>	Mechanical Removal
<b>Tenure:</b>	Mining Lease 45/1230 Mining Lease 45/1231 Mining Lease 45/1260 Miscellaneous Licence 45/400 Miscellaneous Licence 45/401 Miscellaneous Licence 45/404 Miscellaneous Licence 45/416
<b>Location (LGA area/s):</b>	Shire of East Pilbara
<b>Colloquial name:</b>	Pilgangoora Lithium Project

### 1.2. Description of clearing activities

Ngungaju Lithium Operations Pty Ltd proposes to clear up to 454.58 hectares of native vegetation within a boundary of approximately 974.686 hectares, for the purpose of mineral production. The project is located approximately 89 kilometres east of Marble Bar, within the Shire of East Pilbara.

Clearing permit CPS 7246/1 was granted by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 20 October 2016 and was valid from 12 November 2016 to 12 November 2023. The permit authorised the clearing of up to 374.58 hectares of native vegetation within a boundary of approximately 374.58 hectares, for the purpose of mineral production.

CPS 7246/2 was granted on 1 June 2017, amending the permit to increase the permit boundary from 374.58 hectares to 542.6 hectares. The amount of clearing authorised remained unchanged.

CPS 7246/3 was granted on 5 December 2019, amending the permit to increase the amount of clearing authorised from 374.58 hectares to 454.58 hectares, increase the permit boundary from 542.6 hectares to 974.7 hectares, and update the Permit Holder name from Altura Exploration Pty Ltd to Altura Lithium Operations Pty Ltd. The Permit Holder also requested for Mining Lease 45/1260, Miscellaneous Licence 45/401 and Miscellaneous Licence 45/416 to be added to the Permit.

On 26 April 2023, the Permit Holder applied to amend CPS 7246/3 to extend the permit duration by five years, to 12 November 2028, and update the Permit Holder name from Altura Lithium Operations Pty Ltd to Ngungaju Lithium Operations Pty Ltd. The amount of clearing authorised and the permit boundaries are to remain the same.

### 1.3. Decision on application and key considerations

<b>Decision:</b>	Grant
<b>Decision date:</b>	14 September 2023
<b>Decision area:</b>	454.58 hectares of native vegetation

## 1.4. Reasons for decision

This clearing permit application was made in accordance with section 51KA(1) of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 26 April 2023. DMIRS advertised the application for a 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), 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;
- the loss of riparian vegetation.

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 conditions currently imposed on clearing permit CPS 7246/3 are considered adequate to manage the impacts of clearing:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds; and
- watercourse management condition to reduce the impacts to riparian vegetation.

The assessment has changed since the assessment for CPS 7246/3, as observed for clearing principles (c), (d) and (f) where the proposed clearing has resulted in decreased variance against the clearing principles. The assessment of clearing principle (i) in relation to the proposed clearing has led to an increase in variance. The Delegated Officer determined that the proposed amendment to extend permit duration by five years is not likely to lead to an unacceptable risk to environmental values.

## 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 – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- 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

The applicant has advised minimal clearing will be required to ensure the ongoing operation of the Pilgangoora Lithium Project and to align with proposed Mining Proposal amendments. Furthermore, existing cleared areas will be utilised where available and the clearing of riparian vegetation will be avoided where possible (Ngungaju Lithium Operations Pty Ltd, 2023).

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

A review of current environmental information (Appendix B) reveals that the assessment against the clearing principles has changed from the Clearing Permit Decision Report CPS 7246/3.

In assessing the application, the Delegated Officer has had regard for the site characteristics (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 (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 (fauna) – Clearing Principles (a) and (b)

##### Assessment

A fauna survey of the application area recorded two active Western Pebble-mound Mouse mounds (*Pseudomys chapmani*, P3) (Ecologia, 2018). The fauna habitats identified within the application area are well represented elsewhere in the local area, as well as conservation areas (Ecologia, 2018). Localised loss of habitat and the potential impact of the two mounds caused by the proposed clearing is unlikely to significantly impact on the conservation status of Western Pebble-mound Mouse (Natural Area, 2016).

The application area contains basic characteristics of foraging habitat that may provide resources for a number of conservation significant species, particularly: Northern Quoll (*Dasyurus hallucatus*, EN), Pilbara leaf-nosed bat (*Rhinonictoris aurantia*, VU), Ghost bat (*Macroderma gigas*, VU) and the Peregrine falcon (*Falco peregrinus*, OS) (Natural Area Consulting, 2016). Due to the ongoing disturbances caused by grazing, foraging resources are of low quality and may be used by species to transit to more productive surrounding areas found outside the application area (Animal Plant Mineral, 2022).

##### Conclusion

For the reasons set out above, it is considered that the impacts of the proposed clearing on potential fauna habitat can be managed by implementing an avoidance and mitigation measure when undertaking clearing within the application area.

##### Conditions

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

- avoid, minimise to reduce the impacts and extent of clearing;

### 3.3. Relevant planning instruments and other matters

The amendment application was advertised on 16 June 2023 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There are two native title claims (WCD2018/015, WCD2019/010) over the area under application (DPLH, 2023). These claims have been determined by the Federal Court on behalf of the claimant groups. 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 is one registered Aboriginal Sites of Significance within the application area (DPLH, 2023). It is the proponent's responsibility to comply with the *Aboriginal Cultural Heritage Act 2021* 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**

## Appendix A. Site characteristics

### 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). It is located within the Pilbara bioregion surrounded by hummock grassland (GIS Database). The access track on the western end of the application area intersects Turner River and lies approximately 10 kilometres east of a wild river system located within the Town of Port Hedland (GIS database).
Ecological linkage	The application area does not form part of any formal or informal ecological linkages (GIS database).
Conservation areas	The application area is not located within any conservation areas (GIS Database). Approximately 13 kilometres west of the application area is another Schedule 1 non-permitted area classified as a wild river system within which the majority of the Mungaroon Range Nature Reserve lies.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>82: Hummock grasslands, low tree steppe - snappy gum over <i>Triodia wiseana</i>;            93: Hummock grasslands, shrub steppe - kanji over soft spinifex; and            619: Medium woodland - river gum (<i>Eucalyptus camaldulensis</i>) (GIS Database).</p> <p>Natural Area Consulting (2016) undertook a level 2 flora and vegetation survey over part of the application area, during 11 to 22 March 2016. A total of five vegetation types were identified within M 45/1230 and M 45/1231:</p> <ul style="list-style-type: none"> <li>A. <i>Triodia wiseana</i> Hummock Grassland on low hills;</li> <li>B. <i>Triodia epactia</i> and <i>Triodia wiseana</i> Hummock Grasslands on stony plains;</li> <li>C. <i>Eucalyptus camaldulensis</i> Open Woodland along major drainage lines;</li> <li>D. <i>Acacia acradenia</i> and <i>Petalostylis labicheoides</i> Open Shrubland over <i>Triodia pungens</i> Hummock Grassland along minor drainage lines; and</li> <li>E. <i>Acacia</i> tall Open Shrubland over <i>Triodia wiseana</i> Hummock Grasslands.</li> </ul> <p>Animal Plant Mineral (2022) undertook a detailed flora and vegetation survey over part of the application area during 4 to 8 October 2022. A total of three vegetation types were identified within M 45/1260:</p> <ul style="list-style-type: none"> <li>F. Isolated low <i>Corymbia hammersleyana</i> over mid to tall isolated shrubs of <i>Acacia tumida</i> <i>Acacia adsurgens</i> and <i>Acacia inaequilatera</i> with hummock grassland of <i>Triodia angusta</i> <i>Triodia wiseana</i> and <i>Triodia lanigera</i>;</li> <li>G. Isolated low <i>Corymbia hammersleyana</i> over mid to tall isolated shrubs of <i>Acacia tumida</i> <i>Acacia adsurgens</i> and <i>Acacia inaequilatera</i> with hummock grassland of <i>Triodia angusta</i> <i>Triodia wiseana</i> and <i>Triodia lanigera</i>; and</li> <li>H. <i>Corymbia hammersleyana</i> low open woodland over sparse forbland/low shrubland of <i>Streptoglossa odora</i> <i>Goodenia lamprosperma</i> and <i>Solanum diversiflorum</i></li> </ul>
Vegetation condition	<p>The vegetation survey (Natural Area Consulting, 2016) indicates the vegetation within M 45/1230 and M 45/1231 is in excellent, very good, good, and degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>- <b>Excellent:</b> vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species – 15.6% of the surveyed area was identified to be in excellent condition;</li> <li>- <b>Very good:</b> 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 – 12.1% of the surveyed area was identified to be in very good condition;</li> <li>- <b>Good:</b> 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 – 71.6%</li> </ul>

Characteristic	Details
	<p>of the surveyed area was identified to be in good condition; and</p> <ul style="list-style-type: none"> <li>- <b>Degraded:</b> 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 – 0.7% of the surveyed area was identified to be in degraded condition.</li> </ul> <p>The vegetation survey (Animal Plant Mineral, 2022) indicates the vegetation within M 45/1230 and M 45/1260 is in very good, good, degraded and completely degraded (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>- <b>Very good:</b> 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 – 89.2% of the surveyed area was identified to be in very good condition;</li> <li>- <b>Good:</b> 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 – 6.3% of the surveyed area was identified to be in good condition;</li> <li>- <b>Degraded:</b> 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 – 0.6% of the surveyed area was identified to be in degraded condition; and</li> <li>- <b>Completely degraded:</b> 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 – 3.9% of the surveyed area was identified to be in completely degraded condition.</li> </ul> <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	<p>The application area is located in the Chichester subregion of the Pilbara bioregion, described as semi-desert-tropical (Animal Plant Mineral, 2022), with an annual average rainfall 318.5 millimetres (Port Hedland Airport) (BoM, 2023).</p> <p>The Chichester subregion is comprised of undulating Archaean granite and basalt plains that include significant areas of basaltic ranges. Plains support a shrub steppe characterised by <i>Acacia inaequilatera</i> over <i>Triodia wiseana</i> hummock grasslands, while <i>Eucalyptus leucophloia</i> tree steppes occur on ranges (Animal Plant Mineral, 2022).</p>
Soil description	<p>The soils within the application area are mapped as soil units Oc62, Oc63 and Gf1 (GIS Database). These soil units are described as (Northcote et al., 1960-68):</p> <ul style="list-style-type: none"> <li>- Oc62: Very gently undulating pediplain with low granite outcrops and tors; occasional basic dykes occur as low elongate ridges: chief soils are hard alkaline red soils and having coarse-textured;</li> <li>- Oc63: Pediplains on granite, usually occurring as a zone flanking the main stream courses: chief soils are hard alkaline red soils; and</li> <li>- Gf1: Steep ranges on basic lavas along with dolomites, tuff, banded iron formations, and dolerite dykes, with some narrow valley plains and high-level gently undulating areas of limited extent. The soils are generally shallow and stony and there are large areas without soil cover: chief soils are brown loams along with significant areas of earthy loam soils.</li> </ul>
Land degradation risk	<p>The application area falls within the Macroy, Satrist, River and Talga land systems (DPIRD, 2023).</p> <p>The Macroy land system is described as stony plains and occasional tor fields based on granite supporting hard and soft spinifex shrubby grasslands. Vegetation is generally not prone to grazing induced changes but fairly regular fires change botanical composition and vegetation</p>

Characteristic	Details
	<p>structure in the short term. The system has low or very low erosion hazard (Vreeswyk et al., 2004).</p> <p>The Satirist land system is described as stony plains and low rises supporting hard spinifex grasslands, and gilgai plains supporting tussock grasslands. The predominantly hard spinifex vegetation on the system is not preferred by livestock. Minor areas of tussock grasslands are preferentially grazed and are prone to degradation. The system is generally not susceptible to erosion (Vreeswyk et al., 2004).</p> <p>The River land system is described as narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex. The system is largely stabilised by buffel grass and spinifex which are highly and moderately preferred respectively by livestock (Vreeswyk et al., 2004).</p> <p>The Talga land system is described as hills and ridges of greenstone and chert and stony plains supporting hard and soft spinifex grasslands. The system is prospective and localised areas have been disturbed by exploration and mining activity. The system is not susceptible to erosion (Vreeswyk et al., 2004).</p>
Waterbodies	The desktop assessment and aerial imagery indicated that Turner River, a major non-perennial watercourse intersects the western access track of the application area. A small perennial lake also slightly overlaps the most northern point of the access track within the application area (GIS Database).
Hydrogeography	<p>The application area falls within the Pilbara Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (GIS Database). The salinity within the application area varies from 500 to 1000 milligrams per litre total dissolved solids, which is described as marginal water quality (GIS Database).</p> <p>The application area does not intersect any Public Drinking Water Source Areas (PDWSA) (GIS Database).</p>
Flora	There are records of eight priority flora species recorded within 50 kilometres of the application area (GIS Database). The permit holder commissioned a level 2 flora and vegetation survey conducted by Natural Area Consulting on October 2013. The survey identified Priority 3 listed species <i>Stackhousia clementii</i> occurring in two locations within the application area (Natural Area Consulting, 2014).
Ecological communities	The application area is not located within a known or mapped Threatened or Priority Ecological Communities (GIS Database). The closest PEC is the Gregory Land System (P3) located approximately 15 kilometres west of the application area (GIS Database).
Fauna	There are records of 19 fauna species of conservation significance within a 50 kilometre radius of the application area (GIS Database). The level 2 fauna survey conducted by Natural Area Consulting (2016) recorded a total of 52 fauna species that included; 22 native bird species, 21 reptile species and 9 mammals within the application area. Of these observed fauna species, the Western Pebble-mound Mouse (P3) was the only species of conservation significance recorded with two mounds located within the application area (Natural Area Consulting, 2016).

## 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 - Pilbara	17,808,657	17,731,764	~99	10.12	10.12
IBRA Subregion - Chichester	8,374,326	8,361,217	~99	548,971.58	6.56
Local Government – Shire of East Pilbara	37,183,060	37,155,264	~99	4.87	4.87

Beard vegetation associations - State					
82	2,565,901	2,553,206	~99	295,377.96	11.51
93	3,044,309	3,040,640	~99	59,536.96	1.96
619	119,373	118,205	~99	236.34	0.20
Beard vegetation associations - Pilbara Bioregion					
82	2,563,583	2,550,888	~99	11.52	11.52
93	3,042,114	3,038,471	~99	1.96	1.96
619	118,920	118,116	~99	0.20	0.20
Beard vegetation associations - Chichester subregion					
82	360,666	360,322	~99	N/A	N/A
93	2,940,348	2,936,731	~99	59,536.96	2.02
619	85,543	85,520	~99	236.08	0.28

Government of Western Australia (2019)

### A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (Appendix D.1), and biological survey information (Animal Plant Mineral, 2022; Ecologia, 2018; Natural Area Consulting, 2014; Natural Area Consulting, 2016), the following conservation significant fauna have records within a 50 kilometre radius of the application area.

Species name	Conservation status	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (kilometres)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Acacia leeuweniana</i>	P1	Y	Y	29	27	N
<i>Acacia levata</i>	P3	Y	Y	34	20	N
<i>Bulbostylis burbidgeae</i>	P4	Y	Y	24	35	N
<i>Euphorbia clementii</i>	P3	Y	Y	10	31	N
<i>Gymnanthera cunninghamii</i>	P3	Y	Y	16	40	N
<i>Quoya zonalis</i>	T	Y	Y	14	24	N
<i>Stackhousia clementii</i>	P3	N	Y	Within application area	21	Y
<i>Triodia chichesterensis</i>	P3	Y	Y	Within application area	42	Y

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

#### A.4. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (Appendix D.1), and biological survey information (Animal Plant Mineral, 2022; Ecologia, 2018; Natural Area Consulting, 2014; Natural Area Consulting, 2016), the following conservation significant fauna have records within a 50 kilometre radius of the application area.

Species name	Common Name	Conservation status	Distance of closest record to application area (kilometres)	Are surveys adequate to identify? [Y, N, N/A]
Reptiles				
<i>Ctenotus nigrilineatus</i>	Pin-striped finesnout Ctenotus	P1	39	Y
<i>Liasis olivaceus barroni</i>	Pilbara olive python	VU	7	Y
Birds				
<i>Actitis hypoleucos</i>	Common sandpiper	MI	7	N
<i>Apus pacificus</i>	Fork-tailed swift	MI	2	N
<i>Falco hypoleucos</i>	Grey falcon	VU	7	N
<i>Falco peregrinus</i>	Peregrine falcon	OS	2	N
<i>Glareola maldivarum</i>	Oriental pratincole	MI	39	N
<i>Pandion cristatus</i>	Osprey, eastern osprey	OS	39	N
<i>Tringa nebularia</i>	Common greenshank, greenshank	MI	39	N
Mammals				
<i>Dasyercus blythi</i>	Brush-tailed mulgara	P4	6	Y
<i>Dasyurus hallucatus</i>	Northern quoll	EN	4	Y
<i>Hipposideros stenotis</i>	Northern leaf-nosed bat	P2	12	Y
<i>Lagorchestes conspicillatus leichardti</i>	Spectacled hare-wallaby (mainland)	P4	0.6	Y
<i>Leggadina lakedownensis</i>	Northern short-tailed mouse, Lakeland Downs mouse, kerakenga	P4	39	Y
<i>Macroderma gigas</i>	Ghost bat	VU	7	Y
<i>Macrotis lagotis</i>	Bilby, dalgyte, ninu	VU	3	Y
<i>Pseudomys chapmani</i>	Western pebble-mound mouse, ngadji	P4	Within application area	Y
<i>Rhinonictes aurantia</i> (Pilbara)	Pilbara leaf-nosed bat	VU	3	Y
<i>Sminthopsis longicaudata</i>	Long-tailed dunnart	P4	12	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, MI: migratory, OS: other specially protected

(Animal Plant Mineral, 2022; Ecologia, 2018; Natural Area Consulting, 2014; Natural Area Consulting, 2016; Western Australian Herbarium, 1998-; GIS Database).



**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><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>The application area is currently part of the Wallareenya Cattle Station with grazing being an ongoing disturbance (Natural Area Consulting, 2016). Coupled with other major disturbances including altered fire regime, introduced predators and weed invasion, the biodiversity within the application area has been significantly affected (Ecologia, 2018).</p> <p>Eight weed species were recorded within the application area, none of which are listed as Weeds of National Significance or Declared Pests (Animal Plant Mineral, 2022).</p> <p>A level 2 flora and vegetation survey identified <i>Stackhousia clementii</i> (P3) occurring in two locations within the application area (Natural Area Consulting, 2014). This species is well represented in the regional area, and the clearing of these two locations is unlikely to impact the conservation significance of this species (Natural Area, 2014)</p> <p>The area proposed to be cleared does not contain locally or regionally significant fauna or their respective habitats.</p>	<p>Not likely to be at variance</p> <p>as per CPS 7246/3</p>	<p>Yes</p> <p><i>Refer to Section 3.2.1, above.</i></p>
<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 does not contain locally or regionally significant fauna or their respective habitats.</p>	<p>Not likely to be at variance</p> <p>as per CPS 7246/3</p>	<p>Yes</p> <p><i>Refer to Section 3.2.1, above.</i></p>
<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>No Threatened flora species have been recorded within the application area (GIS Database). The closest record of threatened flora species is <i>Quoya zonalis</i> located approximately 18 kilometres southeast of the application area. Flora and vegetation surveys conducted over the application area conclude that the necessary habitat for <i>Quoya zonalis</i> is unlikely to occur within the application area (Ecologia, 2018).</p>	<p>Not likely to be at variance</p> <p>as per CPS 7246/3</p>	<p>No</p>
<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 or in close proximity to the application area (GIS Database). Flora and vegetation surveys of the application area along with past surveys of the surrounding landscape did not identify any vegetation representative of a TEC (Natural Area Consulting, 2018).</p>	<p>Not likely to be at variance</p> <p>as per CPS 7246/3</p>	<p>No</p>
<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 application area falls within the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation associations: 82, 93 and 619 (GIS Database). These vegetation associations have not been extensively</p>	<p>Not at variance</p> <p>as per CPS 7246/3</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
cleared as over 99% of the pre-European extent remains uncleared at a state, bioregional, and subregional level (Government of Western Australia, 2019).		
<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>The application area is not located within any conservation areas (GIS Database). The closest conservation area is the Mungarooka Range Nature Reserve located approximately 64 kilometres southwest of the application area system (GIS Database).</p> <p>Given the absence of ecological linkages and distance to the conservation areas, the proposed clearing is unlikely to have an impact on the environmental values of any conservation areas.</p>	Not likely to be at variance as per CPS 7246/3	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>A survey conducted over the application area found one large and multiple small seasonal watercourses (Natural Area Consulting, 2016). No permanent watercourses or wetlands were recorded within the application area (GIS Database).</p> <p>Based on vegetation mapping by Natural Area (2016), the application area contains two vegetation types identified as growing in association with drainage lines:</p> <p style="padding-left: 40px;">C. <i>Eucalyptus camaldulensis</i> Open Woodland along major drainage lines;</p> <p style="padding-left: 40px;">D. <i>Acacia acradenia</i> and <i>Petalostylis labicheoides</i> Open Shrubland over <i>Triodia pungens</i></p> <p>These vegetation types are likely to provide important habitat for fauna, as the vegetation can provide faunal habitat of a moderate range of microhabitats with logs, leaf litter and tree hollows (GIS Database). Potential impacts to vegetation growing in association with these drainage lines may be minimised by the continued implementation of a vegetation management condition.</p>	At variance as per CPS 7246/3	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>As described above (Appendix A.1) the application area falls within the Macroy, Satrist, Talga and River land systems (DPIRD, 2023). The Macroy, Satrist and Talga land systems are most commonly populated with hard spinifex grasslands which are not preferred by grazing animals and therefore not prone to grazing induced land degradation (Vreeswyk et al., 2004).</p> <p>The River land system contains flood plains and river terraces subject to fairly regular overbank flooding from major channels and watercourses, sandy banks and poorly defined levees and cobble plains (Vreeswyk et al., 2004). Furthermore, river banks are commonly stabilised by buffel grass and spinifex which are preferable to livestock causing erosion where extensive grazing is observed (Animal Plant Mineral, 2022). Therefore, if vegetation cover is removed, susceptibility to erosion of the River land system will increase to high or very high (Vreeswyk et al., 2004).</p> <p>Potential erosion may be minimised by the continued implementation of a staged clearing condition.</p>	May be at variance as per CPS 7246/3	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>A desktop assessment indicates the application area intersects two surface water bodies along the access track: Turner River and a small perennial lake (GIS Database).</p>	May be at variance changed from CPS 7246/3	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The intersection between the non-perennial Turner River and application area lies approximately 48 kilometres south of the Turner alluvial aquifer which has the potential to become a supply source for desalination or a moderate supply of fresh water dependent on limiting factors such as increasing salinity and drawdown (Braithwaite et al., 2011). Despite the Turner River alluvial aquifer being a proclaimed Public Drinking Water Source Area due to pre-existing Public Works Department bore field which is now closed, The Department of Water has not developed a drinking water source protection plan for this source (Braithwaite et al., 2011).</p> <p>The intersection between the small perennial lake and application area may cause deterioration in the quality of surface water if surrounding riparian vegetation is cleared. However, this potential deterioration can be adequately minimised through the vegetation management condition currently placed on the permit requiring the permit holder to avoid clearing riparian vegetation where practicable.</p> <p>No wetlands are recorded within 50 kilometres of the application area and the closest record of a Public Drinking Water Source Area is the Yule River Water Reserve located approximately 45 kilometres north west of the application area (GIS Database). Therefore, the proposed clearing is unlikely to impact ground water quality.</p>		
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>A desktop assessment indicated that a non-perennial watercourse and small perennial lake intersects the application area along the proposed access track (GIS Database). Turner River is a non-perennial watercourse and naturally subject to occasional to regular flooding (Vreeswyk et al., 2004). With the continued implementation of a vegetation management condition, the proposed clearing is unlikely to contribute to an increased incidence or intensity of flooding.</p> <p>Given the small perennial lake has an area of approximately 4.5 hectares, flooding followed by heavy rainfall events will unlikely be exacerbated by the slight native vegetation clearing overlap with the application area.</p> <p>Given no wetlands are recorded within the application area and that the average annual evaporation (3,200 to 3,600 millimetres) (BoM, 2023) is greater than the average annual rainfall (318.5 millimetres) (BoM, 2023), the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding.</p>	<p>Not likely to be at variance</p> <p>as per CPS 7246/3</p>	<p>No</p>

**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.

Condition	Description
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)
- Bush Forever (Regional Scheme) (DPLH-022)
- Clearing Regulations – Schedule One Areas (DWER-057)
- 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)
- 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
- 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 – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- 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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## 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>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DMIRS)
<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

## **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.