



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9591/1
Permit type:	Purpose Permit
Applicant name:	LRL (AUST) Pty Ltd
Application received:	3 February 2022
Application area:	348.2 hectares
Purpose of clearing:	Mineral Production and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	General Purpose Lease 36/52 Mining Leases 36/459, 36/460, 36/696 Miscellaneous Licences 36/255, 36/256
Location (LGA area/s):	Shire of Leonora
Colloquial name:	Kathleen Valley Lithium – Tantalum Project

1.2. Description of clearing activities

LRL (AUST) Pty Ltd (LRL) proposes to clear up to 348.2 hectares of native vegetation within a boundary of approximately 766.8 hectares, for the purpose of mineral production and associated activities. The project is located approximately 45 kilometres northwest of Leinster, within the Shire of Leonora.

The application is to allow for the development of the Kathleen Valley Lithium – Tantalum Project including two small open pit mines, one underground mine, processing plant, two tailings storage facilities (TSFs), a waste rock dump, a borefield and other associated infrastructure.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	15 July 2022
Decision area:	348.2 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 Mines, Industry Regulation and Safety (DMIRS) on 3 February 2022. 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), 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;
- impacts to Priority flora;
- impacts to waterways and minor drainage lines; and
- erosion potential.

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 applicant has suitably demonstrated avoidance and minimisation measures.

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;
- commence construction no later than three months after undertaking clearing to reduce the risk of erosion;
- no clearing of more than 19% of *Grevillea inconspicua* individuals identified within the survey area by Botanica Consulting;
- no clearing of *Hemigenia exilis*;
- avoid clearing of riparian vegetation; and
- maintain natural waterway and drainage line surface water flow.

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).

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *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, 2020)

Other legislation of relevance for this assessment includes:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Mining Act 1978* (WA)

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.

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The supporting documentation submitted by the applicant (MBS, 2022a) and correspondence with MBS Environmental (MBS, 2022b) outlined the following undertaken and planned avoidance and mitigation measures in order to minimise impacts to environmental values of the project.

Planning phase of project:

- Design of the project to avoid significant flora where practicable;
- Utilising existing disturbed areas and locating infrastructure to avoid *Grevillea inconspicua* and *Hemigenia exilis* where possible;
- Project design has considered locations of non-perennial drainages and flood levels and minimised disturbance of these;
- Altered project design from one large open pit south of Jones Creek to a design where there are two smaller pits. The change resulted in a reduction from 99.4 hectares to 30.6 hectares of direct land disturbance. This was largely achieved by increasing the underground mining component of the Project.
- Waste Rock Dump (WRD) and cultural rock storage areas located to be south and east of the two pits out of the area where the Priority species are known to occur. The change resulted in an area reduction from 223 hectares to <50 hectares.
- Open pit mine services are located outside of known locations of Priority species; and
- Process plant and power plant area have been moved as far to the west as possible given the heritage and flood plain constraints to minimise direct impacts to known Priority species locations.

Ongoing throughout the duration of the project:

- Clearing of vegetation will be kept to the minimum required for the project;
- Site weed control will be conducted as required;
- Confining vehicle movements to defined roads and tracks when crossing Jones Creek and mobilising around site;
- Managing clearing via an internal Land Clearing Procedure;
- Clearly delineating the clearing area to ensure only that required for a safe working area is cleared;
- Vehicle and equipment hygiene procedures will be implemented to minimise entry of weed and soil borne diseases;
- Stockpiling stripped topsoil and vegetation for use in future rehabilitation activities;
- Progressively rehabilitating disturbed areas on completion of project activities;
- Scarifying or deep ripping (as appropriate) compacted tracks and roads prior to rehabilitation;
- Conducting topsoil-stripping activities during periods of low winds;

- Installing surface water drainage infrastructure to divert surface water flows around cleared areas and back to downstream catchments where necessary;
- Culverts or flood-ways will be installed where the roads cross ephemeral drainage;
- Vegetation will be removed in stages with disturbance kept to a minimum to reduce runoff;
- Flood bunding and berms will be constructed to protect the open pits from flooding in the event of a 1:100 year flood level.

Based on the summary of avoidance and mitigation measures above, 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 and vegetation) and land and water resources values. 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 (flora, vegetation) - Clearing Principles (a)

Assessment

The clearing permit application area is located within the Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The Eastern Murchison subregion is characterised by internal drainage, extensive areas of elevated red desert sandplains, salt lake systems, broad plains of red-brown soils and breakaway complexes, and red sandplains. The vegetation is dominated by mulga woodlands rich in ephemerals; hummock grasslands, saltbush shrubland and *Tecticornia* shrublands (CALM, 2002). The sub-region is rich and diverse in both its flora and fauna but most species are wide ranging and usually occur in adjoining regions (CALM, 2002).

The application area and local surrounds are relatively well studied with surveys commissioned by LRL for the purpose of the Kathleen Valley Lithium project in October 2018 (Reconnaissance flora survey covering approximately 3,792 hectares, which includes the application area and associated mining tenements) and in April 2021 (Targeted flora survey covering approximately 1,490 hectares) (Botanica 2019; Botanica 2021a;). In addition, there have been various surveys conducted in the local area for other proponents and projects, which have been reviewed as part of the desktop component for the Reconnaissance Flora/Vegetation & Level 1 Fauna Survey undertaken by Botanica Consulting in 2018 (Botanica, 2019).

The desktop component of the Reconnaissance survey identified a total of 357 flora taxa within a 20 kilometre radius of the survey area (the survey area included all tenements associated with the application area) (Botanica, 2019). No Threatened Flora species have previously been recorded within the survey area. Two Priority 4 species (*Grevillea inconspicua*, and *Hemigenia exilis*) have previously been recorded within the survey area (GIS Database; MBS, 2022a). There are records of one Threatened Flora species and 34 Priority species within a 40 kilometre radius of the survey area. These species were assessed and ranked on their likelihood of occurrence within the survey area (Botanica, 2019). Of these species, 22 Priority Flora were ranked as "possible" to occur within the application area and two Priority species were ranked as "known to occur" (Botanica, 2019).

In July 2021, a targeted Flora and Vegetation survey was undertaken by Botanica Consulting (Botanica, 2021a) to identify conservation significant flora and vegetation within the proposed Kathleen Valley Lithium Project area. No Threatened flora were recorded within the survey area and two Priority 4 species (*Grevillea inconspicua*, and *Hemigenia exilis*) were recorded within the survey area (Botanica, 2021a; MBS 2022a).

A total of 3,823 individuals of *Grevillea inconspicua* were recorded within the survey area in five of the 12 vegetation types identified (Botanica 2021a). MBS Environmental (MBS) estimate that approximately 48% of individuals are located within the application area boundary, however, only 19.2% of individuals occur within the proposed footprint of clearing activities (MBS, 2022a). *Grevillea inconspicua* individuals were generally recorded on loam or gravel soils along drainage lines on rock outcrops and creeklines (MBS, 2022a). This species is known to occur throughout the broader Eastern and Western Murchison region with most recordings occurring to the west of the application area in the Shires of Cue, Meekatharra, Menzies, Mount Magnet, Sandstone and Wiluna (Western Australian Herbarium (1998-).

A total of 470 *Hemigenia exilis* plants were recorded within the survey area in two locations within two vegetation types. Of the 470 individuals, 10.6% are located within the application area boundary, however due to considerable planning of the project to avoid these species, none are likely to be directly impacted by clearing activities (MBS, 2022a). Furthermore, an additional population was observed in September 2021 west of the Goldfields Highway, which is outside of the application area, as part of the cultural ecological knowledge assessment undertaken on behalf of the Tjiwarl Aboriginal Corporation. The number of plants present within the population was not recorded (MBS, 2022a).

Grevillea inconspicua and *Hemigenia exilis* populations occur outside of the project area in the Eremaean Botanical Province, in the general Murchison IBRA Bioregion (Western Australian Herbarium (1998-). While their abundance is relatively known in the local area, there is limited data on these species within the broader Murchison region. This is highlighted by the abundance recorded within the application area due to the recent targeted flora surveys. Based on this and the high occurrence of suitable habitat throughout the region, it is likely that these species occur more frequently than their mapped records. Furthermore, these species were once considered rare species, however, extensive survey work in the local area by Western Botanical in 2007 has

contributed to the State's understanding of their distribution. The information collected from their surveys has enabled these two former rare species to become de-listed to Priority 4 species (BHP, 2020).

Four introduced taxa were identified during the 2018 field survey including *Cenchrus ciliaris* (Buffel Grass), *Citrullus amarus* (Pie Melon), *Lysimachia arvensis* (Pimpernel) and *Tribulus terrestris* (Caltrop). None of these species are listed as a Declared Plant under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) (Botanica, 2019; MBS, 2022a). Four introduced flora species were recorded within the application area during the field survey (Botanica, 2019). Weeds are known disturbance invaders, and there is a risk that weeds can be spread into the area and become established as they have the potential to out-compete native flora and reduce the biodiversity of an area.

The south-east portion of the application area is located within the boundary of the Priority 1 Violet Range vegetation complexes Priority Ecological Community (Violet Range PEC) (GIS Database; MBS 2022a). Three of the vegetation types identified during the survey (RH-AFW1, RH-AS1 and RH-AS2) are considered to be representative of the Violet Range PEC. These communities occupy 635.9 ha of the total survey area (3,792 hectares), which represents 3.3% of the Department of Biodiversity Conservation and Attractions (DBCA) mapped extent. Approximately 48 hectares of the PEC is located within the proposed clearing footprint, which represents approximately 0.2% of the DBCA mapped extent (MBS, 2022a). As such, the proposed clearing is unlikely to significantly impact the Violet Range PEC. Furthermore, it is noted that considerable effort has been made by LRL in the design phase of the project to avoid impacts to Priority flora and communities, which are summarised in section 3.1.

One Peregrine Falcon (*Falco peregrinus*) (OS) was observed outside the application area during the 2018 fauna survey. This species inhabits a wide range of habitats including forest, woodlands, wetlands and open country (MBS, 2022a). Given the highly mobile nature of these species, the proposed clearing is not likely to impact the conservation status of this species.

A Level 1 Fauna survey was conducted in October 2018 by Botanica Consulting (Botanica, 2019) and a Targeted Fauna survey (Black-flanked Rock Wallaby) was conducted in April 2021 by Botanica Consulting (Botanica, 2021b). From these surveys, no Threatened or Priority fauna species were recorded within the application area (Botanica, 2019; Botanica 2021b).

Seven introduced fauna taxa have been identified as potentially occurring within the survey area, these being (Botanica, 2019):

1. *Camelus dromedaries* (Camel)
2. *Canis lupus familiaris* (Dog)
3. *Capra hircus* (Goat)
4. *Felis catus* (Cat)
5. *Mus musculus* (House Mouse)
6. *Oryctolagus cuniculus* (Rabbit)
7. *Vulpes vulpes* (Red Fox)

Conclusion

Based on the above, it is evident that a portion (19% of individuals recorded within the survey area) of *Grevillea inconspicua* individuals will be impacted from the proposed clearing. DMIRS notes this species was de-listed from Threatened to a Priority 4 species. There are known *Grevillea inconspicua* populations within the local area and the wider Murchison region and there is suitable habitat throughout the Murchison region. Furthermore, the avoidance and mitigation measures specified by the proponent (section 3.1), assist in minimising impacts to Priority Flora. As such, the proposed clearing is considered unlikely to significantly impact the conservation status of this species.

For the reasons set out above, it is considered that the impacts of the proposed clearing on Priority flora can be managed by the implementation of Priority Flora conditions.

Conditions

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

- Flora Management – no clearing of *Hemigenia exilis* individuals; and
- Flora Management – no clearing of more than 19% of *Grevillea inconspicua* individuals as proposed in section 5.4.1, Table 8 of MBS, 2022a.

3.2.2. Biological values (fauna habitat) - Clearing Principles (b)

Assessment

The fauna survey identified four broad scale terrestrial habitat types within the project area (Botanica, 2019). All of the habitats are considered locally common and widespread. The four habitat types are outlined below:

1. Clay-Loam Plain
2. Open Depression
3. Rocky Hillslope
4. Rocky Plain

Potential impacts to the fauna habitats mapped within the project area are detailed below. The rocky plains habitat type will be the most impacted fauna habitat (32.0% of the mapped area) (MBS, 2022a).

Habitat Type	Total Mapped (ha)	Purpose Permit Area (ha)	Clearing Footprint Area (ha)	(%) Total Habitat Impacted
Clay Loam Plain	1,740.5	330.3	118.3	6.8
Open Depression	820.3	177.7	53.4	6.5
Rocky Hillslope	861.5	114.9	58.2	6.8
Rocky Plain	369.9	144.0	118.4	32.0
Total	3,792.2	766.8	348.2	9.2

No Threatened or Priority fauna species were recorded within the application area during the level 1 fauna survey (Botanica, 2019) and the Targeted Fauna survey (Botanica, 2021b). Furthermore, these habitat types are commonly seen throughout the wider region.

The Peregrine Falcon (*Falco peregrinus*) (OS) was observed with one individual bird observed just south of the study area during the 2018 fauna survey. This species inhabits a wide range of habitats including forest, woodlands, wetlands and open country, which are seen across the wider region. As such, the proposed clearing is unlikely to significantly impact the habitat for this species.

The targeted survey for the Black-Flanked Rock Wallaby conducted in 2021 identified all habitat types within the application area are likely unsuitable for the species and no Black-flanked Rock Wallabies were observed during the field survey (Botanica, 2021b).

Conclusion

Based on the above, the permit area is unlikely to represent significant habitat for fauna.

Conditions

No fauna management conditions required.

3.2.3. Land and Water Resources (waterways) - Clearing Principles (f)

Assessment

There are no permanent wetlands or waterways within the application area and numerous seasonal drainage lines pass through the application area (GIS Database; MBS, 2022a).

The Project falls within the surface water sub-catchment of Jones Creek (a non-perennial waterway), which extends approximately 14 kilometres to the north-east and 8 km to the east of the application area. Jones Creek passes just to the north of the proposed mine area, with the closest proposed infrastructure being over 140 m south of the creek. Jones Creek is recognised as being of cultural significance to the Traditional Owners. As such, an exclusion zone has been applied as part of the agreement between the Tjiwarl group and Liontown Resources Limited. Furthermore, the proposed clearing area and project design has been designed to avoid Jones Creek. In order to avoid impacts to Jones Creek, the existing roads (Goldfield Highway and a minor unsealed existing road on the eastern side of the application area) will be utilised to cross the creek-line when necessary (MBS, 2022a).

Conclusion

Given that Jones Creek has been identified as an exclusion zone due to Aboriginal heritage values, residual impacts to Jones Creek can be managed through the implementation of a waterway management condition.

Conditions

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

- where practicable, avoid clearing riparian vegetation; and
- where a watercourse or drainage line is to be impacted by clearing, existing surface water flow is to be maintained.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 4 March 2022 by the Department of 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 over the area under application (DPLH, 2022). This claim has been registered with the National Native Title Tribunal 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 eight registered Aboriginal Sites of Significance within the application area (DPLH, 2022). 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

Appendix A. Site characteristics

A.1 Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. The project is located approximately 45 kilometres north-west of Leinster and 100 kilometres south of Wiluna. The Project is located within the Shire of Leonora and is situated across Crown Reserve 8560 (Kathleen Town Common) and Yakabindie Pastoral Station (MBS, 2022a).</p> <p>The project is in close proximity to the Goldfields Highway and is currently accessed by Yakabindie Road (MBS, 2022a).</p>
Ecological linkage	According to available databases, there are no formal ecological linkages mapped over the application area.
Conservation areas	There are no known conservation areas mapped across the application area. The nearest conservation area is the Wanjarri Nature Reserve, which is located approximately 4 kilometres north-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> <p>18: Low woodland; mulga (<i>Acacia aneura</i>); and</p> <p>39: Shrublands; mulga scrub; (GIS Database).</p> <p>A reconnaissance flora and vegetation survey and a targeted flora survey (the surveys) was conducted over the application area by Botanica Consulting during October, 2018 and April, 2021, respectively. The surveys identified the following vegetation associations within the application area (MBS, 2022a):</p>

Characteristic	Details				
	Landform	Vegetation Group	Vegetation Community	Description	
	Clay Loam Plain	Acacia Forests & Woodlands	CLP-AFW1	Low woodland of <i>Acacia incurvaneura</i> over mid open shrubland of <i>Eremophila galeata</i> and low open shrubland of <i>Ptilotus obovatus</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> on clay-loam plains	
			CLP-AFW2	Low woodland of <i>Acacia caesaneura</i> / <i>A. incurvaneura</i> over mid open shrubland of <i>Senna artemisioides</i> subsp. <i>helmsii</i> and low open tussock grassland of <i>Eragrostis eriopoda</i> / <i>Monachather paradoxus</i> on clay-loam plains	
	Open Depression	Acacia Forests & Woodlands	OD-AFW1	Low woodland of <i>Acacia caesaneura</i> / <i>A. incurvaneura</i> over low open shrubland of <i>Ptilotus obovatus</i> / <i>Solanum lasiophyllum</i> / <i>Senna artemisioides</i> and low tussock grassland of <i>Aristida contorta</i> / <i>Enneapogon caeruleus</i> in drainage depressions	
		Acacia Open Woodlands	OD-AOW1	Low open woodland of <i>Acacia effusifolia</i> over mid open shrubland of <i>Eremophila galeata</i> and low open tussock grassland of <i>Eragrostis eriopoda</i> / <i>Monachather paradoxus</i> in drainage depressions	
		Eucalypt Woodlands	OD-EW1	Low open forest of <i>Eucalyptus camaldulensis</i> over tall open shrubland of <i>Acacia burkittii</i> and low tussock grassland of <i>Themeda triandra</i> in drainage depressions	
	Rocky Hillslope	Acacia Forests & Woodlands	RH-AFW1	Low woodland of <i>Acacia caesaneura</i> / <i>Acacia incurvaneura</i> over mid shrubland of <i>Santalum lanceolatum</i> / <i>Scaevola spinescens</i> and low open tussock grassland of <i>Enneapogon caeruleus</i> on rocky hillslopes	
			RH-AS1	Tall sparse shrubland of <i>Acacia quadrimarginea</i> over low sparse shrubland of <i>Eremophila galeata</i> and low tussock grassland of <i>Cymbopogon ambiguus</i> on rocky hillslopes	
		Acacia Shrublands	RH-AS2	Mid open shrubland of <i>Acacia balsamea</i> over low open shrubland of <i>Ptilotus obovatus</i> and low tussock grassland of <i>Aristida contorta</i> on rocky hillslopes	
			RH-AS3	Mid open shrubland of <i>Acacia quadrimarginea</i> over low open shrubland of <i>Ptilotus obovatus</i> and low tussock grassland of <i>Aristida contorta</i> on granite exposed hillslopes	
		Casuarina Forests and Woodlands	RH-CFW1	Low woodland of <i>Casuarina pauper</i> over low shrubland of <i>Ptilotus obovatus</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> on rocky hillslopes	
	Rocky Plain	Acacia Open Woodlands	RP-AOW1	Low open woodland of <i>Acacia incurvaneura</i> over mid open shrubland of <i>Eremophila galeata</i> and low open shrubland of <i>Ptilotus obovatus</i> / <i>Senna artemisioides</i> subsp. <i>helmsii</i> on rocky plains	
		Other Shrublands	RP-OS1	Tall sparse shrubland of <i>Hakea lorea</i> over low open shrubland of <i>Ptilotus obovatus</i> / <i>Scaevola spinescens</i> and closed tussock grassland of <i>Enneapogon polyphyllus</i> on rocky plains	
	Vegetation condition	<p>The vegetation survey (Botanica, 2019) indicates the vegetation within the proposed clearing area is in Good to Very Good (Trudgen, 1991) condition.</p> <p>The full Trudgen (1991) condition rating scale is provided in Appendix C.</p>			
	Climate	The climate of the region is arid, with an average rainfall of approximately 248.3 millimetres per year and total evaporation rate of approximately 3200 millimetres per year (BoM, 2022).			
Soil description and land systems	<p>The project is located in low lying, gentle sloped hills, with some breakaways and mesas (MBS, 2022a).</p> <p>The application area lies within eight land systems and associated soils. The land systems and broad soil types are outlined below (GIS Database; MBS, 2022a):</p>				

Characteristic	Details
	<p>279Lv (Laverton) - Greenstone hills and ridges with acacia shrublands. Main soils stony soil (45%); red shallow sandy duplex (30%) and red shallow loam (25%);</p> <p>279Ws (Wilson) - Large creeks with extensive distributary fans, supporting mulga and chenopod shrublands. Main soils are red deep sandy duplex (40%), red shallow loam (35%), red shallow sand (20%), and red deep sand (5%);</p> <p>279Wn (Windarra) - Gently undulating stony plains and low rises with quartz mantles on granite, supporting acacia-eremophila shrublands. Main soil types are red shallow loam (45%), red shallow sand (30%), and red-brown hardpan shallow loam (10%);</p> <p>279Su (Sunrise) - Stony plains supporting mulga shrublands. Main soil types are stony soil (55%), red-brown hardpan shallow loam (40%) and red loamy earth (5%);</p> <p>279Mk (Monk) - Hardpan plains with occasional sandy banks supporting mulga tall shrublands and wanderie grasses. Main soils are red shallow loam (30%), red-brown hardpan shallow loam (25%), red sandy earth (25%) and red loamy earth (20%);</p> <p>279De (Desdemona) - Plains with deep sandy or loamy soils supporting mulga tall shrublands and wanderie grasses. Main soil types are red loamy earth (60%), red deep sand (30%), red sandy earth (5%) and red-brown hardpan shallow loam (5%);</p> <p>279Nu (Nubev) - Greenstone hills and ridges with acacia shrublands. Main soil types are red shallow loam (50%), red shallow sandy duplex (30%) and red shallow sand (20%); and</p> <p>279Vi (Violet) - Gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and occasionally chenopod shrublands. Main soils are red shallow loam (45%), deep red sand (20%), shallow gravel (10%), red shallow sandy duplex (10%), red loamy earth (10%); red-brown hardpan shallow loam (5%).</p>
Waterbodies	<p>According to available databases, there are no permanent watercourses or wetlands that intersect the application area.</p> <p>One non-perennial watercourse (Jones Creek) intersects the application area (GIS Database; MBS, 2022a) and numerous seasonal drainage lines pass through the application area (GIS Database).</p>
Hydrogeography	<p>The application area is within the Goldfields proclaimed groundwater area under the <i>Rights In Water and Irrigation Act 1914</i> (GIS Database). Groundwater within the Kathleen Valley area is considered fresh with salinity ranging between 590 – 810 milligrams per litre total dissolved solids (MBS, 2022a).</p>
Flora	<p>There are no records of Threatened Flora within the application area (GIS Database; MBS, 2021).</p> <p>Two Priority 4 flora taxa (<i>Grevillea inconspicua</i> and <i>Hemigenia exilis</i>) were recorded within the application area during the surveys (Botanica 2018; Botanica, 2021; MBS, 2022a).</p>
Ecological communities	<p>There are no known Threatened Ecological Communities within the application area and surrounds (20 kilometre radius) (GIS database; MBS, 2022a).</p> <p>The south-east portion of the survey area is located within the boundary of the Priority 1 Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation) Priority Ecological Community (PEC) (GIS Database; MBS, 2022a).</p>
Fauna	<p>According to available databases the following conservation significant fauna have been recorded within 20 kilometres of the application area (GIS Database):</p> <ul style="list-style-type: none"> • <i>Dasycercus cristicauda</i> (Crest-tailed Mulgara, Minyiminyi) (VU) • <i>Liopholis kintorei</i> (Giant Desert Skink) (VU) • <i>Kwonkan moriartii</i> (trapdoor spider) (P2) • <i>Burhinus grallarius</i> (Bush Stonecurlew) (P4) <p>There are no records of Threatened or Priority fauna within the application area (GIS Database).</p> <p>A total of 232 vertebrate fauna taxa have been recorded within a 20 kilometre radius of the application area including six amphibians, 103 bird species, 22 mammals, 59 reptiles and 42 invertebrate species (Botanica, 2019). The Long-tailed Dunnart (<i>Sminthopsis longicaudata</i>) (P4)</p>

Characteristic	Details
	<p>was considered 'possible' to occur within the application area and one species known to occur (Peregrine Falcon <i>Falco peregrinus</i>) (OS). One Peregrine Falcon was observed outside of the application area to the south (MBS, 2022a).</p> <p>A Targeted Fauna survey for Black-Flanked Rock Wallaby (<i>Petrogale lateralis</i>) was conducted by Botanica Consulting in April 2021 (Botanica, 2021b), as potential habitat (rocky area) was identified during the Level 1 Fauna Survey. Results from the survey indicate that the habitat types within the application area are considered unsuitable. No Black-Flanked Rock Wallaby's were recorded during the field survey.</p> <p>No Threatened or Priority Fauna were recorded within the application area during the surveys (Botanica, 2019; Botanica 2021b; MBS, 2022a).</p>

A.2 Flora analysis table

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

Species name	Conservation status	Total individuals recorded (within survey area)	Total individuals with clearing/disturbance area	Total individuals to be cleared	Percentage of individuals to be cleared
<i>Grevillea Inconspicua</i>	P4	3823	1840	735	19.2%
<i>Hemigenia exilis</i>	P4	471	50	0	0

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

A.3 Ecological community analysis table

Community name	Conservation status	DBCA mapped extent (hectares)	Survey area extent	Clearing area	Total PEC within application boundary	Clearing impact on PEC
Violet Range vegetation complex (banded iron formation) Ecological Community	Priority 1	19, 256.2	635.9	101.6	48	0.2%

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains two conservation significant flora species (Priority 4) and a Priority Ecological Community (Priority 1).</p>	At variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "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."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain critical habitat for fauna.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>Principle (c): <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 (MBS, 2022a).</p> <p>The vegetation associations within the application area are common and widespread within the region (MBS, 2022a; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora.</p>	Not likely to be at variance	No
<p>Principle (d): <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).</p> <p>Numerous flora and vegetation surveys of the local and regional area, including the application area, have not identified any TECs (MBS, 2022a).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p>Principle (e): <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 Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99.7% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2019).</p> <p>The mapped Beard vegetation associations retain approximately 99% of the pre-European extent of each of these vegetation associations at both the state and bioregional level (Government of Western Australia, 2019).</p> <p>Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.</p>	Not at variance	No
<p>Principle (h): <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>There are no conservation areas within the application area (GIS Database). The nearest conservation area (Class A Wanjarri Nature Reserve) is approximately 5 kilometres north-east of the application area.</p> <p>Given the distance to Wanjarri Nature Reserve and that the application area is down gradient from the reserve (GIS Database), the proposed clearing is unlikely to have a significant impact on the environmental values of the Wanjarri Nature Reserve.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p>Principle (f): <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>One non-perennial water course (Jones Creek) and various seasonal creek lines pass through the application area (GIS Database). Jones Creek has been designated as an exclusion zone due to Aboriginal heritage values. As such, the proposed clearing is unlikely to impact vegetation associated with this waterway.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.3, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
<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 land systems within the application area are generally not susceptible to erosion. However, erosion can be induced by vegetation clearing and heavy rainfall/winds in areas of sloped landforms, loamy earths and shallow soils, which occur within the application area (Pringle et al., 1994).</p> <p><u>Conclusion:</u></p> <p>Given that the land systems within the application area exhibit sloped landforms, loamy earths and shallow soils and the vegetation within the application area is in good to very good condition, the Delegated Officer has determined that the proposed clearing requires further management conditions to compliment the management and mitigations measures outlined by LRL (MBS, 2022a) in relation to this environmental value.</p> <p><u>Condition:</u></p> <p>The following management measures will be required as conditions on the clearing permit:</p> <ul style="list-style-type: none"> no clearing of native vegetation unless mineral production and/or associated activities commences within three months of the authorised clearing being undertaken; 	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>There are no Public Drinking Water Source Areas within or in close proximity to the application area (MBS, 2022a; GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water flows.</p> <p>The proposed clearing is unlikely to cause deterioration in the quality of underground water.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>	Not likely to be at variance	No
<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>The climate of the region is arid, with an average rainfall of approximately 248.3 millimetres per year and total evaporation rate of approximately 3200 millimetres per year (BOM, 2022; Pringle et al., 1994). There are no permanent water courses or waterbodies within the application area (GIS Database). Remnant tropical cyclones from the north-west can occasionally bring heavy rains to the region in the summer months (Pringle et al., 1994). Whilst these large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.</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:

Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their 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):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- 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)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- 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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- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
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- MBS Environmental (MBS) (2022b) Additional information received in relation to Clearing Permit Application CPS 9591/1. MBS Environmental, Western Australia, July 2022.
- Pringle, H.J.R., Van Vreeswyk, A.M.E., Gillian, S.A. (1994) An Inventory and Condition Survey of Rangelands in the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
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4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia

IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	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.