



## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	8246/2
Permit type:	Purpose Permit
Applicant name:	APA Operations Pty Ltd
Application received:	16 October 2023
Application area:	40 hectares
Purpose of clearing:	Gas Pipeline
Method of clearing:	Mechanical Removal
Tenure:	Pipeline Licence 118
Location (LGA area):	Shire of Laverton
Colloquial name:	Murrin Murrin Lateral Loop Pipeline

### 1.2. Description of clearing activities

APA Operations Pty Ltd proposes to clear up to 40 hectares of native vegetation within a boundary of approximately 74 hectares, for the purpose of a gas pipeline (APA, 2018). The project is located approximately 50 kilometres south-west of Laverton, within the Shire of Laverton (GIS Database).

The application is to allow for the construction of the Murrin Murrin Looping pipeline (MUE), a gas pipeline which loops the existing MML pipeline and which will tie into the EGP to increase the supply of gas to existing customers (APA, 2018).

Clearing permit CPS 8246/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 24 January 2019 and was valid from 16 February 2019 to 15 February 2024. The permit authorised the clearing of up to 40 hectares of native vegetation within a boundary of approximately 74 hectares, for the purpose of gas pipeline construction.

On 16 October 2023, the Permit Holder applied to amend CPS 8246/1 to extend the permit duration an additional five years.

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	19 December 2023
Decision area:	40 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) (now Department of Energy, Mines, Industry Regulation and Safety (DEMIRS)) on 16 October 2023. DMIRS advertised the application for a public comment for a period of 7 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 (**Error! Reference source not found.** 2018; Botanica, 2018; KEC, 2018) including the results of a flora and vegetation survey (Botanica, 2018), the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to surface water; and
- potential impacts to conservation significant fauna.

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

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- a watercourse management condition to avoid clearing riparian vegetation where practicable, and maintain existing surface water flow; and
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.

The assessment has not changed since the assessment for CPS 8246/1. The Delegated Officer determined that the proposed extension of duration is not likely to lead to an unacceptable risk to environmental values. The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principle (f), is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

## **1.5. Site map**

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

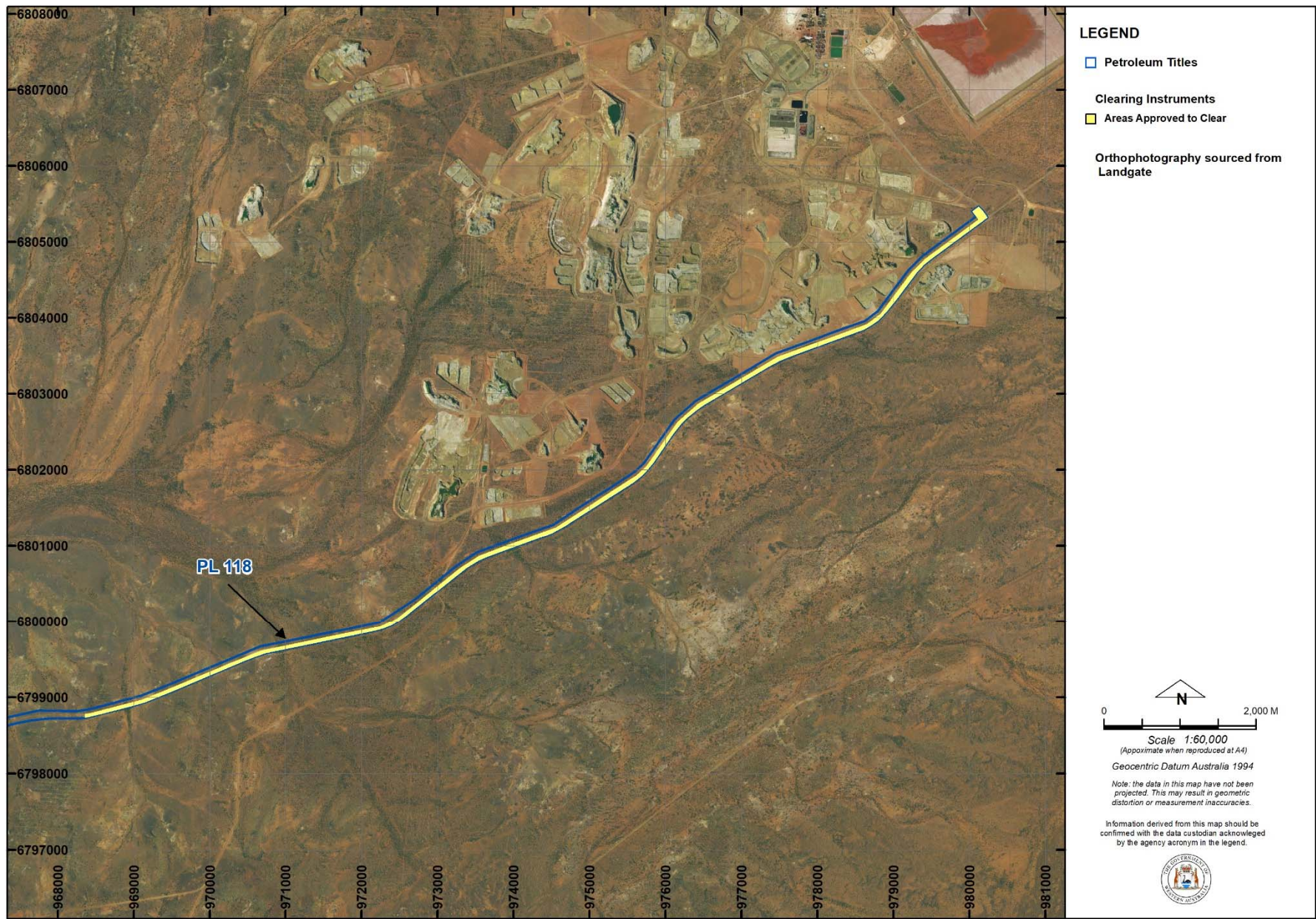


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

## 2. Legislative context

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

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

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016 (WA) (BC Act)*
- *Conservation and Land Management Act 1984 (WA) (CALM Act)*
- *Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)*
- *The Petroleum Pipelines Act 1969 (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)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

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.

Evidence was submitted by the applicant, demonstrating that avoidance and mitigation measures such as those listed below will be undertaken:

- the clearing boundary will be delineated to prevent encroachment of works;
- disturbed areas will be used for construction purposes as far as practicable;
- vegetation to be retained will be communicated in pre-start/inductions and flagged in the field;
- large trees will be avoided as far as practicable;
- sediment control structures will be implemented as required;
- vehicles will remain on approved roads and tracks at all times; and
- machinery and equipment will be cleaned of soil clumps and vegetative matter prior to accessing site (APA, 2018).

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.

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed from the Clearing Permit Decision Report CPS 8246/1. The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principle (f), is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

### 3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 27 October 2023 by the department inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (Nyalpa Pirniku - WAD91/2019) over the area under application (DPLH, 2023). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the pipeline 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 Heritage Act 1972* ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- Approved Environmental Plan.

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.

**4. End**

## Appendix A. Site characteristics

### A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is located within the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) region and East Murchison IBRA subregion (GIS Database). The area is located approximately 50 kilometres west of Laverton within the Shire of Laverton (GIS Database). 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). Land use within the East Murchison IBRA region is dominated by grazing native pastures, unallocated Crown reserves, conservation and mining (APA, 2018).
Ecological linkage & Conservation areas	The nearest conservation area is a Nature Reserve (R 46847) located approximately 70 kilometres south of the application area (GIS Database). The application area is not considered an ecological linkage.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:</p> <ul style="list-style-type: none"> <li>• 18: Low woodland; mulga (<i>Acacia aneura</i>) (GIS Database).</li> </ul> <p>A reconnaissance flora and vegetation survey was conducted over the application area by Botanica Consulting (Botanica) during February, 2018. The following vegetation associations were recorded within the application area (Botanica, 2018):</p> <p>Types within Clay-Loam Plains:</p> <ul style="list-style-type: none"> <li>• <b>CLP-AFW1</b>: Low forest of <i>Acacia caesaneura</i> over <i>Senna artemisioides</i> subsp. <i>helmsii</i>, <i>Acacia tetragonophylla</i>, <i>Acacia burkittii</i>, <i>Eremophila margarethae</i>, <i>Ptilotus obovatus</i>, <i>Solanum lasiophyllum</i> and <i>Maireana triptera</i> in clay-loam soils;</li> <li>• <b>CLP-AOW1</b>: Open low woodland of <i>Acacia aptaneura</i> over <i>Eremophila pantonii</i>, <i>Atriplex bunburyana</i>, <i>Cratystylis subspinescens</i> and <i>Maireana pyramidata</i> in clay-loam soils;</li> <li>• <b>CLP-AOW2</b>: Open low woodland of <i>Acacia incurvaneura</i> and <i>Hakea kippistiana</i> over <i>Eremophila pantonii</i>, <i>Maireana pyramidata</i>, <i>Maireana sedifolia</i>, <i>Maireana glomerifolia</i> and <i>Maireana triptera</i> in clay-loam soils;</li> </ul> <p>Type within open depression:</p> <ul style="list-style-type: none"> <li>• <b>OD-AOW1</b>: Open woodland of <i>Acacia caesaneura</i>, <i>Acacia macraneura</i> and <i>Acacia ayersiana</i> over <i>Acacia ramulosa</i> var. <i>ramulosa</i>, <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>Eremophila margarethae</i>, <i>Maireana triptera</i> and <i>Eragrostis eriopoda</i> in drainage line;</li> </ul> <p>Type within rocky plain:</p> <ul style="list-style-type: none"> <li>• <b>RP-AOW2</b>: Open woodland of <i>Acacia ayersiana</i> and <i>Acacia caesaneura</i> over <i>Eremophila margarethae</i> and <i>Acacia tetragonophylla</i> over Poaceae and Asteraceae spp. in clay with quartz and ironstone pebbles;</li> </ul> <p>Type within rocky slopes:</p> <ul style="list-style-type: none"> <li>• <b>RS-AFW1</b>: Low forest of <i>Acacia incurvaneura</i>, <i>Acacia quadrimarginea</i> and <i>Acacia ramulosa</i> var. <i>ramulosa</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, <i>Senna artemisioides</i> subsp. <i>helmsii</i> and <i>Ptilotus obovatus</i> on rocky slope;</li> </ul> <p>Type within Sand-Loam Plain:</p> <ul style="list-style-type: none"> <li>• <b>SLP-AOW2</b>: Open low woodland to woodland of <i>Acacia caesaneura</i>, <i>Acacia ayersiana</i> over <i>Acacia ramulosa</i> var. <i>ramulosa</i>, <i>Acacia tetragonophylla</i>, <i>Eremophila latrobei</i> subsp. <i>latrobei</i>, <i>Eremophila</i> spp., <i>Maireana triptera</i>, <i>Solanum lasiophyllum</i>, <i>Ptilotus obovatus</i> and <i>Eragrostis eriopoda</i> in sandy-loam soils.</li> </ul>
Vegetation condition	<p>The vegetation survey (Botanica, 2018) indicate the vegetation within the proposed clearing area is in 'Good' and 'Very Good' (Keighery, 1994) condition, described as</p> <ul style="list-style-type: none"> <li>• Very Good: Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing; and</li> <li>• 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.</li> </ul> <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The East Murchison IBRA subregion experiences an arid climate, with an annual rainfall of approximately 234.8 millimetres (BoM, 2023).

Characteristic	Details
Soil description	The soils of the application area are broadly mapped as the following soil types: <ul style="list-style-type: none"> <li>• 279Ht: Hootanui system. Breakaways, hills and ridges with saline gravelly and stony lower plains supporting scattered halophytic low shrublands;</li> <li>• 279Ju: Jundee system. Hardpan plains with variable gravelly mantles and minor sandy banks supporting weakly groved mulga shrublands;</li> <li>• 279Nu: Nubev system. Gently undulating stony plains, minor limonitic low rises and drainage floors supporting mulga and halophytic shrublands; and</li> <li>• 279Bv: Bevon system. Irregular low ironstone hills with stony lower slopes supporting mulga shrublands (DPIRD, 2023).</li> </ul>
Land degradation risk	The application area lies within the Bevon, Nubev, Hootanui and Jundee land systems (DPIRD, 2023). The Jundee land system is generally not susceptible to erosion, while the other land systems have varying susceptibility to erosion (Pringle et al., 1994): <ul style="list-style-type: none"> <li>• Bevon: Breakaway footslopes and narrow drainage tracts are susceptible to soil erosion, particularly if shrub cover is removed;</li> <li>• Hootanui: Narrow drainage tracts and breakaway footslopes are susceptible to erosion; and</li> <li>• Nubev: Drainage zones are moderately susceptible to soil erosion, particularly when shrub cover is removed.</li> </ul>
Waterbodies	There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). The application area crosses several non-perennial minor watercourses (GIS Database).
Hydrogeography	The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The groundwater quality in the application area is between 1,000 to 3,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database).
Flora	No Threatened or Priority flora have been recorded within the application area (Botanica, 2018, GIS Database). There are records of 17 priority flora within 50 kilometres of the application area (GIS Database).
Ecological communities	There are no records of any Threatened Ecological Communities (TECs) within the application area (GIS Database). The vegetation survey of the application area did not identify any communities listed as a TEC (Botanica, 2018).
Fauna	Nine fauna habitats were recorded during the survey area (KEC, 2018). According to database searches, 26 native mammals, nine frog, 86 reptile, 145 bird and 10 introduced mammal species were identified as potentially occurring in the survey area (KEC, 2018). A total of 77 fauna species were recorded within the survey area, which included three frogs, six reptiles, eight native mammals, four introduced mammals and 56 birds (KEC, 2018). Two species listed as Vulnerable, the malleefowl ( <i>Leipoa ocellata</i> ) and the grey falcon ( <i>Falco hypoleucos</i> ), are known to occur within the local area.

## 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 - Murchison	28,120,586.77	28,044,823.42	99.73	2,185,987.96	7.77
Beard vegetation associations - State					
Veg Assoc No. - 18	19,892,306.46	19,843,148.07	99.75	1,317,179.00	6.62
Beard vegetation associations - Bioregion					
Veg Assoc No. - 18	12,403,172.30	12,363,252.47	99.68	614,964.13	4.96

Government of Western Australia (2019)

## A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix D.1), and biological survey information (Botanica, 2018; KEC, 2018; Western Australian Herbarium, 1998-), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Acacia</i> sp. Marshall Pool (G. Cockerton 3024)	P3	Y	<30	10
<i>Acacia websteri</i>	P1	N	<10	21
<i>Angianthus prostratus</i>	P3	Y	<30	10
<i>Calytrix praecipua</i>	P3	N	<50	28
<i>Conospermum toddii</i>	P4	N	<50	56
<i>Cratystylis centralis</i>	P3	Y	<5	13
<i>Eremophila annosicaulis</i>	P3	Y	<30	5
<i>Goodenia lyrata</i>	P3	N	<30	18
<i>Hemigenia exilis</i>	P4	Y	<5	44
<i>Pigea</i> sp. <i>Chloroxantha</i> (E. Bennett & D. Bright EUC 1810)	P3	Y	<5	26
<i>Nicotiana salina</i>	P1	N	<50	13
<i>Olearia mucronata</i>	P3	N	<30	14
<i>Ptilotus tetrandrus</i>	P1	N	<30	3
<i>Tecticornia cymbiformis</i>	P3	N	<30	16
<i>Tecticornia mellarium</i>	P1	N	<50	20
<i>Tecticornia</i> sp. Lake Way (P. Armstrong 05/961)	P1	N	<50	8
<i>Triglochin protuberans</i>	P3	N	<30	12

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

#### A.1. Fauna analysis table

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
<i>Actitis hypoleucos</i>	common sandpiper	MI	<50	N
<i>Bettongia lesueur</i> subsp. ( <i>Barrow and Boodie Islands</i> )	Barrow Island burrowing bettong, boodie (Barrow and Boodie Islands)	VU	<10	N
<i>Branchinella apophysata</i>	a fairy shrimp (Laverton)	P1	<50	N
<i>Branchinella simplex</i>	a fairy shrimp (inland WA)	P1	<50	N
<i>Calidris acuminata</i>	sharp-tailed sandpiper	MI	<50	N
<i>Falco hypoleucos</i>	grey falcon	VU	<10	Y
<i>Falco peregrinus</i>	peregrine falcon	OS	<5	Y
<i>Gelochelidon nilotica</i>	gull-billed tern	MI	<50	N
<i>Leipoa ocellata</i>	malleefowl	VU	<5	Y
<i>Leporillus conditor</i>	greater stick-nest rat, wopilkara	VU	<5	Y
<i>Paraplatyarthus subterraneus</i>	Poseidon slater	P1	<50	Y
<i>Plegadis falcinellus</i>	glossy ibis	MI	<50	N
<i>Pluvialis fulva</i>	Pacific golden plover	MI	<50	N
<i>Sminthopsis longicaudata</i>	long-tailed dunnart	P4	<5	Y
<i>Thinornis cucullatus</i>	hooded plover, hooded dotterel	P4	<50	N
<i>Tringa nebularia</i>	common greenshank	MI	<50	N

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



**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 area proposed to be cleared does not contain significant flora, fauna, habitats, assemblages of plants. The reconnaissance flora and vegetation survey of the application area recorded a total of seven vegetation types, of which were in ‘Good’ to ‘Very Good’ condition (Botanica, 2018). The vegetation types recorded within the application area are well represented in the surroundings and the Murchison region (APA, 2018). The application area has also been subjected to disturbance from the existing buried Murrin Murrin Lateral pipeline constructed along the application area with disturbance of approximately 10 metres wide (Botanica, 2018).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8246/1)</p>	<p>No</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 majority of these fauna habitats are considered widespread and well represented in the Murchison region (APA, 2018; Botanica, 2018; KEC, 2018). Three of the fauna habitats identified were considered to be uncommon or regionally restricted habitats: ironstone ridges, low greenstone hills and major drainage lines. The application area however, does not intersect with these habitats except the banded ironstone ridge which only occurs in a limited extent. Impacts to fauna may be managed by implementing a directional clearing condition requiring all clearing to be undertaken in one direction towards adjacent vegetation.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8246/1)</p>	<p>No</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>There are no records of any Threatened flora species within the application area (GIS Database). The flora surveys of the application area did not record any Threatened flora species (Botanica, 2018).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8246/1)</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 records of any Threatened Ecological Communities (TECs) within the application area (GIS Database). The vegetation survey of the application area did not identify any communities listed as a TEC (Botanica, 2018).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8246/1)</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 Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the Murchison IBRA Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation association 18 (GIS Database). Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2018).</p>	<p>Not at variance</p> <p>(as per CPS 8246/1)</p>	<p>No</p>
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8246/1)</p>	<p>No</p>
<b>Environmental value: land and water resources</b>		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). The application area crosses several non-perennial minor watercourses (GIS Database). Impacts may be managed by implementing a flora management condition requiring the clearing of riparian vegetation to be avoided where possible.</p>	<p>At variance</p> <p>(as per CPS 8246/1)</p>	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The mapped soils have varying susceptibility to erosion (DPIRD, 2023). Given the narrow, linear nature of the proposed activities, the clearing is not likely to result in any appreciable land degradation.</p>	Not likely to 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 permanent watercourses or wetlands within the area proposed to clear (GIS Database). The application area crosses several non-perennial minor watercourses (GIS Database). Impacts may be managed by implementing a flora management condition requiring surface water to be maintained and the clearing of riparian vegetation to be avoided where possible.</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 proposed clearing is for a 25 metre wide corridor over a length of 13.5 kilometres (APA, 2018). The application area is relatively flat across its whole distance (GIS Database). Given this, the proposed clearing is unlikely to cause excessive levels of water runoff that would exacerbate the incidence or intensity of flooding in the local area.</p>	Not likely to be at variance	No

### Appendix C. Vegetation condition rating scale

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

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

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

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.

Condition	Description
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)):

- 10 Metre Contours (DPIRD-073)
- Contours (DPIRD-073)
- 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
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- Soil Landscape Mapping – Western Australia attributed by WA Soil Group (DPIRD-076)
- 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

- APA (2018) Murrin Murrin Looping Pipeline. Supporting Information Purpose Permit to Clear Native Vegetation Permit, November 2018.
- Botanica (2018) Murrin Murrin Looping Project Reconnaissance Flora Survey. Prepared for APA Group, June 2018.
- Bureau of Meteorology (BoM) (2023) Bureau of Meteorology Website – Climate Data Online, Weather Station -# 12045. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 21 November 2023).
- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf)
- Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 22 November 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2023) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://dpird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 22 November 2023).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: [https://dwer.wa.gov.au/sites/default/files/Procedure\\_Native\\_vegetation\\_clearing\\_permits\\_v1.pdf](https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf)
- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: [http://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey\\_Dec13.pdf](http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf)
- Environmental Protection Authority (EPA) (2016) Technical Guidance – Terrestrial Fauna Surveys. Available from: [https://www.epa.wa.gov.au/sites/default/files/Policies\\_and\\_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf](https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.pdf)

- 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>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Kingfisher Environmental Consulting (KEC) (2018) Murrin Murrin Looping Project Level 1 Fauna Assessment. Prepared for APA Group, February 2018.
- Pringle, H.J.R, Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) An inventory and condition survey of rangelands in the north-eastern Goldfields, Western Australia, Technical Bulletin No. 87., Department of Agriculture, South Perth, Western Australia.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 23 November 2023).

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

### Definitions:

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

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

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

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

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

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

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

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

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife*

*Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

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

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

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

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

**Extinct Species:**

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

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

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

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

**Specially protected species:**

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

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

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

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

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

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

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

- OS Other specially protected species**  
Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).  
Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.
- P Priority species:**  
Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.  
Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.  
Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1 Priority One - Poorly-known species**  
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
- P2 Priority Two - Poorly-known species**  
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
- P3 Priority Three - Poorly-known species**  
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
- P4 Priority Four - Rare, Near Threatened and other species in need of monitoring**  
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.  
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.  
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

**Principles for clearing native vegetation:**

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

- (g)** Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (h)** Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i)** Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j)** Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.