



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 8706/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Adaman Resources Pty Ltd

### 1.3. Property details

Property: Mining Lease 59/565  
Local Government Area: Shire of Murchison  
Colloquial name: Mixy Gold Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
100		Mechanical Removal	Mineral Production and Associated Activities

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 5 December 2019

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** The vegetation of the application area is broadly mapped as the following Beard vegetation association: 204: Succulent steppe with open scrub; scattered mulga & *Acacia sclerosperma* over saltbush & bluebush (GIS Database).

A reconnaissance flora and vegetation assessment was conducted over the application area and surrounds by Spectrum Ecology between 16-17 March 2019. The following four vegetation types were described within the application area (Spectrum Ecology, 2019b):

**Flats: plain (clay flat)**

P1: *Acacia ramulosa* var. *linophylla* (+/-*Acacia tetragonophylla* and *Acacia grasbyi*) tall sparse shrubland, over +/- *Eremophila forrestii*, *Hakea preissii* and *Sida ectogama* mid isolated shrubs, over *Ptilotus obovatus* low sparse shrubland and *Monachather paradoxus* low sparse tussock grassland.

**Flats: plain (sandy flat)**

P2: *Acacia ramulosa* var. *linophylla* and *Acacia grasbyi* tall sparse shrubland, over *Eremophila forrestii* mid open shrubland, over *Monachather paradoxus* low sparse tussock grassland.

**Open depression: (drainage line and/or floodplain)**

D3: *Acacia pteraneura*, *Acacia mulganeura* and *Acacia ramulosa* var. *linophylla* tall open shrubland, over *Eremophila forrestii* and *Sida ectogama* mid sparse shrubland, over *Ptilotus obovatus* low sparse shrubland.

**Slope: simple (low lateritic rise)**

S1: *Acacia ramulosa* var. *linophylla*, *Acacia murrayana* and *Acacia mulganeura* tall sparse shrubland, over +/- *Eremophila forrestii*, *Sida ectogama* and *Thryptomene decussata* mid sparse shrubland, over *Monachather paradoxus* low sparse tussock grassland and *Ptilotus schwartzii* low sparse shrubland.

**Clearing Description**

Mixy Gold Project  
Adaman Resources Pty Ltd proposes to clear up to 100 hectares of native vegetation within a boundary of approximately 609.5 hectares, for the purpose of mineral production and associated activities. The project is located approximately 200 kilometres north-east of Geraldton, within the Shire of Murchison.

**Vegetation Condition**

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

to

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

**Comment**

A majority of the application area was classified as 'excellent' condition. Completely degraded areas are associated with the existing Mixy Gold trial mine. The vegetation condition was derived from a low intensity reconnaissance flora and vegetation assessment covering an area of approximately 2,000 hectares, including

the application area, on 16 and 17 March 2019. The survey was a combination of relevés, traverses and opportunistic sampling. Flora was sampled at 12 locations within the application area, representing the diversity of vegetation and geology and targeting areas that potentially support significant flora and vegetation identified during the desktop assessment (Spectrum Ecology, 2019b).

The proposed clearing is for the expansion of the existing Mixy Gold Project trial mine that was constructed within the approved clearing permit boundary of CPS 6484/1, approved in April 2015. This application involves the development of an expanded mine pit, expanded waste rock landform (WRL), run of mine pad (ROM), mine infrastructure, access roads, accommodation camp and rerouting of the Yuin – Murgoo Road (Preston Consulting, 2019).

### 3. Assessment of application against Clearing Principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

##### Comments **Proposal is not likely to be at variance to this Principle**

The clearing permit application area is located within the Talling subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Yalgoo Bioregion (GIS Database). The Yalgoo Bioregion is characterised by low woodlands of Eucalyptus, Acacia and Callitris on red sandy plains of the Western Yilgarn Craton and southern Carnarvon Basin (CALM, 2002).

Spectrum Ecology (2019b) identified 68 plant taxa from 32 genera and 20 families within the survey area. It is noted that the optimal time for undertaking flora and vegetation surveys for the South-West Interzone botanical province is September to November. No rainfall was recorded in the three months prior to the March 2019 flora survey and this influences the number and type of flora recorded during the survey (Spectrum Ecology, 2019b).

Spectrum Ecology (2019b) describes the S1 vegetation type in the application area to be locally and regionally significant. This rating is based on the vegetation type not aligning with any Beard vegetation units mapped within the study area and the vegetation occurring on an uncommon geological feature – a low lateritic rise (Spectrum Ecology, 2019b). Despite its local and regional significance, Spectrum Ecology (2019b) do not consider the S1 vegetation type to be highly diverse, to provide a refuge or to provide a function to maintain ecological integrity of a significant ecosystem. It is likely the S1 vegetation type is more widespread in the local and regional area, especially as it is dominated by common species (Spectrum Ecology, 2019a). The S1 vegetation type covers approximately 60.5ha of the survey area, most of which occurs in the north-east portion of the clearing permit application area. Preston Consulting (2019) advises that alternative project layouts have been assessed for feasibility to minimise disturbance of the S1 vegetation unit and existing disturbed areas have been utilised where possible. However, some sections cannot be avoided as they occur where the proposed open pit and waste rock landform expansions will occur.

No Threatened Ecological Communities (TECs), Priority Ecological Communities (PECs), Threatened or Priority flora species were identified within the clearing permit application area (Spectrum Ecology, 2019b). One priority species, *Grevillea globosa*, was identified approximately 6km south of the application area. This collection occurred on sandy plains of the Kalli land system which is not represented in the application area (Preston Consulting, 2019).

Seven priority flora species were identified during database searches and given a high likelihood of occurrence within the broader survey area (Spectrum Ecology, 2019b): *Dithyrostegia gracilis* (Priority 1), *Solanum pycnotrichum* (Priority 2), *Tecticornia cymbiformis*, *Gunniopsis divisa*, *Ptilotus beardii*, *Dicrastylis linearifolia* and *Grevillea granulosa* (Priority 3). With the exception of *Dithyrostegia gracilis*, these priority species are not restricted to the Yalgoo bioregion and are known from multiple records across multiple IBRA bioregions (Spectrum Ecology, 2019b).

*Dithyrostegia gracilis* is only known from one record state-wide, which is approximately 2km south of the application area on a floodplain adjacent to the Greenough River (Spectrum Ecology, 2019b; GIS Database). The Western Australian Herbarium describes *Dithyrostegia gracilis* as a slender annual herb to 0.25m high. The presence or absence of this species within the application area cannot be confirmed, given the sub-optimal timing of the March 2019 reconnaissance survey. However, it is noted that the one record of this species occurs in a different pre-European vegetation type to that mapped for the application area, and on a soil unit which is absent over a majority of the application area (GIS Database). It is therefore unlikely that the application area provides critical habitat for this species.

A range of native fauna species, including conservation significant fauna, may utilise habitat within the application area (Spectrum Ecology, 2019b). However, the fauna habitat types recorded in the application area are typical for the region and are not considered rare or unique (Spectrum Ecology, 2019b).

The application area occurs within the rangelands, and vegetation in surrounding areas remains largely uncleared (Spectrum Ecology, 2019b; GIS Database). With the exception of the S1 vegetation type and the low lateritic rise on which it occurs, the vegetation types, fauna habitats, and landform types present within the application area are typical for the region and well represented in surrounding areas (Preston Consulting, 2019; Spectrum Ecology, 2019b; GIS Database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** CALM (2002)

Preston Consulting (2019)  
Spectrum Ecology (2019a)  
Spectrum Ecology (2019b)  
Western Australian Herbarium (1998-)

GIS Database:

- IBRA Australia
- Pre-European Vegetation
- Soils Statewide
- Threatened and Priority Flora
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened Fauna

**(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 indigenous to Western Australia.**

**Comments      Proposal is not likely to be at variance to this Principle**

The following three fauna habitats were recorded within the clearing permit application area during a Level 1 fauna assessment in March 2019 (Spectrum Ecology, 2019b):

1. Shrubland – This habitat type covers a vast majority of the clearing permit application area and had sparse ground cover, minimal leaf litter and some fallen timber (Spectrum Ecology, 2019b). A range of common mammal, bird and reptile species can be expected to utilise shrubland habitat (Spectrum Ecology, 2019b).
2. Woodland – Approximately 10ha of this habitat type occurs in the clearing permit application area. Woodland habitat generally had leaf litter restricted to under dense vegetation clumps (Spectrum Ecology, 2019b). The fauna assemblage of this habitat type is expected to be very similar to the shrubland habitat, however areas of denser vegetation can support additional species, particularly providing refuge for small bird species (Spectrum Ecology, 2019b).
3. Saltlake/Claypan – Less than 5ha of this habitat type occurs in the clearing permit application area. The fauna assemblage of this habitat type is similar to the surrounding habitats, however when surface water is present these areas can be utilised by waterbirds and migratory shorebirds. The edges of the saltlake/claypan habitats can also form suitable microhabitats for short range endemic species (Spectrum Ecology, 2019b). Two small claypan areas occur on the western and southern margins of the application boundary, however neither is expected to be impacted by the proposed mine layout (Spectrum Ecology, 2019b).

Based on known fauna records and habitat assessments, two conservation significant fauna species were rated as a high likelihood of occurrence within the Snake Well fauna assessment area (which includes the clearing permit application area) (Spectrum Ecology, 2019b):

Malleefowl; *Leipoa ocellata* (EPBC: Vulnerable, BC Act: Vulnerable) have been recorded recently (1995 – 2016) from a number of locations within 40km of the application area (Spectrum Ecology, 2019b). The species is most abundant in areas with dense shrubs and trees that have a sandy substrate and an abundance of leaf litter (Benshemesh, 2007). No evidence of Malleefowl was recorded in the application area by Spectrum Ecology (2019b). Whilst the Woodland habitat within the application area is potentially suitable habitat for Malleefowl, it is unlikely to represent significant habitat given the general absence of leaf litter and the proximity to the existing mine disturbance.

The Gilled Slender Bluetongue Skink; *Cyclodomorphus branchialis* (Vulnerable, BC Act) has previously been recorded approximately 5km south of the application area in dense shrubland on the edge of Greenough River (Spectrum Ecology, 2019b). Little is known about the preferred habitat of this species however dense vegetation with suitable accumulations of leaf litter, fallen timber and low shrubs are thought to be required (Spectrum Ecology, 2019b). Other available literature supports Spectrum Ecology's description of suspected habitat preferences for the Gilled Slender Bluetongue Skink (Roadside Conservation Committee, 2009). Most areas within the application area showed a distinct paucity of leaf litter and fallen timber (Spectrum Ecology, 2019b) and are therefore unlikely to represent critical habitat for this species.

All three fauna habitat types recorded in the application area are typical for the region and are not considered rare or unique (Spectrum Ecology, 2019b). The fauna habitats recorded in the application do not appear to support the creation of micro habitats for short range endemic fauna as accumulations of leaf litter were not evident and no suitable landscape features (such as ridges, rock piles or large boulders) were present (Spectrum Ecology, 2019b).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology**      Benshemesh (2007)  
Roadside Conservation Committee (2009)

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

**Comments Proposal is not likely to be at variance to this Principle**

There are no known records of Threatened flora within the application area (GIS Database). Two Threatened flora taxa were recorded during desktop database searches supporting Spectrum Ecology's (2019b) reconnaissance flora assessment; *Eremophila viscida* and *Dasymalla axillaris*. Both of these species were given a low likelihood of occurrence in the study area (Spectrum Ecology, 2019b).

The closest known record of *Eremophila viscida* is 48 km south of the study area on a land system characterised by undulating yellow sandplains, which do not occur in the application area, and *Dasymalla axillaris* does not have any known records within 50 km of the study area. A reconnaissance flora and vegetation survey that included the application area did not record any species of Threatened flora (Spectrum Ecology, 2019b).

The vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology Spectrum Ecology (2019b)**

GIS Database:

- Pre-European Vegetation
- Threatened and Priority 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.**

**Comments Proposal is not likely to be at variance to this Principle**

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database).

A reconnaissance flora and vegetation survey that included the application area did not identify any TECs (Spectrum Ecology, 2019b).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology Spectrum Ecology (2019b)**

GIS Database:

- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

**(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.**

**Comments Proposal is not at variance to this Principle**

The application area falls within the Yalgoo Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 97.3% of the pre-European vegetation still exists in the IBRA Yalgoo Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation association 204: Succulent steppe with open scrub; scattered mulga & *Acacia sclerosperma* over saltbush & bluebush (GIS Database). Approximately 99.6% of the pre-European extent of this vegetation association remains uncleared at the bioregional level (Government of Western Australia, 2019).

Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands
IBRA Bioregion – Yalgoo	5,057,325	4,923,840	~97.3	Least Concern	31.34
Beard vegetation associations – WA					
204	199,475	198,735	~99.6	Least Concern	6.75
Beard vegetation associations – Yalgoo Bioregion					
204	11,844	11,844	~100	Least Concern	no data available

\* Government of Western Australia (2019)

\*\* Department of Natural Resources and Environment (2002)

Based on the above, the proposed clearing is not at variance to this Principle.

**Methodology** Department of Natural Resources and Environment (2002)  
Government of Western Australia (2019)

GIS Database:

- IBRA Australia
- Pre-European Vegetation

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

**Comments** **Proposal is not likely to be at variance to this Principle**

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). One small, ephemeral drainage line occurs in the north-east corner of the application area (GIS Database; Spectrum Ecology, 2019b). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall.

Vegetation within the application area is not growing in nor associated with a watercourse or wetland (Spectrum Ecology, 2019b). The D3 vegetation type described from the north-east corner of the application area wasn't described as being distinctively riparian or groundwater-dependent (Spectrum Ecology, 2019b). Where necessary, drainage line crossings will be fitted with culverts or floodways to maintain surface water flows (Preston Consulting, 2019).

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** Preston Consulting (2019)  
Spectrum Ecology (2019b)

GIS Database:

- Hydrography, Lakes
- Hydrography, linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments** **Proposal is not likely to be at variance to this Principle**

The application area lies within the Bunny land system (GIS Database). This land system has been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The Bunny land system is described as hardpan plains with broad sandy banks and thin sand sheets supporting acacia shrublands with wanderrie grasses. This land system is not generally susceptible to erosion (Payne et al., 1998).

The proposed clearing of up to 100 hectares of native vegetation within a boundary of approximately 609.5 hectares, for the purpose of mineral production and associated activities is unlikely to cause appreciable land degradation.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology** Payne et al. (1998)

GIS Database:

**(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.**

**Comments**      **Proposal is not likely to be at variance to this Principle**  
There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the former Woolgorong Pastoral Lease which is located approximately 10 kilometres north-west of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology**    GIS Database:  
- DPaW Tenure

**(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.**

**Comments**      **Proposal is not likely to be at variance to this Principle**  
There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Creek 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.

The proposed clearing is unlikely to cause deterioration in the quality of underground water.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology**    GIS Database:  
- Hydrography, Linear  
- Public Drinking Water Source Areas

**(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

**Comments**      **Proposal is not likely to be at variance to this Principle**  
The climate of the region is arid to semi-arid, with a low average rainfall of approximately 200 to 300 millimetres per year (Spectrum Ecology, 2019b). There are no permanent water courses or waterbodies within the application area (GIS Database). A shallow, ephemeral drainage line is present (Preston Consulting, 2019).

Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

**Methodology**    Preston Consulting (2019)  
Spectrum Ecology (2019b)  
  
GIS Database:  
- Hydrographic Catchments - Catchments  
- Hydrography, linear

## Planning Instrument, Native Title, previous EPA decision or other matter.

### Comments

The clearing permit application was advertised on 4 November 2019 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There are three native title claims over the area under application (DPLH, 2019). These claims have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2019). 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.

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.

**Methodology** DPLH (2019)

## 4. References

- Benshemesh, J. (2007) National Recovery Plan for Malleefowl *Leipoa ocellata*.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DPLH (2019) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 28 November 2019).
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- 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, Perth. <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.
- Payne, A L, van Vreeswyk, A M, Leighton, K A, Pringle, H J, and Hennig, P. (1998) An inventory and condition survey of the Sandstone- Yalgoo-Paynes Find area, Western Australia. Department of Agriculture and Food, Western Australia. Technical Bulletin 90.
- Preston Consulting (2019) Mixy Gold Project Native Vegetation Clearing Permit Application Supporting Information. Report prepared for Adaman Resources Pty Ltd, by Preston Consulting Pty Ltd, October 2019.
- Roadside Conservation Committee (2009) Roadside Vegetation and Conservation Values in the City of Geraldton-Greenough. Roadside Conservation Committee, Bentley, Western Australia.
- Spectrum Ecology (2019a) Additional information received in relation to Clearing Permit Application CPS 8706/1. Spectrum Ecology Pty Ltd, Western Australia.
- Spectrum Ecology (2019b) Snake Well Reconnaissance Flora and Level 1 Fauna Assessment. Report prepared for Adaman Resources Pty Ltd, by Spectrum Ecology Pty Ltd, May 2019.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 25 November 2019).

## 5. Glossary

### Acronyms:

<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>DBCA</b>	Department of Biodiversity, Conservation and Attractions, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
<b>DoEE</b>	Department of the Environment and Energy, Australian Government
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DMIRS)
<b>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
<b>DoE</b>	Department of the Environment, Australian Government (now DoEE)
<b>DoW</b>	Department of Water, Western Australia (now DWER)



<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DSEWPac</b>	Department of Sustainability, Environment, Water, Population and Communities (now DoEE)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , 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.