



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 7104/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Golden Eagle Mining Ltd

### 1.3. Property details

Property: Mining Lease 15/621  
Miscellaneous Licence 15/229  
Local Government Area: Shire of Coolgardie  
Colloquial name: Geko Gold Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
130		Mechanical Removal	Mineral Production

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 18 August 2016

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area (GIS Database):

**8:** Medium woodland; salmon gum & gimlet; and

**1413:** Shrublands; acacia, casuarina & melaleuca thicket (Government of Western Australia, 2014; GIS Database).

MWH Australia Pty Ltd (MWH) conducted a combined flora, vegetation and fauna survey over the application area from 12 to 15 April 2016 (MWH, 2016a). A total of 11 vegetation units were recorded, these being:

#### **AaApCp**

*Acacia aptaneura*, *A. prainii* and *Callistemon phoeniceus* mid to low shrubland.

#### **AaLfPg**

*Acacia aptaneura* tall shrubland over *Leptospermum fastigiatum* and *Prostanthera grylloana* mid open shrubland.

#### **ArTs**

*Eucalyptus griffithsii* and/or *E. leptopoda* subsp. *leptopoda* open mallee woodland to isolated mallee trees over *Acacia resinimarginea* tall shrubland over *Phebalium filifolium* sparse low shrubland over *Triodia scariosa* hummock grassland.

#### **EcMp**

*Eucalyptus clelandii* (+/- *E. yilgarnensis*, *E. salmonophloia*, *E. urna*) open woodland over *Melaleuca pauperiflora* subsp. *fastigiata* scattered patches of closed shrubland (not continuous through the area) over *Scaevola spinescens*, *Alyxia buxifolia* and *Eremophila* spp. mid to low open shrubland.

#### **EgAa**

*Eucalyptus griffithsii* (*E. yilgarnensis*) low woodland to open woodland over *Acacia acuminata* (*Alyxia buxifolia* and *Allocasuarina helmsii*) tall to mid shrubland over *Senna artemisioides* and/or *Grevillea acuaria* low open shrubland.

#### **EgApTs**

*Eucalyptus griffithsii* low open woodland over *Acacia prainii* mid open shrubland over *Triodia scariosa* open hummock grassland.

#### **EgArTs**

*Eucalyptus griffithsii* (+/- *E. horistes* / *E. platycorys* / *E. rigidula*) mid mallee woodland over *Acacia resinimarginea* tall shrubland over *Beyeria sulcata* var. *sulcata* low open to sparse shrubland over *Triodia scariosa* hummock grassland.

#### **EgEpEc**

Mixed Eucalypts comprising *Eucalyptus griffithsii* and/or *E. platycorys*, and/or *E. celastroides* subsp. *virella* mid open mallee woodland over *Eremophila caperata*, *Acacia hemiteles* and *Scaevola spinescens* mid mixed

shrubland with occasional patches of *Melaleuca ? hamata*.

**EsAbAh**

*Eucalyptus salmonophloia* low open woodland over *Acacia burkittii* tall sparse Shrubland over *Acacia hemiteles* mid sparse shrubland over *Scaevola spinescens*, *Alyxia buxifolia* and *Senna artemisioides* subsp. *filifolia* low open shrubland.

**EsEcEyEgEm**

Mixed Eucalypts comprising *Eucalyptus salubris* and/or *E. clelandii* and/or *E. yilgarnensis* and/or *E. griffithsii*, and/or *E. moderata* tall to mid open woodland over *Acacia* and *Eremophila* spp. mid open shrubland over *Scaevola spinescens* and *Olearia muelleri* mid to low open shrubland.

**EyMp**

*Eucalyptus yilgarnensis* low isolated trees over *Melaleuca phoidophylla* tall to low shrubland over *Fabaceae* sp. low sparse shrubland.

**MhOiPr**

*Melaleuca hamata* tall closed shrubland over *Olearia incana* and *Psyrax rigidula* low sparse shrubland.

<b>Clearing Description</b>	<p>Geko Gold Project</p> <p>Golden Eagle Mining Ltd proposes to clear up to 130 hectares of native vegetation within a total boundary area of approximately 568.7 hectares for the purpose of mineral production. The proposal is located approximately 25 kilometres north-west of Coolgardie in the Shire of Coolgardie.</p>
<b>Vegetation Condition</b>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);</p> <p>To</p> <p>Very Good: Vegetation structure altered, obvious signs of disturbance (Keighery, 1994).</p>
<b>Comment</b>	<p>The vegetation condition was assessed by botanists from MWH (2016a).</p>

### 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 may be at variance to this Principle**

The application area occurs within the Eastern Goldfields subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by gently undulating plains interrupted in the west with low hills and a series of large playa lakes in the western half (CALM, 2002). The vegetation is dominated by Mallees, Acacia thickets and shrub-heaths on sandplains, diverse Eucalyptus woodlands occur around salt lakes, on ranges, and in valets, and dwarf shrublands of samphire around salt lakes (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation associations 8 and 1413 which have approximately 98% of their pre-European vegetation extents remaining in the bioregion (Government of Western Australia, 2014; GIS Database). A vegetation survey undertaken between the 12th and 15th of April 2016 over the application area and surrounding vegetation identified 71 species of flora taxa belonging to 20 families (MWH, 2016a). No Threatened flora or Priority flora species were found. A search on the Department of Parks and Wildlife's Declared Rare and Priority flora databases revealed that two Threatened species (*Gastrolobium graniticum* and *Ricinocarpos brevis*) and thirteen Priority species may potentially occur in the application area (MWH, 2016a). No Threatened Ecological Communities or Priority Ecological Communities were recorded or identified within the application area (GIS Database). Eleven vegetation types as described by MWH (2016a) were identified within the application area. The vegetation conditions ranged from 'very good' to 'excellent'.

No introduced flora species were identified by MWH (2016a) during the field survey. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity of the area as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna survey was undertaken over the application area and surrounding location in April 2016 and identified four habitat types within the area. The faunal habitats and assemblage recorded from the study area are common and widespread within the Coolgardie bioregion. The fauna assemblage expected to occur within these habitats, consists of largely generalist species that are widely distributed throughout the region (MWH 2016b). However, the native vegetation within and in close proximity to the study area is known to form important habitat for the Malleefowl listed as Vulnerable under the EPBC Act and WC Act. Potential impacts to the Malleefowl may be minimised by the implementation of a fauna management condition.

The application area is not likely to comprise a greater diversity than nearby and similar areas within the bioregion and local area.

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

**Methodology** CALM (2002)  
MWH (2016a)  
MWH (2016b)

GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Threatened and Priority Flora  
- Threatened Ecological Sites Buffered

**(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 not likely to be at variance to this Principle**  
MWH (2016a) undertook a desktop assessment of the application area identifying 233 species of vertebrate fauna, comprising 30 mammal, 138 bird, 61 reptile and four amphibian species.

MWH (2016a) conducted a field fauna survey of the application area between 12 to 15 April, 2016. The survey identified four broad fauna habitat types:

1. Eucalypt Woodlands;
2. Mallee Woodlands;
3. Shrublands; and
4. Vegetated Claypan

The faunal habitats and assemblage recorded from the study area are common and widespread within the Coolgardie bioregion. The fauna assemblage expected to occur within these habitats, consists of largely generalist species that are widely distributed throughout the region (MWH 2016b). However, the native vegetation within and in close proximity to the study area is known to form important habitat for the Malleefowl, listed as Vulnerable under the EPBC Act and WC Act.

Malleefowl mounds have been identified from three locations in immediate proximity to the application area (MWH, 2016). One of these mounds appeared to have been active in recent years and may again be used by the birds in the upcoming breeding season. Vegetation in the vicinity of these mounds is likely to form important habitat for the species, particularly during the breeding season. However, no mounds will be directly impacted by clearing activities (MWH, 2016a). MWH (2016a) have advised that mounds identified in close proximity to any road ways will trigger management actions including monitoring of the mounds to determine if they are active, erection of signage to alert road users to their presence and implementation of speed limits on roads near active mounds. It has also been proposed that an exclusion zone with a 250 metre buffer will be established around any identified active Malleefowl mounds, and that a pre-clearing inspection will be undertaken to minimise the risk of disturbance (MWH, 2016a). Further potential impacts may be minimised by the implementation of a fauna management condition.

Although other habitats recorded may be suitable for other fauna of conservation significance (such as Fork-tailed Swift (*Apus pacificus*), Peregrine Falcon (*Falco peregrinus*), Rainbow Bee-eater (*Merops ornatus*), Central Long-eared Bat (*Nyctophilus timoriensis*)), none of these species are reliant on the habitats present in the application area. Additionally, none of these habitats form a significant proportion of the suitable habitat for these species within the region. The Fork-tailed Swift, would overfly the application area only, there is no breeding habitat for the Peregrine Falcon (large Eucalypts or cliffs), the Rainbow Bee-eater is a common migratory bird that occupies numerous habitats within the Study Area including the Eucalypt Woodlands; and the Central Long-eared Bat may roost in tree hollows, fissures in branches within the Eucalypt Woodland habitat. Some birds of conservation significance may utilise the claypan located at the end of the proposed pipeline corridor (L15/229) after periods of rainfall (Sharptailed Sandpiper (*Calidris acuminata*), Common Greenshank (*Tringa nebularia*) and Wood Sandpiper (*Tringa glareola*)), however none of these species would be reliant on this claypan and it is not proposed to be cleared (MWH, 2016).

Based on the above, the proposed clearing may be at variance to this Principle.

**Methodology** Government of Western Australia (2014)  
MWH (2016a)  
MWH (2016b)

**(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**  
According to available databases there are no known records of Threatened flora within the application area (GIS Database). A search of the Department of Parks and Wildlife's Declared Rare and Priority flora databases identified no Threatened flora species as occurring within a 10 kilometre radius of the application areas (GIS Database).

MWH (2016a) through their desktop search identified the potential for two Threatened flora species to occur within the study area: *Gastrolobium graniticum* and *Ricinocarpos brevis*. *Gastrolobium graniticum* is a tall, open and erect shrub favouring the bases of granite outcrops, particularly along drainage lines. *Ricinocarpos brevis* favours habitat such as rocky hillslopes and rock outcrops. None of the vegetation surveys over the application area has identified any Threatened flora (MWH, 2016a). Both of these species are not considered likely to occur within the application area due to the lack of suitable habitat (MWH, 2016a).

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

**Methodology** MWH (2016a)

GIS Database:  
- 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**

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The flora surveys conducted over the application areas have not identified any TEC's (MWH, 2016a). There are no TEC's situated within 50 kilometres of the application area (MWH, 2016a; GIS Database).

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

**Methodology** MWH (2016a)

GIS Database:  
- Threatened Ecological Sites Buffered

**(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 areas fall within the Pilbara IBRA bioregion (GIS Database). The vegetation within the application areas are recorded as:

**Beard vegetation association 8:** Medium woodland; salmon gum & gimlet; and  
**Beard vegetation association 1413:** Shrublands; acacia, casuarina & melaleuca thicket (GIS Database; Government of Western Australia, 2014).

According to the Government of Western Australia (2014), Beard vegetation associations 8 and 1413 retain approximately 50% and 77% respectively of their pre-European extent for the State, with both being approximately 98% remaining for the Coolgardie bioregion. Therefore, the areas proposed to be cleared are not 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 DPAW Managed Lands
IBRA Bioregion - Coolgardie	12,912,204	12,648,491	~98	Least Concern	~15.89
<b>Beard vegetation associations - State</b>					
8	694,638	346,570	~50	Least Concern	~6.84
1413	1,679,917	1,286,968	~77	Least Concern	~13.01
<b>Beard vegetation associations - Bioregion</b>					
8	280,248	275,589	~98	Least Concern	~9.72
1413	1,061,213	1,042,554	~98	Least Concern	~18.18

\* Government of Western Australia (2014)

\*\* 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 (2014)

GIS Database:  
- IBRA WA (regions – subregions)  
- 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 at variance to this Principle**

According to the available databases, there are several drainage lines and two vegetated claypans within the application area (GIS Database). Neither claypan contains vegetation communities or species that are confined to watercourses or wetlands, nor are they groundwater dependent (MWH, 2016). The vegetated claypans within the application area are not considered regionally prominent and are not listed within the *Directory of Important Wetlands in Australia* (DoE, 2016) or listed as an ESA under *the Environmental Protection Act 1986*. An additional claypan occurs at the eastern end point of the Pipeline Corridor and is the proposed dewatering point for the mine (MWH, 2016a). This claypan is naturally clear of vegetation.

Seeing as vegetation will be cleared within the drainage lines and claypans, the proposed clearing is at variance to this Principle. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition.

**Methodology** DoE (2016)  
MWH (2016a)

GIS Database:  
- Geodata, Lakes  
- Hydrography, linear  
- Imagery

**(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 Coolgardie bioregion (GIS Database), on Yilgarn Craton's 'Eastern Goldfields Terrains' (CALM, 2002). Landforms of the Coolgardie bioregion include granite rocky outcrops, low greenstone hills, laterite uplands and broad plains (Bastin, G., and the ACRIS Management Committee, 2008). Over-grazing by stock and rabbits is the major cause of land degradation and the Eastern Goldfields subregion is not likely to be susceptible to erosion (Morton, Short & Barker, 1995).

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

**Methodology** Bastin, G., and the ACRIS Management Committee (2008)  
CALM (2002)  
Morton, Short & Barker (1995)

GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- Rangelands

**(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**

The proposed application area is not located within any conservation areas (GIS Database). The nearest conservation area is the Kangaroo Hills Timber Reserve, located approximately 14 kilometres south-east of the application area (GIS Database).

The application area is not expected to have a significant impact on the Kangaroo Hills Timber Reserve. The Kangaroo Hills Timber Reserve is an area of approximately 13,614.8 hectares and the vegetation types and fauna habitats are well represented within the area (GIS Database).

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 may be at variance to this Principle**

The available databases show that the application area is not located within a Public Drinking Water Source

Area (PDWSA) (GIS Database). The application area contains several drainage lines, and two vegetated claypans (GIS Database).

There are several drainage lines and two vegetated claypans within the application area which only flow during and following substantial rainfall (MWH, 2016a; GIS Database). The application area receives an average annual rainfall of 271 millimetres/year, with an average annual pan evaporation rate of 2,400 - 2,800 millimetres/year (BoM, 2016), and there is little surface flow during normal rainfall seasons as the annual evaporation rate exceeds the annual rainfall (BoM, 2016; MWH, 2016a). However, substantial rainfall events create surface sheet flow which is likely to have higher level of sediments. During normal rainfall events, the proposed clearing would not likely to lead to an increase in sedimentation of drainage lines within the application area. Where infrastructure impedes surface water flow, Golden Eagle Mining Ltd (MWH, 2016a) will put in place drainage bunds to divert water around infrastructure and back into its natural flow pathways.

The application area has saline (14,000 - 35,000 milligrams/Litre Total Dissolved Solids (TDS)) groundwater (GIS Database). Currently, no information is available on the extent and quality of the groundwater and whether the Project will require any groundwater drawdown and release into the natural environment (MWH, 2016a). It has been proposed that water will potentially be dewatered to the claypan at the eastern end of the Pipeline Corridor (MWH, 2016a). This will be addressed through the Mining Proposal and a separate report on aquatic ecology (MWH, 2016a).

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

**Methodology** BoM (2016)  
MWH (2016a)

GIS Database:  
- Geodata, Lakes  
- Hydrography, Linear  
- Public Drinking Water Source Areas  
- RIWI Act, Groundwater Areas  
- Groundwater Salinity, Statewide

**(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 application areas experience a semi-desert tropical climate with summer cyclonic or thunderstorm events, with an annual average rainfall of approximately 324 millimetres per year (CALM, 2002; BoM, 2016). Based on an average annual evaporation rate of 3,200 - 3,600 millimetres (BoM, 2016), any surface water resulting from rainfall events is likely to be relatively short lived.

Given the size of the area to be cleared (500 hectares) compared to the size of the Ashburton catchment area (7,877,743 hectares) (GIS Database) it is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

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

**Methodology** BoM (2016)  
CALM (2002)  
Government of Western Australia (2014)

GIS Database:  
- Hydrographic Catchments – Catchments  
- Hydrography, Linear

**Planning instrument, Native Title, Previous EPA decision or other matter.**

**Comments**

There are no native title claims over the area under application (DAA, 2016). 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*.

According to available databases, there are no registered Aboriginal Sites of Significance within the application area (DAA, 2016). 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 Environment Regulation, Department of Parks and Wildlife and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 18 July 2016 by the Department of Mines and Petroleum

inviting submissions from the public. One submission was received raising no objections to the proposed clearing.

**Methodology** DAA (2016)

GIS Database:  
- Aboriginal Sites of Significance

#### 4. References

- Bastin, G., and the ACRIS Management Committee (2008). Rangelands 2008 - Taking the Pulse; Coolgardie Bioregion. Published on behalf of the Australian Collaborative Rangeland Information System (ACRIS) Management Committee by the National Land and Water Resources Audit, Canberra.
- BoM (2016) Climate Statistics for Australian Locations. A Search for Climate Statistics for Coolgardie, Australian Government Bureau of Meteorology, <[http://www.bom.gov.au/climate/averages/tables/cw\\_012018.shtml](http://www.bom.gov.au/climate/averages/tables/cw_012018.shtml)> accessed 15 August 2016.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Coolgardie 3 (COO3) Eastern Goldfields subregion) Department of Conservation and Land Management, Western Australia.
- DAA (2016) Aboriginal Heritage Inquiry System, Government of Western Australia, Department of Aboriginal Affairs, Perth <<http://maps.dia.wa.gov.au/AHIS2/>> accessed 15 August 2016.
- 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.
- DoE, Department of the Environment (2016) *Protected Matters Search Tool (custom search)*. Available online at [www.environment.gov.au/erin/ert/epbc/index.html](http://www.environment.gov.au/erin/ert/epbc/index.html).
- Government of Western Australia (2014) 2014 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Morton, S. R., Short, J. & Barker, R. D. (1995) Refugia for Biological Diversity in Arid and Semi-arid Australia, Department of the Environment, Sport and Territories, Canberra, ACT.
- MWH (2016a) Geko Gold Project Native Vegetation Clearing Permit Supporting Document– M15/621 and L15/229. Unpublished report prepared for Golden Eagle Mining Ltd by MWH Australia Pty Ltd, 2 June 2016.
- MWH (2016b) Geko Level 1 Flora, Vegetation and Fauna Assessment and Targeted Survey for Malleefowl (*Leipoa ocellate*). Unpublished report prepared for Golden Eagle Mining Ltd by MWH Australia Pty Ltd, April 2016.

#### 5. Glossary

##### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia (now DPaW and DER)
<b>DER</b>	Department of Environment Regulation, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DRF</b>	Declared Rare Flora
<b>DotE</b>	Department of the Environment, Australian Government
<b>DoW</b>	Department of Water, Western Australia
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia
<b>DSEWPaC</b>	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
<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:

- T**            **Threatened species:**  
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).  
**Threatened fauna** is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.  
**Threatened flora** is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.  
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. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN**            **Endangered species**  
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU**            **Vulnerable species**  
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX**            **Presumed extinct species**  
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA**            **Migratory birds protected under an international agreement**  
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 the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD**            **Conservation dependent fauna**  
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS**            **Other specially protected fauna**  
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P**              **Priority species**  
Species which are poorly known; or  
Species that are adequately known, are rare but not threatened, and 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.