



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7836/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Greenmount Resources Pty Ltd

1.3. Property details

Property: Mining Lease 52/1070

Local Government Area: Shire of Meekatharra

Colloquial name: Karlawinda Gold Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 4 January 2018

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/s:
- 29: Sparse low woodland; mulga, discontinuous in scattered groups
- 216: Low woodland; mulga (with spinifex) on rises. (GIS Database).

A flora and vegetation survey was conducted over the broader area by 360 Environmental Pty Ltd during March 2016 which was inclusive of the majority of the current application area. The following vegetation associations were recorded within the surveyed area (360 Environmental, 2017):

1. *Acacia aneura*, *Corymbia candida* subsp. *dipsodes* (+ *C. hamersleyana*) low woodland over *Hakea lorea* subsp. *lorea* tall open shrubland over *Eriachne flaccida*, *Aristida inaequiglumis* and *Digitaria ammophila* open tussock grassland;

2. *Acacia aneura* tall sparse shrubland (to open shrubland) over *Eremophila forrestii* subsp. *forrestii* isolated shrubs over *Triodia schinzii* hummock grassland;

3. *Acacia aneura* low woodland over *Eremophila forrestii* subsp. *forrestii* sparse shrubland over *Aristida inaequiglumis*, *Digitaria ammophila* sparse tussock grassland over *Fimbristylis dichotoma* sparse herbland;

4. *Acacia aptaneura*, *Corymbia candida* subsp. *forest dipsodes*, *Acacia catenulata* subsp. *occidentalis* open forest over *Psychdrax latifolia* tall sparse shrubland *Eremophila* sparse shrubland;

5a. *Acacia aptaneura* (and/or *A. paraneura*) tall isolated shrubs over *Eremophila fraseri* subsp. *fraseri* sparse shrubland over *Eremophila youngii* subsp. *youngii* low isolated shrubs over *Aristida contorta* sparse grassland and *Fimbristylis dichotoma* sparse herbs;

5b. *Acacia aptaneura* tall isolated shrubs over *Eremophila fraseri* subsp. *fraseri* isolated shrubs over *Eremophila rigida* low sparse shrubs over *Aristida contorta* sparse grassland;

6. *Acacia aptaneura* or *Acacia subcontorta* sparse shrubland over *Fimbristylis dichotoma* isolated herbs;

7a. *Acacia pruinocarpa* isolated shrubs over *Triodia schinzii* hummock grassland (+ *Triodia epactia*).

7b. *Acacia aptaneura* and *Hakea lorea* subsp. *lorea* tall open shrubland over *Eremophila forrestii* subsp. *forrestii* sparse shrubland over *Triodia pungens* hummock grassland;

8. *A. synchronicia* (+ *Acacia aptaneura*/*A. aneura*) tall scattered shrubs over *Maireana triptera* and *Eremophila cuneifolia* low open shrubland over *Aristida contorta* sparse grassland;

9. *Acacia aptaneura* tall sparse shrubland over *Eremophila flaccida* subsp. *flaccida* low open shrubland over *Fimbristylis dichotoma* and *Aristida contorta* isolated herbs and grasses;

10. *Acacia pruinocarpa* (+*Acacia incurvaneura*) sparse shrubland over *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) hummock grassland;

11. *Acacia incurvaneura* and *Acacia ayersiana* low woodland over *Eremophila forrestii* subsp. *forrestii* sparse shrubland over *Thyridolepis xerophila* sparse tussock grassland (+*Triodia pungens*).

Clearing Description	Greenmount Resources' Karlawinda Gold Project proposes to clear up to 500 hectares of native vegetation within a boundary of approximately 2,975 hectares, for the purpose of Mineral Production. The project is located approximately 60 kilometres south-east of Newman, within the Shire of Meekatharra.
Vegetation Condition	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); to Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).
Comment	The vegetation condition was derived from a vegetation survey conducted by 360 environmental (2017). The proposed clearing is for the purpose to develop a gold mine project inclusive of open cut mining and mineral processing.

3. Assessment of application against Clearing Principles

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

Comments	<p>Proposal is not likely to be at variance to this Principle</p> <p>The application area occurs within the Augusta subregion of the Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Augusta subregion is characterised by rugged low Proterozoic sedimentary and granite ranges divided by broad flat valleys (CALM, 2002).</p> <p>A flora assessment has been undertaken encompassing the majority of the application area by 360 Environmental (2016). No threatened flora species were recorded during the 2010 and 2016 field surveys (360 Environmental 2017).</p> <p>Two 'Priority 3' species as listed by DBCA were recorded during the surveys, <i>Eremophila rigida</i> and <i>Rhagodia</i> sp. <i>Hamersley</i> (M Trudgen 17794). A total of five individuals of <i>E. rigida</i> and 16 individuals of <i>Rhagodia</i> sp were recorded in the application area.</p> <p><i>Eremophila rigida</i> is an erect shrub to 1.2 metres high with extremely thick, rigid, incurved leaves. Suitable habitat includes red sand alluvium on hardpan plains and stony clay depressions with <i>Acacia</i> and <i>Eremophila</i> species. <i>E. rigida</i> was frequently observed occurring in vegetation type 5b (360 Environmental, 2017).</p> <p><i>Rhagodia</i> sp. <i>Hamersley</i> (M Trudgen 17794) is a tall straggly shrub to 2 m. Habitat based on records at the WA Herbarium include plains and floodplains with sand, loam or clay soils (WA Herbarium, 1998 -). R. sp. <i>Hamersley</i> (M Trudgen 17794) was recorded from multiple vegetation types (360 Environmental, 2017; WA Herbarium, 1998 -).</p> <p>The associated habitats are widespread within the local region (GIS Database, 2017). The primary population of <i>E. rigida</i> recorded in the application area however is located outside the indicative infrastructure footprint and may be avoided (360 Environmental, 2017).</p> <p>None of the vegetation types recorded within the development envelope are considered to represent a State or Federal Threatened Ecological Community (TEC) or Priority Ecological Community (PEC) (360 Environmental, 2017; GIS Database, 2017).</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
Methodology	CALM (2002) 360 Environmental (2017) Flora base (2017) GIS Database: <ul style="list-style-type: none">- IBRA Australia- Pre-European Vegetation- Threatened and Priority Flora- Threatened Ecological Sites Buffered- 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 may be at variance to this Principle

The following five fauna habitats have been recorded within the application area during a Level 1 baseline survey of fauna conducted in 2010 (360 Environmental, 2017):

Habitat A: Shrubs (e.g. *Eremophila* sp.) over spinifex .

Habitat B: Shrubs (e.g. *Eremophila* sp.) over gravelly ground of quartz with minimal spinifex

Habitat C: Acacia (Mulga) shrubland with minimal spinifex

Habitat D: Rocky outcrop with occasional *Eremophila* sp.

Habitat E: Patchy shrubs over patchy spinifex over gravelly ground.

Fauna surveys conducted in 2010 by 360 Environmental assessed the following fauna species as possible or likely to occur in the Project area (360 Environmental, 2017):

- Bilby (*Macrotis lagotis*) – Rare (DPAW, 2018);
- Pilbara Leaf-nosed Bat (*Rhinochiropterus aurantia*) – Priority 4 (DPAW, 2018);
- Grey Falcon (*Falco hypoleucos*) – Rare (DPAW, 2018);
- Peregrine Falcon (*Falco peregrinus*) – Other Specially Protected Fauna (DPAW, 2018);
- Ghost Bat (*Macroderma gigas*) – Rare (DPAW, 2018);
- Mulgara (Brush-tailed Mulgara (*Dasymercus blythi*) – Priority 4 (DPAW, 2018).

35 bird species, four reptiles and two native mammals were recorded whilst no frogs were recorded during the 2010 survey (360 Environmental, 2017). Of the species recorded, six bird species are listed under State and/or Australian Government environmental legislation including:

- Pallid Cuckoo (*Cacomantis pallidus*);
- Whistling Kite (*Haliastur sphenurus*);
- Grey Falcon (*Falco hypoleucos*) – Rare (DPAW, 2018);
- Australasian Pipit (*Anthus novaeseelandiae*);
- Black-faced Cuckoo-shrike (*Coracina novae-hollandiae*).
- Rainbow Bee-eater (*Merops ornatus*) – Protected under international agreement (DPAW ,2018).

The Grey Falcon frequents timbered lowland plains, particularly, Acacia shrublands that are crossed by tree-lined watercourses. The Grey falcon is also known to hunt in treeless areas and frequents tussock grassland and open woodland, especially in winter (360 Environmental 2017). Nesting has been recorded in River Red Gum (*Eucalyptus camaldulensis*) and Coolibah (*E. coolabah*) trees up to 15 metres above the ground (360 Environmental 2017). The recording of a Grey Falcon during the survey indicates that the project area does at least have suitable foraging habitat. However, the Project area lacks large trees suitable for nesting, Therefore the species is likely to be an occasional visitor to the project area and the planned disturbance would most likely not be significant in the maintenance of the Grey falcon habitat.

Due to the widespread distribution of the Pallid Cuckoo, Whistling Kite, Australasian Pipit, Black-faced Cuckoo-shrike and Rainbow Bee-eater and the extent of suitable habitat outside of the Project area, the impacts on these species from clearing associated with the project is expected to be negligible (360 Environmental, 2017).

A Targeted Bilby Survey in the application area was conducted by 360 Environmental in October 2016 resulting in no Bilbies, Mulgara or their signs were recorded during the targeted Bilby and Mulgara survey and subsequently possibility of the Bilby or Mulgara occurring in the Project area has been reduced (360 Environmental, 2017). The Project area contains limited suitable foraging habitat for the Ghost Bat and Pilbara Leaf-nosed Bat, and there are no nearby rocky hills where potential caves might occur (360 Environmental, 2017). The Ghost Bat and Pilbara Leaf-nosed Bat are not considered to be significantly impacted by the Project as the Project does not propose to disturb historic adits and the low-relief landscape is widespread.

None of the identified fauna habitats identified in the application area are classified as Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) of fauna habitats of conservation significance. Fauna habitat within the Project area is not considered to contain high levels of faunal diversity (360 Environmental, 2017).

No identified vegetation habitats have been identified as a significant habitat for fauna indigenous to Western Australia with targeted fauna surveys conducted in 2010 and 2016 respectively. The survey reports have not distinguished any fauna habits that are unique or restricted within the project area or habitats that are not well represented within the surrounding areas.

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

DPAW, 2018

GIS Database:

- Imagery
- Pre-European Vegetation
- Threatened Fauna

(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). Flora surveys of the application area did not record any species of Threatened flora (360 Environmental, 2017).

The vegetation associations within the application area are common and widespread within the region (360 Environmental, 2017; GIS Database) and 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 360 Environmental (2017)
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 flora and vegetation survey of the application area did not identify any TECs (360 Environmental, 2017).

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

Methodology 360 Environmental (2017)
GIS Database:
- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities 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 area falls within the Gascoyne Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Gascoyne Bioregion (Government of Western Australia, 2016). The application area is broadly mapped as Beard vegetation associations 29: Sparse low woodland; mulga, discontinuous in scattered groups; and 216: Low woodland; mulga (with spinifex) on rises (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, 2016).

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 – Gascoyne	18,075,219	18,046,441	~99	Least Concern	10.27
Beard vegetation associations – WA					

29	7,903,991	7,900,200	~99	Least Concern	6.29
216	280,759	279,237	~99	Least Concern	0.00
Beard vegetation associations – Bioregion					
29	2,188,768	2,185,968	~99	Least Concern	4.38
216	254,089	252,864	~99	Least Concern	0.00

* Government of Western Australia (2016)

** 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 (2016)

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 at variance to this Principle

The application area occurs within the Savory Creek Wild River area (GIS Database). Savory Creek currently has no/or minor impact from clearing, road or track construction, or introduced plants or plant diseases (DWER, 2017).

Wild Rivers are defined as those rivers which are undisturbed by the impacts of modern technological society (Water and Rivers Commission, 1999 in DoW, 2009). They remain undammed, and exist in catchments where biological and hydrological processes continue without significant disturbance. They occur in a variety of landscapes, and may be permanent, seasonal or dry watercourses that flow or only flow occasionally, (Water and Rivers Commission, 1999 in DoW, 2009). This area has been given a Priority 1 status (GIS Database). Priority 1 rivers are those with no or minor impact from clearing, altering the landscape, loss of vegetation due to grazing, road or track construction, introduced exotic animals, plants or plant diseases, increased fire frequency, unnatural erosion and sedimentation or alterations to waterway and riparian ecosystem (DoW, 2009). Wild Rivers are recognised by the DWER and the Australian Heritage Commission as important representatives of large unchanged systems. In order to protect the Savory Creek Wild River area from further degradation, the following measures are recommended by advice received from DWER in reference to the Karlawinda Gold Project (DWER, 2017):

- all mineral exploration and mining activities in wild river catchments should adhere to established codes of practice. Best management practices should be followed (DWER, 2017);
- Disturbance to riparian vegetation should be avoided to maintain foreshore stability and protect important riparian habitats (DWER, 2017);
- No activity shall be undertaken that will unduly disrupt natural drainage or adversely affect the quality or quantity of water in any watercourse, dam, waterhole, spring or subterranean source of supply.
- There should be no significant alteration of the natural hydrological regime and geomorphology of waterways and the catchment (DWER, 2017);.
- No activity shall be undertaken which results in the loss of riverbank or wetland fringing vegetation, in particular construction of vehicular access tracks. Where possible, existing tracks are to be used (DWER, 2017).

The application area occurs in the margins of the Savory Creek Wild Rivers area, which delineates the boundary of the Wild River area. The clearing of 500 hectares of vegetation in this area is not likely to significantly alter the surface water regimes in the Wild Rivers area (2,061,987 hectares) (GIS Database). Mining activities are managed under the *Mining Act, 1978*.

To minimise potential impacts to riparian vegetation from the proposed clearing, it is recommended that a watercourse management condition be placed on the permit.

Given the application area is within a Wild Rivers area, the proposed clearing is at variance to this Principle.

Methodology DoW (2009)

GIS Database:

- Hydrography, Lakes
- Hydrography, linear
- Wild Rivers

(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 Cadgie, Jamindie and Washplain land systems (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The Cadgie land system is described as hardpan plains with thin sand cover supporting mulga shrublands with soft and hard spinifex. This land system is moderately resistant to degradation and erosion.(Van Vreeswyk et al, 2004).

The Jamindie land system consists of stony hardpan and rises supporting groved mulga shrublands, occasionally with spinifex understorey. This land system encompasses drought durability and carrying capacity is very low, inherently resistant to erosion (Van Vreeswyk et al, 2004).

The Washplain land system consists of hardpan plains supporting grove mulga shrublands and intercepts a very small portion of the application area. The system supports shrubs and grasses which are preferred by grazing animals and is prone to vegetation decline if stocking is uncontrolled. Some parts of alluvial plains, groves and tracts receiving more concentrated flow are moderately susceptible to erosion (Van Vreeswyk et al, 2004).

The proposed clearing of up to 500 hectares of native vegetation within a boundary of approximately 2,977 hectares, for the purpose of mineral production 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 Van Vreeswyk et al. (2004)

GIS Database:

- Landsystem Rangelands
- Soils, Statewide

(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 Collier Range National Park which is located approximately 87 kilometres south 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). The nearest PDWSA is the Newman Water Reserve located approximately 55 km north west of the Project area.

Given the distance separating the application area and the nearest water supply, clearing for the Project is not

likely to impact on the ground water quality of the Newman Water Reserve.

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 and it appears only minor ephemeral watercourses are located within the disturbance envelope (GIS Database, 2017) only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water quality.

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 semi-arid, with a low average rainfall of approximately 265 millimetres per year and an average evaporation rate of 3,200-3,600mm per year (BOM, 2017). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (GIS Database).

There are no permanent water courses or waterbodies within the application area (GIS Database). 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 BOM (2017)
Van Vreeswyk et al. (2004)

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 20 November 2017 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 is one native title claim over the area under application (DPLH, 2017). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2017). 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 (2017)

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
DPaW (2018) NatureMap. Department of Parks and Wildlife (now Department of Biodiversity Conservation and Attractions). <http://naturemap.dpaw.wa.gov.au> (Accessed 3 January 2018)

- DPLH (2017) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 19 December 2017).
- 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.
- DoW (2009) Water Notes No. 37. Wild Rivers in Western Australia, about wild rivers. Department of Water, Government of Western Australia.
- DWER (2017) Advice for land clearing application. Advice to Assessing Officer, Department of Mines, Industry Regulation and Safety, received 22/12/17. Department of Water and Environmental Regulation, Western Australia.
- Government of Western Australia (2016) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2016. WA Department of Parks and Wildlife, 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.
- 360 Environmental (2017) Karlawinda Gold Project Mining Lease, Application for a Native Vegetation Clearing Permit – Purpose Permit Prepared for: Capricorn Metals Pty Ltd. West Perth Western Australia
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.
- Western Australian Herbarium (1998 -). FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 19 December 2017).

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DBCA	Department of Biodiversity Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T	<p>Threatened species: Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, 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).</p> <p>Threatened fauna is that subset of ‘Specially Protected Fauna’ declared to be ‘likely to become extinct’ pursuant to section 14(4) of the <i>Wildlife Conservation Act 1950</i>.</p>
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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 1950*.

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.