



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8715/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Auvex Resources Pty Ltd

1.3. Property details

Property: Mining Lease 46/238

Local Government Area: Shire of East Pilbara

Colloquial name: Ant Hill Project

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|--|
| 208 | | Mechanical Removal | Mineral Production and associated activities |

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 19 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: 192: Hummock grasslands, shrub steppe; kanji over *Triodia pulchella* and *T. brizoides* on basalt (GIS Database).

Three botanical surveys have been undertaken at the Ant Hill project site since 2009. The most recent survey was a Level 2 flora and vegetation survey conducted by Animal Plant Mineral between 28 July and 5 August 2013 (PMI, 2019). The field survey covered Mining Lease 46/238 with a focus on the application area. The following vegetation communities were recorded within the application area, grouped according to geographical features (APM, 2013; PMI, 2019):

Minor Ephemeral Drainage Areas

mdop1: *Acacia ancistrocarpa* mid-dense shrubs over *Cenchrus ciliaris* dense tussock grasses with sparse *Triodia wiseana* hummock grasses.

mdop2: Emergent trees of *Acacia pruinocarpa*, and mid-dense shrubs of *Acacia ancistrocarpa*, and *Acacia fecunda*, over mid-dense hummock grasses of *Triodia lanigera*.

mdop3: Mid-dense *Acacia aptaneura* (*Acacia ancistrocarpa*) to dense *Aristida latifolia* trees, over sparse to open *Cenchrus ciliaris* tussock grasses.

mdrh1: Mid-dense *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia aptaneura* trees over sparse *Acacia ancistrocarpa* shrubs, over mid-dense *Triodia wiseana* and *Triodia longiceps* hummock grasses with occasional mid-dense *Themeda triandra* tussock grasses.

Mid-Sized Ephemeral Creeklines

msc1: Very sparse *Eucalyptus victrix* (*Corymbia candida*) trees, over sparse *Acacia aptaneura*, *Acacia pyrifolia* var. *pyrifolia* to very sparse *Cenchrus ciliaris* shrubs over mid-dense tussock grasses and mid-dense *Triodia wiseana* hummock grasses.

Breakaways, Plateaus, and Hills

bl1: Sparse open *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia aptaneura* and *Acacia pruinocarpa* trees, over very sparse *Ptilotus obovatus* heath, over sparse *Triodia wiseana* (*Triodia longiceps*) hummock grass with mid-dense *Eriachne obtusa* and *Eriachne mucronata* tussock grasses.

bm1: Very sparse to mid-dense *Eucalyptus leucophloia* subsp. *leucophloia*, *Acacia aptaneura*, and *Acacia pruinocarpa* trees, over sparse *Ptilotus obovatus* heath, over mid-dense *Eriachne obtusa* or *Eriachne mucronata* tussock grass, with occasional *Triodia longiceps* open hummock grass.

psh1: Emergent *Eucalyptus leucophloia* subsp. *leucophloia* trees, over mid-dense *Eriachne lanata* tussock grasses, with sparse *Triodia lanigera* hummock grasses.

psh2: Sparse *Eucalyptus leucophloia* subsp. *leucophloia* / *Acacia aptaneura* trees, over sparse *Acacia bromilowiana* shrubs, over mid-dense *Triodia wiseana* hummock grasses.

psh3: Emergent *Eucalyptus leucophloia* subsp. *leucophloia* and *Acacia pruinocarpa* trees, over emergent *Hakea chordophylla* and *Acacia inequilatera* shrubs, over dense *Triodia wiseana* hummock grasses.

psh4: Sparse *Acacia aptaneura* trees, over very sparse *Grevillia berryana* shrubs, over mid-dense *Eriachne obtusa* tussock grasses, and isolated clumps of *Triodia longiceps* hummock grasses.

Flat or Undulating Plains

op1: Occasional emergent *Eucalyptus leucophloia* subsp. *leucophloia* trees, over occasional emergent *Senna glutinosa* subsp. *pruinosa* shrubs over mid-dense *Triodia longiceps* (*Triodia wiseana*) hummock grasses.

op2: Very sparse *Eucalyptus leucophloia* subsp. *leucophloia* trees, over sparse *Acacia retivenea* shrubs, over dense *Triodia wiseana* hummock grasses.

op3: Sparse *Sida echinocarpa* shrubs, over very sparse *Triodia longiceps* / *Triodia wiseana* hummock grasses with sparse *Aristida contorta* tussock grasses.

op4: Mid-dense *Acacia ancistrocarpa* shrubs, over very sparse *Sida echinocarpa*, *Corchorus lasiocarpus* subsp. *lasiocarpus* and *Indigofera monofila* heath, over *Triodia wiseana*, mid-dense hummock grasses with sparse *Aristida contorta* tussock grasses.

op5: Emergent *Acacia inequilatera* shrubs over emergent *Senna glutinosa* subsp. *X luerssenii* shrubs, over mid-dense *Triodia wiseana* hummock grasses.

op6: Emergent *Acacia aptaneura* and *Acacia bromilowiana* trees over mid-dense shrubs, over sparse *Triodia longiceps* hummock grasses.

op7: Very sparse *Acacia victoriae* / *Acacia tetragonophylla* shrubs, over dense *Eriachne obtusa* and *Aristida latifolia* tussock grasses.

op8: Mid-dense *Acacia aptaneura* trees over very sparse *Acacia sibirica* shrubs, over dense *Triodia wiseana* hummock grasses.

op9: Very sparse *Acacia ancistrocarpa* shrubs, over emergent *Senna glutinosa* subsp. *pruinosa* shrubs, over mid-dense *Triodia wiseana* hummock grasses.

| | |
|-----------------------------|---|
| Clearing Description | Ant Hill Project. Auvex Resources Pty Ltd proposes to clear up to 208 hectares of native vegetation within a boundary of approximately 365 hectares, for the purpose of mineral production and associated activities. The project is located approximately 50 kilometres southeast of Nullagine, within the Shire of East Pilbara. |
| Vegetation Condition | Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (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 Animal Plant Mineral (APM, 2013). The majority of the survey area was considered to be in Very Good condition, while a very small section of the survey area was classified as Degraded due to disturbance from historical mining activities (PMI, 2019). The proposed clearing is for the development of a manganese mining operation, which will include an open pit, waste rock landforms, an accommodation camp, and other mining-related infrastructure (PMI, 2019). A previous clearing permit (CPS 5991/1) was granted for this project on 27 March 2014 and was valid from 19 April 2014 to 19 April 2019. CPS 5991/1 authorised the clearing of up to 208 hectares of native vegetation within the same permit boundary as the current clearing permit application. However the proposed mining operation did not proceed at the time, and only 0.345 hectares of clearing was conducted under clearing permit CPS 5991/1 (PMI, 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 Chichester subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Pilbara Bioregion (GIS Database). The Chichester subregion is characterised by undulating granite and basalt plains typically supporting a shrub steppe and hummock grasslands of <i>Acacia inaequilatera</i> over <i>Triodia wiseana</i> ; and significant areas of basaltic ranges typically supporting tree steppes of <i>Eucalyptus leucophloia</i> (CALM, 2002). |
|-----------------|--|

A flora and vegetation survey conducted over the application area and surrounding areas recorded a total of 250 native flora taxa from 108 genera and 36 families (APM, 2013). This was considered to be representative of the level of flora diversity expected for the region (APM, 2013). The vegetation condition within the survey area ranged from Excellent to Good, with the majority of the survey area (57 percent) in Very Good condition (APM, 2013).

No species of Threatened flora were recorded within the survey area and none were expected to occur. One Priority flora species, *Acacia bromilowiana* (P4) was recorded within the survey area (APM, 2013). This species is known from several locations across the Pilbara Bioregion, within the Chichester and Hamersley Subregions (Western Australian Herbarium, 2019). APM (2013) estimated that approximately 100 *Acacia bromilowiana* plants would be affected by the proposed clearing, which is unlikely to affect the conservation status of this species.

Six weed species (Kapok Bush, *Aerva javanica*; Bipinnate Beggartick, *Bidens bipinnata*; Buffel Grass, *Cenchrus ciliaris*; Birdwood Grass, *Cenchrus setiger*; Speedy Weed, *Flaveria trinervia*; and Spiked Malvastrum, *Malvastrum americanum*) were recorded within the survey area (APM, 2013). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area, and care should be taken to avoid the further introduction or spread of weeds. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No Threatened Ecological Communities occur within or in close proximity to the application areas (GIS Database). A Priority Ecological Community (PEC), the Mosquito Land System (P3) occurs approximately 10 kilometres north-northwest of the application area at its nearest point (GIS Database). The proposed clearing is unlikely to impact any TECs or PECs.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (PMI, 2019; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

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

Methodology APM (2013)
CALM (2002)
PMI (2019)
Western Australian Herbarium (2019)

GIS Database:
- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers
- Threatened and Priority Flora
- 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**

A Level 1 fauna survey conducted over the application area and surrounding areas, identified the following four fauna habitats within the application area (APM, 2013; PMI, 2019):

Drainage areas;
Mesa breakaway slopes;
Plateaus, slopes and hills; and
Low rolling hills.

A desktop assessment identified the following fauna species of conservation significance as possible or likely to occur within the application area, based on known distributions and habitat preferences (APM, 2013; PMI, 2019):

- Grey Falcon (*Falco hypoleucos*) - Vulnerable;
- Peregrine Falcon (*Falco peregrinus*) - Other Specially Protected Species;
- Fork-tailed Swift (*Apus pacificus*) - Migratory;
- Pilbara Leaf-nosed Bat (*Rhinonictis aurantia*) - Vulnerable;
- Western Pebble-mound Mouse (*Pseudomys chapmani*) - Priority 4;
- Pin-striped Finesnout Skink (*Ctenotus nigrilineatus*) - Priority 1; and
- Pilbara Olive Python (*Liasis olivaceus subsp. barroni*) - Vulnerable.

Of the above species, the Pilbara Olive Python was considered the most likely to occur within the application area due to the presence of suitable habitat. Although no individuals were recorded, some sloughed skins were found within the application area (APM, 2013).

Additional fauna surveys were conducted over the application area, specifically targeting Northern Quoll, Bilby,

Mulgara, Pilbara Orange Leaf-nosed Bat, Ghost Bat and Pilbara Olive Python (APM, 2013). The targeted surveys did not record any of the targeted species, or their signs (such as scats, tracks or burrows). No restricted fauna habitat features such as northern quoll dens, or bat roosting caves were found within the application area (APM, 2013). No suitable habitat for Bilby or Mulgara was found within the application area (APM, 2013).

No conservation significant fauna species were recorded during any of the fauna surveys (APM, 2013; PMI, 2019). While conservation significant fauna may occur within the application area, the majority of the species are highly mobile and therefore not specifically dependant on the habitats within the application area. The Pilbara Olive Python is likely to occur within the application area, however APM (2013) report that suitable habitat adjoins the application area, providing opportunities for fauna movement.

All of the fauna habitat types recorded within the application area are well represented in the surrounding region, which remains largely uncleared (APM, 2013; GIS Database). The area proposed to be cleared is unlikely to represent a significant habitat for fauna in a regional context.

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

Methodology APM (2013)
PMI (2019)

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, and none are expected to occur (APM, 2013; PMI, 2019).

The vegetation associations within the application area are common and widespread within the region (APM, 2013; 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 APM (2013)
PMI (2019)

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 (APM, 2013; PMI, 2019).

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

Methodology APM (2013)
PMI (2019)

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 Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation association 192: Hummock grasslands, shrub steppe; kanji over *Triodia pulchella* and *T. brizoides* on basalt (GIS Database). Approximately 100% of the pre-European extent of this vegetation association remains uncleared at both the state and 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 – Pilbara | 17,808,657 | 17,731,764 | ~99 | Least Concern | 10.12 |
| Beard vegetation associations – WA | | | | | |
| 192 | 280,691 | 280,691 | ~100 | Least Concern | 9.10 |
| Beard vegetation associations – Pilbara Bioregion | | | | | |
| 192 | 280,691 | 280,691 | ~100 | Least Concern | 9.10 |

* 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 at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Several minor non-perennial watercourses pass through the application area (GIS Database). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (PMI, 2019).

A total of 20 vegetation communities were mapped within the application area (APM, 2013; PMI, 2019). Five of these vegetation communities (mdop1, mdop2, mdop3, mdrh1, and msc1) were associated with drainage lines and watercourses. Watercourses will be avoided where possible, during the development of infrastructure (PMI, 2019).

Based on the above, the proposed clearing is at variance to this Principle. However, seasonal drainage lines are common in the region and impacts to vegetation growing in association with watercourses is expected to be minimal at a regional scale.

Methodology APM (2013)
PMI (2019)

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 Billygoat, McKay and Rocklea 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 Billygoat land system is described as dissected plains and slopes supporting hard spinifex grasslands. This land system is not generally susceptible to erosion (Van Vreeswyk et al., 2004).

The McKay land system consists of hills, ridges, plateaux remnants and breakaways, supporting predominantly hard spinifex grasslands. This land system is not generally susceptible to erosion (Van Vreeswyk et al., 2004).

The Rocklea land system is described as basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands. This land system has a very low erosion risk (Van Vreeswyk et al., 2004).

Although the land systems within the application area are generally not susceptible to land degradation, the risk of wind and water erosion may be increased if large areas are cleared and left bare for long periods. The implementation of a staged clearing condition may minimise the risk of 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

(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 Roy Hill Pastoral Lease which is located approximately 98 kilometres southwest of the application area, at its nearest point (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). Several minor seasonal drainage lines pass through the application area. Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (PMI, 2019).

The application area is located on rocky hills, relatively high in the landscape and surface water runoff following rainfall is likely to be rapid (PMI, 2019).

The proposed clearing is unlikely to result in significant changes to surface water flows, or 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 PMI (2019)

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-desert-tropical with an average rainfall of approximately 300 millimetres per year and high evaporation rates (CALM, 2002; PMI, 2019). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall.

There are no permanent water courses or waterbodies within the application area (GIS Database). Several minor seasonal drainage lines pass through the application area. 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 CALM (2002)
PMI (2019)

GIS Database:

- Hydrographic, lakes
- 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 is one native title claim (WC1999/016) over the area under application (DPLH, 2019). This claim has been determined by the Federal Court 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, 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

- APM (2013) Biological Assessment Ant Hill Project East Pilbara, Western Australia. Report Prepared for Mesa Minerals Limited, by Animal Plant Mineral Pty Ltd, August 2013.
- 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 16 December 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.
- PMI (2019) Ant Hill Project Tenement M 46/238. Native Vegetation Clearing Permit Application Supporting Document. Report prepared by Process Minerals International, for Auvex Resources Pty Ltd, October 2019.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92. Department of Agriculture, South Perth, Western Australia.
- Western Australian Herbarium (2019) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 17 December 2019).

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) |
| DoEE | Department of the Environment and Energy, Australian Government |

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|-----------------|---|
| 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 DoEE) |
| 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 DoEE) |
| 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:

{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.