Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8265/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Artemis Resources Pty Ltd**

1.3. Property details

Property: Mining Lease 47/288
Mining Lease 47/177
Local Government Area: City of Karratha
Colloquial name: Silica Hills Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 17 January 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 associations:
152: Hummock grasslands, grass steppe; soft & hard spinifex; and
589: Mosaic: Short bunch grassland – savanna / grass plain (Pilbara) / hummock grasslands, grass steppe; soft spinifex (GIS Database).

A flora and vegetation survey was conducted over the application area by Ecoscape during March, 2018. The following vegetation associations were recorded within the application area (Ecoscape, 2018):

AmaTw: *Acacia maitlandii, A. ancistrocarpa* and *Acacia pyrifolia* var. *pyrifolia* mid open shrubland over *Triodia wiseana* and *Triodia epactia* mid open hummock grassland;

ApyCc2: *Acacia pyrifolia* var. *pyrifolia, Acacia acradenia* and *Acacia trachycarpa* tall shrubland over **Cenchrus ciliaris, Triodia epactia* and *Triodia angusta* mid tussock/hummock grassland;

ApyTw: *Triodia wiseana* and *Triodia epactia* low hummock grassland with *Acacia pyrifolia* var. *pyrifolia* isolated mid shrubs;

AsyTw: *Acacia synchronicia, Acacia pyrifolia* var. *pyrifolia* and *Acacia bivenosa* mid sparse shrubland over *Triodia wiseana* low hummock grassland;

ChAbiTw2: *Corymbia hamersleyana* low open woodland over *Acacia bivenosa, Acacia acradenia* and *Acacia synchronicia* mid sparse shrubland over *Triodia wiseana* low hummock grassland;

ChApyCc: *Corymbia hamersleyana* low woodland over *Acacia pyrifolia* var. *pyrifolia*, *Santalum lanceolatum* and *Acacia bivenosa* mid open shrubland over **Cenchrus ciliaris, Triodia angusta* and *Triodia epactia* mid tussock/hummock grassland.

**denotes weed species*

Clearing Description

Silica Hills Project.
Artemis Resources Pty Ltd proposes to clear up to 37 hectares of native vegetation within a boundary of approximately 37 hectares, for the purpose of mineral production and associated activities. The project is located approximately 30 kilometres south-east of Karratha, within the City of Karratha.

Vegetation Condition

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

to

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

Comment

The vegetation condition was derived from a vegetation survey conducted by Ecoscape (2018).

The proposed clearing is for a small scale mining operation, involving trail alluvial doze and detect mining, establishment of a small open pit as well as site infrastructure.

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 Roebourne subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) Bioregion (GIS Database). This subregion is characterised by quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera* (CALM, 2002).

The condition of the vegetation within the application area was classified as 'Excellent' to 'Completely Degraded', with the majority being in 'Excellent' and 'Very Good' condition (Ecoscape, 2018). 'Poor', 'Degraded' and 'Completely Degraded' condition vegetation were associated with roads, former mining and infrastructure, as well as frequent bushfires in the past due to prospecting activity (Ecoscape, 2018).

No Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) were recorded within the application area (Artemis Resources, 2018; Ecoscape, 2018; GIS Database). Six vegetation associations were recorded from the application area (Artemis Resources, 2018). None of the vegetation associations within the application area is considered to have significance according to the Environmental Protection Authority's *Flora and Vegetation Technical Guidance* (2016) (Ecoscape, 2018).

A detailed flora and vegetation survey was undertaken over the Project's tenements and its surroundings by Ecoscape in March 2018, encompassing approximately 447 hectares which included the application area. A total of 161 vascular flora species were recorded from the survey area (Ecoscape, 2018). No Threatened flora were recorded within the application area (Artemis Resources, 2018; Ecoscape, 2018; GIS Database).

Two priority flora species were recorded during the survey: *Trianthema* sp. Python Pool (Priority 2) and *Eragrostis crateriformis* (Priority 3). However, none were located within the application area. The priority flora species *Trianthema* sp. Python Pool was recorded from five locations outside of the application area, with an estimate of 350 plants recorded (Ecoscape, 2018). The priority flora species *Eragrostis crateriformis* was recorded from one location outside of the application area (Ecoscape, 2018). Both species have relatively broad distributions, and due to the absence of these species within the application area, the proposed clearing of 37 hectares is unlikely to significantly impact these species.

Three fauna habitats were identified within the application area during a fauna survey conducted in March, 2018: 'Low rocky hills', 'Minor creek line' and 'Stony flats' (Ecoscape, 2018). The application area also includes areas that have been cleared or are degraded and do not provide suitable conditions for fauna species (Ecoscape, 2018). The application area supports a moderately diverse group of fauna, which potentially includes conservation significant fauna, however the habitats are not restricted to the application area and occur within the broader region. The proposed clearing is unlikely to have a significant impact on faunal diversity at a regional scale.

Five weed species were identified within the survey area (Ecoscape, 2018). 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 as a result of the proposed clearing may be minimised by the implementation of a weed 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 Artemis Resources (2018)
CALM (2002)
Ecoscape (2018)

GIS Database:
- IBRA Australia
- Threatened and Priority Flora
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

(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 terrestrial vertebrate and Short Range Endemic (SRE) invertebrate fauna survey was undertaken by Ecoscape during March, 2018. The following three fauna habitats have been recorded within the application area (Artemis Resources, 2018):

- Minor creek line (3.8% of the application area);
- Stony flats (10.3% of the application area); and
- Low rocky hills (77% hectares of the application area).

The application area also includes approximately 3.3 hectares of cleared areas (Artemis Resources, 2018), which do not provide suitable conditions for fauna species (Ecoscape, 2018).

Eight terrestrial vertebrate fauna species were recorded within the wider survey area of Silica Hills, encompassing approximately 447 hectares (Ecoscape, 2018). The Western Pebble-mound Mouse, listed as Priority 4 by Department of Biodiversity, Conservation and Attractions (DBCA) was recorded within the survey area. This species is usually represented on conservation lands (Ecoscape, 2018), any localised loss of habitat within the proposed clearing area is unlikely to result in significant impacts.

Suitable foraging and dispersing habitat for Northern Quolls, listed as Endangered under the Commonwealth EPBC Act and as Schedule 2 under the Western Australian BC Act, was recorded from Silica Hills survey area although no evidence of use was recorded (Ecoscape, 2018). Suitable habitat across the wider survey area of Silica Hills was major drainage lines, which is not found within the application area. Therefore, the proposed clearing area is unlikely to result in significant impacts to the Northern Quoll habitat.

Two individuals of a snail taxon closely related to *Rhagada angulata* were recorded from the Silica Hills survey area (Ecoscape, 2018). The taxon *Rhagada angulata* has a poorly understood distribution, and the specimens recorded from the survey area may represent this taxon. Although it is likely that this species is widespread, it has been considered as a potential SRE based on the Precautionary Principle (Ecoscape, 2018). The survey indicated that the individuals were recorded outside of the application area and tenement boundaries. Additionally, the habitat the individuals were found in only make up a small portion of the proposed clearing area. Therefore, the proposed clearing is unlikely to result in significant impacts to habitat of this taxon.

One scorpion individual (*Lychas* sp. B13) was recorded from the application area (Ecoscape, 2018). The *Lychas* species are generally widespread, however, a few species are considered potential SREs. Following the SRE invertebrate fauna survey in March, 2018, a follow up scorpion survey was undertaken in September, 2018 to find additional *Lychas* sp. B13 specimens outside of the application area. No additional specimens were found, however, the survey demonstrated that the *Lychas* genus is common in the Silica Hills area. There are many manuscripts and undescribed morpho-species of the *Lychas* genus in the Pilbara region which are generally considered not to represent SRE taxa due to their agile nature and the fact that they are not found in restricted habitat niches (Artemis Resources, 2018). The follow up survey recorded 42 scorpions over three nights, including three known morpho-species or species groups that are known throughout the Pilbara and three new species (Artemis Resources, 2018). The habitat and vegetation that the individual *Lychas* sp. B13 was recorded from is widely represented in the region, therefore the morpho-species is not considered to be at risk. Impact to local fauna species may be reduced by a staged clearing condition.

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

Methodology Artemis Resources (2018)
Ecoscape (2018)

(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 (Ecoscape, 2018).

The vegetation associations within the application area are common and widespread within the region (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 Ecoscape (2018)

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 (Ecoscape, 2018).

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

Methodology Ecoscape (2018)

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 Pilbara IBRA Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation associations 152: Hummock grasslands, grass steppe; soft & hard spinifex; and 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex (GIS Database). Approximately 99% of the pre-European extent of each of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2018).

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	17,733,583	~99	Least Concern	10.12
Beard vegetation associations – WA					
152	306,407	306,306	~99	Least Concern	4.23
589	807,698	802,713	~99	Least Concern	1.90
Beard vegetation associations – Pilbara Bioregion					
152	177,945	177,845	~99	Least Concern	7.29
589	728,768	724,695	~99	Least Concern	2.10

* Government of Western Australia (2018)
** 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 (2018)

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). The application area includes a proposed disturbance of 1.4 hectares to minor creek line habitat, which comprises small drainage lines and creek lines dominated by moderate to dense shrubs (Artemis Resources, 2018). The small proportion of the proposed disturbance is unlikely to result in significant impacts to these shrubs.

Based on the above, the proposed clearing is at variance to this Principle**.** Potential impacts to vegetation growing in association with the watercourse may be minimised by the implementation of a watercourse management condition.

Methodology

Artemis Resources (2018)

GIS Database:
- 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 Ruth land system (GIS Database). This land system 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 Ruth land system is described as hills and ridges of volcanic and other rocks supporting shrubby hard spinifex and occasionally soft spinifex grasslands. This land system is not generally susceptible to erosion (Van Vreeswyk et al., 2004).

The proposed clearing of up to 37 hectares of native vegetation within a boundary of approximately 37 hectares, for the purpose of mineral production and associated activities is unlikely to cause appreciable land degradation.

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

Methodology

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 Millstream Chichester National which is located approximately 26 kilometres south-east of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

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

Methodology

GIS Database:
- DPaW Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments

Proposal is not likely to be at variance to this Principle

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS

Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall.

Additionally, the nature of doze and detect mining means the cleared areas will have their landforms immediately reinstated (Artemis Resources, 2018). The proposed clearing is unlikely to result in significant changes to surface water flows.

Majority of the application area has a groundwater salinity that is fresh to brackish (1,000 to 3,000 milligrams/Litre Total Dissolved solids) (GIS Database). The proposed clearing of 37 hectares is unlikely to cause deterioration in the quality of underground water.

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

Methodology Artemis Resources (2018)

GIS Database:
- Groundwater Salinity, Statewide
- 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 296.7 millimetres per year (BoM, 2018). The application area is within the dry inland area of the Pilbara region where up to 12 months of dry weather is often experienced (Ecoscape, 2018). Therefore drainage lines in the area would be 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). 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 (2018)
Ecoscape (2018)

GIS Database:
- Hydrography, linear

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

Comments

The clearing permit application was advertised on 3 December 2018 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 (WC1999/014) over the area under application (DPLH, 2018). 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, 2018). 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 (2018)

4. References

Artemis Resources (2018) Native Vegetation Clearing Permit Application M47/177 & M47/288 – Silica Hills, Artemis Resources Pty Ltd, September 2018.

BoM (2018) Bureau of Meteorology Website – Climate Data Online, Karratha Aero. Bureau of Meteorology. http://www.bom.gov.au/climate/data/ (Accessed 8 January 2018).
CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
DPLH (2018) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 8 January 2018).
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.
Ecoscape (2018) 47 Patch, Silica Hills, Carlow Castle, Radio Hill and Weerianna Biological Surveys. Report prepared for Artemis Resources Pty Ltd by Ecoscape Australia Pty Ltd, April 2018.
Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
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.

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	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (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	*Rights in Water and Irrigation Act 1914*, 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 **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 1950*.

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.