



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 8707/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Redstone Minerals Pty Ltd

### 1.3. Property details

Property: Mining Lease 46/524  
Miscellaneous Licence 46/113  
Local Government Area: Shire of East Pilbara  
Colloquial name: Five Mile Creek

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
18.7		Mechanical Removal	Sand Mining and Access Track

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 19 November 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: 190: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* and *Acacia trachycarpa* over hard spinifex, *Triodia wiseana*, very poor rocky country on gneiss (GIS Database).

A flora and vegetation survey was conducted over a large number of tenements (comprising approximately 4,755 hectares) adjacent to the application area by Plantecology Consulting between April 2016 and March 2017. Twenty-four vegetation associations were recorded within the wider area as part of the following eight broad vegetation site types (CALM, 2002; Waters, A., 2017):

- **HSPG:** Hill spinifex grassland - Hummock grasslands of *Triodia wiseana* (hard spinifex) with isolated shrubs such as *Acacia aphanoclada* (P1) on ridges and hills;
- **PHSG:** Plain hard spinifex grassland - Hummock grasslands of *Triodia wiseana* with isolated shrubs on lower footslopes, and patchy hummock grasslands of *Triodia wiseana*, *Triodia longiceps* with isolated or very scattered shrubs such as *Acacia trachycarpa*, *Acacia synchronicia* on stony plains;
- **SSCG:** Stony plain spinifex grassland with chenopod shrubs - Patchy hummock grasslands of *Triodia longiceps* with isolated to scattered shrubs *Acacia*, *Senna* and *Maireana* species;
- **DAHW:** Drainage *Acacia* hummock grass shrubland / woodland;
- **DESG:** Drainage spinifex grassland with eucalypt overstorey;
- **AHSG:** Alluvial plain hard spinifex grassland;
- **ASSG:** Alluvial plain soft spinifex grassland; and
- **AEBG:** Alluvial plain eucalypt buffel grass woodland.

**Clearing Description** Five Mile Creek.  
Redstone Minerals Pty Ltd proposes to clear up to 18.7 hectares of native vegetation within a boundary of approximately 19.8 hectares, for the purpose of sand mining and access track. The project is located approximately seven kilometres east of Nullagine, within the Shire of East Pilbara.

**Vegetation Condition** Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

To:

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

**Comment** The vegetation condition was derived from aerial photography (GIS Database).

The proposed clearing is for sand mining within Five Mile Creek using an existing track for access to the river. The vegetation within the application area is of a sparse nature, and any large trees will be avoided (Redstone Minerals, 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 Archean granite and basalt plains including significant areas of basaltic ranges. Plains support a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

The vegetation associations within the application area are common and widespread within the region, with the exception of vegetation association SSCG which represents a Priority Ecological Community (PEC). The stony saline plains of the Mosquito land system (Priority 3) is described as “*Triodia longiceps* perennial grasslands with scattered *Maireana melanocoma* and *Sclerolaena* species and includes Priority flora taxa *Atriplex spinulosa* (P1) and *Ptilotus wilsonii* (P1) dissected by drainage lines. Dominated by (but not limited to) *Melaleuca eleuterostachya* and *Acacia bivenosa* occurring on saline red brown non-cracking clays with a mantle of quartz gravel and neutral subsurface soil material on level to undulating plains.” It is unlikely that the proposed clearing will significantly impact the PEC as the PEC covers an area of approximately 174,464.356 hectares, and the majority of the proposed clearing is within Five Mile Creek with only a small section of the access track dissecting the PEC (GIS Database).

There were no flora and vegetation surveys conducted within the application area, however a flora survey conducted over adjacent areas recorded a total of 139 flora species (Waters, A., 2017). A desktop assessment of the application area identified 273 flora species, including ten conservation significant flora species, occurring within 20 kilometres of the application area (Redstone Minerals, 2019). Three Priority flora species were identified as possibly occurring within the application area based on preferred habitat, including; *Acacia fecunda* (P1), *Eucalyptus rowleyi* (P3) and *Goodenia nuda* (P4) (Redstone Minerals, 2019). The proposed clearing is unlikely to have a significant impact on these Priority flora species as all habitat types within the application area are common locally and regionally, and the majority of the application is comprised of sparsely-vegetated sections of the creek bed where plants may be subject to natural removal during large inundation events (GIS Database). No Threatened flora species were identified as potentially occurring within the application area and none were recorded during surveys of adjacent areas (Redstone Minerals, 2019; Waters, A., 2017; GIS Database).

Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the introduction of weeds may be minimised by the implementation of a weed management condition.

A desktop assessment identified 224 fauna species, including nine conservation significant species, previously recorded within 20 kilometers of the area and 101 fauna species were recorded during a survey of adjacent areas (Bamford Consulting, 2017; Redstone Minerals Pty Ltd, 2019). Of the nine conservation significant fauna species with the potential to occur within the application area, three were identified as potentially occurring based on preferred habitat: bilby, *Macrotis lagotis* (Threatened - Vulnerable); mulgara, *Dasyercus blythi* (Priority 4); and northern quoll, *Dasyurus hallucatus* (Threatened - Endangered) (Redstone Minerals, 2019). The potential impact of the proposed clearing to conservation significant fauna species may be managed by: imposing a restricted clearing condition to protect the creek banks, which may be utilised by bilby and mulgara for burrows; and not authorising the clearing of trees, which may be utilised by northern quoll for denning.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Waters, A., 2017; 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** Bamford Consulting (2017)  
CALM (2002)  
Redstone Minerals Pty Ltd (2019)  
Waters, A. (2017)

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

**(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.**

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

The following eight fauna habitats have been recorded within the area immediately south of the application area (Bamford Consulting, 2017):

- Major drainage lines;
- Minor drainage lines on clay/sand;
- Minor drainage lines on rock/sand;
- Alluvial floodplains of loam to sandy loam fringing major drainage lines and supporting Eucalypt Woodland, *Acacia* shrublands and *Triodia* hummock grasslands;
- Intermittently inundated loam soils on plains supporting *Triodia* hummock grasslands and open shrublands;
- Intermittently saturated gravelly loam soils on plains supporting *Triodia* hummock grasslands and open shrublands;
- Rocky and gravelly hills supporting *Triodia* hummock grasslands; and
- Scattered mine adits and shafts (varying in depth and decomposition).

As the majority of the application area is located within Five Mile Creek, it can be inferred to contain the major drainage lines habitat type (Bamford Consulting, 2017; GIS Database). However, it is likely that the access track intersects a number of other habitat types including: minor drainage lines on clay/sand; alluvial plains; intermittently inundated loam soils on plains supporting *Triodia* hummock grasslands and open shrublands; and intermittently saturated gravelly loam soils on plains supporting *Triodia* hummock (Bamford Consulting, 2017; GIS Database).

A number of conservation significant fauna species have the potential to occur within the application area based on suitable habitat, including bilby, mulgara and northern quoll (Bamford Consulting, 2017; Redstone Minerals Pty Ltd, 2019; GIS Database). The potential impact of the proposed clearing to fauna habitat may be managed by: imposing a restricted clearing condition to protect the creek banks, which may be utilised by bilby and mulgara for burrows; and not authorising the clearing of vegetation greater than two metres in height or clearing within the drip lines of this vegetation, which may be utilised by birds for roosting and breeding and by northern quoll for denning.

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

**Methodology** Bamford Consulting (2017)  
Redstone Minerals Pty Ltd (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).

The majority of the vegetation associations within the application area are common and widespread within the region (A. Waters, 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** Waters, A. (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).

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

**Methodology** 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 190: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* and *Acacia trachycarpa* over hard spinifex, *Triodia wiseana*, very poor rocky country on gneiss (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, 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
Beard vegetation associations – WA					
190	169,199	169,051	~99	Least Concern	n/a
Beard vegetation associations – Pilbara Bioregion					
190	169,199	169,051	~99	Least Concern	n/a

\* 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**

The majority of the application area lies within the Five Mile Creek, an ephemeral watercourse approximately 16 kilometres long (GIS Database). Aerial imagery shows the presence of sparse vegetation within the majority of application area, associated with the sandy creek bed of Five Mile Creek (GIS Database). The proposed clearing is for the purpose of sand mining within the creek bed. Redstone Minerals (2019) stated that mining activities will not occur within defined as the “drip line” of vegetation or within two metres of the banks of the creek (other than areas where access ramps are located). Potential impacts to vegetation growing in, and in association with, the watercourse may be minimised by the implementation of a watercourse management condition and restricted clearing conditions.

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

**Methodology** Redstone Minerals (2019)

GIS Database:  
 - Imagery  
 - 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 may be at variance to this Principle**

The application area lies within the Mosquito and River 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 Mosquito land system is described as stony plains and prominent ridges of schist and other metamorphic rocks supporting hard spinifex grasslands. This land system generally has low susceptibility to erosion except for some drainage floor units which are moderately susceptible if vegetation cover is lost (Van Vreeswyk et al., 2004).

The River land system consists of active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands. This land system may be highly susceptible to erosion if vegetation cover is removed (Van Vreeswyk et al., 2004).

Potential land degradation impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Based on the above, the proposed clearing may 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 Meentheena Pastoral Lease which is located approximately 48 kilometres north 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 the application area, however the Nullagine Water Reserve is situated approximately 1.3 kilometres west of the application area (GIS Database). The area proposed to clear is within the Five Mile Creek, an ephemeral water course subject to seasonal inundation (GIS Database). These drainage lines are dry for most of the year, only flowing briefly immediately following significant rainfall (Van Vreeswyk et al., 2004). The proposed clearing is unlikely to result in significant changes to surface water flows.

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

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

**Methodology** Van Vreeswyk et al. (2004)

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 a low average rainfall of approximately 300 millimetres per year (CALM, 2002). The nearest weather station is Nullagine, approximately seven kilometres west of the

application areas, with an average rainfall of approximately 325.7 millimetres per year (BoM, 2019).

Given that the majority of the application area is located within the Five Mile Creek bed, and the relatively small area to be cleared (18.7 hectares) compared to the total Nullagine River catchment area (712,335 hectares) (GIS Database), 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 (2019)  
CALM (2002)  
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 4 November 2019 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There are one native title claim (WC1999/008) over the area under application (DPLH, 2019). 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, 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**

- Bamford Consulting (2017) Millennium Minerals Nullagine Operations: Overview of Fauna Studies. Report prepared for Millennium Minerals Ltd by M.J. & A.R. Bamford Consulting Ecologists, May 2017.
- BoM (2019) Bureau of Meteorology Website – Climate Data Online, Nullagine. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 12 December 2019).
- 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 12 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.
- Redstone Minerals Pty Ltd (2019) Supporting information for an application for Clearing Permit (Formerly CPS 6184/1). Report prepared by Redstone Minerals 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.
- Waters, A. (2017) Vegetation of the MML Nullagine Tenements. Report prepared for Millennium Minerals Ltd by Woodgis and Plantecology Consulting, May 2017.

## 5. Glossary

### Acronyms:

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

### Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

#### **T**            **Threatened species:**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

**Threatened fauna** is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

**Threatened flora** is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

#### **CR**            **Critically endangered species**

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

#### **EN**            **Endangered species**

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

**VU****Vulnerable species**

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

**Extinct Species:****EX****Extinct species**

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

**EW****Extinct in the wild species**

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

**Specially protected species:**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

**MI****Migratory species**

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**CD****Species of special conservation interest (conservation dependent fauna)**

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**OS****Other specially protected species**

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.



**P**      **Priority species:**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

**P1**      **Priority One - Poorly-known species**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

**P2**      **Priority Two - Poorly-known species**

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

**P3**      **Priority Three - Poorly-known species**

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

**P4**      **Priority Four - Rare, Near Threatened and other species in need of monitoring**

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.