



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8176/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Northern Star Resources Ltd

1.3. Property details

Property: Mining Lease 53/197
Mining Lease 53/228
Mining Lease 53/247
Mining Lease 53/347
Mining Lease 53/589
Local Government Area: Shire of Wiluna
Colloquial name: Ramone Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 6 December 2018

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The vegetation of the application area is broadly mapped as the following Beard vegetation associations (GIS Database):
18: Low woodland; mulga (*Acacia aneura*) and
39: Shrublands; mulga scrub.

A flora and vegetation survey which covered the permit area was conducted by Stantec on 20 to 23 March 2018. The vegetation survey area covered a larger area than the permit area. The following vegetation associations were recorded within the survey area (Stantec, 2018):

AaEcTm: *Acacia aneura* tall shrubland over *Eremophila citrina* open low heath over *Triodia melvillei* very open hummock grassland;

AaApEf: *Acacia aptaneura* and *Acacia pteraneura* open low woodland over *Eremophila fraseri* open shrubland;

AaApEs?b.Ee: *Acacia aneura* and *Acacia aptaneura* open tall shrubland over *Eremophila spectabilis* subsp. *?brevis* open low shrubland over *Eragrostis eriopoda* open tussock grassland;

AaEffTb: *Acacia aneura* tall open shrubland over *Eremophila forrestii* subsp. *forrestii* low open shrubland over *Triodia basedowii* hummock grassland;

ApAiEcTm: *Acacia pruinocarpa* low open woodland over *Acacia incurvaneura* tall open shrubland over *Eremophila citrina* low shrubland over *Triodia melvillei* hummock grassland;

AaAtS?sEs?bSeEe: *Acacia aneura*, *Acacia tetragonophylla* and *Santalum ?spicatum* tall open shrubland over *Eremophila spectabilis* subsp. *?brevis* and *Sida ectogama* low open shrubland over *Eragrostis eriopoda* open tussock grassland;

AiEIIAt: *Acacia incurvaneura* tall shrubland over *Eremophila latrobei* subsp. *latrobei* and *Acacia tetragonophylla* open low shrubland;

ApAaAcEIIeFfFd: *Acacia pteraneura* and *Acacia aneura* open scrub over *Acacia craspedocarpa* and *Eremophila latrobei* subsp. *latrobei* open shrubland over *Eriachne flaccida* and *Eragrostis falcata* closed tussock grassland over *Fimbristylis dichotoma* very open sedgeland;

EIAcSeMsp: *Eremophila linearis* and *Acacia craspedocarpa* tall shrubland over *Ptilotus obovatus* herbland over *Sclerolaena ericantha* and *?Maireana* sp. open chenopods;

SMSec: *Senna* sp. Meekatharra (E. Bailey 1-26) hybrid open low shrubland over *Sclerolaena eriacantha* and *Sclerolaena cuneata* (*Maireana* sp.) very open herbland.

Clearing Description	Ramone Project. Northern Star Resources Ltd proposes to clear up to 186.3 hectares of native vegetation within a boundary of approximately 186.3 hectares, for the purpose of mineral production. The project is located approximately 56 kilometres east of Wiluna, within the Shire of Wiluna.
Vegetation Condition	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994); to Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).
Comment	The vegetation condition was derived from a vegetation survey conducted by Stantec (2018). The month preceding the flora survey had below average rainfall and therefore many of the annual species and grasses had senesced at the time of the survey (Stantec, 2018). The Ramone project will consist of one open pit, one waste rock dump, a haul road and associated mine infrastructure (Northern Star Resources, 2018).

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 Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). This subregion is characterised by its internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development (CALM, 2002). Vegetation is dominated by mulga woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Halosarcia shrublands (CALM, 2002).

There were 10 vegetation types identified within the flora survey area (Stantec, 2018). None of the vegetation types were considered to be a Threatened or Priority Ecological Community (Stantec, 2018; GIS Database). The flora survey which covered the permit area and surrounding area recorded a total of 104 flora taxa from 21 families and 53 genera (Stantec, 2018). The floral diversity recorded is within the lower range of the expected diversity compared to similar areas, however, it is expected that the presence of annual plants would increase the total flora count following a good wet season (Stantec, 2018).

The priority flora species *Aristida jerichoensis* var. *subspinulifera* (P3) and *Eremophila pungens* (P4) were both recorded within the greater flora survey area (Stantec, 2018). Individual numbers were not recorded due to the large numbers of plants encountered (Stantec, 2018). *Aristida jerichoensis* var. *subspinulifera* was identified within the ApAaAcEIIeFfFd vegetation type in unchannelled temporary drainage areas (Stantec, 2018). Within the survey area, it was dominant in the tussock grassland layer with *Enneapogon polyphyllus*, *Eragrostis eriopoda* and *Eragrostis falcata* (Stantec, 2018). The flora survey mapped a total of 152.37 hectares of the ApAaAcEIIeFfFd vegetation type (Stantec, 2018). The permit area has avoided disturbance to the majority of this vegetation type, with only a small portion (less than five hectares) within the permit area (Northern Star Resources, 2018). *Eremophila pungens* was recorded within the AiEIIAt vegetation type on skeletal soil and clayey sand (Strategen, 2018). This vegetation was generally associated with low rocky hills and outcrops. A total of 55.16 hectares of this vegetation type was mapped within the greater flora survey area (Stantec, 2018). This vegetation type has been almost entirely avoided by the permit area as only a very small portion of this habitat (less than 0.1 hectares) is within the permit boundary at the location of the proposed haul road. Whilst the proposed clearing will remove a small amount of habitat for these species, it is not likely to have a significant impact on the local populations.

There were three introduced flora species recorded within the greater flora survey area; *Bidens bipinnata* (Bipinnate Beggartick), *Malvastrum americanum* (Spiked Malvastrum) and *Portulaca pilosa* (Djanggara) (Stantec, 2018). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

There were seven fauna habitats identified within the permit area. The majority of the permit area comprised habitat which is widespread and does not offer a large diversity of microhabitats or areas of shelter (Stantec, 2018). The permit area has largely avoided habitats which are likely to support a higher number of fauna species. Given the habitats present, the permit area is not likely to support a high level of faunal diversity.

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

Methodology CALM (2002)
Stantec (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 may be at variance to this Principle**

A fauna survey was conducted over a larger area which includes the permit area. The following fauna habitats were recorded within the permit area (Stantec, 2018):

- Mulga shrubland over grasses
- Mulga shrubland on stony plain
- Mulga drainage
- Mulga over spinifex on low hill
- *Eremophila* shrubland
- Low rocky hills with outcropping
- Spinifex plain

The majority of the habitats were identified as being widespread and having limited significance (Stantec, 2018). The low rocky hills with outcropping has a limited extent and is likely to be significant habitat for fauna (Stantec, 2018). This habitat has rocky crevices which provide shelter for ground dwelling reptiles and mammals and also has a moderate potential to support short range endemic (SRE) species (Stantec, 2018). There was 55.16 hectares of this habitat mapped within the greater survey area however, only a very small portion of this habitat (less than 0.1 hectares) is within the permit boundary at the location of the proposed haul road. The proposed clearing of this habitat is not likely have a significant impact on the maintenance of this habitat in the local area.

The spinifex plain habitat has a widespread extent within the greater survey area but has greater significance for fauna (Stantec, 2018). This is due to spinifex habitat providing low cover for reptile and mammal species and the substrate being suitable for foraging and burrowing (Stantec, 2018). The Priority 4 species Brush-tailed Mulgara (*Dasyercus blythi*) was recorded from within this habitat (Stantec, 2018). Areas of this habitat with a sparse Acacia upper storey will also provide additional microhabitats from peeling bark and woody debris (Stantec, 2018). There was 241.96 hectares of this habitat mapped within the fauna survey area (Stantec, 2018).

The Brush-tailed Mulgara was recorded 18 times from three motion camera locations (Stantec, 2018). All of these records were within the spinifex plain habitat. None of the records were within the permit boundary (Northern Star Resources, 2018; Stantec, 2018). However, it is highly likely that this species will also be present within the spinifex plain habitat within the permit boundary. Approximately 16 hectares of the habitat is proposed to be cleared for a haul road and workshop/office area. The proposed clearing is unlikely to impact on the species at a regional scale however, the clearing may directly impact individual fauna, and at a local scale by reduction of appropriate habitat. Potential impacts to the Brush-tailed Mulgara may be minimised by the implementation of a fauna management condition.

There are also several conservation significant species which were not recorded but considered to possibly occur within the permit area based on known records and habitat preferences. The Grey Falcon (*Falco hypoleucos* - Vulnerable), Peregrine Falcon (*Falco peregrinus* - Other Specially Protected Fauna) and Fork-tailed Swift (*Apus pacificus* - Migratory) may utilise the permit area as part of a larger range however, it is not likely to represent significant habitat for these species (Stantec, 2018). The Long-tailed Dunnart (Priority 4) is also considered possible to occur within the permit area (Stantec, 2018). The preferred habitat for this species is the low rocky hill with outcropping habitat which has been almost entirely avoided by the permit area (Stantec, 2018).

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

Methodology Stantec (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). Based on known

distributions and habitat preferences, the permit area is not likely to contain vegetation which supports Threatened flora (Stantec, 2018; Western Australian Herbarium, 2018; GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Stantec, 2018).

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

Methodology Stantec (2018)
Western Australian Herbarium (2018)

GIS Database:
- Threatened and Priority Flora

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

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

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 (Stantec, 2018).

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

Methodology Stantec (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 permit area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99.73% of the pre-European vegetation still exists in the bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation associations 18 and 39 (GIS Database). These vegetation associations have not been extensively cleared as over 99% remains at both a state and bioregional level (Government of Western Australia, 2018). The permit area is not a remnant nor does it form part of any remnants within the local area (GIS Database).

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

Methodology Government of Western Australia (2018)

GIS Database:
- IBRA Australia
- Imagery
- 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 ephemeral drainage lines pass through the application area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. Areas of ephemeral and temporary drainage were characterised by a denser upper canopy of trees and shrubs as well as a higher density of grasses (Stantec, 2018). The vegetation type ApAaAcEIIIRfEfFd was found within ephemeral drainage areas which are characterised by a distinct channel (Stantec, 2018). Areas of temporary drainage lacked a definable channel and supported the AaAtS?sEs?bSeEe vegetation type (Stantec, 2018).

The vegetation associated with drainage lines mapped during the flora survey varied in composition and density (Stantec, 2018). These areas tended to be complex habitats that would provide a variety of shelter and feeding prospects for fauna species (Stantec, 2018). When the areas are flooded, they would also provide water sources.

The permit area has avoided the majority of the riparian vegetation and drainage line fauna habitat mapped by

the flora and fauna surveys (Northern Star Resources, 2018; Stantec, 2018). The majority of the watercourses that will be impacted by the proposed clearing are associated with a road (Northern Star Resources, 2018).

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

Methodology Northern Star Resources (2018)
Stantec (2018)

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 may be at variance to this Principle

The application area lies within the Sherlock, Violet and Wiluna 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 Sherwood land system is described as widespread stony granite plains with laterite breakaways (Mabbutt et al., 1963). The footslope plains, alluvial fans and drainage lines of this land system have fragile soils which are highly susceptible to erosion if shrub cover is removed (Curry et al., 1994; Mabbutt et al., 1963; Payne et al., 1998; Pringle et al., 1994).

The Violet Land System consists of widespread undulating plains with dense mulga (Mabbutt et al., 1958). The abundant mantles across this land system provide effective protection against soil erosion except where the soil surface has been disturbed (Curry et al., 1994; Pringle et al., 1994). Where the soil is disturbed it becomes moderately susceptible to erosion.

The Wiluna land system is described as greenstone belts and stony lower slopes (Mabbutt et al., 1958). Due to its stony nature, much of this system is generally not prone to erosion. The saline stony plain, alluvial fan and drainage floor units of this land system are mildly to moderately susceptible to accelerated erosion when degraded (Payne et al., 1998).

The permit area has avoided the majority of the drainage lines within these land systems which are more susceptible to erosion. However, the proposed clearing will still disturb soil in areas of increased erosion risk. Potential impacts from erosion 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 Curry et al. (1994)
Mabbutt et al. (1958)
Payne et al. (1998)
Pringle et al. (1994)

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 Department of Biodiversity, Conservation and Attractions (formerly DPaW) managed land is the former Lorna Glen Pastoral Lease which is located approximately 32 kilometres north-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 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. The proposed clearing is unlikely to result in significant changes to surface water flows.

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). 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 GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

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

The climate of the region is semi-arid, with a low average rainfall of approximately 261.3 millimetres per year (BoM, 2018). 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). 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)

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 24 September 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 are two native title claims over the area under application (DPLH, 2018). These claims have been registered with the National Native Title Tribunal on behalf of the claimant groups. 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

- BoM (2018) Bureau of Meteorology Website – Climate Data Online, Wiluna. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (28 November 2018).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Curry, P.J., Payne, A.L., Leighton, K.A., Henning, P. and Blood, D.A. (1994) An Inventory and Condition Survey of the Murchison River Catchment, Western Australia. Department of Agriculture, Western Australia.

- DPLH (2018) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 30 November 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.
- Mabbutt, J. A., Litchfield, W. H., Speck, N. H., Sofoulis, J., Wilcox, D. G., Arnold, Jennifer M., Brookfield, Muriel, and Wright R. L. (1963) General Report on Lands of the Wiluna-Meekatharra Area, Western Australia, 1958. Commonwealth Scientific and Industrial Research Organization, Australia, Melbourne.
- Northern Star Resources (2018) Clearing Permit Supporting Document - Ramone Open Pit Mining Project. Northern Star Resources Limited, Western Australia.
- Payne, A. L., Van Vreeswyk, A. M. E., Pringle, H. J. R., Leighton, K. A. and Hennig, P. (1998) An Inventory and Condition Survey of the Sandstone-Yalgoo-Paynes Find Area, Western Australia. Agriculture Western Australia, Western Australia.
- Pringle, H. J. R., Van Vreeswyk, A. M. E. and Gilligan, S.A. (1994) An Inventory and Condition Survey of Rangelands in the North-Eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
- Stantec (2018) Ramone Flora, Fauna and Vegetation Survey. Prepared for Northern Star Resources Limited, by Stantec, 28 May 2018.
- Western Australian Herbarium (2018) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 23 November 2018).

5. Glossary

Acronyms:

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

Definitions:

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

T	Threatened species: Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i> , listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared
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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.