



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 9390/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Big Bell Gold Operations Pty Ltd

1.3. Property details

Property: Mining Leases 51/427, 51/445, 51/459, 51/491, 51/796, 51/823, 51/892;
Miscellaneous Licences 51/35, 51/77, 51/104, 51/107
Local Government Area: Shire of Meekatharra
Colloquial name: Albury Heath and Euro Mining Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 5 October 2021

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:
18: Low woodland; mulga (*Acacia aneura*); and
39: Shrublands; mulga scrub (GIS Database).

A reconnaissance flora and vegetation survey was conducted over the application area by Spectrum Ecology from 9 to 12 June, 2020. The following vegetation associations were recorded within the application area (Spectrum Ecology, 2020):

Vegetation Type	Land Surface and Landform	Vegetation Description
F1	Flat plain; red brown orange, sandy clay loam; laterite, cobbles of abundant ironstone / granite.	<i>Acacia macraneura</i> or <i>Acacia fuscaneura</i> low isolated trees to open woodland over +/- <i>Acacia grasbyi</i> or <i>Acacia craspedocarpa</i> tall isolated shrubs over <i>Aristida contorta</i> low isolated tussock grasses.
F2	Flat plain; red orange, clay sand; fine ironstone gravel.	<i>Eremophila fraseri</i> subsp. <i>parva</i> mid isolated shrubs over <i>Ptilotus roei</i> low isolated shrubs over <i>Aristida contorta</i> low isolated tussock grasses.
F3	Flat plain; red orange, clay sand; abundant medium ironstone gravel.	<i>Tecticornia</i> spp. low-mid sparse samphire shrubland over <i>Aristida contorta</i> , <i>Diplachne fusca</i> subsp. <i>muelleri</i> low sparse tussock grassland.
F4	Low hills; red brown, sandy loam; abundant medium granite gravel.	<i>Acacia aptaneura</i> tall isolated shrubs over <i>Micromyrtus sulphurea</i> , <i>Grevillea inconspicua</i> (P4) low sparse shrubland over <i>Aristida contorta</i> low sparse tussock grassland.
D1	Drainage line on flats; red brown orange sandy clay; No rocks to abundant medium ironstone gravel.	<i>Acacia aptaneura</i> , <i>A. craspedocarpa</i> , <i>A. macraneura</i> tall open shrubland over <i>A. tetragonophylla</i> mid sparse shrubland over <i>Enteropogon ramosus</i> , <i>Dichanthium sericeum</i> subsp. <i>humilius</i> or <i>Eragrostis cumingii</i> low open tussock grassland.
D2	Creek bed; red orange sandy loam; Fine creek stones.	<i>Eucalyptus kingsmillii</i> low open woodland over <i>Senna artemisioides</i> subsp. <i>x artemisioides</i> , <i>Acacia burkittii</i> tall open shrubland over * <i>Cenchrus setiger</i> low open tussock grassland.

* denotes weed species

Clearing Description Albury Heath and Euro Mining Project.
Big Bell Gold Operations Pty Ltd proposes to clear up to 450 hectares of native vegetation within a boundary of approximately 1,709 hectares, for the purpose of mineral production and associated activities. The project is located approximately 9 kilometres south of Meekatharra, within the Shire of Meekatharra.

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 Spectrum Ecology (2020).

3. Assessment of application against Clearing Principles

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

Comments

Proposal is not likely to be at variance to this Principle

The clearing permit application area is located within the Western Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). This subregion is characterised by mulga low woodlands, often rich in ephemerals (usually with bunch grasses). Surfaces associated with the occluded drainage occur throughout with hummock grasslands on Quaternary sandplains, saltbush shrublands on calcareous soils and *Tecticornia* low shrublands on saline alluvia (CALM, 2002).

A reconnaissance flora and vegetation survey within the application area identified six vegetation types, two (F3 and F4) of which are considered to be of local or regional significance (Spectrum Ecology, 2020).

The F4 vegetation type is located on a rocky rise within the application area and also falls within the haul road route (Westgold, 2021). This vegetation type offers habitat for conservation significant flora i.e. *Heliotropium mitchellii*. Spectrum Ecology (2020) speculated that although this vegetation type may have a restricted distribution within the application area, it is unlikely to be locally restricted given that there are many similar such hills in the surrounding areas. Approximately 8 hectares of the F4 vegetation type was mapped within the application area, with 1.2 hectares proposed to be cleared as per the current mining footprint (Westgold, 2021).

The F3 vegetation type is restricted to small pockets within and adjacent to the proposed haul route and does not appear to be widespread in the local area (Spectrum Ecology, 2020; Westgold, 2021). Westgold (2021) advise that no clearing of the F3 vegetation type will occur.

Potential impacts to restricted vegetation communities may be minimised by the implementation of a restricted clearing condition. These conditions will allow for no more than 1.2 hectares of native vegetation to be cleared within the F4 vegetation type, and for no clearing of native vegetation to occur within the F3 vegetation type.

No Threatened or Priority Ecological Communities, or Threatened flora species were identified within the application area (Spectrum Ecology, 2020; GIS Database).

A total of 86 taxa from 21 families and 46 genera were recorded within the application area during the survey (Spectrum Ecology, 2020). Of these, four were Priority Flora species: *Heliotropium mitchellii* (P1), *Calytrix verruculosa* (P3), *Grevillea inconspicua* (P4), and *Acacia speckii* (P4) (Spectrum Ecology, 2020). A targeted flora survey was undertaken during 14 to 18 September 2020 which extended outside the application area, and primarily focussed on *Heliotropium mitchellii*, but all relevant significant flora taxa were included (Spectrum Ecology, 2020). The survey identified three of the four Priority Flora species recorded during the reconnaissance survey; *Heliotropium mitchellii*, *Calytrix verruculosa*, and *Grevillea inconspicua* (Spectrum Ecology, 2020).

Heliotropium mitchellii was recorded from 273 locations totalling 5,654 individuals (Spectrum Ecology, 2020). Of the individuals recorded, 81% were recorded outside the application area (Spectrum Ecology, 2020). This species was identified within the F4 vegetation type, and Westgold (2021) state that approximately 300 individuals may require clearing per the current mining footprint. This represents approximately 5 per cent of the known local population, and is unlikely to have a significant impact on the conservation status of this species.

Grevillea inconspicua was recorded from 10 locations totalling 17 individuals (Spectrum Ecology, 2020). This species was identified within the F4 vegetation type. The proposed clearing of 17 individuals of this species is not likely to impact the conservation status of this species.

Calytrix verruculosa was recorded from 2 locations totalling 14 individuals (Spectrum Ecology, 2020). This species occurred within the D1 vegetation type. The proposed clearing of 14 individuals of this species is not likely to impact the conservation status of this species.

There was only one individual in one location of *Acacia speckii* recorded during the reconnaissance flora and vegetation survey (Spectrum, 2020). The proposed clearing of one individual of *A. speckii* is not likely to impact the conservation status of this species.

Five weed species were recorded during the survey; *Bidens bipinnata*, *Cenchrus setiger*, *Malvastrum americanum*, *Ricinus communis*, and *Rumex vesicarius*. Weeds were recorded mostly as scattered clumps of plants in drainage areas or disturbed areas (Spectrum Ecology, 2020). 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.

There were three fauna habitats identified across the application area (Spectrum Ecology, 2020). The habitats are well represented in the local region and do not contain core habitat for conservation significant species. Given the habitats and habitat features present within the application area, the application area not likely to support a higher level of faunal diversity than surrounding areas.

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

Methodology CALM (2002)
Spectrum Ecology (2020)
Westgold (2021)

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

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

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

The following three fauna habitats have been recorded within the application area (Spectrum Ecology, 2020):

1. Open plain - Mixed density tall Acacia shrubland over low moderately dense to isolated shrubs;
2. Mulga woodland - Dominated by mixed tall open shrubland of Acacia over *Acacia tetragonophylla* mid sparse shrubland and low mixed tussock grassland. Larger creekline is sparse *Eucalyptus kingsmillii* woodland over tall open shrubland; and
3. Rock outcrop - Dominated by tall open shrubland of mixed Acacia with little to no ground cover.

The Open plain habitat was the most dominant within the application area. This habitat type has limited vegetation present for fauna habitat and foraging resources (Spectrum Ecology, 2020).

The Mulga woodland habitat contains tall *Acacias* which may provide habitat for bird species, and tussock grasses, dense vegetation and sandy drainage lines may provide suitable habitat for mammals and reptiles (Spectrum Ecology, 2020; Westgold, 2021).

Rock outcrop habitat only accounted for 0.8 hectares within the application area (Spectrum Ecology, 2020). This habitat type may provide shelter for rock dwelling fauna, mammals and reptiles.

A level 1 fauna survey was undertaken over the application area and surrounding region, and no conservation significant fauna were recorded (Spectrum Ecology, 2020). Based on fauna habitats within the application area and NatureMap (DBCA, 2007-), there are five species of conservation significance that may utilise the application area; the Meekatharra Slider (*Lerista eupoda*) (Priority 1), Long-tailed Dunnart (*Sminthopsis longicaudata*) (Priority 4), Grey Falcon (*Falco hypoleucos*) (VU), Fork-tailed Swift (*Apus pacificus*) (MI) and Peregrine Falcon (*Falco peregrinus*) (OS).

Spectrum Ecology (2020) suggest that a population of Long-tailed Dunnart (*Sminthopsis longicaudata*) may exist in the wider region. A small amount of suitable habitat occurs within the application area, and the Long-tailed Dunnart may utilise the application area as part of its foraging habitat, however it is unlikely to be core habitat for this species.

The Mulga woodland habitat forms suitable habitat for the Meekatharra Slider (*Lerista eupoda*), particularly when leaf litter accumulates on loamy soils along the drainage lines (Spectrum Ecology, 2020). This habitat type is common in the surrounding region, particularly around Lake Annean and occurs only in small pockets within the application area (Spectrum Ecology, 2020; GIS Database). Potential impacts to the Meekatharra Slider may be minimised by the implementation of a watercourse management condition.

The remaining three conservation significant fauna species (Grey Falcon, Fork-tailed Swift, and Peregrine Falcon) are wide ranging bird species that are expected to only utilise the application area occasionally to forage. No suitable nesting habitat was recorded within the application area (Spectrum Ecology, 2020).

Potential impacts to conservation significant fauna may be minimised by the implementation of directional clearing condition.

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

Methodology DBCA (2007-)

Spectrum Ecology (2020)
Westgold (2021)

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, threatened 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 (Spectrum Ecology, 2020).

The vegetation associations within the application area are common and widespread within the region (Spectrum Ecology, 2020; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora.

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

Methodology Spectrum Ecology (2020)

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 (Spectrum Ecology, 2020).

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

Methodology Spectrum Ecology (2020)

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 Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (GIS Database). Approximately 99% of the pre-European vegetation still exists in the Murchison Bioregion (Government of Western Australia, 2019). 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% of the pre-European extent of these vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). The application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared (GIS Database).

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

Methodology Government of Western Australia (2019)

GIS Database:
- IBRA Australia
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is at variance to this Principle

There are no permanent watercourses within the application area, however, there are several ephemeral watercourses that intersect the application area (GIS Database).

There were two vegetation types identified growing in association with drainage lines; D1 and D2. The vegetation type D2 was mapped as restricted in the application area as the haul road crosses through an ephemeral watercourse (GIS Database). However, drainage lines within the local area are not restricted (Spectrum Ecology, 2020).

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

Methodology Spectrum Ecology (2020)

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 Gabanintha, Jundee, Wiluna and Yandil 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 Gabanintha land system is described as greenstone ridges and hills supporting sparse acacia shrublands. Stone mantles afford protection against soil erosion, the exception being narrow drainage tracts which are mildly susceptible to water erosion (Payne et al., 1998).

The Jundee land system consists of hardpan plains with ironstone gravel mantles supporting mulga shrublands. This land system may be susceptible to erosion (Payne et al., 1998).

The Wiluna land system consists of greenstone hills, breakaways and lower plains supporting mulga shrublands occasionally with understoreys of halophytic shrubs. This land system is generally not susceptible to erosion, however disturbance of the stony mantle, especially on sloping areas can result in erosion (Payne et al., 1998).

The Yandil land system consists of mainly hardpan mulga shrubland, potentially supporting a useful variety of palatable perennial shrubs and herbs but now widely degraded through preferential grazing and chronic overuse around easily obtained supplies of permanent fresh water. This land system may be susceptible to erosion if vegetation cover is removed (Curry et al, 1994).

The proposed clearing of up to 450 hectares of native vegetation for the purpose of mineral production and associated activities may cause appreciable land degradation. Potential 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)
Payne et al. (1998)**

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 an ex-pastoral station (ex Mooloogool) proposed for conservation, which is located approximately 75 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**
The application area is not located within a Public Drinking Water Source Area (GIS Database). Generally, groundwater within the application area is 1,000 to 3,000 milligrams per litre of total dissolved solids which is considered to be brackish (GIS Database). The broader region remains largely uncleared and it is not likely that the proposed clearing will have an impact on groundwater quality in the local area.

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). The minor ephemeral watercourses within the application area are likely to be dry for most of the year, only flowing briefly immediately following significant rainfall (GIS Database). 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 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 arid climate with bimodal rainfall that usually falls in winter (CALM, 2002). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall given the area's low annual rainfall and high evaporation rate (Westgold, 2021).

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 CALM (2002)
Westgold (2021)

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 August 2021 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 no native title claims over the area under application (DPLH, 2021). 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, 2021). 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.

4. References

- 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, Hennig, P, and Blood, D A. (1994) An inventory and condition survey of the Murchison River catchment, Western Australia. Technical Bulletin 84. Department of Agriculture, Perth.
- DBCA (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Biodiversity, Conservation and Attractions. <https://naturemap.dbca.wa.gov.au/> (Accessed 28 September 2021).
- DPLH (2021) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 23 September 2021).
- 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.
- Payne, A L, van Vreeswyk, A M, Leighton, K A, Pringle, H J, and Hennig, P. (1998) An inventory and condition survey of the Sandstone-Yalgoo-Paynes Find area, Western Australia. Technical Bulletin 90. Department of Agriculture and Food, Western Australia.
- Spectrum Ecology (2020) Albury Heath & Euro Mining Areas: Reconnaissance & Targeted Flora & Level 1 Fauna Assessment. Prepared for Westgold Resources Limited, by Spectrum Ecology Pty Ltd, November 2020.
- Westgold Resources Limited (Westgold) (2021) Meekatharra Gold Operations. Supporting Document: Albury Heath & Euro Project Clearing Permit Application. Big Bell Gold Operations Pty Ltd, August 2021.

5. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
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)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
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)
DoEE	Department of the Environment and Energy (now DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

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

T Threatened species:

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

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

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

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

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

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

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

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

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

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

Extinct Species:

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

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

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

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

Specially protected species:

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

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

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

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn

Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

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

CD Species of special conservation interest (conservation dependent fauna)

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

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

OS Other specially protected species

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

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

P Priority species:

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

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

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

P1 Priority One - Poorly-known species

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

P2 Priority Two - Poorly-known species

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

P3 Priority Three - Poorly-known species

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

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

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

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

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