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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8882/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Carnegie Gold Pty Ltd**

1.3. Property details

Property: Mining Lease 30/255
Local Government Area: Shire of Menzies
Colloquial name: Waihi Gold Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 18 June 2020

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:
40: Shrublands; *Acacia* scrub, various species; and
468: Medium woodland; salmon gum and goldfields blackbutt (GIS Database).

A flora and vegetation survey was conducted over the application area by Jenny Borger Botanical Consulting (JBBC) during October, 2019. The following vegetation associations were recorded within the application area (JBBC, 2019):

VT1: *Eucalyptus salmonophloia*, *Eucalyptus* species open woodland / chenopods
Eucalyptus salmonophloia and / or Eucalyptus salubris, Eucalyptus transcontinentalis, Eucalyptus clelandiorum, Eucalyptus griffithsii woodland over *Eremophila scoparia, Senna artemisioides* subsp. *filifolia, Rhagodia drummondii, Acacia erinacea, Atriplex nummularia* open shrubland over *Acacia erinacea, Atriplex vesicaria, Maireana pyramidata, Maireana triptera, Eremophila scoparia* low sparse shrubland over *Maireana tomentosa, Atriplex vesicaria, Austrostipa nitida* low open chenopod shrubland.

VT2: *Eucalyptus loxophleba / Acacia burkittii* tall shrubland
Eucalyptus loxophleba subsp. *lissophloia, Acacia fuscaneura* tall closed mallee forest over *Acacia burkittii, Senna artemisioides* subsp. *filifolia* tall sparse shrubland over *Acacia colletioides*, *Maireana georgei, Ptilotus obovatus, Rhagodia drummondii, Eremophila clarkei* low sparse shrubland over *Ptilotus obovatus, Swainsona* sp., *Eremophila clarkei* low isolated shrubs and forbs.

VT3: *Eucalyptus salubris* woodland/ chenopod shrubs
Eucalyptus salubris low woodland over isolated *Eremophila, Atriplex* and *Ptilotus obovatus* shrubs.

VT4: *Acacia caesaneura, Acacia fuscaneura, Acacia burkittii* tall shrubland
Eucalyptus transcontinentalis, Casuarina pauper, Eucalyptus loxophleba subsp. *lissophloia* open woodland over *Acacia caesaneura, Acacia fuscaneura, Acacia burkittii, Acacia tetragonophylla* tall open shrubland over *Acacia burkittii, Acacia tetragonophylla, Eremophila clarkei* sparse shrubland over *Solanum lasiophyllum, Austrostipa elegantissima, Maireana triptera, Ptilotus obovatus, Senna artemisioides* subsp. *filifolia* isolated low shrubs, forbs and grasses.

VT5: *Eremophila maculata, Frankenia setosa* low sparse shrubland
Eremophila interstans subsp. *interstans, Atriplex nummularia* isolated shrubs over *Eremophila maculata* subsp. *brevifolia, Frankenia setosa, Atriplex vesicaria, Senna cardiosperma* low sparse shrubland over *Ptilotus aervoides, Goodenia pusilliflora, Eragrostis dielsii* low sparse forbland.

VT6: *Eucalyptus* species open woodland / *Eremophila, Acacia* shrubs
VT6A: *Eucalyptus clelandiorum, Eucalyptus griffithsii, Eucalyptus salubris, Eucalyptus transcontinentalis* woodland over *Eremophila* sp. Mt Jackson, *Dodonaea lobulata* tall sparse shrubland over *Dodonaea lobulata, Casuarina pauper, Senna artemisioides* subsp. *filifolia, Acacia burkittii* shrubland over *Ptilotus obovatus, Acacia erinacea, Dodonaea lobulata, Olearia muelleri, Maireana tomentosa* low open shrubland over *Sclerolaena diacantha, Roepera aurantiaca, Austrostipa nitida* low sparse forbland.

VT6B: *Acacia acuminata, Eremophila interstans* subsp. *interstans* tall open shrubland over *Eremophila interstans* subsp. *interstans, Eremophila granitica, Atriplex nummularia* open shrubland over *Atriplex vesicaria, Eremophila interstans* subsp. *interstans* low sparse shrubland over *Maireana tomentosa, Ptilotus obovatus, Maireana triptera* low sparse chenopod shrubland over *Sclerolaena fusiformis, Sclerolaena diacantha, Ptilotus aervoides, Austrostipa nitida, Austrostipa elegantissima* low sparse forbland and grass tussocks.

VT7: *Acacia incurvaneura, Acacia ramulosa* tall open shrubland
Acacia incurvaneura, Acacia ramulosa var. *ramulosa* low woodland over *Acacia ramulosa* var. *ramulosa, Acacia tetragonophylla, Acacia incurvaneura* isolated shrubs over *Cheilanthes sieberi, Velleia rosea, Waitzia acuminata, Calocephalus multiflorus, Monachather paradoxus, Austrostipa elegantissima* low open fernland.

Clearing Description

Waihi Gold Project.
Carnegie Gold Pty Ltd proposes to clear up to 221 hectares of native vegetation within a boundary of approximately 230 hectares, for the purpose of mineral production and associated activities. The project is located approximately 53 kilometres southwest of Menzies, within the Shire of Menzies.

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 JBBC (2019). The area has been subjected to previous mining and pastoral activities (JBBC, 2019; OraBanda, 2020).

The proposed clearing is for minesite and infrastructure expansion including the extension of the existing eastern waste rock landform, construction of a northern mine haul road, realignment of a short section of the existing Shire of Menzies managed Coolgardie North – Mulline road and supporting infrastructure to the mining operations (OraBanda, 2020). The area proposed to be cleared exists adjacent to a historical mine that commenced mining activities in the 1980s (OraBanda, 2020).

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 Goldfields subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Coolgardie Bioregion (GIS Database). The Eastern Goldfields subregion is characterised by undulating plains interrupted by low hills and ridges, supporting mallees, *Acacia* thickets and shrub-heaths on sandplains, and diverse *Eucalyptus* woodlands around salt lakes, on ranges, and in valleys. Salt lakes support dwarf shrublands of samphire. The subregion is rich in endemic *Acacia* species (CALM, 2002).

The application area falls on the northern edge of the area known as the Great Western Woodlands, which represents the largest and most intact eucalypt woodland remaining in southern Australia and is one of the best examples of its type in the world (DEC, 2010). The Great Western Woodlands covers a total area of approximately 16 million hectares, and is recognised for its flora and fauna species richness and high number of endemic flora species (DEC, 2010). However, at approximately 221 hectares in size, the clearing permit application area represents less than 0.01 percent of the area covered by the Great Western Woodlands, and the proposed clearing of 221 hectares is unlikely to have any significant impact on the conservation values of the Great Western Woodlands.

A reconnaissance flora and vegetation survey of the majority of the application area and surrounding areas was conducted by JBBC (2019) on 30 October 2019. Vegetation was dominated by *Eucalyptus* woodlands, *Acacia* shrublands and *Eremophila* shrublands (JBBC, 2019). Vegetation within the application area was representative of regional vegetation (JBBC, 2019). No Threatened or Priority Ecological Communities were identified as potentially occurring in the application area and the field assessments of the application did not record any (JBBC 2019; GIS Database).

A total of 81 flora species from 36 genera and 23 families were recorded within parts of the application area and surrounding areas (JBBC, 2019). A desktop assessment identified 17 Priority flora previously recorded within 40 kilometres of the application area (JBBC, 2019). Eight of these species were determined to be unlikely to occur due to a lack of suitable habitat, however eight Priority species were considered to have a low or moderate likelihood of occurring and one Priority species, *Notisia intonsa* (P3), was considered highly likely to occur due to the presence of suitable habitat (JBBC, 2019). One Priority flora species, *Thysanotus brachyantherus* (P2) was recorded during the field assessment, just outside of the application area (JBBC, 2019). However, no Threatened or Priority flora species were identified during the field assessment of the application area (JBBC, 2019). As the field survey was conducted at a sub-optimal time, with very few annual species being present, it is possible that annual Priority flora species were present and not detected (JBBC, 2019). However, none of the Priority flora species potentially present are locally or regionally restricted, and all occur across multiple IBRA regions (Western Australian Herbarium, 1998-). It is unlikely that the proposed

clearing will have a significant impact on the conservation status of Priority flora potentially present.

Two species of weeds, *Carrichtera annua* (Ward's Weed) and *Brassica tournefortii* (Mediterranean Turnip), were recorded during the field survey (JBBC, 2019). 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 fauna habitat assessment of the application area was conducted by Biostat (2020). Malleefowl (*Leipoa ocellata*, VU) were identified as highly likely to occur within the application area due to the presence of suitable habitat, however no evidence of malleefowl were recorded (Biostat, 2020; JBBC, 2019).

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Biostat, 2020; JBBC, 2019; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

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

Methodology

Biostat (2020)
CALM (2002)
DEC (2010)
JBBC (2019)
Western Australian Herbarium (1998-)

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

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

Comments

Proposal may be at variance to this Principle

A fauna habitat assessment of the application area was conducted by Biostat (2020). The following three fauna habitats have been recorded within the application area (Biostat, 2020):
Acacia shrublands;
Eucalyptus / chenopod woodlands; and
Eucalyptus woodlands.

None of the fauna habitats described were restricted to the application area and the vegetation proposed to be cleared is unlikely to represent significant habitat for fauna in a local or regional context. The majority of the fauna habitats were described as degraded (Biostat, 2020). However, areas in the south and west of the application area contained higher quality fauna habitat likely to support a higher fauna diversity and potential habitat for malleefowl (Biostat, 2020; JBBC, 2019). Vegetation type 4: *Acacia caesaneura, Acacia fuscaneura, Acacia burkittii* tall shrubland, which was recorded in the north-west of the application area, may support malleefowl (JBBC, 2019). Potential impacts to malleefowl as a result of the proposed clearing may be minimised by the implementation of a malleefowl management condition.

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

Methodology

Biostat (2020)
JBBC (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 flora survey of the application area did not record any species of Threatened flora (JBBC, 2019).

The vegetation associations within the application area are common and widespread within the region (JBBC,

2019; 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 JBBC (2019)

GIS Database:
- Pre-European Vegetation
- Threatened and Priority Flora

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

Comments

Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the application area (GIS Database).

A flora and vegetation survey of the application area did not identify any TECs (JBBC, 2019).

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

Methodology JBBC (2019)

GIS Database:
- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments

Proposal is not at variance to this Principle

The application area falls within the Coolgardie Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 97% of the pre-European vegetation still exists in the IBRA Coolgardie Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 40: shrublands; *Acacia* scrub, various species; and 468: medium woodland; salmon gum and goldfields blackbutt (GIS Database). Approximately 95-100% 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 – Coolgardie	12,912,204	12,648,491	~97	Least Concern	~16
Beard vegetation associations – WA					
40	369,056	351,139	~95	Least Concern	~6
468	592,022	583,902	~98	Least Concern	~22
Beard vegetation associations – Coolgardie Bioregion					
40	1,675	1,675	~100	Least Concern	~47
468	583,357	575,360	~98	Least Concern	~22

* Government of Western Australia (2019)
** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2019)

GIS Database:
- IBRA Australia
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (JBBC, 2019; GIS Database). A number of seasonal creek 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.

The majority of the application area consists of lowland and washout areas of salmon gum (*Eucalyptus salmonophloia*) and gimlet (*Eucalyptus salubris*) woodlands over chenopods (Biostat, 2020). A number of vegetation types were described as occurring in association with drainage lines including VT1, VT2, VT3 and VT5 (JBBC, 2019). However, many of the drainage lines have been heavily disturbed, with significant areas being degraded (JBBC, 2019).

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

Methodology

Biostat (2020)
JBBC (2019)

GIS Database:
- Hydrography, Lakes
- Hydrography, linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments

Proposal may be at variance to this Principle

The application area lies within the Gumland and Illaara land systems (DPIRD, 2020).

The Gumland system ranges from depositional surfaces with broad shallow valley plains, typically receiving flow from greenstone hills (DPIRD, 2020). Higher loamy plains and restricted areas of slightly more elevated stony surfaces and plains with fine gravelly ironstone mantles and central drainage tracts (DPIRD, 2020). Soils of the Gumland system are dominated by calcareous loamy earths and red deep duplex soils or shallow duplex greenstone (DPIRD, 2020). The alluvial plains of the Gumland system are susceptible to soil erosion if the perennial shrub cover is removed, as are the stony plains if the protective mantle is disturbed (DPIRD, 2020).

The Illaara system is dominated by gently undulating plains and occasional low rises with ironstone gravel mantles, slightly lower level to gently undulating plains with calcrete rubbles (DPIRD, 2020). The Illaara land system is dominated by deep red earth or red sand with a ferruginous lag (DPIRD, 2020). The Illaara land system is not generally susceptible to soil erosion (DPIRD, 2020).

The proposed clearing of up to 221 hectares of native vegetation within a boundary of approximately 230 hectares, for the purpose of mineral production and associated activities may cause appreciable land degradation. 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

DPIRD (2020)

(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

The application area is not located within a conservation area. The nearest DBCA (formerly DPaW) managed land is the former Credo Pastoral Lease which surrounds the application area, being within approximately 700 metres at its closest point (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

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

Methodology

GIS Database:
- DPaW Tenure

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

Comments

Proposal is not likely to be at variance to this Principle

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

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 arid to semi-arid, with an average annual rainfall of 200-300 millimetres occurring primarily in winter (CALM, 2002). The nearest weather station is Menzies, approximately 53 kilometres north-east of the application area, with an average rainfall of approximately 254 millimetres per year (BoM, 2020).

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 (2020)
CALM (2002)

GIS Database:
- Hydrography, linear

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

Comments

The clearing permit application was advertised on 17 April 2020 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 (WC2017/001 and WC2017/007) over the area under application (DPLH, 2020). 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, 2020). 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 (2020)

4. References

Biostat (2020) Vegetation Clearing – Fauna Assessment. Report prepared for Ora Banda Mining, by Biostat Pty Ltd, March 2020.

BoM (2020) Bureau of Meteorology Website – Climate Data Online, Menzies. Bureau of Meteorology. http://www.bom.gov.au/climate/data/ (Accessed 25 May 2020).

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

DEC (2010) A Biodiversity and Cultural Conservation Strategy for the Great Western Woodlands. Department of Environment and Conservation, Western Australia.

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.

DPIRD (2020) Advice received in relation to Clearing Permit Application CPS 8882/1. Deputy Commissioner of Soil and Land Conservation, Department of Primary Industries and Regional Development, Western Australia, May 2020.

DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 12 June 2020).

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

JBBC (2019) Targeted Vegetation and Flora Survey of the Proposed Waihi Mining Project and adjacent areas. Report prepared for Ora Banda Mining Limited, by Jenny Borger Botanical Consulting, October 2019.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. https://florabase.dpaw.wa.gov.au/ (Accessed 15 June 2019).

OraBanda (2020) Waihi Gold Operations Application for Clearing Permit (Purpose Permit) Waihi Pit Extensions M30/255. Report prepared by OraBanda Mining Limited, April 2020.

5. Glossary

Acronyms:

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

Definitions:

{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.