



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8514/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Aurene Parker Range Pty Ltd

1.3. Property details

Property: Mining Lease 77/657
Mining Lease 77/762
Miscellaneous Licence 77/264
Local Government Area: Shire of Yilgarn
Colloquial name: Centenary Gold Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
96.9		Mechanical Removal	Mineral Production and associated infrastructure

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 1 August 2019

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The vegetation of the application area is broadly mapped as the following Beard vegetation associations:
8: Medium woodland; salmon gum and gimlet;
125: Bare areas; salt lakes;
128: Bare areas; rock outcrops; and
1068: Medium woodland; salmon gum, morrel, gimlet and *Eucalyptus sheathiana* (GIS Database).

A vegetation survey was conducted over the application area and surrounding areas by Botanica Consulting during November 2012. The following five vegetation associations, from two major vegetation groups, were recorded within the application area (Botanica, 2019):

Eucalypt Woodland

- CLP-EW1:** Low woodland of *Eucalyptus salubris* over tall shrubland of *Melaleuca pauperiflora* subsp. *fastigiata* and open low shrubland of *Microcybe multiflora* on clay-loam plain;
- CLP-EW2:** Low woodland of *Eucalyptus longicornis* / *Eucalyptus salubris* over tall open scrubland of *Melaleuca pauperiflora* subsp. *fastigiata* and open chenopod shrubland and of *Atriplex vesicaria* / *Tectornina disarticulata* on clay-loam plain;
- HS-EW1:** Low woodland of *Eucalyptus longicornis* / *Eucalyptus salubris* over tall open shrubland of *Melaleuca pauperiflora* subsp. *fastigiata* and low open shrubland of *Phebalium tuberosum* on Banded Ironstone Formation (BIF) ridge;
- B-EW1:** Open low woodland of *Eucalyptus capillosa* over very open shrub mallee of *E. loxophleba* subsp. *lissophloia* and low open shrubland of *Astroloma serratifolium* / *Calytrix tetragona* on breakaway; and

Mallee Woodland and Shrubland

- SLP-MWS1:** Very open tree mallee of *Eucalyptus horistes* over mid shrubland of *Acacia acuminata* / *Allocasuarina corniculata* and open low open sedgeland of *Lepidosperma sanguinolentum* on sand-loam plain.

Clearing Description Centenary Gold Project.
Aurene Parker Range Pty Ltd proposes to clear up to 96.9 hectares of native vegetation within a boundary of approximately 96.9 hectares, for the purpose of mineral production. The project is located approximately 19 kilometres south east of Marvel Loch, within the Shire of Yilgarn.

Vegetation Condition Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Comment The vegetation condition was described in the vegetation survey conducted by Botanica Consulting using a scale adapted from the Keighery scale and the Trudgen scale (Botanica, 2019; Keighery, 1994; Trudgen, 1991), and has been converted to the Keighery scale (Keighery, 1994).

The application area includes areas historically cleared for mining activities (Botanica, 2019).

The majority of the proposed clearing is over previous permit 5626/1, which expired in July 2017.

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 may be at variance to this Principle**

The clearing permit application area is located within the Southern Cross subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Coolgardie Bioregion (GIS Database), and the Merredin subregion of the Avon Wheatbelt IBRA Bioregion (GIS Database). The Southern Cross subregion is characterised by gently undulating uplands dissected by broad valleys with bands of low greenstone hills, supporting diverse Eucalyptus woodlands rich in endemic eucalypts (CALM, 2002). The Merredin subregion is characterised by gently undulating landscapes rich in endemics, on residual lateritic uplands and derived sandplains; mixed eucalypt, *Allocasuarina huegeliana* and Jam-York gum woodlands (CALM, 2002).

A detailed flora and vegetation survey of the broader area was undertaken by Botanica Consulting in November 2012 (Botanica, 2019). The quadrats were revisited and survey data reviewed and updated in April 2019 (Botanica, 2019). The survey recorded 71 flora taxa, from 47 genera and 23 families (Botanica, 2019). No Threatened flora or Threatened Ecological Communities (TECs) were recorded in the application area.

A desktop search identified records of Priority flora: *Acacia asepala* (Priority 2) and *Hakea pendens* (Priority 3) in the broader survey area (Botanica, 2019; GIS Database). The application area was subsequently designed to avoid disturbance to populations of these Priority flora taxa (Botanica, 2019).

The application area is within the known distribution area for several Priority flora species, and habitat of at least marginal quality was identified for *Hydrocotyle corynophora* (Priority 1) and *Rinzia medifila* (Priority 1) as present during the field/desktop study (Botanica, 2019). These species were not recorded during the flora survey; however, they were not specifically searched for (Botanica, 2019). Priority flora are considered possible to occur within the application area (DBCA, 2019b), however, all of the vegetation associations which occur in the application area also extend outside the application area (Botanica, 2019), therefore, any Priority flora (if present), are unlikely to be restricted to the application area.

There are records of the Priority Ecological Community (PEC), Parker Range vegetation complexes (Priority 3) within the application area (Botanica, 2019; GIS Database). Existing mapping of the Parker Range PEC is indicative only, and definitions of the Parker Range vegetation complexes are broad (DBCA, 2019a). Analysis to determine the similarities between species composition and vegetation communities from the broader Parker Range area and the application area, found that; species composition of the Parker Range vegetation complexes appear to differ from those represented in the application area (Botanica, 2019). However, advice received from DBCA is the Parker Range PEC is comprised of all the vegetation units that occur on the Parker Range (DBCA, 2019a).

The vegetation associations, within the application area, are not restricted and their distribution extends outside of the application area. The proposed clearing, of at most 96.9 hectares represents less than 0.2 % of the Parker Range PEC. Given the relatively small area of clearing, and that the vegetation was previously disturbed by historic mining activities; the proposed clearing is unlikely to significantly impact the PEC.

The following weed species were recorded in the application area: *Agave Americana* (Century plant), *Centaurea melitensis* (Maltese cockspur) and *Diuriscus graveolens* (Stinkwort). None of these species are listed as a declared plant under the *Biosecurity and Agriculture Management Act 2007* (DPIRD, 2019). Clearing activities may spread or introduce weeds, which have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A desktop study identified records of a total of 124 vertebrate fauna species, and 13 invertebrate fauna species known to occur in the broader survey area (Botanica, 2019). A fauna reconnaissance survey was conducted on 13 April 2019. Four fauna habitats were verified as occurring in the broader survey area (Botanica, 2019). The habitat assessment was used to determine potential habitat for conservation significant fauna species. It was found that several species of conservation significance possibly occur in the application area, including Malleefowl (*Leipoa ocellata*) (Vulnerable) (Botanica, 2019). However, no evidence of any conservation significant fauna species were found (Botanica, 2019). Given there is suitable habitat for these species elsewhere within the surrounding areas; potential impact from the clearing is considered to be minimal (Botanica, 2019; GIS Database).

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Botanica, 2019; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas.

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

Methodology Botanica (2019)
CALM (2002)
DBCA (2019a)
DBCA (2019b)

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

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

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

The following four fauna habitats have been recorded within the application area (Botanica, 2019):

1. BIF Ridge / Breakaway: Eucalypt Woodland;
2. Clay-Loam Plain: Eucalypt Woodland;
3. Sand-Loam Plain: Mallee Woodland and Shrubland; and
4. Cleared Vegetation: Disturbed mined area.

A desktop assessment found records of a total of 124 vertebrate fauna, and 13 invertebrate fauna species in the broader survey area (Botanica, 2019). Based on the fauna habitats and previous records, a list of fauna species with potential to occur within the application area was compiled (Botanica, 2019). Conservation significant fauna that may occur in the application area, included: Malleefowl (*Leipoa ocellata*) (Vulnerable); Peregrine Falcon (*Falco peregrinus*) (OS); Central Long-eared Bat (*Nyctophilus major tor*) (Priority 3); Lake Cronin Snake (*Paroplocephalus atriceps*) (Priority 3) (Botanica, 2019). However, no fauna species of conservation significance were recorded in the application area during the reconnaissance survey (Botanica, 2019).

There are records of Malleefowl occurring within approximately 5 kilometres of the application area (Botanica, 2019; GIS Database). However, the habitat in the application area was considered to be 'not ideal' and there was no evidence of Malleefowl observed during the 2019 reconnaissance survey (Botanica, 2019). The application area may be suitable for foraging, however, it is not considered as suitable for breeding (Botanica, 2019). Potential impacts to Malleefowl from the proposed clearing is considered to be minor as there is suitable habitat elsewhere within the surrounding areas (Botanica, 2019; GIS Database).

Fauna habitats within the application are common and widespread in the region (Botanica, 2019). The proposed clearing of 96.9 hectares is not likely to impact significant fauna habitat.

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

Methodology Botanica (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). Flora surveys of the application area did not record any species of Threatened flora (Botanica, 2019).

The vegetation associations within the application area are widespread within the region (Botanica, 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 Botanica (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 (Botanica, 2019).

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

Methodology Botanica (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 likely to be at variance to this Principle**

The vegetation of the application area is broadly mapped as the following Beard vegetation associations:

8: Medium woodland; salmon gum and gimlet;

125: Bare areas; salt lakes;

128: Bare areas; rock outcrops; and

1068: Medium woodland; salmon gum, morrel, gimlet and *Eucalyptus sheathiana* (GIS Database).

The majority of the application area falls within the Coolgardie Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA). Approximately 97% of the pre-European vegetation still exists in the IBRA Coolgardie Bioregion. The Beard vegetation associations mapped within the application area have over 50% remaining within the Coolgardie Bioregion, and a conservation status of 'Least Concern', at a Bioregional level (Department of Natural Resources and Environment, 2002; Government of Western Australia, 2019).

A small section (approximately 12.4 hectares) of the application area falls within the Avon Wheatbelt Bioregion. Approximately 18.5% of the pre-European vegetation still exists in the IBRA Avon Wheatbelt Bioregion, and approximately 20% within the Merredin subregion (Government of Western Australia, 2019). This section of the application area is mapped as Beard vegetation associations 128 and 1068. Within the Avon Wheatbelt Bioregion and the Merredin subregion there is more than 49%, of each of these vegetation associations remaining, and a conservation status of 'Depleted' to 'Least Concern' (Department of Natural Resources and Environment, 2002; Government of Western Australia, 2019).

The national objectives and targets for biodiversity conservation recognise that the retention of 30% or more of the pre-clearing extent of a vegetation association is necessary if Australia's biological diversity is to be protected (DEH, 2001). Although the remaining vegetation in the Wheatbelt Bioregion and Merredin subregion is below this threshold, vegetation within the Shire of Yilgarn remains largely uncleared at over 80%, and all Beard vegetation associations within the application area retain over 36% in the Shire of Yilgarn.

Historical mining activity has altered the structure of the vegetation within the application area, and the majority of the vegetation surrounding the application is intact (GIS Database). Therefore, the application area does not represent a significant remnant of vegetation within an area that has been extensively cleared, in a local context (Botanica, 2019; GIS Database).

	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 (17)
IBRA Bioregion - Avon Wheatbelt	9,517,109	1,761,187	18.51	Vulnerable	~2 (10)
IBRA Subregion -Merredin	6,524,180	1,367,565	20.96	Vulnerable	~3 (9)
Local Government Yilgarn	3,042,759	2,480,372	81.52	Least Concern	~25 (31)
Beard vegetation associations – WA					
8	694,638	346,425	~49.87	Depleted	7 (14)
125	3,485,785	3,146,487	~90.27	Least Concern	9 (8)
128	329,836	288,813	87.56	Least Concern	21 (24)
1068	268,900	142,088	52.84	Least Concern	6 (12)
Beard vegetation associations –Coolgardie Bioregion					
8	280,248	275,589	98	Least Concern	~10 (10)
125	545,717	506,802	92	Least Concern	7 (7)
128	184,549	183,891	99	Least Concern	19 (19)
1068	193,988	104,804	54	Least Concern	7 (14)
Beard vegetation associations –Avon Wheatbelt Bioregion					
128	41,967	22,998.8	~54	Least Concern	10 (19.)
1068	74,875	37,249	~49.7	Depleted	3 (7)
Beard vegetation associations – Merredin subregion					
128	35,455	20,055	56	Least Concern	11 (20)
1068	74,875	37,249	49.75	Depleted	3 (7)
Beard vegetation associations – Shire of Yilgarn					
8	163,920	59,992	36	Depleted	6(17)
125	81,718	44,957	55	Least Concern	13(24)
128	45,797	41,452	90	Least Concern	27(30)
1068	268,900	142,088	52	Least Concern	6(11)

* Government of Western Australia (2019)

** Department of Natural Resources and Environment (2002)

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

Methodology DEH (2001)
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 (Botanica, 2019; GIS Database). Several seasonal creek lines pass through the application area (GIS Database). Creek lines in the region are dry for most of the year, and only flow and hold water for short durations following significant rainfall (Botanica, 2019).

The creeklines within the application area feed into a large a non-perennial salt lake approximately 0.2 kilometres to the south east of the application area at its nearest point (GIS Database). However, none of the vegetation within the application area is buffering the lake, or growing in an environment associated with the lake (Botanica, 2019; GIS Database).

None of the vegetation associations recorded during the vegetation survey are described as growing in association with watercourses or wetlands (Botanica, 2019). The vegetation condition and vegetation association mapping indicates that the majority of the vegetation in the vicinity of the seasonal creek lines is 'completely degraded' (Keighery, 1994), and was previously cleared for mining activities and is mapped as cleared vegetation (Botanica, 2019; GIS Database).

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 Botanica (2019)
Keighery (1994)

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 is not likely to be at variance to this Principle

A desktop study illustrates minimal variation between contour lines across the application area, indicating that the application area is relatively flat (GIS Database). Therefore, there is little slope to impel movement of soil and water, and hence cause erosion.

Soil mapping of the area defines the majority of the application area as undulating plains with some low dunes and seasonal lakes, with soils of brown and grey brown calcareous earth (Northcote, K. H. et al. 1960-68).

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

Methodology Northcote, K. H. et al. (1960-68)

GIS Database:
- Soils, Statewide
- Topographic Contour, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

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

There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the Jibadji Nature Reserve which is located approximately 13.5 kilometres east of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

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

Methodology GIS Database:
- DPaW Tenure

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

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

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. 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 semi-arid, with a low average rainfall at the nearest weather station, at Southern Cross Airfield, of approximately 306 millimetres per year (BoM, 2019). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (Botanica, 2019).

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 (2019)
Botanica (2019)

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 17 June 2019 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC2017/007) over the area under application (DPLH, 2019). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2019). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

Methodology DPLH (2019)

4. References

BoM (2019) Bureau of Meteorology Website – Climate Data Online, Southern Cross Airfield (012320). Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 15 July 2019).

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DBCA (2019a) Advice received in relation to Clearing Permit Application CPS 8514/1. Species and Communities Branch. Department of Biodiversity, Conservation and Attractions, Western Australia, June 2019.
- DBCA (2019b) Advice received in relation to Clearing Permit Application CPS 8514/1. Species and Communities Branch. Department of Biodiversity, Conservation and Attractions, Western Australia, July 2019.
- DEH (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Department of the Environment and Heritage, Canberra, 2001.
- 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
- DPLH (2019) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 15 July 2019).
- 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.
- Trudgen, M.E. (1991) Vegetation Condition Scale, in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc), and the Tree Society (Inc), Perth.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 18 July 2019).

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:

{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.