



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8152/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Avoca Mining Pty Ltd

1.3. Property details

Property:
Mining Lease 15/348
Mining Lease 15/375
Mining Lease 15/506
Mining Lease 15/507
Mining Lease 15/597
Mining Lease 15/580
Mining Lease 15/1814
Miscellaneous Licence 15/382
Miscellaneous Licence 15/386

Local Government Area: Shire of Coolgardie
Colloquial name: Baloo Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 4 October 2018

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The vegetation of the application area is broadly mapped as the following Beard vegetation associations:
8: Medium woodland: salmon gum (*E. salmonophloia*) and gimlet (*E. salubris*);
125: Bare areas; salt lakes; and
501: Medium woodland; goldfields blackbutt (*E. lesouefii*) (GIS Database).

A flora and vegetation survey was conducted over the application area by Native Vegetation Solutions from 11 to 13 May 2015. The following 15 vegetation associations were recorded within the application area (NVS, 2015):

Eucalyptus lesouefii* and *E. flocktoniae* woodland over *Melaleuca sheathiana - Dominant species were *Eucalyptus flocktoniae* subsp. *hebes*, *Melaleuca sheathiana*, *Atriplex nummularia* subsp. *spathulata*, *Eremophila interstans* subsp. *virgata*, *Maireana sedifolia*, *Cratystylis conocephala* and *Olearia muelleri*;

***Melaleuca sheathiana* thicket** - Dominant species were *Melaleuca sheathiana*, *Atriplex vesicaria*, *Sclerolaena diacantha*, *Maireana georgei*, *Solanum nummularium*, and *Angianthus tomentosus*;

***Eucalyptus salmonophloia* woodland over sclerophyll shrubland** - Dominant species were *Eucalyptus salmonophloia*, *E. salubris*, *Melaleuca sheathiana*, *Atriplex nummularia* subsp. *spathulata*, *Eremophila interstans* subsp. *virgata*, *Maireana sedifolia*, *Cratystylis conocephala* and *Olearia muelleri*;

***Eucalyptus ravida* woodland** - Dominant species were *Eucalyptus ravida*, *E. flocktoniae* subsp. *hebes*, *Eremophila scoparia*, *E. maculata* subsp. *brevifolia*, *Atriplex nummularia* subsp. *spathulata*, and *Olearia muelleri*;

Mixed *Eucalyptus* woodland over mixed shrubland - Dominant species were numerous *Eucalyptus* species, *Eremophila scoparia*, *E. interstans* subsp. *virgata*, *Atriplex vesicaria* and *A. nummularia* subsp. *spathulata*;

Open *Eucalyptus salmonophloia* woodland - Dominant species were *Eucalyptus salmonophloia*, *Atriplex vesicaria*, *Atriplex nummularia* subsp. *spathulata*, *Senna artemisioides* subsp. *filifolia*, *Maireana sedifolia* and *Eremophila scoparia*;

Open mixed *Eucalyptus* woodland over Chenopod shrubland - Dominant species were numerous *Eucalyptus* species, over *Atriplex vesicaria*, *Frankenia pauciflora*, *Maireana tomentosa*, *Sclerolaena diacantha* and *Carpobrotus modestus*;

Acacia quadrimarginea shrubland - Dominant species were *Acacia quadrimarginea*, *Beyeria lechenaultii*, *Triodia rigidissima*, *Dodonaea lobulata* and *Eremophila oppositifolia* subsp. *angustifolia*;

Tecticornia shrubland - Dominant species were *Tecticornia indica* subsp. *bidens*, *T. moniliformis*, *T. pergranulata* subsp. *pergranulata* and *T. syncarpa*;

Eucalyptus oleosa and E. lesouefii over Melaleuca sheathiana and mixed shrubland on undulating hills - Dominant species were *Eucalyptus oleosa* subsp. *oleosa*, *E. lesouefii*, *Melaleuca sheathiana*, *Acacia quadrimarginea*, *Scaevola spinescens*, *Acacia tetragonophylla*, *Senna artemisioides* subsp. *filifolia* and *Alyxia buxifolia*;

Mixed Eucalyptus woodland over Melaleuca sheathiana and Cratystylis Conocephala - Dominant species were numerous *Eucalyptus* species over *Melaleuca sheathiana*, *Cratystylis conocephala*, *Ptilotus obovatus*, *Atriplex vesicaria* and *Eremophila interstans* subsp. *virgata*;

Mixed sclerophyll shrubland - Dominant species were *Atriplex vesicaria*, *Eremophila scoparia*, *Exocarpos aphyllus*, *Atriplex stipitata*, *Lycium australe* and *Cratystylis subspinescens*;

Sclerophyll shrubland with emergent Bossiaea walker - Dominant species were *Bossiaea walker*, *Cratystylis subspinescens*, *Olearia subspicata*, *Scaevola spinescens*, *Frankenia setosa*, *Frankenia interioris*, and *Ptilotus obovatus*;

Eucalyptus torquata and Eucalyptus lesouefii over mixed sclerophyll shrubland on undulating hills - Dominant species were *Eucalyptus torquata*, *E. lesouefii*, *Atriplex nummularia* subsp. *spathulata*, *Dodonaea lobulata*, *Eremophila glabra* subsp. *glabra*, *Olearia muelleri*, *Acacia tetragonophylla*, *Scaevola spinescens*, and *Senna artemisioides* subsp. *filifolia*; and

Existing Disturbance - Dominant species were *Atriplex nummularia* subsp. *spathulata*, *A. vesicaria* and numerous *Sclerolaena* species.

Clearing Description	Baloo Project. Avoca Mining Pty Ltd proposes to clear up to 200 hectares of native vegetation within a boundary of approximately 1,677 hectares, for the purpose of mineral production and associated activities. The project is located approximately 48 kilometres north of Norseman, within the Shire of Coolgardie.
Vegetation Condition	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); To: Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).
Comment	The vegetation condition was derived from a vegetation survey conducted by NVS (2015).

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 Goldfield subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Coolgardie Bioregion (GIS Database). The Eastern Goldfield subregion is characterised by Mallees, Acacia thickets and shrubheaths on sandplains. Diverse <i>Eucalyptus</i> woodlands occur around salt lakes, on ranges, and in valleys. Salt lake support dwarf shrublands of samphire. Woodlands and <i>Dodonaea</i> shrubland occur on basic granulites of the Fraser Range. The area is also rich in endemic Acacias (CALM, 2002). The application area sits partially within Lake Cowan, a bare salt flat which is partially inundated after heavy rain (GIS Database). The application area is also within the Great Western Woodlands, a large tract of Eucalypt Woodland extending from the Wheatbelt to the inland deserts of Western Australia. The Great Western Woodlands is the largest remaining intact temperate woodland in the world, is one of the very few, large, intact landscapes remaining in temperate Australia and is of global significance (DEC, 2010). NVS conducted a Level 1 flora and vegetation survey over the application area and surrounding region, identifying 15 vegetation associations with 136 species, representing 29 families and 62 genera (NVS, 2015). Species composition and vegetation types within the application areas are typical of the local region and not considered to be unusually diverse (NVS, 2015; GIS Database). The areas proposed to be cleared are not considered to be remnant vegetation and some areas have been disturbed by historical activities (GIS Database). No Threatened or Priority Flora species, Threatened or Priority Ecological Communities were recorded within the application area (NVS, 2015; GIS Database). There were two weed species recorded within the application areas; <i>Carrichtera annua</i> (Ward's Weed) and <i>Medicago polymorpha</i> (Burr Medic) (NVS, 2015). 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.
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There were four broad fauna habitat types recorded within the application area by Terrestrial Ecosystems (2015). All faunal habitats within the application areas are considered to be common and widespread within the subregion and faunal assemblages are unlikely to be different to those found in similar habitat located elsewhere in the region (GIS Database).

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

Methodology CALM (2002)
DEC (2010)
NVS (2015)
Terrestrial Ecosystems (2015)

GIS Database:

- IBRA Australia
- Imagery
- 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**

A level 1 fauna survey was undertaken by Terrestrial Ecosystems on 13 May 2015 (Terrestrial Ecosystems, 2015). There were four broad faunal habitats identified during the survey;

- Tecticornia low dense shrubland;
- Sclerophyll shrubland;
- Mixed eucalyptus woodland over mixed sclerophyll shrubland with a sparse understory; and
- Sclerophyll and chenopod shrubland (Terrestrial Ecosystems, 2015).

Within each of these four broad fauna habitats there were variations in the density of the eucalypt woodland ranging upwards from very open, and other areas showing evidence of recent rehabilitation (Terrestrial Ecosystems, 2015).

There were no species of conservation significance recorded from within the application area (Terrestrial Ecosystems, 2015). The application area contains suitable habitat for the Malleefowl (*Leipoa ocellata* – Schedule 1) and the bird has been recorded in other fauna surveys nearby. However, there was no evidence of tracks or mounds of Malleefowl within the application area (Terrestrial Ecosystems, 2015). The Malleefowl could potentially use the application area and adjoining areas for foraging, however there is limited high quality habitat available for this species within the application area (Terrestrial Ecosystems, 2015). The proposed clearing is not likely to significantly impact the conservation significance of this species.

A salt lake ecological survey was undertaken by Bennelongia (2016) within the application area that intersects Lake Cowan during 4 to 5 February 2016. There were 12 diatom species identified which a common level of richness of hypersaline lakes, and the species recorded are typical of hypersaline waters in inland Australia (Bennelongia, 2016). No macrophytes and seven species of aquatic invertebrates were recorded during the survey. These species are commonly represented within salt lakes of Australia (Bennelongia, 2016).

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

Methodology Terrestrial Ecosystems (2015)
Bennelongia (2016)

(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 (NVS, 2015).

The vegetation associations within the application area are common and widespread within the region (NVS, 2015; 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 NVS (2015)

GIS Database:
- Threatened and Priority Flora

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

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

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

A flora and vegetation survey of the application area did not identify any TECs (NVS, 2015).

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

Methodology NVS (2015)

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 application area falls within the Coolgardie Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 98% of the pre-European vegetation still exists in the IBRA Coolgardie Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation associations: 8: Medium woodland: salmon gum (*E. salmonophloia*) and gimlet (*E. salubris*), 125: Bare areas; salt lakes, and 501: Medium woodland; goldfields blackbutt (*E. lesouefii*) (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands (and post clearing %)
IBRA Bioregion - Coolgardie	12,912,204	12,648,491	~97.96	Least concern	16.39 (16.72)
IBRA Subregion - Eastern Goldfields	5,058,247	5,031,528	~99.47	Least concern	8.64 (8.68)
Beard vegetation associations – WA					
8	694,638	346,426	~49.87	Depleted	6.81 (13.58)
125	3,485,785	3,146,487	~90.27	Least concern	9.29 (8.45)
501	48,022	47,889	~99.72	Least concern	14.09 (14.13)
Beard vegetation associations – Eastern Goldfields Bioregion					
8	280,248	275,589	~98.34	Least concern	9.52 (9.68)
125	545,718	506,803	~92.87	Least concern	6.57 (7.04)
501	43,939	43,806	~99.70	Least concern	15.40 (15.45)
Beard vegetation associations - subregion					
8	226,086	225,022	~99.53	Least concern	7.04 (7.07)
125	303,091	300,446	~99.13	Least concern	3.19 (3.22)
501	43,871	43,738	~99.70	Least concern	15.42 (15.47)

* Government of Western Australia (2018)

** Department of Natural Resources and Environment (2002)

Although Beard vegetation association 8 is considered depleted at the State level, it will remain above the 30% threshold level recommended in the National Objectives Targets for Biodiversity Conservation below which, species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000). The vegetation of the application area is not part of a remnant (GIS Database).

The application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

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

Methodology Department of Natural Resources and Environment (2002)
EPA (2000)
Government of Western Australia (2018)

GIS Database:
- IBRA Australia
- Pre-European Vegetation

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

Comments Proposal is at variance to this Principle

The application area sits partially within Lake Cowan, a non-perennial salt lake (GIS Database). This salt lake is dry for most of the year, only partially inundated immediately following significant rainfall (GIS Database).

The *Tecticornia* shrubland vegetation association was identified as growing in association with the salt lake (NVS, 2015; GIS Database). This vegetation association is sparse in nature and occupies 5.72 hectares of the application area. Samphire species are important for saline waterways provides important habitat for fauna that live in saline ecosystems such as Lake Cowan (DWER, 2004).

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 DWER (2004)
NVS (2015)

GIS Database:
- Hydrography, Lakes
- Hydrography, linear
- Imagery

(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

The application area intersects the Lefroy, Coolgardie and Doney land systems (GIS Database). This land system has been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The majority of the application area intersects the Lefroy land system. This land system is a lake bed land unit, which is highly saline, un-vegetated and not prone to land degradation, however the Dunes land unit is prone to wind erosion if the protective vegetation is cleared (DPIRD, 2018).

The Coolgardie land system is described as uplands and undulating plains associated with ultramafic greenstones. The red loamy soils support eucalypt woodlands and halophytic shrublands and are not regarded as being highly prone to erosion under pastoral land use.

The Doney land system is characterised by calcareous plains with Eucalyptus woodlands adjacent to the salt lake systems. The application area is likely to include the loamy plain and the drainage line land units. These have moderately close mixed shrubs under a Eucalypt overstory (DPIRD, 2018). The drainage line is broad and unchanneled. The deep calcareous red earth soils are not inherently prone to erosion.

Land degradation in the form of soil erosion is unlikely to occur within the application area, provided the surface hydrology is not altered by the road design (DPIRD, 2018).

The application intersects Lake Cowan, and management may be needed to ensure increased sedimentation

does not affect the local area (GIS Database). Potential impacts from land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition. The application area has an annual average evaporation rate of approximately eight times the annual average rainfall (GIS Database). Given this, surface flows during normal rainfall events are likely to be short lived and recharge to groundwater would be considered minimal. This would reduce the likelihood of salinity increasing as a result of the proposed clearing.

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

Methodology DPIRD (2018)

GIS Database:

- Imagery
- Landsystem Rangelands

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

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

There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the Binaronca Nature Reserve which is located approximately four kilometres north-west of the application area (GIS Database). Given the distance between the application area and Binaronca Nature Reserve, the proposed clearing is not likely to impact on the 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**

According to available databases, the application area is not located within a Public Drinking Water Source Area (GIS Database).

There are no permanent waterbodies or watercourses within the application area, however, there are several non-perennial watercourses within the application area, and Lake Cowan, a non-perennial salt lake, sits partially within the application area (GIS Database). Clearing in the vicinity of these may result in localised erosion and sedimentation, particularly following heavy rainfall. Potential impacts to the surface water quality as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The application area receives an average annual rainfall of approximately 300 millimetres with an average annual evaporation rate of between 2,400 and 2,500 millimetres (GIS Database). Any surface flows are therefore likely to be short lived.

According to available databases, groundwater salinity within the application area is between 14,000 and 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be saline. Given the high TDS, the proposed clearing is not likely to cause groundwater salinity levels within the application area to alter.

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

Methodology GIS Database:
- Hydrography, Linear
- Groundwater Salinity, Statewide
- 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 application area is located within the Balladonia catchment areas (GIS Database). Given the size of the area to be cleared (200 hectares) in relation to the size of the catchment areas (2,488,250 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

The climate of the region is arid to semi-arid, with an average annual rainfall of 300 millimetres (CALM, 2002) and an average annual evaporation rate of between 2,400 and 2,500 millimetres there is likely to be little surface flow during normal seasonal rains (GIS Database). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology CALM (2002)

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 13 August 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim over the area under application (DPLH, 2018). 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, 2018). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

Methodology DPLH (2018)

- Bennelongia (2016) Baloo Project: Salt Lake Ecological Survey. Report prepared for S2 Resources Ltd, by Bennelongia Environmental Consultants, April 2016.
- 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.
- DPIRD (2018) Advice received in relation to Clearing Permit Application CPS 8152/1. Commissioner of Soil and Land Conservation, Department of Primary Industries and Regional Development, Western Australia, August 2018.
- DPLH (2018) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage.
<http://maps.daa.wa.gov.au/AHIS/> (Accessed 22 August 2018).
- 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.
- DWER (2004) *Halosarcia indica* subsp *bidens*. Department of Water and Environment Regulation.
https://www.water.wa.gov.au/_data/assets/pdf_file/0020/4754/84801.pdf (Accessed 22 August 2018).
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
- Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions.
<https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- NVS (2015) Level 1 Flora and Vegetation Survey of the Baloo Gold Prospect Proposed Access Corridor. Report prepared for Polar Metals Pty Ltd, by Native Vegetation Solutions, August 2015.
- Terrestrial Ecosystems (2015) Level 1 Vertebrate Fauna Risk Assessment for the Baloo Project Area. Report prepared for Polar Metals Pty Ltd, by Terrestrial Ecosystems, June 2015.

Acronyms:

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

Definitions:

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

T	<p>Threatened species: Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).</p> <p>Threatened fauna is that subset of ‘Specially Protected Fauna’ declared to be ‘likely to become extinct’ pursuant to section 14(4) of the <i>Wildlife Conservation Act 1950</i>.</p> <p>Threatened flora is flora that has been declared to be ‘likely to become extinct or is rare, or otherwise in need of special protection’, pursuant to section 23F(2) of the <i>Wildlife Conservation Act 1950</i>.</p> <p>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.</p>
CR	<p>Critically endangered species Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
EN	<p>Endangered species Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
VU	<p>Vulnerable species Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.</p>
EX	<p>Presumed extinct species Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, in</p>

Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

- IA Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1 Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
- P2 Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
- P3 Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
- P4 Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.