



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8891/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Fenix Resources Ltd

1.3. Property details

Property: Mining Lease 20/118
General Lease 20/28
Miscellaneous Licences 20/83, 20/84, 20/85
Local Government Area: Shire of Cue
Colloquial name: Iron Ridge Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 20 August 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:
18: Low woodland; mulga (*Acacia aneura*); and
202: Shrublands; mulga & *Acacia quadrimarginea* scrub (GIS Database).

Several flora and vegetation surveys have been conducted over the application area and the Weld Range area. The following vegetation associations were recorded within the application area (Fenix, 2020):

SH01 - *Acacia* sparse shrubland: *Acacia ramulosa* var. *ramulosa*, *Acacia tetragonophylla* tall sparse shrubland; *Ptilotus obovatus*, *Scaevola spinescens*, *Senna artemisioides* subsp. *artemisioides* low sparse shrubland.

SH02 - *Acacia* sparse shrubland: *Acacia* sp. Weld Range (A. Markey & S. Dillon 2994), *Acacia speckii* (P4), *Acacia pteraneura* tall sparse shrubland; *Eremophila glutinosa*, *Eremophila mackinlayi* subsp. *spathulata*, *Senna artemisioides* subsp. *sturtii* low sparse shrubland.

SH03 - *Acacia* open shrubland: *Acacia* sp. Weld Range (A. Markey & S. Dillon 2994), *Acacia incurvaneura*, *Acacia ramulosa* var. *linophylla* tall open shrubland; *Eremophila forrestii* subsp. *forrestii*, *Harnieria kempeana* subsp. *muelleri*, *Ptilotus obovatus* low sparse shrubland.

SH04 - *Acacia* sparse shrubland: *Acacia* sp. Weld Range (A. Markey & S. Dillon 2994), *Acacia ramulosa* var. *linophylla* tall sparse shrubland; *Eremophila mackinlayi* subsp. *spathulata*, *Ptilotus obovatus*, *Senna artemisioides* subsp. *helmsii* low sparse shrubland.

SH05 - *Acacia* sparse shrubland: *Acacia rhodophloia*, *Acacia incurvaneura*, *Thryptomene decussata* tall sparse shrubland; *Ptilotus obovatus*, *Dodonaea pachyneura*, *Eremophila latrobei* subsp. *latrobei* low sparse shrubland.

SH06 - *Acacia* sparse shrubland: *Acacia incurvaneura*, *Acacia fuscaneura*, *Acacia incurvaneura* x *mulganeura* tall sparse shrubland; *Eremophila georgei*, *Eremophila forrestii* subsp. *forrestii*, *Psydrax latifolia* low sparse shrubland.

SH07 - *Acacia* sparse shrubland: *Acacia incurvaneura*, *Acacia mulganeura*, *Acacia ramulosa* var. *linophylla* tall sparse shrubland; *Eremophila glutinosa*, *Eremophila latrobei* subsp. *latrobei*, *Micromyrtus placoides* (P3) low sparse shrubland.

SH08 - *Acacia* sparse shrubland: *Acacia ramulosa* var. *linophylla*, *Acacia incurvaneura*, *Acacia incurvaneura* x *mulganeura* tall sparse shrubland; *Eremophila forrestii* subsp. *forrestii*, *Eremophila jucunda* subsp. *jucunda*, *Ptilotus schwartzii* low sparse shrubland.

W01 - *Acacia* open woodland: *Acacia pruinocarpa* low open woodland; *Acacia pteraneura*, *Acacia ramulosa* var. *linophylla* tall open shrubland; *Eremophila forrestii* subsp. *forrestii*, *Harnieria kempeana* subsp. *muelleri*, *Ptilotus obovatus* low sparse shrubland.

W02 - *Acacia* open woodland: *Acacia pruinoarpa* low open woodland; *Acacia incurvaneura*, *Acacia fuscaeneura*, *Acacia ramulosa* var. *linophylla* tall open shrubland; *Eremophila forrestii* subsp. *forrestii*, *Eremophila georgei*, *Ptilotus obovatus* low sparse shrubland.

Clearing Description	Iron Ridge Project. Fenix Resources Ltd proposes to clear up to 98.6 hectares of native vegetation within a boundary of approximately 462.341 hectares, for the purpose of mineral production. The project is located approximately 53 kilometres north north-west of Cue, within the Shire of Cue.
Vegetation Condition	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994). To Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).
Comment	The vegetation condition was derived from a vegetation survey conducted by Ecologia (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 may be at variance to this Principle**

The clearing permit application area is located within the Western Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The Western Murchison subregion is characterised by Mulga low woodlands, often rich in ephemerals (usually with bunch grasses), on outcrop and fine textured Quaternary alluvial and eluvial surfaces (extensive hardpan washplains that dominate and characterise the subregion) mantling granitic and greenstone strata of the northern part of the Yilgarn Craton. Surfaces associated with the occluded drainage occur throughout with hummock grasslands on Quaternary sandplains, saltbush shrublands on calcareous soils and Halosarcia low shrublands on saline alluvia (CALM, 2002).

Twelve flora and fauna surveys have been undertaken over the application area and its surrounds since 2008, with the most recent having been undertaken by Ecologia in 2019 (Ecologia, 2020; Fenix, 2020). The Ecologia survey identified 171 plant taxa, from 134 genera and 49 families within the greater project area (Ecologia, 2019; Fenix, 2020). No Threatened flora or Threatened Ecological Communities were identified within the application area or its surrounds (Fenix, 2020).

Six Priority flora species have been identified within the application area:

- *Acacia dilloniorum* - (Priority 1)
- *Stenanthemum patens* - (Priority 1)
- *Micromyrtus placoides* - (Priority 3)
- *Prostanthera petrophila* - (Priority 3)
- *Acacia speckii* - (Priority 4)
- *Dodonaea amplisemina* - (Priority 4)

For each of the Priority flora species above, apart from *Micromyrtus placoides*, the proposed local impacts are considered to be negligible, with both Priority 1 species having less than 0.4% impact, and for the other Priority species (excluding *Micromyrtus placoides*), the local impact being less than 6% (Fenix, 2020).

Approximately 32.6% of the known *Micromyrtus placoides* (P3) local population could be impacted by the proposed clearing (Fenix, 2020). *Micromyrtus placoides* occurs within the Murchison and Yalgoo IBRA bioregions (Eastern Murchison, Western Murchison and Talling subregions). *Micromyrtus placoides* has a relatively restricted distribution from near Cue (Weld Range), southwest to Talling Peak, covering a range of approximately 200 kilometres (DBCA, 2020). Reports have shown Talling Peak to contain a population of approximately 25,000 plants, although records from Mount Barloweerie and Mount Narryer have no quantitative population data. The nearest recorded location to the application area is Cue, which also has no population data (DBCA, 2020).

The proposed clearing could potentially remove approximately 33% of *Micromyrtus placoides* from Weld Range (3,864 individuals from a known total of 11,710); however, the Department of Biodiversity, Conservation and Attractions has advised that due to there being another approved mining project within Weld Range, this may result in a cumulative impact of 47.36% to the local *Micromyrtus placoides* population. Given that a number of occurrences of *Micromyrtus placoides* within the Weld Range lack quantitative population data, it possible that further surveys of the range would result in a reduction in the significance. Fenix Resources Ltd have committed to undertaking further surveys in the area surrounding the application area to determine population numbers for the local area of *Micromyrtus placoides*. As part of this commitment, Fenix have agreed to delay construction of their proposed waste dump (area shaded red on Plan 8891/1) until the survey is complete and only if they can keep local impacts to below 20%. To minimise potential impacts to *Micromyrtus placoides*, it is recommended that a restricted clearing condition be implemented.

The Iron Ridge Project partly coincides with the Priority 1 Priority Ecological Community (PEC) “Weld Range vegetation complexes (banded ironstone formation)” and the 500 m administrative buffer that surrounds it. Rather than being defined by a specific plant community, the extent of the Weld Range PEC has been determined on the basis of its extent over the banded ironstone formation of the Weld Range. Approximately 119 hectares (0.58%) of the Weld Range vegetation assemblages (banded ironstone formation) Priority 1 ecological community lies within the application area (DBCA, 2020; GIS Database). Boundaries of the PEC are approximate only, and the total area covered appears to be an under estimation (DBCA, 2020). Based on recent survey of the application area (Fenix 2020), the boundary of the PEC is likely to extend beyond the mapped boundary as currently recorded in online databases (DBCA, 2020).

A search of the Department of Biodiversity, Conservation and Attractions NatureMap, identified the potential for two amphibian species, 98 avian species, three invertebrate, 21 mammal and 19 reptile species as potentially occurring within a 20 kilometre radius of the application area. Four fauna habitats were identified within the application area (Fenix, 2020). The fauna habitats to be impacted by the proposed clearing are well represented in the surrounding area (Fenix, 2020).

Several weed species have been identified within or considered likely to occur within the application area (Fenix, 2020). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Fenix, 2020; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas in the locality, however may be regionally important due to the presence of the Priority 1 Priority Ecological Community (PEC) “Weld Range vegetation complexes (banded ironstone formation).”

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

Methodology CALM (2002)
DBCA (2020)
Ecologia (2020)
Fenix (2020)

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 Level 2 vertebrate fauna assessment was undertaken by Ecologia in 2009, and a reconnaissance survey of the Iron Ridge Project area in July 2019 (Fenix, 2020). Ecologia also conducted a Level 1 fauna and fauna habitat assessment of the project area in September 2019, including a targeted survey for the northern shield-backed trapdoor spider. During this most recent survey, 15 vertebrate fauna species were identified including 13 birds, one mammal and one reptile.

The following four fauna habitats have been recorded within the application area (Ecologia, 2020; Fenix, 2020):

- *Acacia* sp. Weld Range (A. Markey & S. Dillon 2994) and *Acacia speckii* shrubland on mid and lower slopes;
- Mulga woodland over ironstone ridge crests and slopes;
- Mixed *Acacia* shrublands over stony lower slopes and stony plains; and
- Minor drainage line supporting dense shrubs.

‘*Acacia* sp. Weld Range (A. Markey & S. Dillon 2994) and *Acacia speckii* shrubland on mid and lower slopes’ habitat occurs predominantly on the lower slopes and valleys on the northern margins of the application area (Fenix, 2020). This habitat type provides suitable substrates, vegetation and habitat to support the Priority 3 northern shield-backed trapdoor spider (Fenix, 2020). This habitat is confined to the Weld Range where it is considered widespread. The project will result in minimal impact to this habitat (4.29% of the application area) and known locations of the Trapdoor spiders have been avoided (Fenix, 2020).

‘Mulga woodland over ironstone ridge crests and slopes’ habitat is dominated by *Acacia aneura* shrublands over rocky banded ironstone ridges and slopes (Fenix, 2020). The long-tailed dunnart (Priority 4) has been recorded from widely scattered localities in the arid zone where it inhabits rugged, rocky areas, such as this

habitat type (Fenix, 2020). It typically occurs on plateaus near breakaways and scree slopes, and on rugged boulder-strewn scree slopes. The long-tailed dunnart was once considered rare but has recently been shown to be relatively common and widespread within rocky habitats, especially banded iron formation ranges within the Midwest. The proposed pit and part of the proposed waste dump are located in this habitat type. Impact to a localised area will therefore result from the proposed clearing.

'*Minor drainage line supporting dense shrubs*' habitat provides suitable habitat for the west coast mulga slider (Priority 1), which has been recorded on two previous occasions within the project area (Fenix, 2020). This small fossorial lizard is known to inhabit open mulga woodland on red loams and sandy loams (Fenix, 2020). Known from the arid interior of the Midwest of Western Australia and endemic to the Murchison bioregion, this species has previously been recorded within Weld Range in leaf litter fringing drainage lines (Fenix, 2020). This habitat exists around the project area but impact is expected to be minimal due to this habitat type being only 8.55% of the application area. Potential impacts to this habitat type may be minimised by the implementation of a watercourse management condition.

The '*mixed Acacia shrublands over stony lower slopes and stony plains*' habitat occurs throughout the southern portion of the application area and is the most widespread habitat present in the area (Fenix, 2020). No conservation significant species have been recorded in this habitat, although the peregrine falcon is likely to utilise or fly over while foraging (Fenix, 2020). Most disturbance associated with the project will occur in this habitat type.

Although several species of conservation-significance have been recorded within the application area, and some may potentially utilise the area as part of a broader foraging habitat, the application area is not considered to provide habitat necessary for the survival of these species (Fenix, 2020). The fauna habitats to be impacted by the proposal are well represented in the surrounding area and accounts for a very small proportion of available habitat.

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

Methodology Ecologia (2020)
Fenix (2020)

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 (Fenix, 2020).

The vegetation associations within the application area are common and widespread within the region (Fenix, 2020; 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 Fenix (2020)

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

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

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

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

A flora and vegetation survey of the application area did not identify any TECs (Fenix, 2020).

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

Methodology Fenix (2020)

GIS Database:

- Threatened and Priority Ecological Communities Boundaries
- Threatened and Priority Ecological Communities Buffers

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

Comments Proposal is not at variance to this Principle

The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 18: Low woodland; mulga (*Acacia aneura*); and 202: Shrublands; mulga & *Acacia quadrimarginea* scrub (GIS Database). Approximately 99% 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 – Murchison	28,120,587	28,044,823	~99	Least Concern	7.77
Beard vegetation associations – WA					
18	19,892,306	19,843,148	~99	Least Concern	6.62
202	448,529	448,344	~99	Least Concern	22.91
Beard vegetation associations – Murchison Bioregion					
18	12,403,172	12,363,252	~99	Least Concern	4.96
202	339,742	339,641	~99	Least Concern	21.25

* 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 (Fenix, 2020; 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, only flowing briefly immediately following significant rainfall (Fenix, 2020).

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 Fenix (2020)

GIS Database:
- Hydrography, Lakes
- Hydrography, linear

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

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

The application area lies within the Jundee, Violet, Weld and Yarrameedie land systems (GIS Database). These land systems have been mapped and described in technical bulletins produced by the former Department of Agriculture (now the Department of Primary Industries and Regional Development).

The Jundee land system is described as hardpan plains with ironstone gravel mantles and occasional sandy banks supporting mulga shrublands. This land system is not generally susceptible to erosion (Curry et. al., 1994).

The Violet land system consists of gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga bowgada shrublands and patchy halophytic shrublands. This land system is not generally susceptible to erosion (Curry et. al., 1994).

The Weld land system consists of rugged ranges and ridges of banded ironstone and quartzite, supporting shrublands. This land system is not generally susceptible to erosion (Curry et. al., 1994).

The Yarrameedie land system consists of undulating stony interfluves, drainage floors and pediment (foothill) plains below major ranges of crystalline rocks (mainly Weld land system) supporting sparse mulga shrublands. This land system is not generally susceptible to erosion (Curry et. al., 1994).

The proposed clearing of up to 98.6 hectares of native vegetation within a boundary of approximately 462.341 hectares, for the purpose of mineral production is unlikely to cause appreciable land degradation.

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

Methodology Curry et. al. (1994)

GIS Database:

- Landsystem Rangelands
- Soils, 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 an unnamed former leasehold proposed for conservation which is located approximately 50 kilometres south 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 of approximately 233 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)
Fenix (2020)

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 11 May 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 is one native title claim/s over the area under application (DPLH, 2020). This claim has been determined by the Federal Court 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, 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

- BoM (2020) Bureau of Meteorology Website – Climate Data Online, Cue. Bureau of Meteorology.
http://www.bom.gov.au/climate/averages/tables/cw_007017.shtml (Accessed 18 August 2020).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Curry P.J., Payne A.L., Leighton K.A, Hennig P., Blood D.A. (1994) Technical Bulletin No. 84. An inventory and condition survey of the Murchison River catchment and surrounds, Western Australia. Department of Agriculture, Western Australia.
- DBCA (2020) Advice to Assessing Officer in Regards to Clearing Permit Application CPS 8891/1. Advice received 20 July, 2020.
- 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 (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage.
<http://maps.daa.wa.gov.au/AHIS/> (Accessed 18 August 2020).
- Ecologia (2020) Iron Ridge Biological Survey 2019. Unpublished report prepared for Fenix Resources by Ecologia, March 2020.
- Fenix (2020) Iron Ridge Clearing Permit Application, Supporting Information. Unpublished report prepared by Fenix Resources, April 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>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

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	<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.