



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8464/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Greenmount Resources Pty Ltd

1.3. Property details

Property: Miscellaneous Licence 52/189
Miscellaneous Licence 52/192
Miscellaneous Licence 52/197

Local Government Area: Shire of Meekatharra

Colloquial name: Karlawinda Gold Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
200		Mechanical Removal	Gas Pipeline and associated infrastructure

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 30 May 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:
29: Sparse low woodland; mulga, discontinuous in scattered groups; and
178: Hummock grasslands, grass steppe; hard spinifex, *Triodia basedowii* (GIS Database).

A flora and vegetation survey was conducted over the application and broader area by Tetris Environmental during March 2018. The following vegetation associations were recorded within the application area (Tetris, 2018):

Vegetation of the plains – sparse vegetation on hardpan plain

1. *Eremophila rigida*, (*Senna artemisioides* subsp. *helmsii*, *Senna glaucifolia*, *Solanum lasiophyllum*, *Ptilotus obovatus* var. *obovatus*, *Eremophila incisa*) scattered shrubs to low open shrubland over *Aristida contorta* scattered grasses;
2. Sparsely scattered shrubs that typically include some combination of *Acacia aptaneura*, *Acacia pteraneura*, *Acacia subcontorta*, *Acacia rhodophloia* and *Eremophila galeata* over scattered low shrubs that included some combination of *Eremophila incisa*, *Eremophila exilifolia*, *Eremophila flaccida*, *Eremophila jucunda* subsp. *pulcherrima*, *Senna glaucifolia*, *Senna artemisioides* subsp. *helmsii* and *Ptilotus obovatus* subsp. *obovatus* over *Aristida contorta* scattered grasses to very open grassland;

Vegetation of the plains – areas of 'groves' and 'sand sheet' vegetation

3. *Acacia ?aptaneura*, *Acacia catenulata* subsp. *occidentalis*, (*Corymbia hamersleyana*) low woodland over *Psyrax latifolia* scattered tall shrubs over *Eremophila forrestii* subsp. *forrestii*, *Sida ?ectogama* scattered shrubs to open shrubland;
4. *Acacia catenulata* subsp. *occidentalis*, *Acacia aneura*, *Acacia aptaneura*, *Grevillea berryana* low woodland to low open forest over *Psyrax latifolia* scattered tall shrubs over *Eremophila forrestii* subsp. *forrestii*, *Sida ?ectogama* open shrubland over *Thyridolepis xerophila* scattered grasses to very open tussock grassland;
5. *Acacia pruinocarpa*, (*Acacia pteraneura*, *Acacia paraneura*, *Acacia aneura*) low open forest over *Eremophila galeata* scattered tall shrubs to tall open shrubland over *Senna artemisioides* subsp. *helmsii* scattered shrubs;
6. *Acacia aptaneura*, *Acacia paraneura*, *Acacia pteraneura* low open woodland to low woodland over *Eremophila forrestii* subsp. *forrestii* open shrubland over *Triodia schinzii* hummock grassland;
7. *Acacia aneura*, *Acacia aptaneura*, *Acacia ayersiana* low woodland over *Eremophila forrestii* subsp. *forrestii* shrubland over *Eragrostis eriopoda* scattered grasses;

8. *Acacia incurvaneura*, (*Grevillea berryana*) low open woodland over *Acacia subcontorta* scattered tall shrubs over *Eremophila forrestii* subsp. *forrestii* shrubland over *Eragrostis eriopoda* scattered grasses and *Triodia vanleeuwenii* scattered hummock grasses (small patches);

Vegetation of drainage areas

9. *Acacia aptaneura*, *Acacia citrinoviridis*, (*Acacia pteraneura*, *Acacia pruinoarpa*) low woodland over *Acacia tetragonophylla*, *Psyrdrax latifolia* scattered tall shrubs over *Eriachne flaccida*, *Themeda triandra* scattered tall grasses;
10. *Acacia aptaneura*, *Acacia paraneura*, (and or *Acacia citrinoviridis*, *Acacia catenulata* subsp. *occidentalis*, *Acacia pteraneura* in less prominent flow areas) low woodland over *Acacia tetragonophylla*, *Eremophila galeata* scattered tall shrubs to tall open shrubland over *Eriachne flaccida*, (*Eragrostis cumingii*) grassland;
11. *Acacia aptaneura*, (*Corymbia candida* subsp. *dipsodes*) low woodland over scattered shrubs over *Eriachne flaccida*, *Aristida ?inaequiglumis* (sterile) grassland; and
12. *Eriachne flaccida* closed grasslands.

Clearing Description	Karlawinda Gold Project. Greenmount Resources Pty Ltd proposes to clear up to 200 hectares of native vegetation within a boundary of approximately 1,118 hectares, for the purpose of a gas pipeline and associated infrastructure. The project is located approximately 55 kilometres south of Newman, within the Shire of Meekatharra.
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 initially described in the vegetation survey conducted by Tetris Environmental in 2018. The vegetation condition scale was rated using the Trudgen scale (Tetris, 2018; Trudgen, 1988), and has been converted to the Keighery scale (Keighery, 1994). The proposed linear area of clearing is for the construction of a gas pipeline approximately 52 kilometres long, and associated infrastructure including; borrow pits and an access road. The new pipeline will run from the existing Goldfields Gas Pipeline to the Karlawinda Gold Project site (Tetris, 2019).

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 Augustus subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Gascoyne Bioregion (GIS Database).

The Augustus subregion is characterised by rugged low Proterozoic sedimentary and granite ranges divided by broad flat valleys, supporting, Mulga woodland with *Triodia* (CALM, 2002).

A flora and vegetation survey of the Karlawinda Gas Pipeline corridor and proposed borrow pits, and surrounding areas was undertaken by Tetris Environmental in March 2018. The survey area was approximately 100 metres wide and approximately 60 kilometres long (Tetris, 2018). The survey recorded 121 flora species, from 61 genera and 24 families (Tetris, 2018).

There are no records of Threatened flora in the application area, and none were recorded during the flora survey (Tetris, 2018; GIS Database). Priority flora: *Aristida jerichoensis* var. *subspinulifera* (Priority 3); *Eremophila rigida* (Priority 3), *Rhagodia* sp. Hamersley (M. Trudgen 17794) (Priority 3) and *Goodenia nuda* (Priority 4) were recorded in the application area (Tetris, 2018). Only one plant of *Goodenia nuda* was recorded during the survey. *Aristida jerichoensis* var. *subspinulifera* was recorded at five locations within the survey area (Tetris, 2018). *Eremophila rigida* and the *Rhagodia* sp. Hamersley (M. Trudgen 17794) were found to be quiet abundant in the survey area (Tetris, 2018). However, these species are well represented at a regional scale with numerous populations recorded, outside the narrow band of the application area, within the Gascoyne and Pilbara Bioregions (Tetris, 2018; Western Australian Herbarium, 1988-2019). The clearing will impact the four Priority flora species at a local scale; however, it is unlikely to impact these species at a regional scale.

There are no records of Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) within the application area or within close proximity, and none were recorded during the survey (Tetris, 2018; GIS Database).

The following weed species were recorded in the application area: *Bidens bipinnata* (Spanish needles) and *Cenchrus ciliaris* (Buffel grass). None of these species are listed as declared plants 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 fauna survey of the application area was undertaken by Bamford Consulting Ecologists (BCE) in March 2018 (BCE, 2018; Tetris, 2019). An initial desktop study identified species of conservation significance with the potential to occur in the area. Investigations found that the application area may be significant habitat for the following fauna species (BCE, 2019):

- *Lerista macropisthopus remota* (Unpatterned Robust Slider) (Robertson Range) (Priority 2)
- *Sminthopsis longicaudata* (Long-tailed Dunnart) (Priority 4)

A targeted survey searched habitat known to support these species, however, no priority fauna species were recorded in the survey (BCE, 2018).

The survey found that overall there is a moderately rich fauna assemblage within the application area; however, it is unlikely that the application area is a core habitat for fauna species (BCE, 2018; Tetris, 2019).

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (BCE, 2018; Tetris, 2019; GIS Database). The application area is unlikely to represent an area of higher biodiversity than surrounding areas, in either a local or regional context.

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

Methodology BCE (2018)
CALM (2002)
DPIRD (2019)
Tetris (2018)
Tetris (2019)
Western Australian Herbarium (1998-2019)

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**
A fauna survey of the application area was undertaken by Bamford Consulting Ecologists (BCE) in March 2018 (BCE, 2018; Tetris, 2019).

The following eight fauna habitats have been recorded within the application area (BCE, 2018):

1. Scattered open shrubland on hardpan plains;
2. Bands of Mulga/Acacia woodlands on low rises between the scattered open shrubland on hardpan plains;
3. Minor Drainage lines, with open Acacia woodlands over open shrublands and mixed grasslands;
4. Minor Drainage lines, with Acacia and Eucalypt woodlands over mixed shrubland;
5. Major Drainage lines, with Acacia and Eucalypt woodlands over mixed shrubland;
6. Sparse Acacia shrubland over *Triodia* hummock grassland on sandy loams;
7. Acacia shrubland on low rocky rises with occasional outcrops; and
8. Open Acacia shrubland over mixed grasses - ephemeral wetlands/damp lands.

An initial desktop study identified species of conservation significance with the potential to occur in the area. Further analysis found that the application area is unlikely to be core habitat for most of the species identified in the desktop study (BCE, 2018). However, *Lerista macropisthopus remota* (Unpatterned Robust Slider) (Robertson Range) (Priority 2), is often found in leaf litter of Acacia woodland and or shrublands, which is abundant in the application area, and *Sminthopsis longicaudata* (Long-tailed Dunnart) (Priority 4) are associated with rocky outcrops, and some outcrops occur within the application area (BCE, 2018). A targeted search of suitable habitats did not record either of these species within the application area (BCE, 2018)

All the fauna habitat types recorded within the application are well represented in surrounding areas (BCE, 2018). The proposed clearing is unlikely to comprise significant fauna habitat given the narrow linear nature of the application area.

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

Furhter Methodology BCE (2018)
Tetris (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 (Tetris, 2018).

The vegetation associations within the application area are common and widespread within the region (Tetris, 2018; 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 Tetris (2018)

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 (Tetris, 2018). There are no TECs currently listed within the Gascoyne Augustus sub region of the interim Biogeographic Regionalisation for Australia (Tetris, 2018).

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

Methodology Tetris (2018)

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 Gascoyne Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Gascoyne Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 29: Sparse low woodland; mulga, discontinuous in scattered groups; and 178: Hummock grasslands, grass steppe; hard spinifex, *Triodia basedowii* (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 – Gascoyne	18,075,219	18,067,441	~99	Least Concern	10
Beard vegetation associations – WA					
29	7,903,991	7,898,973	~99	Least Concern	6
178	578,161	578,161	~100	Least Concern	0.4
Beard vegetation associations – Gascoyne Bioregion					
29	3,802,459	3,799,635	~99	Least Concern	8
178	33,051	33,051	~100	Least Concern	1.5

* 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 (GWRM, 2018; GIS Database). Several drainage lines pass through the application area (GIS Database). Creek lines in the region are dry for most of the year, only flowing after prolonged periods of heavy rainfall (GWRM, 2018).

The application area is on the edge of the buffer for the Wild Rivers, Savory Creek (Priority 1) (GIS, Database). A few of the larger drainage lines, within the application area, feed into the regional watershed towards the Savory Creek (GWRM, 2018; GIS Database).

Several of the vegetation units described in the vegetation survey are growing in association with open channel creeks, broad shallow flow areas, and internal drainage flats (Tetris, 2018).

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

Methodology GWRM (2018)
Tetris (2018)

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 Cadgie, Collier, Nooingnin and Egerton 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 Cadgie land system is described as plains supporting soft spinifex. This land system is not generally susceptible to erosion (Payne et al., 1988).

The Collier land system consists of stony uplands and hills supporting Mulga and short forb pastures and small inclusions of stony chenopods and chenopod pastures grass. This land system may be susceptible to erosion

if vegetation cover is removed (Payne et al., 1988). However, only approximately three percent of the application area lies over this land system, therefore, the risk of erosion from the proposed clearing is minimal.

The Nooingnin land system consists of hard plains and large groves supporting mulga shrublands. This land system has generally low susceptibility to erosion except in extreme cases of vegetation loss (Payne et al., 1988; Van Vreeswyk et al., 2004)

The Egerton land system consists of highly dissected plains and slopes supporting sparse mulga shrublands (Payne et al., 1988). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The proposed clearing of a narrow band of native vegetation, of up to 200 hectares within a corridor approximately 52 kilometres long, for the purpose of a gas pipeline and associated infrastructure 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 Payne et al. (1988)
Van Vreeswyk et al. (2004)

GIS Database:
- Landsystem Rangelands

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

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

There are no conservation areas in the vicinity of the application area. The nearest DBCA (formerly DPaW) managed land is the former Juna Downs Station which is located approximately 114 kilometres north west 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 (PDWSA) within or in close proximity to the application area (GIS Database). The nearest PDWSA is approximately 40 kilometres to the north of the application area. There are no permanent watercourses or wetlands within the area proposed to be cleared (GIS Database). All local watercourses are ephemeral and only carry flow following prolonged periods of heavy rainfall (GWRM, 2018).

The proposed clearing is unlikely to result in significant changes to surface water flows, and is unlikely to cause deterioration in the quality of surface or underground water.

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

Methodology GWRM (2018)

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 Newman Aero of approximately 329 millimetres per year (BoM, 2019). All local watercourses are ephemeral and only carry flow following prolonged periods of heavy rainfall (GWRM, 2018).

There are no permanent water courses or waterbodies within the application area (GIS Database). Flows

along ephemeral watercourses can occasionally be high as a result of intense cyclonic or depression related rainfall, therefore, temporary localised flooding may occur briefly following heavy rainfall events (GWRM, 2018; GIS Database).

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)
GWRM (2018)

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 22 April 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 are three native title claims (WC2005/006, WC2005/003, and WC2013/003) over the area under application (DPLH, Year). These claims have been determined by the Federal Court on behalf of the claimant groups. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 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

- BCE (2018) Fauna Assessment Karlawinda project; Pipeline and Access Corridor Capricorn Metals Ltd. Report prepared for Tetris Environmental, by M.J. Bamford and A.R. Bamford Consulting Ecologists, April 2018.
- BoM (2019) Bureau of Meteorology Website – Climate Data Online, Newman Aero (007176). Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 13 May 2019).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- DPIRD (2019) Declared Plants. Department of Primary Industries and Regional Development. <https://www.agric.wa.gov.au/pests-weeds-diseases/weeds/declared-plants> (Accessed 24 April 2019).
- DPLH (2019) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 14 May 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>
- GWRM (2018) Karlawinda Gold Project, Gas Pipeline Corridor Preliminary Hydrological Assessment. Report prepared for Capricorn Metals Ltd, by Ground Water Resource Management Ltd, May 2018.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Payne, A.L., Mitchell, A.A. Mitchell., and Holman, W.F. (1988) An inventory and condition survey of the rangelands in the Ashburton River catchment, Western Australia. Technical Bulletin No. 62. Department of Agriculture, South Perth, Western Australia.
- Tetris (2018) A Reconnaissance Survey of Flora and Vegetation of the Proposed Karlawinda Gas Pipeline Corridor. Report prepared for Greenmount Resources, by Tetris Environmental, June 2018.
- Tetris (2019) Karlawinda Gold Project Clearing Permit Application Purpose Permit, Report prepared for Greenmount Resources Pty Ltd of Capricorn Metals Ltd, by Tetris Environmental, April 2019.
- Trudgen (1988) A report on the flora and vegetation of the Port Kennedy area. Report prepared for Bowman Bishaw and Associates, by M.E. Trudgen, 1988.

Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92. Department of Agriculture, South Perth, Western Australia.
Western Australian Herbarium (1998-2019) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 30 May 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*

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.