



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 8938/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Greenstone Resources (WA) Pty Ltd

### 1.3. Property details

Property: Mining Leases 37/67, 37/76, 37/90, 37/201, 37/222, 37/248, 37/330, 37/394, 37/410, 37/416, 37/429, 37/457, 37/496, 37/547, 37/548, 37/570, 37/571, 37/572, 37/573, 37/574  
Miscellaneous Licence 37/211

Local Government Area: Shire of Leonora  
Colloquial name: King of the Hills Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 30 July 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: Open low woodland; mulga; and  
39: Shrublands; mulga scrub (GIS Database).

Several flora and vegetation surveys have been conducted over the application area by Law (2004) and Mattiske (1997; 1999; 2000; 2003; 2004; 2006; 2019a; 2019b; and 2020). The following vegetation associations were recorded within the application area (MBS, 2020):

A1: Low Open Forest of *Acacia* spp. over *Eremophila youngii* subsp. *youngii*, *Eremophila forrestii* subsp. *forrestii*, *Rhagodia drummondii*, *Ptilotus obovatus*, *Solanum lasiophyllum* over *Aristida contorta*, *Enneapogon caeruleus*, annual herbs and grasses on sandy loams on flats and flowlines.

A2: Low Open Woodland of *Acacia* spp. over *Hakea preissii*, *Eremophila forrestii* subsp. *forrestii*, *Spartothamnella teucriflora*, *Ptilotus calostachyus*, *Ptilotus obovatus*, *Solanum lasiophyllum* over *Maireana suaedifolia*, *Aristida contorta*, *Enneapogon caeruleus*, annual herbs and grasses on sandy-loams on flats and lower slopes.

A3: Low Open Woodland of *Acacia* spp. over *Hakea preissii*, *Eremophila galeata*, *Ptilotus obovatus*, *Solanum lasiophyllum* over mixed Chenopods, annual herbs and grasses on flats and lower slopes with pebbles and quartz on surface.

A5: Low Open Woodland of *Acacia* spp. and patches of *Casuarina pauper* over *Senna* and Chenopod species over annual herbs and grasses on ridges and slopes, with sandy-loams with mixed volcanic rocks on surface.

A6: Low Open Woodland of *Acacia fuscaneura* and *Acacia aneura* over *Ptilotus obovatus*, *Solanum lasiophyllum*, *Eremophila galeata* with occasional *Brachychiton gregorri* over mixed Chenopods, annual herbs and grasses on lower slopes with calcrete soils and quartz on surface.

A7: Low Open Woodland of *Acacia* spp. over *Ptilotus obovatus*, *Solanum lasiophyllum*, *Eremophila galeata* over mixed Chenopods, annual herbs and grasses on flats and lower slopes with calcrete soils.

A8: Low Open Woodland of *Acacia* spp. over *Eremophila* species, *Dodonaea lobulata*, *Prostanthera albiflora* on volcanic rockier hills and slopes or on erosional slopes.

A9: Low Open Woodland of *Acacia aneura* and *Hakea preissii* over mixed Chenopods and *Eremophila* species on sandy-loam soils with pebbles and quartz.

A10: Low Open Woodland of *Acacia aneura* and *Acacia ramulosa* var. *ramulosa* over *Eremophila youngii* subsp. *youngii* over *Cheilanthes austrotenuifolia*, annual herb and grasses on quartz ridge.

A11: Low Open Woodland of *Acacia aneura* – *Acacia tetragonophylla* over *Dodonaea rigida*, *Scaevola spinescens* over annual herbs and grasses on ironstone outcropping ridge.

A13: Low woodland of *Acacia incurvaneura* over *Acacia* spp. tall open shrubland over *Eremophila platycalyx*, *Scaevola spinescens*, *Senna artemisioides* subsp. x *artemisioides*, *Eremophila latrobei* subsp. *glabra* and *Psydrax* spp. mid sparse shrubland on hard red clay flats.

C1: Open Chenopod Shrubland with *Atriplex nummularia*, *Maireana pyramidata* and mixed *Sclerolaena* species with occasional emergent *Hakea preissii* and patches of *Acacia aneura* on calcrete soils.

E1: Open Woodland of *Eucalyptus camaldulensis* subsp. *obtusata* with pockets of *Casuarina* and *Acacia citrinoviridis* over *Bossiaea walkeri* over mixed grasses and annual herbs on sandy soils in creeklines.

D: Disturbed Sites. These sites include tracks old coal load out areas near Leonora and very disturbed sites.

CL: Cleared Sites. These sites include all the mining areas and the previously cleared areas near Leonora.

<b>Clearing Description</b>	King of the Hills Project. Greenstone Resources (WA) Pty Ltd proposes to clear up to 918.5 hectares of native vegetation within a boundary of approximately 2,472.5 hectares, for the purpose of mineral production and associated activities. The project is located approximately 23 kilometres north-west of Leonora, within the Shire of Leonora.
<b>Vegetation Condition</b>	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).  To  Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).
<b>Comment</b>	The vegetation condition was derived from a vegetation survey conducted by Mattiske (2020).

### 3. Assessment of application against Clearing Principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>The application area occurs within the East Murchison subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development (CALM, 2002). The salt-lake systems are associated with the occluded Paleodrainage system (CALM, 2002). The vegetation is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Halosarcia shrublands (CALM, 2002).</p> <p>Several flora surveys have been undertaken over the application area by Law (2004) and Mattiske (1997; 1999; 2000; 2003; 2004; 2006; 2019a; 2019b; and 2020). No Threatened flora, Threatened Ecological Communities or Priority Ecological Communities have been identified within or directly adjacent to the application area (MBS, 2020; GIS Database).</p> <p>One Priority flora species, <i>Frankenia georgei</i> (Priority 1), was recorded occurring in the King of the Hills (KOTH) project area (Mattiske 2020). Other Priority species were identified during the survey, however these species were recorded outside of the application area. Two large populations of <i>Frankenia georgei</i>, both exceeding 1,000 individuals and covered an area approximately 29 hectares, were recorded along the proposed haul road (MBS, 2020). <i>Frankenia georgei</i> is a low shrub belonging to the family Frankeniaceae, primarily flowering in December, however an individual with fresh flowers was collected in the March 2020 survey (Mattiske 2020). The species has various populations across the state, with records of the species occurring 130 kilometres to the north, 340 kilometres south and 420 kilometres south east of the application area (MBS, 2020; NatureMap, 2020). The proposed disturbance will impact on approximately 2.5 hectares (8.5%) of the area recorded as supporting <i>Frankenia georgei</i> populations. Complete avoidance of this species is not achievable given requirements for avoidance of heritage sites of significance associated with Sullivan Creek and the geographical extent of these populations between the proposed satellite pits and main operational area (MBS, 2020).</p> <p>A large proportion of the application area is disturbed sites or cleared sites (GIS Database). The vegetation communities of the project area and within the application area are predominantly <i>Acacia</i> open woodlands that are commonly represented in the region (MBS, 2020).</p> <p>A Level 2 vertebrate fauna survey was undertaken in Spring 2019 for the KOTH Project area (MBS, 2020). In total, 60 species of birds, 34 reptiles and 2 mammal species were recorded during the survey (Terrestrial Ecosystems 2020). Based on the fauna survey, it was determined that two major fauna habitats exist within the application area: mulga woodlands and the Sullivan Creek habitat type (Terrestrial Ecosystems, 2020). No Threatened or significant species as defined by the <i>Environment Protection and Biodiversity Conservation Act 1999</i> or <i>Biodiversity Conservation Act 2016</i> were identified during the survey (MBS, 2020).</p>
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Several introduced flora species have been recorded within the application area. The proposed vegetation clearing also has the potential to introduce weed species into the local area should adequate hygiene practices not be put in place. Weeds can affect biodiversity in a number of ways, including out competing native species for resources and increasing the fire risk. The potential spread of introduced species as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

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

**Methodology** CALM (2002)  
Law (2004)  
Mattiske (1997)  
Mattiske (1999)  
Mattiske (2000)  
Mattiske (2003)  
Mattiske (2004)  
Mattiske (2006)  
Mattiske (2019a)  
Mattiske (2019b)  
Mattiske (2020)  
MBS (2020)  
NatureMap (2020)  
Terrestrial Ecosystems (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 is not likely to be at variance to this Principle**

A search of the Department of Biodiversity, Conservation and Attractions NatureMap (2020) 47 bird species, one mammal species, and five reptile species as potentially occurring within a 20 kilometre radius of the application area. No fauna species of conservation significance were identified as potentially occurring within the application area, and there are no records of conservation significant fauna species within 20 kilometres of the application area (NatureMap, 2020).

A Level 2 vertebrate fauna survey was undertaken in Spring 2019 for the KOTH Project area (MBS, 2020). The following two broad fauna habitats were recorded within the application area (Terrestrial Ecosystems, 2020):

- Mulga woodlands habitat (open mulga woodland over mixed shrubs and scattered grasses or bare ground); and
- Sullivan Creek habitat (woodland of large eucalypts over mixed shrubs and scattered grasses along the ephemeral creekline that runs north-south through the project area).

The consultant's report recommended avoiding the Sullivan Creek habitat as much as possible as it provides ecological linkages for fauna (MBS, 2020). It is estimated that about 0.44 hectares of riparian vegetation (Community A1) associated with Sullivan Creek may need to be cleared for the causeway. The causeway will be about 50 m wide to accommodate the haul road and water pipelines, which are required for the satellite open pits north west of the main project area (MBS, 2020).

The quality of fauna habitat varies from highly degraded to good. The more degraded areas include the active mining area, historical and recent exploration areas and where cattle grazing is occurring. There are numerous access tracks in the application area, but these are generally narrow and mostly only wheel tracks on a sand-clay substrate (Terrestrial Ecosystems, 2020). There is extensive evidence of feral fauna (i.e. wild dogs and cats) in the application area.

The two fauna habitat types represented in the application area are abundant and in similar condition in adjacent areas (MBS, 2020; Terrestrial Ecosystems, 2020). Therefore, the fauna assemblage that are present in the application area will also be present and abundant in the adjacent areas.

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

**Methodology** MBS (2020)  
NatureMap (2020)

Terrestrial Ecosystems (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 (MBS, 2020).

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

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

**Methodology MBS (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: Open low woodland; mulga; and 39: Shrublands; mulga 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
39	6,613,567	6,602,578	~99	Least Concern	12.02
Beard vegetation associations – Murchison Bioregion					
18	12,403,172	12,363,252	~99	Least Concern	4.96
39	1,148,400	1,138,064	~99	Least Concern	3.56

\* 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)  
Ref (Year)

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 (MBS, 2020; GIS Database). Several seasonal creek line 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 (BoM, 2020).

The proposed disturbance footprint crosses Sullivan Creek to the west of the current main area of disturbance for the KOTH Project (MBS, 2020). Clearing within Sullivan Creek will be for the purposes of constructing a causeway for a haul road to the satellite open pits north west of the main project area. The causeway will be about 50 m wide to accommodate the haul road and water pipelines (MBS, 2020). It is estimated that about 0.44 hectares of riparian vegetation (Community A1) associated with Sullivan Creek may need to be cleared for the causeway (MBS, 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** BoM (2020)  
MBS (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 may be at variance to this Principle**

The application area lies within the Brooking, Gundockerta, Jundee, Laverton, Leonora, Nubev, Rainbow, Violet and Wilson 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 Brooking land system is described as 'Prominent ridges of banded iron formation supporting mulga shrublands and occasional minor halophytic communities.' This land system is not generally susceptible to erosion (Pringle et al., 1994).

The Gundockerta land system is described as 'Extensive, gently undulating calcareous stony plains supporting bluebush shrublands.' This land system is moderately susceptible to erosion (Pringle et al., 1994).

The Jundee land system is described as 'Hardpan plains with variable gravelly mantles and minor sandy banks supporting weakly groved mulga shrublands.' Soil erosion can be initiated where tracks and diversion structures harvest water on sloping land (Payne et al., 1998).

The Laverton land system is described as 'Low greenstone hills and stony plains supporting mixed chenopod shrublands.' This land system is not generally susceptible to erosion (Pringle et al., 1994).

The Leonora land system is described as 'Low greenstone hills and stony plains supporting mixed chenopod shrublands.' This land system is not generally susceptible to erosion (Pringle et al., 1994).

The Nubev land system is described as 'Gently undulating stony plains, minor limonitic low rises and drainage floors supporting mulga and halophytic shrublands.' This land system is not generally susceptible to erosion (Pringle et al., 1994).

The Rainbow land system is described as 'Hardpan plains supporting mulga tall shrublands.' This land system is not generally susceptible to erosion.

The Violet land system is described as 'Gently undulating gravelly plains on greenstone, laterite and hardpan, with low stony rises and minor saline plains; supporting groved mulga and bowgada shrublands and occasionally chenopod shrublands.' This land system is midly susceptible to erosion (Pringle et al., 1994).

The Wilson land system consists of 'Large creeks with extensive distributary fans, supporting mulga and chenopod shrublands.' Large proportions of this land system are severely degraded and eroded (Payne et al, 1998). The drainage tracts, alluvial fans and hardpan plains are most extensively eroded (Payne et al, 1998). The vegetation of this land system is highly preferred for grazing by introduced and native animals, rendering it susceptible to overgrazing and consequent degradation (Payne et al., 1998).

The proposed clearing of up to 918.5 hectares of native vegetation within a boundary of approximately 2,472.5 hectares, for the purpose of mineral production may cause land degradation. Potential impacts from erosion may be reduced by the imposition of a staged clearing condition.

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

**Methodology** Payne et al. (1998)  
Pringle 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 the ex-Bulga Downs former leasehold proposed for conservation, which is located approximately 79 kilometres 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 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 236 millimetres per year (BoM, 2020). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (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)**

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 June 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 over the area under application (DPLH, 2020). 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 several 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**

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- Mattiske (2020) Flora and Vegetation Values on Proposed Expansion Areas at Tarmoola. Level 1 Flora and Vegetation Survey. Memorandum prepared for Red 5 Limited by Mattiske, April 2020.
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- NatureMap (2020) NatureMap, Mapping Western Australia's Biodiversity. Department of Biodiversity, Conservation and Attractions. Available online at: <https://naturemap.dbca.wa.gov.au/> (Accessed 27 July 2020).
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- Pringle, H.J.R, Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) An inventory and condition survey of rangelands in the north-eastern Goldfields, Western Australia, Technical Bulletin No. 87., Department of Agriculture, South Perth, Western Australia.
- Terrestrial Ecosystems (2020) Level 2 Vertebrate Fauna Assessment, King of the Hills Project. Unpublished report prepared for Red 5 Limited by Terrestrial Ecosystems, May 2020.

## 5. Glossary

### Acronyms:

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

