



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 8872/1

Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Paddington Gold Pty Ltd

### 1.3. Property details

Property: Mining Lease 24/564, 24/565, 24/616, 27/38, 27/149, 27/171, 27/178, 27/185, 27/437  
Miscellaneous Licence 24/231

Local Government Area: City of Kalgoorlie-Boulder

Colloquial name: Mulgarrie Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 9 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:  
10: Medium woodland; red mallee group;  
20: Low woodland; mulga mixed with *Allocasuarina cristata* & *Eucalyptus* sp.; and  
529: Succulent steppe with open low woodland; mulga & sheoak over bluebush (GIS Database).

A flora and vegetation survey was conducted over the application area by Botanica Consulting (Botanica) during 7 December 2019 and 31 January 2020. The following vegetation associations were recorded within the application area (Botanica, 2020):

**CLPAFW/CFW1:** Low woodland of *Acacia incurvaneura*/ *Casuarina pauper* over tall open shrubland of *Acacia jennerae* and low closed chenopod shrubland of *Maireana sedifolia* on clay-loam plain.

**CLP-AFW/MWS1:** Low open woodland of *Acacia caesaneura*/ mid open mallee woodland of *Eucalyptus concinna* over open mid shrubland of *Acacia hemiteles* and low chenopod shrubland of *Atriplex vesicaria*/ *Maireana pyramidata* on clay-loam plain.

**CLP-AFW1:** Low woodland of *Acacia caesaneura*/ *Casuarina pauper* with isolated mallee trees of *Eucalyptus oleosa* over mid open shrubland of *Acacia burkittii* and low open chenopod shrubland of *Maireana sedifolia* on clay-loam plain.

**CLP-AFW2:** Low open forest of *Acacia caesaneura* over mid open shrubland of *Acacia ramulosa* var. *ramulosa* and low open chenopod shrubland of *Maireana sedifolia* on clay-loam plain.

**CLP-AFW3:** Low open forest of *Acacia caesaneura* over mid open shrubland of *Senna artemisioides* subsp. *filifolia* and open low chenopod shrubland of *Maireana sedifolia* on clay-loam plain.

**CLP-EOW1:** Low open woodland of *Eucalyptus salmonophloia*/ *E. transcontinentalis* and mid open mallee woodland of *E. oleosa* over low open shrubland of *Acacia hemiteles* and low sparse hummock grassland of *Triodia scariosa* on clay-loam plain.

**CLP-EW1:** Low woodland of *Eucalyptus salmonophloia* over mid open shrubland of *Acacia kalgoorliensis* and low open chenopod shrubland of *Atriplex vesicaria*/ *Maireana pyramidata*/ *Tecticornia disarticulata* on clay-loam plain.

**CLP-EW2:** Low open woodland of *Eucalyptus clelandiorum*/ *E. oleosa* over mid open shrubland of *Acacia hemiteles*/ *Eremophila scoparia* and low chenopod shrubland of *Maireana sedifolia* on clay-loam plain.

**CLP-EW3:** Low woodland of *Eucalyptus clelandiorum*/ *E. salmonophloia*/ *E. transcontinentalis* over mid sparse shrubland of *Acacia burkittii*/ *A. tetragonophylla*/ *Eremophila scoparia* and low chenopod shrubland of *Atriplex nummularia* subsp. *spathulata*/ *A. vesicaria*/ *Maireana sedifolia* on clay-loam plain.

**CLP-MWS1:** Mid mallee woodland of *Eucalyptus concinna* over mid shrubland of *Acacia burkittii* and low open shrubland of *Ptilotus obovatus*/ *Senna artemisioides* subsp. *filifolia* on clay-loam plain.

**DD-AFW1:** Low woodland of *Acacia caesaneura*/*Casuarina pauper* with isolated mallee trees of *Eucalyptus oleosa* over mid open shrubland of *Acacia burkittii* and low open chenopod shrubland of *Maireana sedifolia* in drainage depression.

**RH-EW1:** Low open woodland of *Eucalyptus clelandiorum* over mid open shrubland of *Eremophila interstans* subsp. *virgata* and low open shrubland of *Acacia erinacea* on rocky hillslope.

**RH-EW2:** Low open forest of *Eucalyptus flavida* over mid shrubland of *Acacia kalgoorliensis* and low hummock grassland of *Triodia scariosa* on rocky hillslope.

<b>Clearing Description</b>	Mulgarrie Project. Paddington Gold Pty Ltd proposes to clear up to 285 hectares of native vegetation within a boundary of approximately 1,866 hectares, for the purpose of mineral production and associated activities. The project is located approximately 33 kilometres north of Kalgoorlie-Boulder, within the City of Kalgoorlie-Boulder.
<b>Vegetation Condition</b>	Very Good: Vegetation structure altered; obvious signs of disturbance (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 Botanica (2020).  The proposed clearing is for the expansion of the existing Mulgarrie open pit mine and widening of the existing haul road.

### 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 clearing permit application area is located within the Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The Eastern Murchison subregion is characterised by its internal drainage and extensive areas of elevated red desert sandplains with minimal dune development, supporting Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and Tecticornia shrublands (CALM, 2002).</p> <p>A reconnaissance flora and vegetation survey of the application area and surrounds was conducted by Botanica (2020) on 7 December 2019 and 31 January 2020. Eight major vegetation groups were recorded in the survey area and surrounding areas, comprising mainly of <i>Eucalyptus</i> woodlands, <i>Acacia</i> forests and woodlands, <i>Casuarina</i> forests and woodlands and Mallee woodlands and shrublands (Botanica, 2020). No unique or restricted vegetation communities were identified, and all vegetation types/communities are common, widespread and well represented in the Eastern Murchison subregion (Talis, 2020). No Threatened or Priority Ecological Communities were identified as potentially occurring in the application area and the field assessments of the application did not record any (Botanica, 2020; GIS Database).</p> <p>A desktop assessment identified a total of 191 flora taxa recorded within 20 kilometres of the application area (Botanica, 2020). A desktop assessment identified 22 Priority flora species as previously recorded within a 50 kilometre radius of the application area (Botanica, 2020). Of the 22 Priority flora species, the majority were considered to be unlikely to occur due to a lack of suitable habitat, however three species were considered possibly occurring due to the presence of suitable habitat (Botanica, 2020). A total of 99 flora species, from 23 families and 44 genera were recorded within the application area and surrounds during the field survey (Botanica, 2020). No Threatened or Priority flora species were identified during the field assessment of the application area (Botanica, 2020). As the field survey was conducted at a sub-optimal time, it is possible that Priority species <i>Rhodanthe uniflora</i> (P1) was present and not detected due to being an annual species. The only known locations of this species have been recorded 30 kilometres to the north-west of the application area in <i>Eucalyptus</i> woodland, and the other 18 kilometres south of the application area in a Chenopod shrubland (DBCA, 2020). DBCA (2020) advise that vegetation communities identified within the application area are relatively common within the Goldfields Region and that very few Threatened or Priority flora are found in association with these communities. As the application area is heavily grazed, the presence of <i>Rhodanthe uniflora</i> and other annuals will likely be greatly reduced, if present at all (DBCA, 2020).</p> <p>A desktop assessment identified a total of 103 vertebrate fauna taxa within a 20 kilometre radius of the application area, consisting of one amphibian, 67 bird species, nine mammals and 26 reptiles (Botanica, 2020). Seven conservation significant fauna were identified as being previously recorded in the general area, with three being considered as potentially occurring within the application area due to suitable habitat (Botanica, 2020). The Central long-eared bat (<i>Nyctophilus major tor</i>, P4) and Peregrine Falcon (<i>Falco peregrinus</i>, OS) are highly mobile species and unlikely to be significantly impacted by the proposed clearing. Active and inactive</p>
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Malleefowl (*Leipoa ocellata*) mounds have been recorded within the application area and surrounds, and are therefore likely to be impacted by the proposed clearing as there is suitable breeding and foraging habitat within the application area.

The Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*, CR) was identified as potentially occurring in the area (DBCA, 2020). A targeted survey for the pale-coloured (inland) form of the large sugar ant *Camponotus terebrans* was conducted in June 2020 and confirmed that the host ant for the butterfly was absent within the application area (Harewood, 2020b)

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Botanica, 2020; Talis, 2020; 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

Botanica (2020)  
CALM (2002)  
DBCA (2020)  
Talis (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 reconnaissance flora and fauna survey was conducted on 7 December 2019 and 31 January 2020 across most of the application area, covering approximately 2612 hectares (Botanica, 2020).

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

1. *Acacia* Woodlands / *Casuarina* Forests
2. Eucalypt Woodlands / Mallee Woodlands
3. *Acacia* Woodlands
4. Eucalypt Woodlands

The intact fauna habitat within the application area ranged from good to very good (Botanica, 2020). There were also areas present that were completely degraded or cleared of fauna habitat (Botanica, 2020). None of these fauna habitats are restricted to the application area and are widely distributed throughout the Eastern Murchison subregion (Botanica, 2020; Talis, 2020). No conservation significant fauna were observed during the field survey (Botanica, 2020).

A targeted Malleefowl (*Leipoa ocellata*, VU at both state and federal level) survey was conducted on 23 to 25 and 31 January 2020 across most of the application area, covering approximately 1543 hectares (Botanica, 2020). A total of eight Malleefowl mounds were found during the survey, of which five were inactive and three were active. Of the inactive mounds, two were located within the application area, the remaining three were located within close proximity to the application area. The three active mounds were all located within approximately 2 kilometres of the application area (Talis, 2020). No Malleefowl individuals were observed during the survey (Botanica, 2020). The presence of inactive and active mounds within and in close proximity to the application area indicates that there is suitable foraging and breeding habitat and that Malleefowl are likely to be active in the area. Potential impacts to the breeding habitat of Malleefowl as a result of the clearing may be minimised by the implementation of a fauna management condition.

DBCA (2020) identified the potential for the proposed clearing to impact the threatened Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*, CR at both state and federal level) based on suitable habitat attributed by the presence of smooth bark eucalypts within the application area for the butterfly's host ant species. A desktop review was conducted by Harewood (2020a) of available information on the Arid Bronze Azure Butterfly to determine the likelihood that the butterfly is present within the application area. The species is only known to be extant at two locations within the Wheatbelt region, 290-330 kilometres from the application area, and is presumed extinct at Lake Douglas, 55 kilometres south of the application area (Harewood, 2020a). The associated ant, a pale-coloured (inland) form of the large sugar ant *Camponotus terebrans*, on which the butterfly relies on is sporadically distributed across southern Australia, and that floristically diverse habitats are needed to sustain high densities of the host ant (Harewood, 2020a). Harewood (2020a) concluded that the host ant is unlikely to be present within the application area, and a targeted survey conducted on 21 June 2020

confirmed the absence of the host ant species within the application area (Harewood, 2020b).

Other conservation significant species that may possibly occur within the application area are the Peregrine Falcon (*Falco peregrinus*, OS) and the Central Long-eared Bat (*Nyctophilus major tor*, P3) (Botanica, 2020). These species may potentially inhabit some sections of the application area as transient visitors, utilising the area as a much larger home range, however, are unlikely to breed in the area given the lack of suitable nesting habitat (Talis, 2020). Records of these species in the local area are uncommon, and the Central Long-eared Bat is rarely observed north of the Kalgoorlie area (Talis, 2020). The proposed clearing is unlikely to impact these two conservation significant fauna species.

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

**Methodology** Botanica (2020)  
Harewood (2020a)  
Harewood (2020b)  
Talis (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 (Botanica, 2020)

None of the vegetation types identified provide a refuge for any Threatened flora (Talis, 2020). The vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened (rare) flora.

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

**Methodology** Botanica (2020)  
Talis (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 (Botanica, 2020; Talis, 2020).

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

**Methodology** Botanica (2020)  
Talis (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 10: Medium woodland; red mallee group; 20: Low woodland; mulga mixed with *Allocasuarina cristata* & *Eucalyptus* sp.; and 529: Succulent steppe with open low woodland; mulga & sheoak over bluebush (GIS Database). Approximately 98-99% 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	28,120,586	28,044,823	~99	Least Concern	7.78
Beard vegetation associations – WA					
10	145,676	144,162	~98	Least Concern	3.05
20	1,295,103	1,292,474	~99	Least Concern	19.38
529	102,579	102,479	~99	Least Concern	4.37
Beard vegetation associations – Murchison Bioregion					
10	65,387	64,757	~99	Least Concern	4.67
20	1,174,259	1,171,630	~99	Least Concern	15.49
529	62,202	62,102	~99	Least Concern	4.46

\* 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 may be at variance to this Principle**

There are no permanent watercourses or wetlands within the area proposed to clear (Botanica, 2020; Talis, 2020; GIS Database). There are multiple ephemeral drainage lines that intersect the application area (GIS Database). Drainage lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (Talis, 2020).

There is one vegetation type within the application area growing in association with these drainage lines:

**DD-AFW1:** Low woodland of *Acacia caesaneura*/*Casuarina pauper* with isolated mallee trees of *Eucalyptus oleosa* over mid open shrubland of *Acacia burkittii* and low open chenopod shrubland of *Maireana sedifolia* in drainage depression (Botanica, 2020).

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

**Methodology** Botanica (2020)  
Talis (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 Kambalda soil-landscape zone (Landloch, 2019). The landscape of this zone is described as flat to undulating plains, hills and ranges on greenstone and granitic rocks of the Yilgarn Craton, with calcareous loamy earths, red loamy earths, salt lake soils and some red-brown hardpan shallow loams and red sandy duplexes (Tille, 2006; Landloch, 2019).

Topsoils within the application area are described as highly slaking and dispersive and prone to structural degradation (Landloch, 2019; Talis, 2020). Subsoils within the application area are clay-rich with low permeability and prone to clay dispersion and moderate slaking (Landloch, 2019; Talis, 2020). Given the size of the proposed clearing (285 hectares), the presence of drainage lines, and the soils' susceptibility to erosion, there may be a potential for land degradation to occur from the removal of native vegetation.

Based on the above, the proposed clearing may be at variance to this Principle. Potential degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

**Methodology** Landloch (2019)  
Talis (2020)  
Tille (2006)

GIS Database:  
- 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 Goongarrie National Park which is located approximately 28 kilometres north 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 Broad Arrow Dam Catchment Area is located approximately 7 kilometres west of the application area (GIS Database). The proposed clearing is unlikely to impact the PDWSA.

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Drainage 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 arid, with a mean rainfall of approximately 266.1 millimetres per year (BoM, 2020).

The application area is located within the Raeside-Ponton catchment area (GIS Database), where there are no major river systems. 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 (Talis, 2020). 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)  
Talis (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 27 April 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 are two native title claims (WC2017/001; WC2017/007) over the area under application (DPLH, 2020). These claims have been registered with the National Native Title Tribunal 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, 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, Weather Station Name. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 3 June 2020).
- Botanica (2020) Reconnaissance Flora/Vegetation & Fauna Survey Mulgarrie Project. Report prepared by Botanica Consulting, for Paddington Gold Pty Ltd, February 2020.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DBCA (2020) Advice received in relation to Clearing Permit Application CPS 8872/1. Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, Western Australia, May 2020.
- DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 3 June 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.
- 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>
- Harewood, G. (2020a) Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) Review. Clearing Permit Area (CPS 8872/1) Mulgarrie Project Paddington Gold Pty Ltd. Review prepared by Greg Harewood, for Paddington Gold Pty Ltd, June 2020.
- Harewood, G. (2020b) Ant Survey. Clearing Permit Area (CPS 8872/1) Mulgarrie Project Paddington Gold Pty Ltd. Review prepared by Greg Harewood, for Paddington Gold Pty Ltd, June 2020.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Landloch (2019) Memorandum: Characterisation of soils from the Mulgarrie Project. Report prepared by Landloch Pty Ltd, for Paddington Gold Pty Ltd, December 2019.
- Talis (2020) Purpose Native Vegetation Clearing Permit Application for the Mulgarrie Gold Project. Report prepared by Talis Consultants, for Paddington Gold Pty Ltd, April 2020.
- Tille, P.J. (2006) Soil-landscapes of Western Australia's rangelands and arid interior. Department of Agriculture and Food, Western Australia, Perth.

## 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.