



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8008/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Nickel West Pty Ltd

1.3. Property details

Property: Mining Lease 36/87
Mining Lease 36/102
Mining Lease 36/103
Mining Lease 36/131
Mining Lease 36/439

Local Government Area: Shire of Leonora

Colloquial name: Camelot Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 19 April 2018

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The vegetation of the application area is broadly mapped as the following Beard vegetation associations:

18: Low woodland; mulga (*Acacia aneura*); and
39: Shrublands; mulga scrub (GIS Database).

A Level 2 flora and vegetation survey was conducted over the application area by Western Botanical during March, August and September 2017. The following vegetation associations were recorded within the application area (Western Botanical, 2018):

- WABS: Wanderrie Bank Grassy Shrubland
- SMS: Stony Mulga Shrubland
- PoUS: *Ptilotus obovatus* (upright form) Shrubland on outcropping carbonate soil
- SIMS: Stony Ironstone Mulga Shrubland
- SSS: Stony *Senna* sp. Shrubland
- MgS: *Maireana glomerifolia* Shrubland
- CSS: *Cratystylis subspinescens* low open Shrubland
- CP: Drainage Clay Pan
- GRMU: Mugla Grove Shrubland
- HPMS: Hardpan Mulga Shrubland
- SAES: Scattered *Acacia eremophila* Shrubland
- DRMS: Open Drainage Mulga Shrubland

Clearing Description Camelot Project.
BHP Billiton Nickel West Pty Ltd (hereafter referred to as BHP Nickel West) proposes to clear up to 315 hectares of native vegetation within a boundary of approximately 1,778.2 hectares, for the purpose of mineral production. The project is located approximately 25 kilometres north of Leinster, within the Shire of Leonora.

Vegetation Condition Pristine: No obvious signs of disturbance (Keighery, 1994).
to
Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment Western Botanical's field survey 'study area' encompassed the entire clearing permit application area, plus an additional ~210 hectares at the northern end of the application area. The Level 2 flora and vegetation field survey program was divided into three phases. Phase 1 was scheduled to be undertaken between the 21st and 23rd of March 2017. However, due to a 1 in 100 year rainfall event, the field survey was interrupted and deferred to the 6th to the 12th April 2017. Phase 2 of the field survey program was completed between 10th and 16th August 2017. Phase 3 was conducted on the 17th September 2017.

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 East Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The East Murchison subregion is characterised by internal drainage and elevated red desert sandplains, dominated by Mulga Woodland with hummock grasslands and saltbush or *Halosarcia* (now known as *Tecticornia*) shrublands (CALM, 2002).

The vegetation present within the application area was considered to range from 'Pristine' to 'Completely Degraded'. The majority of the vegetation was in pristine condition, with the completely degraded vegetation attributed to a small area of the application area that has undergone clearing for a drilling program (Western Botanical, 2018).

No Threatened Flora or Threatened Ecological Communities (TECs) were recorded within 10 kilometres of the application area (Western Botanical, 2018; GIS Database). No flora and vegetation relating to a Priority Ecological Communities (PECs) were present within the application area (Western Botanical, 2018; GIS Database). The application area is within the buffer of the Priority 1 (P1) Lake Miranda East Calcrete PEC, however, the application area is not located within the Melaleuca land system that is associated with this PEC (Western Botanical, 2018; GIS Database). The Lake Miranda East Calcrete PEC is described as a unique assemblage of invertebrates in the groundwater calcretes, and therefore is unlikely to be impacted by the proposed clearing (DBCA, 2017).

The Violet Range (Perseverance Greenstone Belt) vegetation complexes (banded ironstone formation, BIF) Priority 1 PEC is present approximately 5 kilometres north of the application area (Western Botanical, 2018; GIS Database). The field survey identified that the Stony Ironstone Mulga Shrublands (SIMS) vegetation community shows similarities to the Violet Range PEC. However, only a small section of the SIMS is present within the application area (<1.52%) and therefore, is unlikely to be significantly impacted by the proposed clearing (Western Botanical, 2018).

The desktop study recorded 252 known flora species occurring within a 20 kilometre radius of the application area. Seven of these species are listed as Priority Flora, including four Priority 3 species and three Priority 4 species (Western Botanical, 2018).

The field survey identified 260 endemic flora species from 113 genera and 41 families within 12 vegetation associations. The majority of these species are widespread and well represented in the Murchison bioregion and East Murchison subregion (Western Botanical, 2018). The field survey recorded three Priority Flora species within the application area;

- *Sauropus* sp. Woolgorong (M. Officer s.n. 10/8/94) (Priority 3) (9 plants in one population).
- *Tribulus adelacanthus* (Priority 3) (147 plants in two sub-populations (northern and southern areas)).
- *Grevillea inconspicua* (Priority 4) (1 plant recorded).

All the Priority flora species recorded from the field survey occurs within the application area, excluding a part of the northern sub-population of the *Tribulus adelacanthus*. All Priority flora species are known from multiple records throughout the region (Western Australian Herbarium, 2018). The proposed clearing of a small number of these species is unlikely to impact the conservation significance of this species.

Six introduced weeds were identified during the survey. These weed species were Buffel Grass (*Cenchrus ciliaris*), Ruby Dock (*Rumex vesicarius*), Afghan Melon (*Citrullus lanatus*), Prickly Paddy Melon (*Cucumis myriocarpus*), Black Berry Nightshade (*Solanum nigrum*) and Caltrop (*Tribulu terrestris*). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The vegetation of the application area is common along the region and is not expected to comprise a higher level of diversity than adjacent areas.

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

Methodology CALM (2002)
DBCA (2018)
Western Australian Herbarium (2018)
Western Botanical (2018)

- GIS Database:
- IBRA Australia
 - Pre-European Vegetation
 - Threatened and Priority Flora
 - Threatened Ecological Sites boundaries
 - Threatened Ecological Sites buffered
 - 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

No targeted fauna surveys have been undertaken within the application area. However, no habitats that are known to provide critical habitat to the maintenance of fauna species were identified within the application area during the flora and vegetation survey (Western Botanical, 2018). Based on the flora and vegetation survey and imagery of the application area, there are no significant habitat features such as caves, waterholes, significant creek lines or coastal dunes (Western Botanical, 2018; GIS Database).

The grove Mulga woodlands of the Grove Mulga on Hardpan Plains (GRMU) vegetation association was noted as being the most likely to support and provide refuge to fauna species as it has the ability to retain moisture during the dry periods of the year (Western Botanical, 2018). The GRMU vegetation association is found within the Violet and Jundee land systems that are widespread throughout the region, and therefore the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any indigenous fauna (GIS Database).

According to available databases, four conservation significant species have the potential to occur within the application area (EPBC, 2018). These include;

- Chuditch (*Dasyurus geoffroi*) (Vulnerable);
- Malleefowl (*Leipoa ocellata*) (Vulnerable);
- Alexandra's Parrot (*Polytelis alexandrae*) (Vulnerable); and
- Night Parrot (*Pezoporus occidentalis*) (Endangered).

However, the above species have not been previously reported in a 20 kilometre radius of the application area (DBCA, 2018). The application area may provide habitat for a variety of fauna species but the fauna habitat types are likely to be represented outside the application area. No conservation significant fauna have previously been recorded within the application area (GIS Database) and while the application area may provide foraging habitat for some conservation significant species it is unlikely to provide core habitat for any species (Western Botanical, 2018).

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

- Methodology** DBCA (2018)
 EPBC (2018)
 Western Botanical (2018)
 GIS Database:
 - Hydrography, linear
 - Imagery
 - Landsystem Rangelands
 - 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 (Western Botanicals, 2018).

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

- Methodology** Western Botanical (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 (Western Botanical, 2018).

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

Methodology Western Botanical (2018)

GIS Database:

- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities buffered

(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 99.7% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2018). The application area is broadly mapped as Beard vegetation associations 18: Low woodland; mulga (*Acacia aneura*); 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 (see table) (Government of Western Australia, 2018).

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	~99.73	Least Concern	7.78
Beard vegetation associations – WA					
18	19,892,306	19,843,729	~ 99.76	Least Concern	6.62
39	6,613,567	6,602,578	~ 99.83	Least Concern	12.02
Beard vegetation associations – Murchison Bioregion					
18	12,403,172	12,363,252	~99.68	Least Concern	4.96
39	1,148,400	1,138,064	~99.10	Least Concern	3.56

* Government of Western Australia (2018)

** 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 (2018)

GIS Database:

- IBRA Australia
- Pre-European Vegetation

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

Comments Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Numerous minor non-perennial waterlines dissect the application area and throughout the local area (GIS Database). These minor waterlines are likely to only flow following a significant rain event.

Three vegetation associations; Drainage line Mulga Shrubland (DRMS), Grove Mulga on Hardpan Plains (GRMU) and Drainage Clay Pan (CP), were described in the field survey as vegetation that could potentially be considered as growing in association with a watercourse (Western Botanical, 2018).

The DRMS vegetation association occurs on narrow to broad drainage tracks on clay loam soils with incised water flow channels. This DMRS association covers approximately 320 hectares within the application area of 1,778.2 hectares (Western Botanical, 2018).

The GRMU vegetation association generally supports a wide range of sclerophyllous species that are particularly rich in annuals following rainfall. Areas of GRMU may also form broad drainage areas forming connections between drainage lines at times of high rainfall. The GRMU vegetation association covers approximately 55.9 hectares within the application area (Western Botanical, 2018).

The CP vegetation association occurs in internally drained depressions in the landscape on plains, where during times of high rainfall, these pond water for an extended period of time. The aquatic species *Eleocharis pusilla* and *Marsilea exarata* are found within this vegetation association. The CP vegetation association only covers a small area of 2.15 hectares within the application area (Western Botanical, 2018).

Whilst the proposed clearing will impact riparian vegetation, it is common the local area and the vegetation is not likely to be significant for native fauna (GIS Database). Several of the drainage lines have already been impacted by an existing road that runs through the application area (GIS Database). Potential impacts to riparian vegetation may be managed by a watercourse management condition.

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

Methodology Western Botanical (2018)
GIS Database:
- Hydrography, Lakes
- Hydrography, linear
- Imagery

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

Comments Proposal may be at variance to this Principle

The majority of the application area lies within the Nubev, Jundee and Violet land systems; and to a lesser extent, the Desdemona, Laverton and Sherwood land systems (Western Botanical, 2018; GIS Database). Furthermore, two land systems (Bullimore and Booking land systems), occurs at the boundary of the application area but are unlikely to be impacted by the proposed clearing (Western Botanical, 2018; 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 Nubev land system is described as gently undulating stony plains, minor limonitic low rises and drainage floors, supporting mulga and halophytic shrublands. Drainage zones are moderately susceptible to soil erosion, particularly where perennial shrub cover is substantially reduced. Disturbance of the protective stone mantle on saline stony plains is also likely to initiate water erosion (Pringle et al., 1994).
- The Jundee land system is described as hardpan plains with ironstone gravel mantles, supporting mulga shrub lands. The gravel mantles provide effective protection against soil erosion (Pringle et al., 1994).
- The Violet land system is described as undulating stony and gravelly plains and low rises, supporting mulga shrublands. This land system is generally not susceptible to erosion. However, removal of the stony mantles can make soils moderately susceptible to water erosion (Pringle et al., 1994).
- The Desdemona land system is described as extensive plains with deep sandy or loamy soils, supporting mulga and wanderrie grasses. This land system is generally not susceptible to soil erosion (Pringle et al., 1994).
- The Laverton land system is described as greenstone hills and ridges supporting acacia shrublands. The stone mantles protect most of this land system against soil erosion except for the narrow drainage tracts, which are mildly susceptible to water erosion (Pringle et al., 1994).
- The Sherwood Land System is described as granite breakaways and extensive stony granitic plains, with mulga shrublands and minor halophytic shrublands. The foot slopes and drainage tracts have fragile soils that are highly susceptible to water erosion (Pringle et al., 1994).
- The Brooking land system is described as prominent ridges of banded iron formation, supporting mulga shrublands with occasional minor halophytic communities in the south-east (Pringle et al., 1994). Soil erosion can occur if stony mantles are disturbed or removed (Pringle et al., 1994).
- The Bullimore land system is described as extensive sandplains supporting spinifex hummock grasslands. Wind erosion may occur after removal of vegetation, however, stabilisation is usually rapid following rain and consequent regeneration of vegetation (Pringle et al., 1994).

Given several of these land systems are susceptible to erosion, the proposed clearing has the potential to cause localised erosion. The potential impacts from erosion on the above land systems as a result of the proposed clearing of 315 hectares may be minimised by the implementation of a staged clearing condition.

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

Methodology Pringle et al. (1994)
Western Botanical (2018)
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 Wanjarri Nature Reserve which is located approximately 25 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:
- DBCA Managed Lands and Waters

(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). Numerous minor water lines that occur within the region are dry for most of the year, only flowing briefly immediately following significant rainfall. Surface water run-off in these significant rainfall events is likely

to be as sheet flow towards the existing natural drainage lines within the Lake Carey catchment area (GIS Database). Therefore, the proposed clearing is unlikely to result in significant changes to surface water flows.

The groundwater of the application area is brackish with 3,000 – 7,000 total dissolved solids (TDS). Given the small size of the area to be cleared (315 hectares) in relation to the size of the Lake Carey catchment area (11,378,213 hectares), 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 Area
- Groundwater Salinity, Statewide

(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 an average rainfall of approximately 266.2 millimetres per year and total evaporation rate of approximately 3200 millimetres per year (BOM, 2018; Pringle et al., 1994). There are no permanent water courses or waterbodies within the application area (GIS Database). Remnant tropical cyclones from the north-west can occasionally bring heavy rains to the region in the summer months (Pringle et al., 1994). Whilst these large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding in the region.

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

Methodology BOM (2018)
Pringle et al. (1994)
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 12 March 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS) inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim over the area under application (DPLH, 2018). This claim (WC2011/007) 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 is one registered Aboriginal Sites of Significance within the application area (DPLH, 2018). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

Methodology DPLH (2018)

4. References

- BOM (2018) Bureau of Meteorology Website – Climate Statistics for Australian locations, Summary statistics Leinster Aero. http://www.bom.gov.au/climate/averages/tables/cw_012314.shtml (Accessed 5 April 2018).
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- DBCA (2017) Priority Ecological Communities for Western Australia Version 27. Current as of June 2017. WA Department of Biodiversity, Conservation and Attractions. https://www.dpaw.wa.gov.au/images/documents/plants-animals/threatened-species/Listings/priority_ecological_communities_list.pdf.
- DBCA (2018) NatureMap. Department of Biodiversity, Conservation and Attractions. <https://naturemap.dpaw.wa.gov.au/> (Accessed 5 April 2018).
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- EPBC (2018) Protected Matters Search Tool. Department of the Environment and Energy.
<http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf> (Accessed 6 April 2018).
- Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions.
<https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pringle, H.J.R., Van Vreeswyk, A.M.E., Gillian, S.A. (1994) An Inventory and Condition Survey of Rangelands in the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
- Western Australian Herbarium (2018) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 6 April 2018).
- Western Botanical (2018) Level 2 Flora and Vegetation Assessment of the Camelot Proposal Study Area. Report prepared for BHP Billiton Nickel West Pty Ltd, by Western Botanical, 11 January 2018.

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:

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

T	<p>Threatened species: Published as Specially Protected under the <i>Wildlife Conservation Act 1950</i>, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).</p> <p>Threatened fauna is that subset of ‘Specially Protected Fauna’ declared to be ‘likely to become extinct’ pursuant to section 14(4) of the <i>Wildlife Conservation Act 1950</i>.</p> <p>Threatened flora is flora that has been declared to be ‘likely to become extinct or is rare, or otherwise in need of special protection’, pursuant to section 23F(2) of the <i>Wildlife Conservation Act 1950</i>.</p> <p>The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.</p>
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- CR Critically endangered species**
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1 Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
- P2 Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
- P3 Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4

Priority Four - Rare, Near Threatened and other species in need of monitoring:

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.