

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8152/3
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Avoca Mining Pty Ltd

1.3. Property details

Property: General Purpose Leases 15/19, 15/26, 15/27, 15/29; Mining Leases 15/31, 15/231, 15/338, 15/348, 15/352, 15/375, 15/506, M15/507, 15/512, 15/528, 15/580, 15/581, 15/597, 15/610, 15/639, 15/640, 15/642, 15/681, 15/748, 15/817, 15/1790, 15/1814; Miscellaneous Licences 15/347, 15/368, 15/382, 15/386, 15/389

Local Government Area: Shire of Coolgardie
Colloquial name: Higginsville Gold Operations

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1000		Mechanical Removal	Mineral Production and Associated Activities

1.5. Decision on application

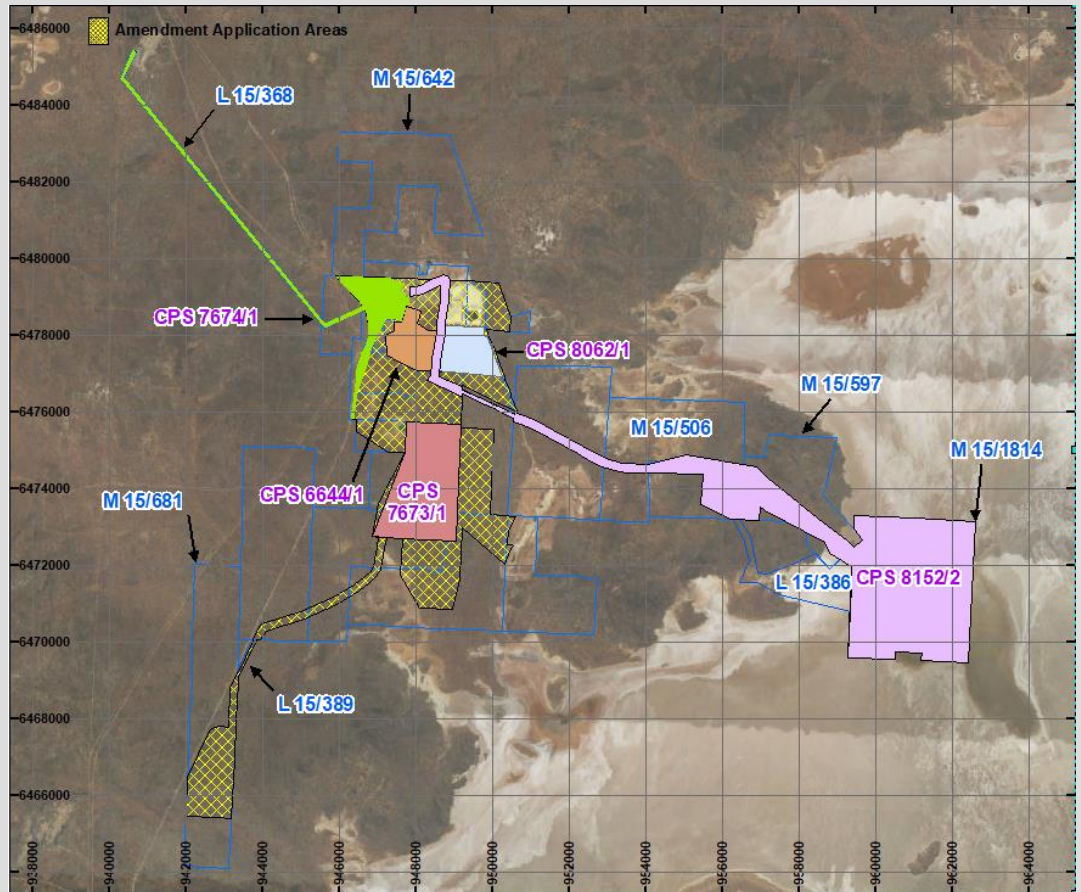
Decision on Permit Application: Grant
Decision Date: 20 August 2020

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association: 8: Medium woodland; salmon gum & gimlet; and 501: Medium woodland; goldfields blackbutt (GIS Database).</p> <p>Several flora and vegetation surveys have been conducted over the application area (RNC, 2020). Based on these surveys, the following vegetation associations have been recorded within the application area (RNC, 2020):</p> <ul style="list-style-type: none"> • 1. <i>Eucalyptus salmonophloia</i> woodland over sclerophyll shrubland. • 4. Mixed <i>Eucalyptus</i> woodland over mixed sclerophyll shrubland. • 9. <i>Eucalyptus lesouefii</i> over <i>Cratystylis conocephala</i> and sclerophyll shrubland.
Clearing Description	<p>Higginsville Gold Operations.</p> <p>Avoca Mining Pty Ltd proposes to clear up to 1000 hectares of native vegetation within a boundary of approximately 4,563.445 hectares, for the purpose of mineral production and associated activities. The project is located approximately 50 kilometres north of Norseman, within the Shire of Coolgardie.</p>
Vegetation Condition	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);</p> <p>To</p> <p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).</p>
Comment	<p>The vegetation condition was partly derived from the environmental surveys reviewed by GHD (2010), previous decision reports (CPS 6644/1, 7673/1, 7674/2, 8062/1 and 8152/2) and observing aerial imagery.</p> <p>Clearing permit CPS 8152/1 was amended on 26 September 2019 for the purpose of increasing the area authorised to clear from 200 hectares to 270 hectares and increasing the permit boundary from 1,694 hectares to 1,789 hectares.</p> <p>On 2 June 2020, the Permit Holder applied to amend CPS 8152/2 to increase the amount of approved clearing, increase the permit boundary, and amalgamate five pre-existing permits into one. Clearing permits CPS 6644/1, 7673/1, 7674/2, 8062/1 and 8152/2 are to be amalgamated into CPS 8152/3. The total combined approved clearing area under these permits is 1,190.66 hectares. Through this amendment the total disturbance footprint for the Higginsville Gold Operations will be reduced from 1,190.66 hectares to 1,000 hectares.</p>



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 amendment area occurs within the Eastern Goldfields subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Eastern Goldfields subregion is characterised by calcareous earths that cover much of the plains and greenstone areas (CALM, 2002). A series of playa lakes in the western half are the remnants of an ancient major drainage line (CALM, 2002). The vegetation is of mallees, Acacia thickets and shrubheaths on sandplains (CALM, 2002). Diverse Eucalypt woodlands occur around salt lakes, on ranges and in valleys (CALM, 2002).

A total of three vegetation communities have been mapped across the amendment area (Native Vegetation Solutions, 2017). The most dominant vegetation community was the *Eucalyptus salmonophloia* woodland community, which accounted for approximately 38% of the application area (Native Vegetation Solutions, 2017). None of the vegetation communities mapped within the amendment area represent Threatened or Priority Ecological Communities (Native Vegetation Solutions, 2017).

Native Vegetation Solutions (2017) has recorded a total of 94 plant species in the project area from 42 genera and 19 families. There were no Threatened flora species identified in the application area (Native Vegetation Solutions, 2017).

Three Priority species; *Calandrinia lefroyensis* (Priority 1), *Allocasuarina eriochlamys subsp. grossa* (Priority 3) and *Diocirea acutifolia* (Priority 3), have been recorded within the amendment area (RNC, 2020).

Calandrinia lefroyensis was recorded at one location that may have been cleared as approved under CPS 8152/1 for the Baloo haul road, assuming that the recorded location of this samphire community species is correct (RNC, 2020). The habitat description for *Calandrinia lefroyensis* is salt-lake flats among samphire communities on the outer edges of samphire communities including within the ecotone of adjacent communities (RNC, 2020). This habitat type occurs near the Baloo haul road as well as at two small areas intersected by the proposed Pioneer haul road. The Baloo haul road is already constructed so no further clearing is required. The Pioneer haul road was subject to a vegetation survey by an experienced goldfields senior botanist and no conservation listed flora were recorded (RNC, 2020).

Calandrinia lefroyensis has a range extending 140 kilometres north of Lake Cowan and has not been recorded in the vegetation surveys conducted by NVS. It is noted that the associated habitat (salt-lake flats among samphire communities) is not contained within the mining development footprint (with the exception of two small areas at the Pioneer haul road that were subject to flora survey and it as not recorded at these locations)

(RNC, 2020). Based upon the above, it is unlikely that clearing within the amendment area will impact on the conservation status of *Calandrinia lefroyensis*.

Allocasuarina eriochlamys subsp. *grossa* has a known distribution from Salmon Gums (95km north of Esperance) and extending 230km north to near Coolgardie (RNC, 2020). Two small populations have previously been recorded within the amendment area (RNC, 2020). Given its regional distribution and occurrence at only two locations in the amendment area, it is unlikely that clearing within the amendment area will impact on the overall conservation status of *Allocasuarina eriochlamys* subsp. *grossa*.

Diocirea acutifolia, was recorded at multiple locations within the application area (RNC, 2020). This species is widespread and in large numbers through the local and regional area and is well documented by previous flora surveys (RNC, 2020). NatureMap (DBCA, 2020) confirms that this species has been recorded in around the Coolgardie, Kambalda and Norseman area. Given this species is found outside of the application area in sufficient numbers, the proposed clearing is not likely to significantly impact on this species.

Three introduced plant taxa were recorded in the amendment area (Native Vegetation Solutions, 2017). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

According to NatureMap (DBCA, 2020), there are 74 fauna species records within 20 kilometres of the project area, consisting of 33 bird, 27 reptile, 11 mammal, and 3 invertebrate species. According to Native Vegetation Solutions (2017), the broad habitat types recorded in the amendment area are widespread in the region, therefore the amendment area is not considered to represent an area of higher fauna diversity.

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

Methodology CALM (2002)
DBCA (2020)
Native Vegetation Solutions (2017)
RNC (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**

Numerous fauna surveys have been undertaken over the project area and its surrounds (RNC, 2020). Based on these surveys, five broad habitat types have been identified within the amendment area:

- Open eucalypt woodland over chenopods, mostly on a red clayey substrate.
- Open eucalypt woodland over low shrubs on a stony, red clayey substrate.
- Open eucalypt woodland over tall shrubs mostly on a stony red clay soils.
- Low trees with limited understorey of shrubs on red clayey substrate.
- Low trees with a dense understorey of low shrubs on red clayey and often stony substrate.

These habitat types are common in the local area and do not provide any important ecological linkages or fauna movement corridors (RNC, 2020).

Seven species of conservation significance were considered to have the potential of occurring within the amendment area (RNC, 2020):

- Malleefowl – (Vulnerable).
- Central Long-eared Bat - Priority 3.
- Southern Death Adder – Priority 3.
- Western Rosella (inland) - Priority 3.
- Oriental Plover - BC Act 2016 Migratory.
- Fork-tailed Swift - BC Act 2016 Migratory.
- Peregrine Falcon – Other specially protected fauna.

Malleefowl have been observed in the region, however, there are no recent records of active breeding mounds in the vicinity of the Higginsville Gold Operations (HGO) area (RNC, 2020). Open fauna habitat and the presence of feral pest species significantly reduce the probability of Malleefowl utilising the project area (RNC, 2020). Malleefowl nests or tracks have not been sighted in any of the fauna surveys of the project area. It is therefore considered unlikely that the proposed clearing of the amendment area will have any significant impact on this species.

The Central Long-eared Bat is distributed across the southern and central wheatbelt, southern part of the Great Victoria Desert and the Nullarbor coast (RNC, 2020). The project area is on the boundary of its known distribution. It roosts in tree cavities, foliage and under loose bark (RNC, 2020). Given that the proposed vegetation clearing represents a very small fraction of similar habitat in the general area, it is Terrestrial Ecosystems' (2019) assessment that the proposed clearing in the project area is unlikely to have a significant impact on this species.

The Southern Death Adder is a very cryptic snake that is found from the Darling Range, central wheatbelt and from Esperance across the Nullarbor Plain to the South Australian border (RNC, 2020). The Southern Death Adder is in relatively low densities across the goldfields and there is a very low possibility it could occur in the HGO project area (RNC, 2020). There are no records in the Atlas of Living Australia near the HGO area (RNC, 2020). On the basis of a very low possibility of it occurring in the HGO area and its vast regional distribution, the impact on the conservation status of the Southern Death Adder from the proposed clearing is considered negligible (RNC, 2020).

The Western Rosella is found mostly in eucalypt and *Casuarina* woodlands and shrublands, especially Wandoo, Flooded Gums and Salmon Gums, and has been reported at Widgiemooltha (Terrestrial Ecosystems, 2019). It is possible that this species could infrequently occur in the HGO area. The potential for impact is generally low given its ability to rapidly exit from areas being cleared (RNC, 2020). Overall, given that the HGO area represents a very small fraction of similar habitat in adjacent areas, it is considered unlikely that the proposed amendment will have any impact on the conservation status of this species (Terrestrial Ecosystems 2019).

The proposed clearing is unlikely to significantly impact on migratory species as they are considered highly mobile and would likely move to adjacent undisturbed habitat.

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

Methodology RNC (2020)
Terrestrial Ecosystems (2019)

GIS Database:
- Imagery
- Pre-European Vegetation
- Threatened Fauna

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

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

There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (RNC, 2020).

The vegetation associations within the application area are common and widespread within the region (RNC, 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 RNC (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 amendment area (GIS Database).

Flora and vegetation surveys of the amendment area did not identify any TECs (GHD, 2010; Native Vegetation Solutions, 2017; RNC, 2020).

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

Methodology GHD (2010)
Native Vegetation Solutions (2017)
RNC (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 amendment area falls within the Coolgardie Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 98% of the pre-European vegetation still exists in the IBRA Coolgardie Bioregion (Government of Western Australia, 2019). The amendment area is broadly mapped as Beard vegetation associations 8: Medium woodland; salmon gum & gimlet; and 501: Medium woodland; goldfields blackbutt (GIS Database). Approximately 50% of the pre-European extent of Beard vegetation association 8 remains uncleared at the state level and approximately 98% at the bioregional level (Government of Western Australia, 2019). Approximately 99% of the pre-European extent of Beard vegetation association 501 remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).

Therefore, the amendment 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 – Coolgardie	12,912,204	12,648,491	~98	Least Concern	16.37
Beard vegetation associations – WA					
8	694,638	346,426	~50	Least Concern	6.77
501	48,022	47,889	~99	Least Concern	14.09
Beard vegetation associations – Coolgardie Bioregion					
8	280,248	275,589	~98	Least Concern	9.52
501	43,939	43,806	~99	Least Concern	15.4

* Government of Western Australia (2019)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2019)

GIS Database:

- IBRA Australia
- Pre-European Vegetation

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

Comments Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the amendment area (RNC, 2020; GIS Database). Several seasonal creek lines pass through the amendment area (RNC, 2020; GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (BoM, 2020).

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

Methodology BoM (2020)
RNC (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 amendment area is located within the Kambalda Soil-Landscape Zone (Tille, 2006). This zone is characterised by flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton (Tille, 2006). Soils comprise calcareous loamy earths and red loamy earths with salt lakes soils and some red/brown hardpan shallow loams and red sandy duplexes (Tille, 2006).

The amendment proposal to clear 1000 hectares of native vegetation is considered to be a relatively large area and may lead to land degradation through soil erosion. According to Northcote et al (1960 -1968), the application area is within an area of sandy soils which can be susceptible to wind erosion. Although typical surface runoff would be minimal given the climate (BoM, 2020), high rainfall events may cause short-term erosion through the transportation of sediments in surface flows. Potential impacts from land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The amendment area has an annual average evaporation rate of approximately at least eight times the annual average rainfall (BoM, 2020; GIS Database). Based on this information, surface flows during normal rainfall events are likely to be short lived and recharge to groundwater would be considered minimal. This would reduce the likelihood of salinity increasing as a result of the proposed clearing.

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

Methodology BoM (2020)
Northcote et al (1960 -1968)
Tille (2006)

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

The amendment area is not located within any conservation areas. The nearest conservation area is Binaronca Nature Reserve, which is located approximately 2.6 kilometres north, north-west of the application area of the main project area, and 1.72 hectares from the haul road (GIS Database). Aerial imagery shows continuous vegetation around the reserve, therefore the proposed clearing is not likely to disrupt any linkages to the reserve (GIS Database). Given the distance between the application area and Binaronca Nature Reserve, the proposed clearing is not likely to impact on the 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 amendment area (GIS Database). There are no permanent watercourses or wetlands within the amendment area (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.

Groundwater salinity in the local area is estimated to be between 14,000 – 35,000 milligrams/Litre Total

Dissolved Solids (TDS), which is considered saline (GIS Database). The proposed clearing is not likely to significantly alter groundwater salinity levels within the application area.

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

With an average annual rainfall of 270 millimetres and an average annual evaporation rate of between 2,400 and 2,800 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2020; GIS Database). Whilst large rainfall events may result in flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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 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/averages/tables/cw_012018.shtml (Accessed 11 August 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) NatureMap, Mapping Western Australia's Biodiversity. Department of Biodiversity, Conservation and Attractions. Available online at: <https://naturemap.dbca.wa.gov.au/> (Accessed 11 August 2020).

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <http://maps.daa.wa.gov.au/AHIS/> (Accessed 11 August 2020).

GHD (2010) Avoca Resources Limited, Report for Higginsville Project Area, Desktop Biological Assessment and Broad Scale Vegetation Mapping. Unpublished report prepared for Avoca Resources Limited by GHD, February 2010.

Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

- Native Vegetation Solutions (2017) Level 1 Flora and Vegetation Survey of the Mitchell Project Area, Higginsville (M15/338, M15/639, M15/640, M15/1790 and G15/29). Report prepared for Avoca Mining Pty Ltd by Native Vegetation Solutions, June 2017.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne. RNC (2020) Supporting Information for an Application to Amend CPS 8152/2 Higginsville Gold Operations. Unpublished report prepared by RNC Minerals, May 2020.
- Terrestrial Ecosystems (2019) Level 1 Vertebrate Fauna Risk Assessment for the Eundynie Project. Unpublished report prepared for Native Vegetation Solutions on behalf of RNC Minerals Limited by Terrestrial Ecosystems, Version 1, July 2019.
- Tille. P. (2006) Soil-landscapes of Western Australia's Rangelands and Arid Interior. Technical Report 313. Department of Agriculture and Food, Western Australia. ISSN 1039-7205.

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

Definitions:

{DFCA (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.