



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 9100/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: GSM Mining Company Pty Limited

1.3. Property details

Property: Mining Lease 38/205
Mining Lease 38/389
Mining Lease 38/532
Local Government Area: Shire of Laverton
Colloquial name: Granny Smith Gold Mine

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 07 January 2021

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 association:
18: Low woodland; mulga (*Acacia aneura*) (GIS Database).

A flora and vegetation survey was conducted over the application area by Native Vegetation Solutions (NVS) on 31 March and 1 April 2020. The following vegetation associations were recorded within the application area (NVS, 2020):

Mulga shrubland - dominated by *Acacia aneura*, *Acacia pteraneura*, *Acacia ramulosa* var. *ramulosa*, *Eremophila latrobei* subsp. *latrobei*, *Maireana triptera*, *Sida* sp. Golden calyces glabrous (H.N. Foote 32) and *Teucrium teucriiflorum*.

Mulga over chenopod shrubland - dominated by *Acacia aneura*, *Acacia mulganeura*, *Acacia craspedocarpa*, *Acacia tetragonophylla*, *Atriplex bunburyana*, *Maireana pyramidata*, *Atriplex vesicaria*, *Cratystylis subspinescens* and *Atriplex stipitata*.

Mulga creekline vegetation - dominated by *Acacia aneura*, *Acacia masliniana*, *Acacia mulganeura*, *Acacia burkittii*, *Acacia tetragonophylla*, *Atriplex bunburyana*, *Atriplex codonocarpa*, *Maireana pyramidata*, *Rhagodia eremaea*, *Scaevola spinescens* and *Sida* sp. Golden calyces glabrous (H.N. Foote 32).

Mulga over BIF - *Acacia aneura*, *Acacia craspedocarpa*, *Acacia mulganeura*, *Acacia quadrimarginea*, *Eremophila latrobei* subsp. *latrobei*, *Dodonaea rigida*, *Sida* sp. Golden calyces glabrous (H.N. Foote 32), *Ptilotus obovatus* and *Ptilotus schwartzii*. This vegetation group provides habitat for *Phyllanthus baeckeoides* (P3).

Acacia and Hakea open shrubland - open scrub dominated by *Acacia aneura*, *Acacia kalgoorliensis* and *Acacia masliniana* over *Hakea preissii* and *Cratystylis subspinescens* over *Maireana georgei* and *Maireana triptera*.

Clearing Description Granny Smith Gold Mine.
GSM Mining Company Pty Limited (GSM) proposes to clear up to 150 hectares of native vegetation within a boundary of approximately 342.1 hectares, for the purpose of mineral production and associated infrastructure. The project is located approximately 20 kilometres south of Laverton, within the Shire of Laverton.

Vegetation Condition Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

To:

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment

The vegetation condition was derived from a vegetation survey conducted by NVS (2020).

The proposed clearing is for the construction of an additional Tailings Storage Facility – Cell 4 adjoining, and to the west of, the existing Tailings Storage Facility situated at the Granny Smith Gold Mine (GSM, 2020). The proposed 150 hectares of clearing includes clearing for the tailings storage area and ancillary infrastructure that includes tailings pipelines, monitoring bores, access tracks and topsoil stockpiles (GSM, 2020). In addition, the proposed clearing will also include the realignment of the existing site power line and pipeline corridors (GSM, 2020).

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 Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The Eastern Murchison subregion is characterised by: internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development; broad plains with red-brown soils and breakaway complexes as well as red sandplains; and salt lake systems (CALM, 2002). Vegetation is dominated by mulga woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and *Tecticornia* shrublands (CALM, 2002).

A vegetation assessment of the application area was conducted by Native Vegetation Solutions (NVS) on 31 March and 1 April 2020 (NVS, 2020). The vegetation of the application area and surrounding areas was dominated by mulga shrublands (NVS, 2020). Vegetation types described within the application area were all represented in surrounding areas. No Threatened or Priority Ecological Communities were identified as potentially occurring in the application area and the field assessment of the application did not record any (NVS, 2020; GIS Database).

A total of 111 flora species from 49 genera and 25 families were recorded during the field surveys of the application area (NVS, 2020). Twenty-three conservation significant flora were identified as previously being recorded within 50 kilometres of the application area (NVS, 2020). However, the majority of these species were determined to be unlikely to occur due to a lack of suitable habitat (NVS, 2020). Four Priority species were identified as potentially occurring due to the presence of suitable habitat within the application area, and one Priority species was identified as being recorded within the application area during previous surveys (NVS, 2020). No Threatened flora species were identified as potentially occurring within the application area and none were recorded during the field surveys of the application area (NVS, 2020). One Priority flora species, *Phyllanthus baeckeoides* (P3) was identified within the application area (NVS, 2020). The proposed clearing is likely to remove or indirectly impact 70 individuals, which represents 1.4% of the regional population (GSM, 2020; NVS, 2020). The loss of the local population may have some significance on a local scale, however *Phyllanthus baeckeoides* (P3) is known from a number of populations within the Murchison and Great Victoria Desert IBRA regions and the proposed clearing is of a population that exists within the known range of the species, will not result in a contraction of the known range of the species and is unlikely to significantly impact the conservation status of the species at a regional scale (Western Australian Herbarium, 1998-).

Two species of weeds; *Mesembryanthemum crystallinum* (iceplant) and *Cenchrus ciliaris* (buffel grass), were recorded during the field surveys of the application area, however none were declared pest species or listed weeds of national significance (NVS, 20120). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the introduction of weeds may be minimised by the implementation of a weed management condition.

A desktop assessment identified 246 fauna species potentially present within the application area including 113 birds, 8 amphibians, 35 mammals and 90 reptiles, and 12 conservation significant fauna species (Terrestrial Ecosystems, 2020). A total of 81 fauna species including 60 birds, three amphibians, six mammals and twelve reptiles, and 12 conservation significant fauna species, were recorded during the field surveys of the application area (GSM, 2020; Terrestrial Ecosystems, 2020). Of the conservation significant species potentially present, suitable habitat was only present for four species: princess parrot, *Polytelis alexandrae* (P4 at State and Vulnerable at Federal level); fork-tailed swift, *Apus pacificus* (MI); peregrine falcon, *Falco peregrinus* (OS) and long-tailed dunnart, *Sminthopsis longicaudata* (P4) (Terrestrial Ecosystems, 2020). The princess parrot, fork-tailed swift and peregrine falcon are unlikely to be impacted by the proposed clearing as the species are highly mobile avian species. However, clearing and fragmentation of habitat may impact on the long-tailed dunnart, which has previously been recorded in the local area (Terrestrial Ecosystems, 2020). Although clearing may impact the local population of the long-tailed dunnart, the proposed clearing is not likely to significantly impact the conservation status of the species due to a low density population being supported with similar abundance likely to be present in adjacent areas.

A Short-Range Endemic (SRE) invertebrate survey recorded two spider species (Aname 'MYG001' and Kwonkan 'MYG219') associated with the drainage line within the application area (Terrestrial Ecosystems, 2011). Aname 'MYG001' was determined to be widespread and not considered to be a SRE (Terrestrial Ecosystems, 2011). Kwonkan 'MYG219' potentially represented a SRE as only two specimens were recorded during the survey, however one specimen was recorded outside of the application area on the eastern side of the existing mine site (Terrestrial Ecosystems, 2011). The fauna habitats are not restricted to the application area and it is likely that species would be present in adjacent areas. Therefore, it is unlikely that the proposed

clearing will have a significant impact on any potential SRE species populations.

The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (NVS, 2020; Terrestrial Ecosystems, 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 CALM (2002)
GSM (2020)
NVS (2020)
Terrestrial Ecosystems (2011)
Terrestrial Ecosystems (2020)
Western Australian Herbarium (1998-)

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

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

- Open mulga woodland over scattered low shrubs and grasses of varying densities;
- Mulga woodland along creekline over grasses and shrubs of varying densities;
- Mulga over chenopod shrubland over scattered grasses of varying densities; and
- Mulga woodland over scattered low shrubs and grasses over banded ironstone formation.

The long-tailed dunnart has previously been recorded in the local area, with suitable habitat present including the banded ironstone formation habitat in the east of the application area (Terrestrial Ecosystems, 2020). This habitat could be locally important for long-tailed dunnarts and maintaining native vegetation and habitat corridors between the ridges in the region is important for maintaining the local population (Terrestrial Ecosystems, 2020). However, with approximately 4 hectares of this habitat type being present within the application area and already being partially cleared for the adjacent Tailings Storage Facility – Cell 3, clearing this habitat is unlikely to significantly impact on the species in a regional context and the proposed clearing is unlikely to impact on habitat linkages between rocky ridges and hills in the region.

The application area lies within the potential range of the Arid Bronze Azure Butterfly, *Ogyris subterrestris petrina* (Critically Endangered at state and federal level). However, no suitable habitat (woodlands dominated by smooth barked *Eucalyptus* species) was recorded in the application area. Therefore it is unlikely that the proposed clearing will significantly impact the species.

The fauna habitat types present within the application area are well represented in adjacent areas and are unlikely to represent significant habitat on a local or regional scale (Terrestrial Ecosystems, 2020; GIS Database).

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

Methodology Terrestrial Ecosystems (2020)

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

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

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

There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of

the application area did not record any species of Threatened flora (NVS, 2020).

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

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

Methodology NVS (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 association 18: Low woodland; mulga (*Acacia aneura*) (GIS Database). Approximately 99% of the pre-European extent of this vegetation association 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
Beard vegetation association – WA					
18	19,892,306	19,843,148	~99	Least Concern	~6
Beard vegetation association – Murchison Bioregion					
18	12,403,172	12,363,252	~99	Least Concern	~5

* Government of Western Australia (2019)

** Department of Natural Resources and Environment (2002)

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

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

GIS Database:
 - IBRA Australia

- Pre-European Vegetation

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

Comments Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (NVS, 2020; GIS Database). One seasonal creek line passes through the application area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. One vegetation association described within the application area "mulga creekline vegetation" was recorded in association with the seasonal drainage line (NVS, 2020).

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

Methodology NVS (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 Bevon, Jundee and Steer land systems, with the majority of the application area falling within the Steer land system (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 Bevon land system is described as irregular low ironstone hills with stony lower slopes supporting mulga shrublands. Minor areas with texture contrast soils on breakaway footslopes and narrow drainage tracts of this land system are susceptible to soil erosion, particularly if perennial shrub cover is substantially reduced or the soil surface is disturbed (Pringle et al., 1994).

The Jundee land system consists of hardpan plains with ironstone gravel mantles supporting mulga shrublands. This land system is not generally susceptible to erosion as gravel mantles provide effective protection against soil erosion, however if natural sheet flow is impeded soil erosion can occur and cause water starvation and loss of vigour in vegetation downslope (Pringle et al., 1994).

The Steer land system is described as gravelly alluvial plains supporting halophytic shrublands. This land system is not generally susceptible to erosion, partly as a consequence of protective stone and gravel soil mantles, however unprotected areas on alluvial plains and on drainage floors are susceptible to water erosion (Pringle et al., 1994).

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

Methodology Pringle et al. (1994)

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 Goongarrie National Park which is located approximately 133 kilometres south-west of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.

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

Methodology GIS Database:
- DPaW Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). 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 low average rainfall of approximately 200 millimetres per year, falling mainly in winter (CALM, 2002). The nearest weather station is Laverton, approximately 20 kilometres north of the application area, with an average rainfall of approximately 236.3 millimetres per year (BoM, 2020).

There are no permanent water courses or waterbodies within the application area (GIS Database). 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)
CALM (2002)

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 23 November 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 (WC2019/002) 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, Laverton. Bureau of Meteorology.
<http://www.bom.gov.au/climate/data/> (Accessed 10 December 2020).

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

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

- DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 10 December 2020).
- 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>
- GSM (2020) Supporting Document for Native Vegetation Clearing Permit Application – Purpose Permit – Granny Smith Minesite M38/205, M38/389 and M38/532. Report prepared by GSM Mining Company Pty Ltd for Department of Mines, Industry Regulation and Safety, November 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.
- NVS (2020) Reconnaissance Flora and Vegetation Survey of Proposed TSF4, Granny Smith Mine. Report prepared by Native Vegetation Solutions for GSM Mining Company Pty Ltd, December 2020.
- Pringle, H.J.R., Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) An inventory and condition survey of rangelands in the north-eastern Goldfields, Western Australia. Technical Bulletin No. 87. Department of Agriculture, South Perth, Western Australia.
- Terrestrial Ecosystems (2011) Investigation of Short-Range Endemic Invertebrates for the Granny Deeps Project Area. Report prepared by Terrestrial Ecosystems for Barrick Gold of Australia, March 2011.
- Terrestrial Ecosystems (2020) Vertebrate Fauna Risk Assessment – Granny Smith Tailing Storage Facility Expansion. Report prepared by Terrestrial Ecosystems for Granny Smith Mining Company Pty Ltd, June 2020.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/> (Accessed 10 December 2020).

5. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
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)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
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)
DoEE	Department of the Environment and Energy (now DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be "*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX Extinct species

Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that "*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory

species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (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.