Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5433/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: *Iron Ore (Mount Newman) Agreement Act 1964,* Mineral Lease 244SA (AML 70/244)
Local Government Area: Shire of East Pilbara
Colloquial name: Orebodies 42 and 43

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
90		Mechanical Removal	Mineral exploration, hydrological investigations 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

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

29: Sparse low woodland; Mulga discontinuous in scattered groups;
82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and
216: Low woodland; Mulga (with Spinifex) on rises (GIS Database).

Multiple flora and vegetation surveys have been conducted over the application area since 2009. The most recent is the consolidated vegetation mapping report by Onshore Environmental, 2014. The following vegetation associations were recorded within the application area (Onshore Environmental, 2014):

FP Cc Sccn - Scattered Tussock Grasses of **Cenchrus ciliaris* over Scattered Herbs of *Sclerolaena cornishiana* on pale brown silty clay on floodplains.

FP AaAssAan c Tp - High Shrubland of *Acacia aptaneura*, *Acacia sclerosperma* subsp. *sclerosperma* and *Acacia ancistrocarpa* over Very Open Hummock Grassland of *Triodia pungens* on red brown sandy loam on floodplains and medium drainage lines.

FP AayAaApt Tp Cc - Low Open Forest of *Acacia ayersiana*, *Acacia aptaneura* and *Acacia pteraneura* over Hummock Grassland of *Triodia pungens* and Open Tussock Grassland of **Cenchrus ciliaris* on red brown silty clay on floodplains.

FP AaAciApr AsyAssAb Tp - Low Open Woodland of *Acacia aptaneura*, *Acacia citrinoviridis* and *Acacia pruinocarpa* over Open Shrubland of *Acacia synchronicia*, *Acacia sclerosperma* subsp. *sclerosperma* and *Acacia bivenosa* over Very Open Hummock Grassland of *Triodia pungens* on red brown clay loam on floodplains and medium drainage lines.

FP AaAprCh ErfrAteDop e AriChfArc - Low Open Woodland of *Acacia aptaneura*, *Acacia pruinocarpa* and *Corymbia hamersleyana* with Open Shrubland of *Eremophila fraseri*, *Acacia tetragonophylla* and *Dodonea petiolaris* over Tussock Grassland of *Aristida inaequiglumis*, *Chrysopogon fallax* and *Aristida contorta* on red sandy loam on floodplains.

FP AcaoAaEx Erff Tp - Low Woodland of *Acacia catenulata* subsp. *occidentalis*, *Acacia aptaneura* and *Eucalyptus xerothermica* over Open Shrubland of *Eremophila forrestii* subsp. *forrestii* over Open Hummock Grassland of *Triodia pungens* on red sandy loam on floodplains.

FP AciChAa AancApyp Pl TtAriCc - Low Woodland of *Acacia citrinoviridis*, *Corymbia hamersleyana* and *Acacia aptaneura* over High Shrubland of *Acacia ancistrocarpa*, *Acacia pyrifolia* var. *pyrifolia* and *Petalostylis*

labicheoides over Very Open Tussock Grassland of *Themeda triandra, Aristida inaequiglumis* and **Cenchrus ciliaris* on brown sandy loam on floodplains and medium drainage lines.

MI CocAa CcCs Tb - Low Open Woodland of *Corymbia candida* subsp. *dipsodes* and *Acacia aptaneura* over Open Tussock Grassland of **Cenchrus ciliaris* and **Cenchrus setiger* and Very Open Hummock Grassland of *Triodia basedowii* on red brown loam on floodplains and minor drainage lines.

MA EcrEv AciApypMg CcEuaTt - Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* and *Eucalyptus victrix* over High Open Shrubland of *Acacia citrinoviridis*, *Acacia pyrifolia* var. *pyrifolia* and *Melaleuca glomerata* over Tussock Grassland of **Cenchrus ciliaris*, *Eulalia aurea* and *Themeda triandra* on brown clay loam on banks of major drainage lines.

MA EvAciEcr TercCocrA pyp CcEuaTt - Woodland of *Eucalyptus victrix*, *Acacia citrinoviridis* and *Eucalyptus camaldulensis* subsp. *refulgens* over Low Open Shrubland of *Tephrosia rosea* var. *clementii*, *Corchorus crozophorifolius* and *Acacia pyrifolia* var. *pyrifolia* over Very Open Tussock Grassland of **Cenchrus ciliaris*, *Eulalia aurea* and *Themeda triandra* on brown loamy sand on channels of major drainage lines.

SF Frs Cc - Low Open Shrubland of *Frankenia setosa* with Scattered Tussock Grasses of **Cenchrus ciliaris* on red brown clay loam on saline flats.

ME Gll Ev Sen - Herbs of *Glinus lotoides* with Low Open Woodland of *Eucalyptus victrix* and Low Scattered Shrubs of *Senna notabilis* on pale brown loam on medium drainage lines.

CP TwTa Ese AbPlApyp - Hummock Grassland of *Triodia wiseana* and *Triodia angusta* with Open Mallee of *Eucalyptus socialis* subsp. *eucentrica* and Open Shrubland of *Acacia bivenosa*, *Petalostylis labicheoides* and *Acacia pyrifolia* var. *pyrifolia* on light brown clay loam on calcrete plains and rises.

FP Tb AaApr Erff - Hummock Grassland of *Triodia basedowii* with Low Open Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Eremophila forrestii* subsp. *forrestii* on red sandy loam on floodplains.

HS Tb Ell AbAiPl - Hummock Grassland of *Triodia basedowii* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Acacia bivenosa*, *Acacia inaequilatera* and *Petalostlyis labicheoides* on red brown sandy loam on lower hill slopes.

HS TsTp AaAprAci AaErllSegl - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia pungens* with High Open Shrubland of *Acacia aptaneura*, *Acacia pruinocarpa* and *Acacia citrinoviridis* and Open Shrubland of *Acacia aptaneura*, *Eremophila latrobei* subsp. *latrobei* and *Senna glutinosa* subsp. x *luerssenii* on red loamy sand on upper hill slopes.

HS TsTwTp EllCh AhiAaa - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxa* on red brown sandy loam on hill slopes.

HS Tw EllChHc AancAbAa - Hummock Grassland of *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. leucophloia, *Corymbia hamersleyana* and *Hakea chordophylla* and Open Shrubland of *Acacia ancistrocarpa*, *Acacia bivenosa* and *Acacia aptaneura* on red sandy loam on hill slopes.

MI TsTp AancAmGr wh - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Triodia pungens* with Shrubland of *Acacia ancistrocarpa*, *Acacia monticola* and *Grevillea wickhamii* subsp. *hispidula* on brown sandy loam on minor drainage lines.

SA Tb ChEg ScpBeKep - Hummock Grassland of *Triodia basedowii* with Low Open Woodland of *Corymbia hamersleyana* and *Eucalyptus gamophylla* over Low Open Shrubland of *Scaevola parvifolia*, *Bonamia erecta* and *Kennedia prorepens* on red loamy sand on sand plains.

SP TbTp HlAancAi Ch - Hummock Grassland of *Triodia basedowii* and *Triodia pungens* with High Open Shrubland of *Hakea lorea* subsp. *lorea*, *Acacia ancistrocarpa* and *Acacia inaequilatera* and Scattered Low Trees of *Corymbia hamersleyana* on red brown loamy sand on stony plains.

SP TpTb Eg PlAbAanc - Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Open Mallee of *Eucalyptus gamophylla* and Shrubland of *Petalostylis labicheoides*, *Acacia bivenosa* and *Acacia ancistrocarpa* on red brown loamy sand on stony plains and footslopes.

SP Ts Ai - Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with High Open Shrubland of *Acacia inaequilatera* on red brown loamy sand on lower hill slopes and stony plains.

FP TscTp ExAaApr AteAssGrw h - Open Hummock Grassland of *Triodia schinzii* and *Triodia pungens* with Low Open Woodland of *Eucalyptus xerothermica*, *Acacia aptaneura* and *Acacia pruinocarpa* over Scattered Shrubs of *Acacia tetragonophylla*, *Acacia sclerosperma* subsp. *sclerosperma* and *Grevillea wickhamii* subsp. *hispidula* on red brown clay loam on floodplains.

SP Tl AancApa ApAprCh - Open Hummock Grassland of *Triodia lanigera* with Open Shrubland of *Acacia ancistrocarpa* and *Acacia pachyacra* and Scattered Low Trees of *Acacia paraneura*, *Acacia pruinocapra* and *Corymbia hamerselyana* on red sandy loam on stony plains.

MA TydCyv EcrEv AciAcp - Sedges of *Typha domingensis* and *Cyperus vaginatus* with Open Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* and *Eucalyptus victrix* over Low Open Woodland of *Acacia citrinoviridis* and *Acacia coriacea* subsp. *pendens* on brown clayey sand on permanent pools along major drainage lines.

*Denotes weed species

Clearing Description

Orebodies 42 and 43.
BHP Billiton Iron Ore Pty Ltd proposes to clear up to 90 hectares of native vegetation within a boundary of approximately 1,744.72 hectares, for the purposes of mineral exploration, hydrological investigations, and associated activities. The project is located approximately 8 kilometres east of Newman, within the Shire of East Pilbara.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

To

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment

The vegetation condition was derived from a vegetation survey conducted by Onshore Environmental (2014).

Clearing permit CPS 5433/1 was granted by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 4 April 2013 and was valid from 27 April 2013 to 31 October 2027. The permit authorised the clearing of up to 60 hectares of native vegetation within a boundary of approximately 2,238 hectares, for the purposes of mineral exploration, hydrological investigations, and associated activities.

On 18 June 2020, the Permit Holder applied to amend CPS 5433/2 to increase the area of clearing from 60 ha to 90 ha, to enable further exploration drilling in the Orebody 42 and 43 areas. The amendment also seeks to reduce the permit boundary from 2,238 ha to 1,744.72 ha to remove overlap with CPS 7374/2, to extend the period in which clearing is authorised from 31 October 2022 to 30 November 2030, to extend the duration of the permit from 31 October 2027 to 30 November 2035 and to change the final reporting date from 31 October 2027 to 30 November 2035.

3. Assessment of application against Clearing Principles

Comments

The Permit Holder has identified the need to increase the area of clearing authorised by 30 hectares to allow for additional exploration drilling in the Orebody 42/43 project area. However, the permit boundary is being reduced by 494 hectares to remove overlap with existing clearing permit CPS 7374/2.

The amendment application area is located on the border of two subregions: the Hamersley Subregion of the Pilbara biogeographic region and the Augustus Subregion of the Gascoyne biogeographic region, of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). The amendment application area therefore represents a transition between the two subregions in terms of the floristic diversity and vegetation assemblages. The Hamersley subregion is described as the southern section of the Pilbara Craton. It includes mountainous areas of Proterozoic sedimentary ranges and plateaux, dissected by gorges (basalt, shale and dolerite). Mulga low woodlands occur over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges. Drainage is into either the Fortescue (to the north), the Ashburton to the south, or the Robe to the west (CALM, 2002). The Augustus subregion is described as rugged low Proterozoic sedimentary and granite ranges divided by broad flat valleys. This subregion also includes the Narryera Complex and Bryah Basin of the Proterozoic Capricorn Orogen (on northern margin of the Yilgarn Craton), as well as the Archaean Marymia and Sylvania Inliers. Although the Gascoyne River System provides the main drainage of this subregion, it is also the headwaters of the Ashburton and Fortescue Rivers. There are extensive areas of alluvial valley-fill deposits. Mulga woodland with Triodia occur on shallow stony loams on rises, while the shallow earthy loams over hardpan on the plains are covered by Mulga parkland. The Augustus subregion experiences a desert climate with bimodal rainfall (CALM, 2002).

The amendment application area is broadly mapped as Beard vegetation associations 29, 82 and 216, which is consistent with the original permit area (GIS Database). These vegetation associations remain at approximately 99% of pre-European extent in the state and 98-100% in the two bioregions (Government of Western Australia, 2019). Hence, the vegetation proposed to be cleared does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

Multiple flora and vegetation surveys have been conducted over the amendment application area since 2009. The most recent is the consolidated vegetation mapping report by Onshore Environmental, 2014. No Threatened Flora species were identified within the amendment application area (BHPBIO, 2020). Three Priority Flora species have been identified within the amendment application area being, *Aristida jerichoensis* var. *subspinulifera* (Priority 3), *Goodenia nuda* (Priority 4), and *Rhagodia* sp. *Hamersley* (Priority 3) (BHPBIO, 2020). No Priority Ecological Communities have been recorded within the amendment application area (GIS Database; BHPBIO, 2020). The amendment application area is located within the buffer of one Threatened Ecological Community (TEC), 'Ethel Gorge aquifer stygobiont community' (GIS Database). This TEC is a

groundwater ecosystem and the proposed clearing is not expected to lead to any significant impacts to the groundwater values of the area (BHPBIO, 2020). Onshore Environmental (2014) mapped a total of 12 broad floristic communities with 26 vegetation associations within the amendment application area. Vegetation condition within the amendment application area ranges from Excellent to Completely Degraded (Onshore Environmental, 2014). Vegetation adjacent to the amendment application area is in similar condition to the vegetation of the amendment application area (BHPBIO, 2020). The amendment areas are unlikely to represent an area of higher biodiversity than the original permit area or surrounding areas.

Eighteen weed species have been recorded within the vicinity of the amendment area (Onshore Environmental, 2014; BHPBIO, 2020). Weeds have the potential to out-compete native flora species and reduce the biodiversity of an area, and care should be taken to prevent the introduction or spread of weeds in the application areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the continued implementation of the existing weed management condition on the permit.

Biologic (2014) consolidated all fauna mapping undertaken on BHP Billiton Iron Ore tenure and identified the following seven fauna habitat types occur within the amendment application area; Artificial Wetlands, Drainage Area/Floodplain, Hillcrest/Hillslope, Major Drainage Line, Mulga Woodland, Sand Plain, and Stony Plain (BHPBIO, 2020). There are no unique or restricted fauna habitats within the amendment application area and the area is unlikely to represent significant habitat for fauna in a regional context (BHP Billiton, 2020). The vegetation and habitat found within the amendment application area are considered to be well represented in the Pilbara bioregions (BHPBIO, 2020).

Three conservation significant fauna species were recorded within the amendment application area by Biologic (2014) being the Pilbara Flat-headed Blind-snake (*Anilios ganei*) (DBCA Priority 1), Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) (EPBC Act Vulnerable; BC Act Schedule 3), and Western Pebble-mound Mouse (*Pseudomys chapmani*) (DBCA Priority 4) (Biologic, 2014; BHPBIO, 2020). Based on the occurrence of the habitat types and conservation significant fauna species previously recorded in the vicinity, an additional two species are considered to potentially occur within the amendment application area (i.e. those considered 'likely' or 'possible' to occur), the Curlew Sandpiper (*Calidris ferruginea*), (EPBC Act Critically Endangered and Migratory; BC Act Schedules 3 and 5), and the Grey Falcon (*Falco hypoleucos*) (BC Act Schedule 3) (Biologic, 2014; BHPBIO, 2020). However, clearing in the amendment application area is unlikely to impact the conservation status of any fauna species.

The amendment application area contains portions of five surface water features, Ophthalmia Dam, Fortescue River, Shovelanna Creek, Homestead Creek, and Warrawanda Creek (GIS Database). Where practicable BHPBIO, will utilise existing cleared tracks to cross areas identified as Major Drainage Lines and if it is necessary for new crossings to be installed, clearing will be kept to a bare minimum and will be constructed flat, level to the surface (i.e. a simple clearing with no bunds) to maintain the natural surface flow (BHPBIO, 2020).

The application area is not located within a conservation area (GIS Database). The nearest conservation area is Karijini National Park, located approximately 130 kilometres west of the application area (GIS Database). The proposed clearing is considered unlikely to impact on the values of any conservation areas.

Clearing native vegetation within the amendment application area is not likely to cause land degaration isuues, alter or deteriorate the quality of surface or ground water or to cause or exacerbate the indicence of flooding in the area (BHPBIO, 2020).

The vegetation associations, landforms, and fauna habitat types occurring within the amendment areas are similar to those assessed under 5433/1, and are well represented in the region (BHP Billiton, 2020; GIS Database). The relatively small increase to the area of authorised clearing (30 hectares) is unlikely to result in any significant additional environmental impacts.

The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*. Environmental information has been reviewed, and the assessment of the proposed clearing against the clearing principles remains consistent with the assessment contained in decision report CPS 5433/1.

Methodology

BHPBIO (2020)
Biologic (2014)
CALM (2002)
Government of Western Australia (2019)
Onshore Environmental (2014)

GIS Database:
- DPaW Tenure
- Hydrography, Lakes
- Hydrography, Linear
- IBRA Australia
- Imagery

- Landsystem Rangelands
- Pre-European Vegetation
- Public Drinking Water Source Areas
- Soils, Statewide
- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities buffers
- Threatened and Priority Flora
- Threatened Fauna

Planning Instrument, Native Title, previous EPA decision or other matter.

Comments

There is one native title claim (WC2005/006) 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 a number of 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.

The amendment application was advertised on 13 July 2020 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

Methodology DPLH (2020)

4. References

BHPBIO (2020) Application to amend NVCP CPS 5433/1 – Orebodies 42/43 Exploration, Native Vegetation Clearing Permit Amendment Application Supporting Document. BHP Billiton Iron Ore Pty Ltd, June 2020.

Biologic (2014) Consolidation of Regional Fauna Habitat Mapping BHP Billiton Iron Ore Pilbara Tenure. Report prepared for BHP Billiton Iron Ore Pty Ltd, by Biologic Environmental Survey Pty Ltd, May 2014.

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

DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 29 July 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

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

Onshore Environmental (2014) Consolidation of Regional Vegetation Mapping BHP Billiton Iron Ore Pilbara Tenure. Report prepared for BHP Billiton Iron Ore Pty Ltd, by Onshore Environmental Consultants Pty Ltd, June 2014.

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)
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 DBCA)
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	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (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	*Rights in Water and Irrigation Act 1914*, 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.

Principles for clearing native vegetation:

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

(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.

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

(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.

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

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

(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.

(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.

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.