



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8101/2

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: B & J Catalano Pty Ltd

1.3. Property details

Property: Mining Lease 70/733

Local Government Area: City of Kalamunda

Colloquial name: Pickering Brook Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
12.91		Mechanical Removal	Gravel extraction

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 19 November 2020

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The clearing permit application area is broadly mapped as the following Beard vegetation association:
3: Medium forest; jarrah-marri (GIS Database).

A flora and vegetation survey conducted over the original permit area and surrounding areas identified the following vegetation association within the existing permit area: Open *Eucalyptus marginata* / *Corymbia calophylla* woodland (Ecologia, 1997).

The Permit Holder applied to amend the permit to include an additional area, approximately 600 metres north of the original permit area. The majority of the amendment application area consisted of revegetation following previous gravel extraction activities, with small pockets of uncleared remnant vegetation located mainly around the edges of the amendment application area.

A flora and vegetation reconnaissance survey conducted by Lundstrom Environmental Consultants (Lundstrom, 2020) described the vegetation within the amendment application area as follows:

The previously cleared and revegetated sections:

Eucalyptus marginata - *Corymbia calophylla* woodlands. These revegetated areas include *Acacia pulchella*, *Allocasuarina fraseriana*, *Bossiaea aquifolium*, *Daviesia decurrens*, *Corymbia calophylla*, *Gompholobium scabrum*, *Kennedia coccinea* and *Phyllanthus calycinus*;

The remnant vegetation sections:

Open *Corymbia calophylla*, *Eucalyptus marginata* over moderately dense mixed shrubs. *Corymbia calophylla* dominates in the tall tree stratum with *Allocasuarina fraseriana* and *Banksia grandis* common subdominant species. Beneath this stratum, a relatively species poor shrub layer occurs. Moderately dense stands of *Persoonia longifolia*, *P. elliptica*, *Bossiaea aquifolium*, *Macrozamia riedlei* and *Xanthorrhoea preissii* predominate over smaller shrubs such as *Scaevola calliptera*, *Phyllanthus calycinus* and *Hibbertia commutata* (Lundstrom, 2020).

Clearing Description Pickering Brook Project.
B & J Catalano Pty Ltd proposes to clear up to 12.91 hectares of native vegetation within two separate areas, (of approximately 2.9 hectares and approximately 10.01 hectares, respectively), for the purpose of gravel extraction. The project is located approximately 12 kilometres southeast of Kalamunda, in the City of Kalamunda.

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

To

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

Comment

The vegetation condition was derived from a reconnaissance vegetation survey conducted by Lundstrom Environmental Consultants (Lundstrom, 2020).

The amendment application area is located immediately adjacent to an existing gravel quarry, which has been in operation for many years.

Clearing permit CPS 8101/1 was granted by the Department of Mines, Industry Regulation and Safety on 19 September 2019 and was valid from 12 October 2019 to 11 October 2024. The permit authorised the clearing of up to 2.9 hectares of native vegetation within a boundary of approximately 2.9 hectares, for the purpose of gravel extraction.

The Permit Holder has applied to amend CPS 8101/1 to increase the amount of clearing authorised and increase the size of the permit boundary, by adding a new area to the permit. The additional area is approximately 10.01 hectares in size, increasing the total permit boundary to approximately 12.91 hectares.

3. Minimisation and Mitigation Measures

The original permit (CPS 8101/1) authorised the clearing of 2.9 hectares of native vegetation within an area of approximately the same size. The Permit Holder applied to amend clearing permit CPS 8101/1 to include an additional area on the permit, located approximately 600 metres north of the original permit area. The initial amendment application area was approximately 10.934 hectares in size, consisting of approximately 9.434 hectares of vegetation which had been previously cleared for gravel extraction and subsequently revegetated several years ago, and approximately 1.5 hectares of uncleared remnant vegetation most of which was located around the edges of the amendment application area.

A Black Cockatoo habitat survey conducted over a 12.8 hectare area including the amendment application area and immediately adjacent areas, identified several Black Cockatoo habitat trees (defined as trees with a diameter of 50 centimetres or greater at 1.5 metres above the ground) within or on the boundary of the proposed clearing area, including three trees with large hollows potentially suitable for nesting by Black Cockatoos. One of these three trees was excised from the amendment application area by the proponent prior to submitting the amendment application, surrounded by a 50 metre diameter circular buffer zone.

During the course of the assessment, the remaining two trees containing large hollows were also excised from the amendment application area, with each tree surrounded by 50 metre diameter circular buffer zones. These three exclusion zones have minimised any potential impacts to Black Cockatoo breeding habitats by preserving all known trees with hollows large enough for nesting of Black Cockatoos. Removing the two additional trees from the amendment application area, reduced the total size of the amendment area, and also slightly reduced the amount of remnant vegetation proposed to be cleared. In addition, the north-eastern boundary of the amendment application area was modified, avoiding another five Black Cockatoo habitat trees including four trees with no known hollows and one tree containing small hollows, and further reducing the amount of remnant vegetation to be cleared. These changes resulted in a final amendment application area of approximately 10.01 hectares comprising approximately 0.988 hectares of remnant vegetation, and the remainder of revegetation. The final amendment application area proposes to clear six Black Cockatoo habitat trees, comprising five trees with no visible hollows and one dead tree containing small hollows.

The WA Environmental Offsets Guidelines (Government of WA, 2014), state that an offset may be required if the assessment of a clearing permit application determines that significant residual impacts remain, after all options for avoidance, mitigation and rehabilitation have been considered. Avoidance and mitigation measures have been applied to this clearing proposal, as outlined above, to minimise the potential impacts of the project to habitats for Threatened species of Black Cockatoo. Following the implementation of these avoidance and mitigation measures, an offset for the residual environmental impacts of the proposed clearing is not considered necessary in this instance.



Figure 1: Showing the original amendment application area (Area 2) applied for under CPS 8101/2, and the existing permit area previously approved under CPS 8101/1 (Area 1).



Figure 2: Showing the reduced (10.01 ha) amendment area (Area 2) approved under CPS 8101/2, and the 2.9 ha area previously approved under CPS 8101/1 (Area 1).

4. Assessment of application against Clearing Principles

Comments

The proposed amendment to the permit is to allow the expansion of an existing gravel pit which has been in operation at the site for many years. The proponent initially applied to amend the permit to add a new area of approximately 10.934 hectares to the permit boundary. The majority of the initial amendment application area (approximately 9.434 hectares) was previously cleared for gravel extraction and subsequently revegetated several years ago (Lundstrom, 2020). The proponent now proposes to re-clear the revegetated area to carry out further gravel extraction to a greater depth. Approximately 1.5 hectares of the initial amendment application area contained uncleared remnant vegetation. Lundstrom (2020) described the vegetation condition of the amendment application area as ranging from Excellent in the remnant vegetation areas, to Degraded in the revegetated areas. The remnant vegetation showed evidence of previous disturbance from timber harvesting, however no weed species were recorded (Lundstrom, 2020). Alterations to the amendment application area during the course of the assessment has reduced the amendment application area to approximately 10.01 hectares, and reduced the area of remnant vegetation to less than one hectare.

The permit area is located within the Northern Jarrah Forest sub-region of the Jarrah Forest Bioregion of the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). The Northern Jarrah Forest subregion is characterised by Jarrah-Marri forest on laterite gravels and, in the eastern part, by woodlands of Wandoo - Marri on clayey soils (CALM, 2002). The majority of the diversity in the vegetation communities occurs on the lower slopes or near granite soils where there are rapid changes in site conditions (CALM, 2002). The permit area is located on lateritic gravels and block laterite, supporting marri/jarrah woodland (Lundstrom, 2020).

The amendment area is broadly mapped as Beard vegetation association 3: Medium forest; jarrah-marri; which is consistent with the original permit area (GIS Database). Approximately 67% of the pre-European extent of Beard vegetation association 3, remains uncleared at both the State and Bioregional level, and approximately 79% of this vegetation association remains uncleared within the Northern Jarrah Forest sub-region and the City of Kalamunda (Government of Western Australia, 2019). The application area occurs within the Jarrahdale State Forest, a large expanse of native forest (GIS Database). Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

Lundstrom (2020) conducted a vegetation reconnaissance survey over the amendment application area during February 2020. No Threatened or Priority flora, Threatened Ecological Communities or Priority Ecological Communities have been recorded within the amendment area (GIS Database), and none were found during the vegetation survey (Lundstrom, 2020). The vegetation associations, fauna habitats and landform types occurring within the amendment area are similar to those occurring within the original permit boundary, and are well represented in the region (GIS Database). Parts of the amendment application area are immediately adjacent to access roads and other infrastructure related to the existing quarry operations. The amendment area is unlikely to represent an area of higher biodiversity than the original permit area or surrounding areas.

The fauna habitat of the amendment application area is broadly described as jarrah/marri woodland, consisting predominantly of regenerating vegetation following previous mining activities, with several small areas of remnant vegetation. The remnant vegetation areas were located mostly around the edges of the amendment application area and were contiguous with large areas of surrounding jarrah/marri forest. The expansion of the existing quarry is likely to have some impact on fauna habitat. For the majority of fauna species the impact is unlikely to be significant in a regional context, as the application area is relatively small and it is within a large expanse of similar native vegetation (Western Wildlife, 2020; GIS Database).

The application area occurs within the known ranges of three Threatened species of Black Cockatoo: Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) (VU); Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) (EN); and Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) (EN) (DBCA, 2020; DSEWPAC, 2012; Western Wildlife, 2020). There are three key components of Black Cockatoo habitat: foraging habitat; roosting habitat; and breeding habitat. The application area is considered unlikely to provide important roosting habitat, due to a lack of nearby water sources (Western Wildlife, 2020). Black Cockatoo breeding has been recorded in nearby forest to the north, south, east, and west of the application area, with the nearest known breeding site located approximately four kilometres from the amendment application area (DBCA, 2020). For a breeding site to be viable, there must be sufficient foraging habitat available within 6 to 12 kilometres of a nesting site (DSEWPAC, 2012). Suitable Black Cockatoo foraging tree species occur within the application area and adjacent areas, and all three Black Cockatoo species may forage in the area (Western Wildlife, 2020). Black Cockatoo foraging evidence (chewed Marri and Sheoak nuts) was recorded within the application area, and 12 Forest Red-tailed Black Cockatoos were observed foraging on the eastern boundary of the application area during the habitat tree survey (Western Wildlife, 2020). Black Cockatoo breeding could occur within the application area if suitable nesting hollows were available.

Western Wildlife (2020) conducted a targeted Black Cockatoo habitat tree survey over a total area of approximately 12.8 hectares, on 19 February 2020. The survey covered the amendment application area and immediately adjacent areas. The revegetated areas within the amendment application area are not likely to represent significant foraging habitat in the local or regional area, considering that the revegetation is relatively young (14-20 years) and has not matured sufficiently to provide a significant food resource compared to the surrounding native forest (DBCA, 2020; Western Wildlife, 2020). The revegetated and remnant vegetation proposed to be cleared would provide only a very small amount of Black Cockatoo feeding resource in a local

and regional context (DBCA, 2020). The rehabilitation areas did not contain any trees of a size suitable for Black Cockatoo roosting or breeding (Western Wildlife, 2020), however it should be noted that the re-clearing of the revegetated areas further delays the potential future development of good quality foraging or breeding habitat.

Black Cockatoos nest in large hollows in mature eucalypt trees including Marri (*Corymbia calophylla*) and Jarrah (*Eucalyptus marginata*) (DSEWPAC, 2012). Research has indicated that it takes between 100 and 200 years for a tree to grow to a size where it could develop a hollow large enough to be suitable for breeding of Black Cockatoos (DEC, 2008; DPaW, 2013; DSEWPAC, 2012). The populations of all three Threatened species of Black Cockatoo are declining due to habitat destruction (SEWPAC, 2012), and nest hollow shortage is considered a significant threat to breeding success and the long-term survival of Black Cockatoo populations (DEC, 2008, DPaW, 2013). Given the long history of timber harvesting throughout the northern jarrah forest, any mature trees containing hollows that may support Black Cockatoo breeding are considered significant, and clearing of these trees should be avoided (DBCA, 2020). Feral bees may inhabit large tree hollows, preventing nesting by Black Cockatoos while the bees are in residence. However, DBCA (2020) has advised that if feral bees leave a hollow, other invertebrate species will eat and remove the hive beeswax and honeycomb material and the hollow can be returned to a suitable nest hollow for cockatoos and other fauna relatively quickly. Actively removing feral bees from suitable nest hollows is recognised as a recovery action for Black Cockatoos, to maximise the number of available hollows (DBCA, 2020; DEC, 2008; DPaW, 2013).

The targeted Black Cockatoo habitat tree survey (Western Wildlife, 2020), covered the amendment application area and immediately adjacent areas. A total of 27 "Black Cockatoo habitat trees" (defined as trees with a diameter of 50 centimetres or greater at 1.5 metres above the ground), were recorded within the survey area, including three trees containing large hollows considered suitable for nesting by Black Cockatoos (Western Wildlife, 2020). One of the three trees recorded with large hollows was excised from the amendment application area before the application was submitted. Fourteen of the Black Cockatoo habitat trees recorded during the survey occurred within the boundary of the original amendment application area. All of the Black Cockatoo habitat trees within the application area were located within remnant vegetation, consisting of: 10 trees with no hollows observed; two trees with small hollows; and two trees with large hollows (Western Wildlife, 2020). The two trees with large hollows were occupied by feral bees at the time of the survey, one of which showed signs of chewing at the hollow entrance, indicating possible previous use by Black Cockatoos (Western Wildlife, 2020). During the course of the assessment, these two trees were also excluded from the amendment application area, surrounded by 50 metre diameter circular buffer zones designed to protect the root zone and stability of the trees and provide a visual and noise buffer between the potential nesting sites and mining operations. These exclusion zones and further changes to the boundary of the amendment application area, reduced the number of Black Cockatoo habitat trees to be impacted and reduced the amount of remnant vegetation to be cleared. Following these changes, and considering the small size of the proposed clearing compared to the large expanse of similar habitat in surrounding areas, the impacts to fauna habitats from the proposed additional clearing are not considered significant in a local or regional context.

The application area is located within the Jarrahdale State Forest, which is managed by the Department of Biodiversity, Conservation and Attractions (DBCA) for purposes including conservation, and covers a total area of several thousand hectares on the Darling Ranges (GIS Database). The proposed clearing will impact the State forest at a local level, however the impacts will be relatively minor in a regional context. The proposed clearing has been minimised to mitigate potential environmental impacts. Considering the relatively small size of the amendment area, comprising largely of regrowth vegetation and located immediately adjacent to existing quarry operations, the proposed amendment is unlikely to have any significant impact on the environmental values of the Jarrahdale State Forest or any nearby conservation area.

There are no watercourses or wetlands within or in close proximity to the amendment area (GIS Database), and no vegetation growing in association with a watercourse or wetland was identified during the vegetation survey (Lundstrom, 2020). The application area is located within the Canning River Catchment Area Public Drinking Water Source Area (PDWSA) (GIS Database). Advice was sought from the Department of Water and Environmental Regulation (DWER) and the Water Corporation, in relation to this amendment application. No concerns were raised by DWER or the Water Corporation regarding the proposed additional clearing within the PDWSA (DWER, 2020; Water Corp, 2020). The proposed clearing will not impact on vegetation growing in association with a watercourse or wetland, and is unlikely to cause deterioration in the quality of surface or underground water.

The application area is located on gravelly soils on a hillside, and removal of vegetation may result in water erosion from runoff during rain events. However, the application area is immediately adjacent to an existing gravel pit, and given the gravelly soils and the relatively small area of the amendment application, the additional clearing to expand the gravel pit operations, is unlikely to cause appreciable land degradation. The removal of vegetation cover may result in additional water runoff, however this is unlikely to cause, or exacerbate, the incidence or intensity of flooding.

During the course of the assessment of the amendment application, the amendment area was reduced in size to minimise environmental impacts, and only approximately 10.01 hectares of the original 10.934 hectare amendment application area has been approved for clearing. The previously approved permit (CPS 8101/1) approved the clearing of up to 2.9 hectares of native vegetation. With the addition of the amendment area, the amended permit (CPS 8101/2) now approves the clearing of up to 12.91 hectares within the total permit area.

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*, and the proposed clearing may be at variance to Principle (b), is not likely to be at variance to Principles (a), (c), (d), (g), (h), (i) and (j) and is not at variance to Principles (e) or (f).

Methodology CALM (2002)
DBCA (2020)
DEC (2008)
DPaW (2013)
DSEWPAC (2012)
DWER (2020)
Government of WA (2014)
Government of Western Australia (2019)
Lundstrom (2020)
Water Corp (2020)
Western Wildlife (2020)

GIS Database:

- DPaW Tenure
- Hydrography, Lakes
- Hydrography, Linear
- IBRA Australia
- Imagery
- Pre-European Vegetation
- Public Drinking Water Source Areas
- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities buffers
- Threatened and Priority Flora
- Threatened Fauna
- Topographic Contours, Statewide

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

Comments

The amendment application was advertised on 11 May 2020 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. Two submissions were received in relation to this application. One submission raised concerns over potential increased truck movements on local roads. The proponent has advised that there will be no increase in truck movements with the expansion of the quarry.

The other submission raised concerns over potential impacts to Aboriginal heritage values. 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.

The permit area is within the South West Native Title Settlement area (DPLH, 2020). This settlement resolves Native Title rights and interests over an area of approximately 200,000 square kilometres within the south west of Western Australia. 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*.

It is noted that the proposed clearing may impact on Black Cockatoos, which are a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of Agriculture, Water and the Environment for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Agriculture, Water and the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

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)

5. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DBCA (2020) Advice received in relation to Clearing Permit Application CPS 8101/2. Environmental Management Branch and Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, Western Australia, September 2020.
- DEC (2008) Forest Black Cockatoo (Baudin's Cockatoo *Calyptorhynchus baudinii* and Forest Red-Tailed Black Cockatoo *Calyptorhynchus banksii naso*) Recovery Plan. Department of Environment and Conservation, Perth, Western Australia.
- DPaW (2013) Carnaby's cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Western Australian Wildlife Management Program No. 52. Department of Parks and Wildlife, Perth, Western Australia, October 2013.
- DPLH (2020) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage.
<https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 30 October 2020).
- DSEWPAC (2012) EPBC Act Referral guidelines for three threatened black cockatoo species: *Carnaby's Cockatoo* (endangered) *Calyptorhynchus latirostris*; Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii*; and Forest red-tailed black cockatoo (vulnerable) *Calyptorhynchus banksii naso*. Department of Sustainability, Environment, Water, Population and Communities, Australian Government, Canberra.
- DWER (2020) Advice received in relation to Clearing Permit Application CPS 8101/2. Swan Avon Region, Department of Water and Environmental Regulation, Western Australia, May 2020.
- Ecologia (1997) Boral Resources Quarry M70/733 Botanical Assessment. Report prepared for Boral Resources, by Ecologia Environmental Consultants, January 1997.
- Government of WA (2014) WA Environmental Offsets Guidelines. Government of Western Australia, August 2014.
- 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.
- Lundstrom (2020) Reconnaissance Survey Report. Kings Mill Rd, Pickering Brook: Gravel Extraction. Report prepared for B&J Catalano Pty Ltd, by Lundstrom Environmental Consultants, February 2020.
- Water Corp (2020) Advice received in relation to Clearing Permit Application CPS 8101/2. Water Quality Business Unit, Water Corporation, Western Australia, May 2020.
- Western Wildlife (2020) Kingsmill Road Quarry, Pickering Brook – black-cockatoo habitat tree survey. Report prepared for Lundstrom Environmental Consultants, by Western Wildlife, February 2020.

6. 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:

{DBC (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.