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.:** 8101/1
**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: |
|---|---|---|---|
| 2.9 | | Mechanical Removal | Gravel Extraction |

### 1.5. Decision on application

**Decision on Permit Application:** Grant
**Decision Date:** 19 September 2019

## 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 associations:
3: Medium forest; jarrah-marri (GIS Database).

A flora and vegetation survey was conducted over the application area and surrounding areas by Ecologia (1997). The following vegetation association was identified within the application area:

Open *Eucalyptus marginata* / *Corymbia calophylla* woodland. Parts of the application area have been subject to previous clearing and consist of regrowth vegetation (Ecologia, 1997).

**Clearing Description**

Pickering Brook Project.
B & J Catalano Pty Ltd proposes to clear up to 2.9 hectares of native vegetation within a boundary of approximately 2.9 hectares, for the purpose of gravel extraction. The project is located approximately 12 kilometres southeast of Kalamunda, in the City of Kalamunda.

**Vegetation Condition**

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

To

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

**Comment**

The proposed clearing is for the expansion of an existing gravel pit. The application area is located immediately adjacent to an existing gravel quarry which commenced operations in the late 1980's / early 1990's. The current application area was approved for clearing under a previous clearing permit CPS 4359/1, which expired in August 2016. CPS 4359/1 was granted in 2011 and authorised the clearing of 20.65 hectares within a permit area of approximately 23.7 hectares. Gravel extraction at the site has moved gradually from the north to the south of the tenement (M70/733), with small areas open for gravel extraction at any one time and areas progressively rehabilitated once gravel extraction has ceased. The current clearing permit application (CPS 8101/1) is for the southernmost section of the area previously approved under CPS 4359/1.

## 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 may be at variance to this Principle**

The application area occurs 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). Vegetation of the Northern Jarrah Forest comprises Jarrah - Marri forest in the west, with Bullich and Blackbutt in the valleys grading to Wandoo and Marri woodlands in the east with Powder Bark on breakaways (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 proposed clearing is for the expansion of an existing gravel pit, and is located immediately adjacent the existing quarry operations. The current clearing permit application originally applied to clear 7.74 hectares, however the application area was reduced to 2.9 hectares during the course of the assessment. The revised 2.9 hectare application area includes an area of approximately 1.9 hectares of regrowth vegetation following previous historical clearing and approximately one hectare of undisturbed native vegetation.

The whole of Mining Lease 70/733, including the clearing permit application area, is broadly mapped as Beard vegetation associations 3: Medium forest; jarrah-marri (GIS Database). A flora and vegetation survey was conducted over the whole of Mining Lease 70/733 by Ecologia (1997). The survey recorded 152 flora species, from 39 families, 18 of which were represented by a single taxon.

Ecologia (1997) identified one broad vegetation type: Open *Eucalyptus marginata* / *Corymbia calophylla* woodland. Parts of the application area have been subject to previous clearing and as such the vegetation condition is considered to range from 'degraded' to 'very good' on the Keighery scale (Keighery, 1994). Species richness was considered to be slightly low over the site with an average of 28 taxa recorded in the quadrats sampled (Ecologia, 1997). The flora survey results were reviewed in 2011 and checked for taxonomic changes and changes in conservation significance. The review concluded that the survey results were still current (Landform Research, 2011).

One Threatened flora species and several Priority flora species have the potential to occur within the application area (DBCA, 2018), however none were recorded during the flora survey (Ecologia, 1997; Landform Research, 2011).

A fauna survey conducted over the tenement by Western Wildlife in 2011 identified two main fauna habitats: Jarrah / Marri Forest; and areas which have been previously disturbed and re-vegetated (Western Wildlife, 2011). Neither of these fauna habitats was considered to be restricted. A history of logging has resulted in only a few larger trees being present in the application area, however the vegetation to be cleared is likely to support a similar community of native fauna species as the surrounding forest (Western Wildlife, 2011). The vertebrate fauna that potentially occurs in the study area includes up to 11 amphibian, 51 reptile, 98 bird and 30 mammal species (Western Wildlife, 2011). However, although the quarry extension will result in a loss of fauna habitats from the application area, it is not likely to isolate other areas of native vegetation (Western Wildlife, 2011) and the fauna habitats identified are common and widespread.

There are no Threatened or Priority Ecological Communities recorded within the local area. The vegetation associations, fauna habitats and landform types present within the application area, are well represented in surrounding areas (Ecologia, 1997; Western Wildlife, 2011; 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 may be at variance to this Principle.

**Methodology**

CALM (2002)
DBCA (2018)
Ecologia (1997)
Keighery (1994)
Landform Research (2011)
Western Wildlife (2011)

GIS Database:
- IBRA Australia
- Pre-European Vegetation
- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities buffered
- 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 may be at variance to this Principle**

A Level 1 fauna survey of the application area and surrounding areas was undertaken by Western Wildlife (2011) including a field survey on 22 March 2011.

The fauna survey identified the following two main fauna habitats within the application area:

**Jarrah / Marri Forest** - This habitat consists of a canopy of Jarrah (*Eucalyptus marginata)* and Marri *(Corymbia calophylla)* over a mid-storey of scattered Sheoak *(Allocasuarina fraseriana)* and Bull Banksia *(Banksia grandis)*. The understorey is generally sparse and dominated by *Xanthorrhoea preissii* and *Hibbertia hypericoides*. Much of the forest shows evidence of past timber felling, and consists of dense stands of young trees. There are a few tree hollows present, and though these are mainly small, they may provide roosting or breeding sites for fauna (Western Wildlife, 2011); and

**Revegetation Area** - This habitat consists mainly of dense stands of Glowing Wattle (*Acacia celastrifolia*) and Waterbush (*Bossiaea aquifolium*), with patch es of sparse Bull Banksia and Sheoak. Though this habitat is likely to support less fauna species due to its disturbed nature, the denseness of the vegetation is likely to provide shelter and nesting sites for some species (Western Wildlife, 2011).

Western Wildlife (2011) identified 11 amphibian, 51 reptile, 98 bird and 30 mammal species that may potentially occur within the survey area (Mining Lease 70/733).

Several fauna species of conservation significance may occur within the application area. Conservation significant fauna may forage through the area, however none are likely to be specifically dependant on the vegetation proposed to be cleared, due to the small size of the application area and the extensive areas of similar forest nearby.

The three species of Black Cockatoo: Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii naso*); Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) and Baudin's Black-Cockatoo (*Calyptorhynchus baudinii*), are known to visit the area. They are likely to forage in the application area, but are relatively unlikely to breed (Western Wildlife, 2011).

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 small and it is within a large area of continuous native vegetation (Western Wildlife, 2011; GIS Database). Approximately 1.9 hectares of the 2.9 hectare application area has been previously cleared and consists of rehabilitated and regenerating native vegetation (Ecologia, 1997; Western Wildlife, 2011; GIS Database).

Impacts to fauna habitats may be minimised by the implementation of a fauna management condition, requiring the searching for and avoidance of trees containing hollows suitable for use by Black Cockatoos. The implementation of a fauna management condition will reduce the impact of the clearing upon individual species that may be utilising these hollows.

The vegetation units and associated fauna habitats within the application area are well represented in surrounding areas, including within nearby National Parks (GIS Database). The small scale of the proposed clearing is unlikely to have any significant impact on available fauna habitats in either a local or regional context.

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

**Methodology**
DBCA (2018)
DSEWPaC (2012)
Ecologia (1997)
Western Wildlife (2011)

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), and none have been recorded during flora surveys conducted over the application area and surrounding areas (Catalano, 2018; DBCA, 2018).

The application area occurs within an extensive area of State Forest, and the vegetation association found within the application area is widespread in the surrounding forest areas and well represented in the bioregion (GIS Database). 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**
Catalano (2018)
DBCA (2018)
Ecologia (1997)

GIS Database:
- Imagery
- Pre-Eurpoean 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 (Catalano, 2018).

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

**Methodology** Catalano (2018)

GIS Database:
- Threatened and Priority Ecological Communities boundaries
- Threatened and Priority Ecological Communities buffered

**(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.**

**Comments**

**Proposal is not at variance to this Principle**

The application area is located within the Northern Jarrah Forest sub-region of the Jarrah Forest Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 53% and 55% of the pre-European vegetation still exists in this IBRA Bioregion and Subregion, respectively (Government of Western Australia, 2019).

The application area is broadly mapped as Beard vegetation association 3: Medium forest; jarrah-marri (GIS Database) (GIS Database). Approximately 67% of the pre-European extent of Beard vegetation association 3 remains uncleared at both the State and Bioregional level (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.

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in DBCA Managed Lands (and post clearing %) |
|---|---|---|---|---|---|
| IBRA Bioregion - Jarrah Forest | 4,506,940 | 2,399,8348 | 53 | Least Concern | 37.1 (69.7) |
| IBRA Subregion - Northern Jarrah Forest | 1,570,678 | 865,777 | 55 | Least Concern | 28.2 (50.7) |
| Local Government - Kalamunda | 32,394 | 23,358 | 72 | Least Concern | 62.0 (86.0) |
| Beard vegetation associations - State | | | | | |
| 3 | 2,661,404 | 1,803,437 | 67 | Least Concern | 55.2 (81.5) |
| Beard vegetation associations - Jarrah Forest Bioregion | | | | | |
| 3 | 2,390,591 | 1,604,101 | 67 | Least Concern | 54.3 (81.0) |
| Beard vegetation associations - Northern Jarrah Forest subregion | | | | | |
| 3 | 908,099 | 724,445 | 79 | Least Concern | 66.9 (84.0) |

* 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
- Imagery
- 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 not at variance to this Principle**
There are no watercourses or wetlands within the area proposed to be cleared (GIS Database). No vegetation growing in association with a watercourse or wetland was identified during the flora and vegetation survey (Ecologia, 1997).

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

**Methodology** Ecologia (1997)

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 is not likely to be at variance to this Principle**
The proposed clearing is for the expansion of an existing gravel quarry. The clearing will be carried out in stages and progressively rehabilitated (Catalano, 2018).

The soils of the application area are mapped as soil type JZ1 (GIS Database). This soil type is characterised by lateritic gravels and block laterite, and chief soils are ironstone gravels with sandy and earthy matrices (Northcote et al., 1960-68). The application area is located on gravelly soils on a hillside, and removal of vegetation may result in wind erosion or water erosion from runoff during rain events. However, the application area is immediately adjacent to an existing gravel pit, and the small area of additional clearing (2.9 hectares) to expand the gravel pit operations, is unlikely to cause appreciable land degradation.

Potential land degradation may be minimised by the implementation of a staged clearing condition.

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

**Methodology** Catalano (2018)
Northcote et al. (1960-68)

GIS Database:
- Soils
- Topographic Contours

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

**Comments** **Proposal is not likely to be at variance to this Principle**
The application area is located within the Jarrahdale State Forest, which is managed by the Department of Biodiversity, Conservation and Attraction (DBCA) for purposes including conservation, and covers a total area of several thousand hectares on the Darling Ranges (GIS Database). Advice was sought from DBCA, in relation to this clearing application. No concerns were raised by DBCA in relation to the proposed clearing within the Jarrahdale State Forest (DBCA, 2018).

The small area of the proposed clearing for the expansion of an existing gravel quarry is unlikely to have any significant impact on the environmental values of the Jarrahdale State Forest or any nearby conservation area.

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

**Methodology** DBCA (2018)

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**

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, in relation to this clearing application. No concerns were raised by DWER in relation to the proposed clearing within the PDWSA (DWER, 2018).

There are no permanent watercourses or wetlands within the application areas (GIS Database). The proposed clearing is unlikely to result in significant changes to surface water flows.

The small area of 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** DWER (2018)

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**

There are no water courses or waterbodies within or in close proximity to the application area (GIS Database). The application area is on gravelly soils on a hillside, and water from rain events is likely to quickly infiltrate or runoff, with flooding considered unlikely.

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

**Methodology** GIS Database:
- Hydrography, lakes
- Hydrography, linear
- Soils
- Topographic Contours

**Planning instrument, Native Title, Previous EPA decision or other matter.**

**Comments**

The clearing permit application was advertised on 9 July 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS) inviting submissions from the public. One submission was received in relation to this application, in raising concern over potential impacts to Aboriginal heritage values.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2019). 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, 2019). 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 the Environment and Energy for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of the Environment and Energy 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 (2019)

## 4. References


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

DBCA (2018) Advice received in relation to Clearing Permit Application CPS 8101/1. Environmental Management Branch and Species and Communities Branch, Department of Biodiversity, Conservation and Attractions, Western Australia, November 2018.

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.

DSEWPaC (2012) EPBC Act referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo (endangered) *Calyptorhynchus latirostris,* Baudin's cockatoo (vulnerable) *Calyptorhynchus baudinii,* Forest red-tailed black Cockatoo *(vulnerable) Calyptorhynchus banksii naso*. Department of Sustainability, Environment, Water, Population and Communities, Canberra.

DPLH (2019) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 17 September 2019).

DWER (2018) Advice received in relation to Clearing Permit Application CPS 8101/1. Swan Avon Land Use Planning, Department of Water and Environmental Regulation, Western Australia, July 2018.

Ecologia (1997) Boral Resources Quarry M70/733 Botanical Assessment. Report prepared for Boral Resources, by Ecologia Environmental Consultants, January 1997.

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.

Landform Research (2011) Notes on Flora Assessments M70/733. Report prepared for WA Limestone, by Landform Research, June 2011.

Northcote, K.H., Beckmann, G.G., Bettenay ,E., Churchward, H.M., van Dijk, D.C., Dimmock, G.M., Hubble, G.D., Isbell, R.F., McArthur, W.M., Murtha, G.G., Nicolls, K.D., Paton, T.R., Thompson, C.H., Webb, A.A. and Wright, M.J. (1960-68) 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Western Wildlife (2011) Part Tenement M70/733, Kingsmill Rd Pickering Brook, Level 1 Fauna Survey 2011. Report prepared for WA Limestone, by Western Wildlife, May 2011.

## 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 DEE) |
| **DoW** | Department of Water, Western Australia (now DWER) |
| **DPaW** | Department of Parks and Wildlife, Western Australia (now DBCA) |
| **DSEWPaC** | Department of Sustainability, Environment, Water, Population and Communities (now 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:

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

**T** **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950,* listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

***Threatened fauna*** is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the Wildlife Conservation Act.

***Threatened flora*** is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the Wildlife Conservation Act.

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. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

**EN** **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

**VU** **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

**EX** **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

**IA** **Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

**CD** **Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

**OS** **Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

**P** **Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

**P1** **Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

**P2** **Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

**P3** **Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

**P4** **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.