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.:** 7608/1

**Permit type:** Purpose Permit

### 1.2. Proponent details

**Proponent's name:** **Hamersley Iron Pty Ltd**

### 1.3. Property details

**Property:** Prospecting Licence 47/1559
Prospecting Licence 47/1560
Prospecting Licence 47/1561
Prospecting Licence 47/1562
Prospecting Licence 47/1563
Prospecting Licence 47/1564
Prospecting Licence 47/1578

**Local Government Area:** Shire of Ashburton

**Colloquial name:** Marra Mamba Orebody Exploration Project

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|---|---|---|---|
| 170 | | Mechanical Removal | Mineral Exploration, Hydrogeological and Geotechnical Investigations and Associated Activities |

### 1.5. Decision on application

**Decision on Permit Application:** Grant

**Decision Date:** 31 August 2017

## 2. Site Information

### 2.1. Existing environment and information

#### *2.1.1. Description of the native vegetation under application*

**Vegetation Description**

Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. Two Beard vegetation associations have been mapped within the application area (Government of Western Australia, 2016; GIS Database):

- 18: Low woodland; mulga (*Acacia aneura*); and
- 29: Sparse low woodland; mulga, discontinuous in scattered groups.

A level two flora and vegetation survey has been undertaken over the application area by Biota Environmental Sciences (2008), which recorded 11 vegetation groups across the application area, which are:

**Vegetation of broad drainage areas and basins**

**1a**: Woodland of *Acacia aneura* over a tussock grassland dominated by *Chrysopogon fallax*

**1b:** *Aristida contorta* open grassland

**1c:** Low open woodland of *Acacia aneura* usually with *A. pruinocarpa* over scattered hummocks to hummock grassland of *Triodia melvillei* or *T. schinzii*

**1d:** *Triodia melvillei* hummock grassland with emergent, isolated pockets of *Triodia pungens*

**Vegetation of moderate flowlines and creeks**

**2a:** Open forest of *Acacia aneura* (typically var. pilbarana), with substantial amounts of *A. pruinocarpa*, over a tussock grassland broadly dominated by *Chrysopogon fallax*, *Eulalia aurea* and *Themeda triandra*

**2b:** *Eucalyptus xerothermica*, *Acacia aneura* var. *pilbarana* low open forest over *Acacia bivenosa*, *Santalum lanceolatum* open shrubland over *Triodia longiceps* hummock grassland and *Themeda triandra*, *Eulalia aurea* very open tussock grassland

**2c:** *Eucalyptus xerothermica – Acacia aneura* woodland over *Acacia citrinoviridis* tall Shrubland

**Vegetation of minor creeks**

**3a:** Emergent scattered *Eucalyptus leucophloia* over mixed *Acacia* spp. shrubland over *Triodia wiseana* and *T.* sp. Shovelanna Hill (S. van Leeuwen 3835) hummock grassland

**3b:** Low woodland of mixed mallee *Eucalyptus* species on shallow calcrete soils

**Vegetation of ridges and erosional spurs**

**5h:** *Triodia wiseana* hummock grassland with mixed *Acacia* spp. emergent shrubs

**Vegetation of low foothills and escarpments**

**6d:** *Eucalyptus trivalva*, *E. socialis* low mallee woodland with pockets of *Triodia angusta*, *T. wiseana* hummock grassland on shallow calcrete soils

**Clearing Description**

Marra Mamba Orebody Exploration Project
Hamersley Iron Pty Ltd proposes to clear 170 hectares of native vegetation within a total boundary of approximately 1019.6 hectares for the purpose of mineral exploration, hydrogeological and geotechnical investigations and associated activities. The project is located approximately 44 kilometres east of Tom Price, in the Shire Ashburton.

**Vegetation Condition**

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

To

Good: Structure significantly altered by multiple disturbances; retains basic structure/ability to regenerate (Keighery, 1994).

**Comment**

The vegetation condition was determined from aerial imagery (GIS Database).

## 3. Assessment of application against clearing principles

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

**Comments**

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

The application area occurs within the Hamersley (PIL3) subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by sedimentary ranges and plateaux, dissected by gorges (CALM, 2002). At a broad scale, vegetation can be described as Mulga low woodlands over bunch grasses on fine textured soils in valley floors and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002).

A total of eleven vegetation communities have been mapped across the application area (Biota Environmental Sciences, 2008). The survey results indicate that none of the vegetation associations within the Project Area are representative of any Threatened or Priority Ecological Communities and all are well represented in the Hamersley sub-region of the Pilbara bioregion (Rio Tinto, 2017).

No Declared Rare Flora species were recorded within the Project Area, and based on the habitats available none are likely to occur. One Priority 3 flora taxa has been recorded in the Project Area (*Goodenia lyrata*) and one Priority 4 taxa (*Goodenia nuda*) has been recorded within 100 metres of the application area (Rio Tinto, 2017). An additional three Priority flora taxa have been recorded (within the Rio Tinto database) within 5 km of the Project Area: *Indigofera ixocarpa* (Priority 2); *Rhagodia sp.* Hamersley (M. Trudgen 17794) (Priority 3); and *Eremophila magnifica* subsp. *magnifica* (Priority 4). Potential impacts to these Priority flora species may be minimised by the implementation of a flora management condition.

A total of 32 introduced plant taxa have been recorded around Mara Mamba (Rio Tinto, 2017). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No conservation listed fauna have been recorded within the application area (Rio Tinto, 2017; GIS Database).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. No core habitat for Matters of National Environmental Significance (denning, cave or significant drainage containing permanent or semi-permanent pools habitats) occurs within the application area (Rio Tinto, 2017). Some conservation listed fauna may utilise the habitats within the application area for foraging and dispersal (Rio Tinto, 2017).

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

**Methodology**

Biota Environmental Sciences (2008)
CALM (2002)
Rio Tinto (2017)

GIS Database:
- Fauna
- IBRA WA (Regions - Sub Regions)

**(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.**

**Comments**

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

Based on the vegetation mapping in the area, four broad fauna habitat types are present within the application area:

(i) broad drainage areas and basins;
(ii) moderate flowlines and creeks;
(iii) minor creeks; and
(iv) ridges and erosional spurs.

Naturemap records within a ten kilometre buffer of the application area reveal that the application area may provide habitat for 24 mammal, 102 avian, 76 reptile and five amphibian species (DPaW, 2017). These include conservation significant species such as the Northern Quoll (*Dasyurus hallucatus*; Endangered), Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*; Vulnerable), Ghost Bat (*Macroderma gigas*; Vulnerable), Rainbow Bee-eater (*Merops ornatus*; Migratory), Barking Owl (*Ninox connivens* subsp. *connivens*; Priority 2), and Western Pebble-mound Mouse (*Pseudomys chapmani*; Priority 4) (DPaW, 2017).

No conservation listed fauna have been recorded within the application area (Rio Tinto, 2017). The Western Pebble-mound mouse has been recorded in the vicinity of the project and Rio Tinto (2017) has identified that undetected mounds have the potential to occur in the application area. No core habitat for conservation significant fauna (denning, cave or significant drainage containing permanent or semi-permanent pools habitats) occurs within the application area (Rio Tinto, 2017). Some conservation listed fauna may utilise the habitats within the Project Area for foraging and dispersal, however it is unlikely to be considered core habitat (Rio Tinto, 2017).

The four habitat types within the application area are well represented in the region, and are unlikely to function as significant foraging or denning habitat due to the absence of important microhabitats such as caves or semi-permanent/ permanent waterbodies (Rio Tinto, 2017).

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

**Methodology**

DPaW (2017)
Rio Tinto (2017)

**(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**

According to available datasets, there are no known records of Threatened flora within the application area (GIS Database). Similarly, no Threatened flora were recorded during the flora and vegetation assessment, nor were they considered to potentially exist within the application area (Rio Tinto, 2017).

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

**Methodology**

Rio Tinto (2017)

GIS Database:
- 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**

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The flora and vegetation assessment over the application area did not record any vegetation communities which were representative of a TEC (Rio Tinto, 2017). The nearest known TEC is approximately 54 kilometres north, north-west of the application area and is a Themeda grassland on cracking clays (GIS Database).

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

**Methodology**

Rio Tinto (2017)

GIS Database:
- Threatened Ecological Sites 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 falls within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database) in which approximately 99.58% of pre-European vegetation remains (Government of Western Australia, 2016). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation within the application area is recorded as Beard vegetation associations:

- 18: Low woodland; mulga (*Acacia aneura*); and
- 29: Sparse low woodland; mulga, discontinuous in scattered groups.

Approximately 99% of these Beard vegetation associations remain at both a state and bioregional level (Government of Western Australia, 2016). Based on aerial imagery, the vegetation within the application area is neither a remnant itself nor does it form part of any remnants within the local area (GIS Database).

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in DPaW Managed Land |
|---|---|---|---|---|---|
| IBRA Bioregion - Pilbara | 17,808,657 | 17,733,584 | ~99.58 | Least Concern | ~10.16 |
| Beard vegetation associations - State | | | | | |
| 18 | 19,892,305 | 19,843,727 | ~99.76 | Least Concern | ~6.81 |
| 29 | 7,903,991 | 7,900,200 | ~99.95 | Least Concern | ~5.54 |
| Beard vegetation associations - Bioregion | | | | | |
| 18 | 676,557 | 672,424 | ~99.39 | Least Concern | ~25.33 |
| 29 | 1,809,776 | 1,805,364 | ~99.98 | Least Concern | ~9.38 |

* Government of Western Australia (2016)
** 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 (2016)

GIS Database:
- IBRA Australia
- Pre-European Vegetation

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

**Comments**

**Proposal is at variance to this Principle**

The application area intersects numerous minor, non-perennial watercourses and runs adjacent to an area subject to inundation (GIS Database). Aerial imagery indicates that vegetation growing along these watercourses is riparian in nature (GIS Database). Two riparian vegetation units have been described by Biota Environmental Sciences (2008), being the 'moderate flowlines and creeks' and 'minor creeks' (Rio Tinto, 2017). Biota Environmental Sciences (2008) advise that moderate flowlines and creeks holds moderate conservation value as it represents good quality, mature creekline vegetation with minimal weed invasion. Potential impacts to these vegetation units as a result of the proposed clearing may be minimised by the implementation of a watercourse management condition.

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

**Methodology**

Biota Environmental Sciences (2008)
Rio Tinto (2017)

GIS Database:
- 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 majority pf the application area occurs within the Boolgeeda land system (GIS Database). The Boolgeeda Land System is described as consisting of stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). This land system consists of gently inclined slopes and plains, and is not considered to be susceptible to soil erosion (Van Vreeswyk et al., 2004).

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

**Methodology**

Van Vreeswyk et al. (2004)

GIS Database:
- Rangelands

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

**Comments**

**Proposal may be at variance to this Principle**

The application area lies within the outer boundary of the Karijini National Park, which is listed on the Register of National Estate and is therefore considered to be an Environmentally Sensitive Area (GIS Database). However, the application area occurs within a 5(1)(g) Reserve that functions as an infrastructure corridor and is excised from the Karijini National Park area (GIS Database). The reserve is vested in the Conservation Commission of Western Australia and managed by DPaW (GIS Database). Liaison has occurred with the Department of Biodiversity, Conservation and Attractions (DBCA) as the land managers of the 5(1)(g) Reserve. DBCA expects further consultation from the proponent in relation to the potential impacts on flora and the reserve prior to the submission of individual Programme of Works applications to DMIRS (DBCA, 2017).

A number of weed species in the Pilbara have the potential to increase in abundance and/or distribution following disturbance (DEC, 2001). Invasive flora species can decrease the biodiversity value of an area, as they out-compete native vegetation for available resources, contribute to land degradation and increase the frequency and intensity of fires (DEC, 2011). Potential impacts to biodiversity within and nearby the application area as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

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

**Methodology**

DBCA (2017)
DEC (2001)
DEC (2011)

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**

According to available databases the application area is adjacent to the Marandoo Water Reserve Public Drinking Water Source Area (GIS Database).

There are numerous non-perennial drainage lines within the application area (GIS Database). These drainage lines are common in the local area and the proposed clearing for exploration activities is not expected to have a significant impact on surface water quality or groundwater in the local region.

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

**Methodology**

GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas
- RIWI Act, Groundwater 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**

Mean annual rainfall in Tom Price is approximately 398.5 millimetres (BoM, 2017). The Pilbara region represents a transitional zone between semi-arid and tropical climates, and receives a majority of its rainfall during the summer months (Kendrick, 2001; CALM, 2002). During these periods of intense rainfall, localised flooding is not unusual (BoM, 2017). The application area consists mostly of stony soils and hard clays (Van Vreeswyk et al., 2004), which are less permeable to water and therefore there is the potential of some localised flooding within cleared areas.

A majority of the application area is located within the Ashburton River catchment area (GIS Database). Given the size of the area to be cleared (170 hectares) compared with the size of the catchment area (7,877,743 hectares), and that the permit area is subject to seasonal flood events, it is unlikely that the clearing will exacerbate the incidence or intensity of flooding within the local area.

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

**Methodology**

BoM (2017)
CALM (2002)
Kendrick (2001)
Van Vreeswyk et al. (2004)

GIS Database:
- Hydrographic Catchments – Catchments
- Hydrography, Linear

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

**Comments**

There are no native title claims over the application area (Department of Planning, Lands and Heritage, 2017). 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*.

According to available databases, there are several Sites of Aboriginal Significance located in the area applied to clear (Department of Planning, Lands and Heritage, 2017). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Biodiversity Conservation and Attractions and the Department of Water and Environmental Regulation, 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 clearing permit application was advertised on 5 June 2017 by the Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) inviting submissions from the public. There were no submissions received.

**Methodology**

Department of Planning, Lands and Heritage (2017)

## 4. References


BoM (2017) Climate Statistics for Australian Locations. A Search for Climate Statistics for Tom Price, Australian Government Bureau of Meteorology. http://www.bom.gov.au (Accessed 28 August 2017).

Biota Environmental Sciences (2008) A vegetation and flora survey of the Rio Tinto rail duplication – bellbird siding to Juna Downs. Unpublished report prepared for Rio Tinto Iron Ore, 2008.

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

DBCA (2017) CPS 7608/1 - Hamersley Iron Pty Ltd - Advice Request, received 9 August 2018.

DEC (2001) Environmental weed strategy for Western Australia. Department of Environment and Conservation, Perth.

DEC (2011) Invasive Plant Prioritisation, Department of Environment and Convseration, Perth.

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.

Department of Planning, Lands and Heritage (2017) Aboriginal Heritage Enquiry System. Government of Western Australia. https://maps.daa.wa.gov.au/AHIS/ (Accessed 28 August 2017).

DPaW (2017) NatureMap - Mapping Western Australia Biodiversity. Department of Parks and Wildlife. Western Australia. http://naturemap.dec.wa.gov.au/default.aspx. (Accessed 28 August 2017).

Government of Western Australia (2016) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.

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

WA (Inc). Nedlands, Western Australia.
Kendrick, P. (2001) Pilbara 3 (PIL3 – Hamersley Subregion). In A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 (eds J. E. May & N. L. McKenzie). Department of Conservation and Land Management, WA.
Rio Tinto (2017) Marandoo Iron Ore Mine – Marandoo Near-Mine Resource Evaluation – Proposal. Unpublished report prepared by Rio Tinto, November 2016.
Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.

## 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) |
| **DEE** | 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 DEE) |
| **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.