



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5924/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (Goldsworthy-Nimingarra) Agreement Act 1972, Mining Lease 263SA (AM 70/263);
Iron Ore (Goldsworthy-Nimingarra) Agreement Act 1972, Mineral Lease 251SA (AML 70/251);
Iron Ore (Mount Goldsworthy) Agreement Act 1964, Mineral Lease 249SA (AML 70/249).

Local Government Area: Shire of East Pilbara
Colloquial name: Sunrise Hill 4 West Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
180		Mechanical Removal	Mineral production and associated activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 20 February 2014

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 has been broadly mapped as the following Beard vegetation associations:

- 93: Hummock grasslands, shrub steppe; kanji over soft spinifex;
- 117: Hummock grasslands, grass steppe; soft spinifex; and
- 171: Hummock grasslands, low tree steppe; snappy gum over soft spinifex & *Triodia brizoides*.

A flora and vegetation survey conducted over the application area by Astron Environmental Services (Astron) identified the following four main vegetation communities comprising ten vegetation associations (Astron, 2011):

Acacia Low Closed Forest:

5: Low Closed Forest of *Acacia colei* var. *colei* and *A. tumida* var. *pilbarensis* over Tall Open Scrub of *A. colei* var. *colei*, *A. tumida* var. *pilbarensis* and *A. synchronicia* over Scattered Hummock Grasses of *Triodia epactia* and *T. biflora*.

Acacia Tall Open Scrub:

6a: Low Open Woodland of *Corymbia hamersleyana* and *C. flavescens* over Tall Open Scrub of *Acacia tumida* var. *pilbarensis*, *A. ancistrocarpa*, *A. colei* var. *colei* and *Petalostylis labicheoides* over Low Open Heath of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *T. schinzii* over Very Open Tussock grassland of *Chrysopogon fallax* and *Paraneurachne muelleri*.
6b: Scattered Low Trees of *Corymbia flavescens* and *C. hamersleyana* over Tall Open Scrub of *Acacia ancistrocarpa* and *Grevillea wickhamii* subsp. *hispidula* over Open Hummock Grassland of *Triodia epactia* with Open Tussock Grassland of *Chrysopogon fallax*.
6c: Scattered Low Trees of *Corymbia hamersleyana* over Tall Open Scrub of *Acacia tumida* var. *pilbarensis* over Low Open Shrubland of *Acacia adoxa* and *A. hilliana* over Hummock Grassland of *Triodia epactia*.

Triodia Hummock Grassland:

10a: Scattered Low Trees of *Corymbia hamersleyana* over Tall Open Shrubland of *Acacia tumida* var. *pilbarensis* and *Grevillea wickhamii* subsp. *hispidula* over Low Open Shrubland of *Acacia adoxa* and *A. hilliana* over Hummock Grassland of *Triodia epactia* over Very Open Sedgeland of *Fimbristylis oxystachya* and Scattered Tussock Grasses of *Eriachne mucronata* and *E. lanata*.
10b: Tall Shrubland of *Grevillea wickhamii* subsp. *hispidula* over Low Open Shrubland to Open Heath of *Acacia hilliana* and *A. adoxa* over Hummock Grassland of *Triodia epactia*.
10e: Low Open Woodland of *Corymbia hamersleyana* over Tall Open Shrubland of *Grevillea wickhamii* subsp. *hispidula* and *Acacia inaequilatera* over Low Shrubland of *Acacia adoxa* and *A. ptychophylla* over Closed Hummock Grassland of *Triodia epactia* and *T. wiseana*.
10p: Tall Open Shrubland of *Acacia tumida* var. *pilbarensis*, *A. inaequilatera* and *A. synchronicia* over Low Open Shrubland of *Acacia hilliana* and *A. adoxa* over Hummock Grassland of *Triodia epactia* and *T. wiseana*.
10s: Low Open Woodland of *Grevillea pyramidalis* subsp. *leucadendron* and *Acacia inaequilatera* over Open Shrubland of *Acacia ancistrocarpa*, *A. inaequilatera* and *A. synchronicia* over Hummock Grassland of *Triodia epactia*.

Triodia Open Hummock Grassland:

11: Low Woodland of *Corymbia hamersleyana* and *Acacia tumida* var. *pilbarensis* over Low Shrubland of *Tephrosia* sp. Bungaroo Creek, *Acacia adoxa* and *A. stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *T. wiseana*.

Clearing Description

Sunrise Hill 4 West project.

BHP Billiton Iron Ore Pty Ltd (BHP Billiton) proposes to clear up to 180 hectares of native vegetation within a boundary of approximately 450 hectares, for the purpose of mining iron ore from an existing open pit mine and waste rock stockpiles, and mining-related infrastructure. The project is located approximately 150 kilometres east-southeast of Port Hedland, within the Shire of East Pilbara.

Vegetation Condition

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

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

Comment

The vegetation condition was derived from a vegetation survey conducted by Astron (2011). The majority of the application area (approximately 80 percent) has been previously cleared and comprises sparse regrowth vegetation (BHP Billiton, 2013).

Vegetation clearing is for the purpose of continued mining at the existing Sunrise Hill 4 West pit, crushing of low grade ore from 16 existing waste rock stockpiles within the Goldsworthy mining operations, and mining related infrastructure including: ore crushing areas, haul roads, train load-out, stockpiles, and waste rock dumps (BHP Billiton, 2013).

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 is located mostly within the Chichester sub-region of the Pilbara Bioregion, with a small part of the application area falling within the McLarty sub-region of the Great Sandy Desert Bioregion, of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). The Chichester subregion is described as undulating granite and basalt plains with significant areas of basaltic ranges. Plains support a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on the ranges (CALM, 2002). The McLarty sub-region is described as mainly tree steppe grading to shrub steppe in the south; comprising open hummock grassland of *Triodia pungens* and *Triodia schinzii* with scattered trees of *Owenia reticulata* and Bloodwoods, and shrubs of *Acacia* spp., *Grevillea wickhamii* and *G. refracta*, on red longitudinal sand dune fields overlying sandstones (CALM, 2002).

The clearing permit application area is made up of multiple areas, which include the existing Sunrise Hill 4 West Pit and 16 associated waste rock stockpiles (BHP Billiton, 2013). The majority of the application areas are within or immediately adjacent to existing mining operations (BHP Billiton, 2013).

The vegetation condition within the application area ranges from Degraded to Excellent with a majority of the application area having been previously cleared for mining related activities (BHP Billiton, 2013). The vegetation on and surrounding the waste rock stockpiles is predominantly regrowth vegetation. The areas where the vegetation was considered to be in Excellent condition represented approximately 20 percent of the total application area, and occurred predominantly around the existing Sunrise Hill 4 West mine pit (BHP Billiton, 2013).

The application areas are located within the Muccan pastoral lease (GIS Database), and previous vegetation disturbance has occurred from pastoral activities, including substantial weed invasion particularly by the introduced pastoral grass species *Cenchrus ciliaris* (Buffel Grass) (Astron, 2011; BHP Billiton, 2013).

A flora and vegetation survey was conducted over the application area and surrounding areas during March and April 2011 (Astron, 2011). No Threatened Ecological Communities, Priority Ecological Communities or vegetation associations of restricted distribution were identified within the application area. No Threatened flora species were recorded in the survey. Three Priority flora species were recorded in the broader survey area, but none were recorded within the current clearing permit application area (Astron, 2011).

A fauna survey conducted over the application area and surrounding areas did not record any conservation significant fauna species within the application area (ENV, 2011). The fauna habitats within the application area were considered to be highly degraded, in comparison to surrounding areas (ENV, 2011; BHP Billiton, 2013).

The vegetation associations and fauna habitat types found in the application area are well represented and widespread within the region (BHP Billiton, 2013; GIS Database). Considering the extent of previous disturbance within the application area, the vegetation proposed to be cleared is unlikely to represent a higher level of biodiversity than surrounding undisturbed areas.

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

Methodology Astron (2011)
BHP Billiton (2013)
CALM (2002)

ENV (2011)
GIS Database:
- Pastoral Leases
- Pre-European Vegetation
- Threatened Ecological Sites Buffered

(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

A fauna survey was conducted over the Goldsworthy area, which included the areas applied to clear (ENV, 2011). The survey identified the following two fauna habitat types within the application area: Alluvial Plain, and Low Hill, and a further two habitat types (Drainage line and Gorge/Gully) occurred in areas adjacent to the application area (ENV, 2011).

Much of the application area is sparsely vegetated by regrowth vegetation, and ENV (2011) considered the fauna habitats within the application areas to be of poor quality compared to surrounding undisturbed areas. Substantial areas of similar habitat occur outside of the application areas, and the application areas were considered unlikely to represent significant habitat for fauna (ENV, 2011).

The survey recorded the following five fauna species of conservation significance within two kilometres of the application area (ENV 2011):

- Northern Quoll (*Dasyurus hallucatus*), listed as Schedule 1 under the *Wildlife Conservation Act 1950* (WC Act);
- Pilbara Leaf Nosed Bat (*Rhinioncteris aurantius*), listed as Schedule 1 under the WC Act;
- Ghost Bat (*Macroderma gigas*) - listed as Priority 4 by the Department of Parks and Wildlife (DPaW);
- Bush Stone-curlew (*Burhinus grallarius*) - listed as Priority 4 by the DPaW; and
- Rainbow Bee-Eater (*Merops ornatus*) - a migratory species listed as Schedule 3 under the WC Act (ENV, 2011).

No conservation significant fauna species were recorded within the application areas (ENV, 2011). Although some conservation significant species may pass through or forage within the application areas, abundant areas of more suitable habitat occur outside of the application areas and hence these species are considered unlikely to be reliant on the habitat found within the application areas (ENV, 2011).

The vegetation types found within the application area are widespread within the region (Astron, 2011; BHP Billiton, 2013; ENV, 2011; GIS Database) and are unlikely to be necessary for the maintenance of a significant habitat for fauna.

The proposed clearing of predominantly previously disturbed native vegetation within and immediately adjacent to existing mining operations is unlikely to have any significant impact on available fauna habitats at either a local or regional scale.

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

Methodology Astron (2011)
BHP Billiton (2013)
ENV (2011)
GIS Database:
- Pre-European Vegetation

(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

Flora surveys of the application area did not record any species of Threatened Flora, Priority Flora or other flora species of conservation significance (Astron, 2011; BHP Billiton, 2013).

The vegetation associations within the application area are common and widespread within the region (Astron, 2011; BHP Billiton, 2013; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of rare flora.

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

Methodology Astron (2011)
BHP Billiton (2013)
GIS Database:
- Declared Rare and Priority Flora List
- Pre-European Vegetation

(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 (TEC's) located within a 100 kilometre radius of the application area (GIS Database).

Surveys of the application area did not identify any Threatened Ecological Communities (Astron, 2011; BHP Billiton, 2013).

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

Methodology Astron (2011)
BHP Billiton (2013)
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 areas applied to be cleared are located on the boundary of the Pilbara and Great Sandy Desert IBRA bioregions, with the majority of the application areas broadly mapped as falling within the Pilbara Bioregion (GIS Database). There is approximately 99% of Pre-European vegetation remaining within both of these bioregions (Government of Western Australia, 2013). The vegetation of the application area is classified predominantly as Beard vegetation associations: 93 - Hummock grasslands, shrub steppe; kanji over soft spinifex; and 171 - Hummock grasslands, low tree steppe; snappy gum over soft spinifex & *Triodia brizoides*; with a small section of the application area classified as Beard vegetation association 117: Hummock grasslands, grass steppe; soft spinifex. These vegetation associations remain at approximately 96-99% of pre-European extent in the state and 94-99% in the two bioregions (Government of Western Australia, 2013). Hence, the vegetation proposed to be cleared does not represent a significant remnant of vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,808,657	17,733,584	~ 99	Least Concern	6.3
IBRA Bioregion - Great Sandy Desert	29,538,805	29,535,816	~ 99	Least Concern	2.7
Beard vegetation associations - State					
93	3,044,310	3,040,641	~ 99	Least Concern	0.44
117	919,517	886,005	~ 96	Least Concern	13.26
171	331,952	330,643	~ 99	Least Concern	0
Beard vegetation associations - Pilbara Bioregion					
93	3,042,114	3,038,472	~ 99	Least Concern	0.44
117	82,706	78,097	~ 94	Least Concern	14.60
171	331,307	330,026	~ 99	Least Concern	0
Beard vegetation associations - Great Sandy Desert Bioregion					
93	1,107	1,096	~ 99	Least Concern	0
117	467,579	467,122	~ 99	Least Concern	0.19
171	644	617	~ 96	Least Concern	0

* Government of Western Australia (2013)

** 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 (2013)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- 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 may be at variance to this Principle

There are no permanent watercourses or wetlands within or in close proximity to the application area (GIS database).

One minor, non-perennial watercourse passes through part of the application area (GIS Database), however no riparian vegetation occurs within the application area (Astron, 2011). The drainage lines in the region are dry for most of the year, only flowing briefly following significant rainfall events (BHP Billiton, 2013).

Based on the above, the proposed clearing may be at variance to this Principle. However, the proposed clearing is unlikely to result in any significant impact on the ephemeral watercourse or any other watercourse or wetland.

Methodology Astron (2011)
BHP Billiton (2013)
GIS Database:
- Geodata, Lakes
- Hydrography, linear
- Pardoo Keraudren 50cm Orthomosaic - Landgate 2004
- Western Australia ETM 25m 543 - AGO 2004

(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 application areas fall predominantly within the Capricorn and Boolgeeda Land Systems, with small sections of the application area falling within the Nita, Macroy and Callawa Land Systems (GIS Database).

The Boolgeeda Land System is characterised by stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). This system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Capricorn Land System is characterised by hills and ridges of sandstone and dolomite supporting hard and soft spinifex grasslands (Van Vreeswyk et al., 2004). This system has low susceptibility to erosion due to its stony soils (Van Vreeswyk et al., 2004).

The Nita Land System is characterised by sandplains supporting shrubby soft spinifex grasslands with occasional trees. The sandy soils of this land system may be susceptible to wind erosion if vegetation cover is removed. However, this land system represents less than three percent of the application area (Van Vreeswyk et al., 2004).

The Macroy Land System is characterised by stony plains and occasional tor fields based on granite, supporting hard and soft spinifex grasslands. This system has a low to very low risk of erosion (Van Vreeswyk et al., 2004).

The Callawa Land System is characterised by highly dissected low hills, mesas and gravelly plains of sandstone and conglomerate supporting soft and hard spinifex grasslands. This system is not prone to erosion (Van Vreeswyk et al., 2004).

Management practices will be implemented to minimise the risk of erosion (BHP Billiton, 2013).

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

Methodology BHP Billiton (2013)
Van Vreeswyk et al. (2004)
GIS Database:
- Rangeland Land System Mapping

(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 nearest conservation area to the application area is the former Meentheena Pastoral Station which is now managed by the Department of Parks and Wildlife, and is located approximately 70 kilometres south of the application area, at its nearest point (GIS Database). The proposed clearing is unlikely to have any impacts on the environmental values of this or any other conservation area.

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

Methodology GIS Database:

- DEC proposed 2015 pastoral lease exclusions
- DEC Tenure
- Pastoral Leases

(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 not within a Public Drinking Water Source Area. There are no permanent watercourses or wetlands within the application area (GIS Database). One seasonal watercourse passes through the application area (GIS Database). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BHP Billiton, 2013). Management practices will be implemented to minimise the risk of erosion and potential impacts to surface water quality (BHP Billiton, 2013).

Groundwater in the application area is at a depth of approximately 50 metres (BHP Billiton, 2013), and removal of the predominantly spinifex vegetation is unlikely to have any significant impact on groundwater levels.

The proposed clearing is unlikely to result in increased sedimentation of any watercourse, or cause deterioration in the quality of surface or underground water.

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

Methodology BHP Billiton (2013)

GIS Database:

- Hydrography, Linear
- Public Drinking Water Source Areas

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

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

The climate of the region is semi-arid, with a low average rainfall of approximately 200-300 millimetres per year (Van Vreeswyk et al., 2004). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (BHP Billiton, 2013).

There are no permanent water courses or waterbodies within the application area (GIS Database). One minor seasonal drainage line passes through the application area. Temporary localised flooding may occur during heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

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

Methodology BHP Billiton (2013)

Van Vreeswyk et al. (2004)

GIS Database:

- Hydrography, linear

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

Comments

The clearing permit application was advertised on 23 December 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WC1999/008) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance located within or in close proximity to the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation and the Department of Water, 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 GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court
- Native Title Claims - Filed at the Federal Court
- Native Title Claims - Registered with the NNTT

4. References

- Astron (2011) Yarrie Nimingarra, Shay Gap & Sunrise Hill Flora and Vegetation Survey. Prepared for BHP Billiton Pty Ltd. Astron Environmental Services, April 2011.
- BHP Billiton (2013) Sunrise Hill 4 West and Waste Rock Stockpiles. Application for a Native Vegetation Clearing Permit under the Environmental Protection Act 1986. BHP Billiton Iron Ore Pty Ltd, Western Australia, December 2013.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- ENV (2011) Nimingarra and Shay Gap Vertebrate Fauna Survey. Prepared for BHP Billiton Pty Ltd. ENV Australia, April 2011.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. 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.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , 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
s.17	Section 17 of <i>the Environment Protection Act 1986</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}-

- T** **Threatened species:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).
Threatened Fauna and Flora are further recognised by the Department according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorhynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.
Rankings:
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
EN: Endangered - considered to be facing a very high risk of extinction in the wild.
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.
- X** **Presumed Extinct species:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).
- IA** **Migratory birds protected under an international agreement:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.
- S** **Other specially protected fauna:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P1** **Priority One - Poorly-known species:**
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
- P2** **Priority Two - Poorly-known species:**
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
- P3** **Priority Three - Poorly-known species:**
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities 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 localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
- 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 do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
- P5** **Priority Five - Conservation Dependent species:**
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.