

Clearing Permit Decision Report

1. Application details

Permit application details

Permit application No.: 4947/1

Permit type: Purpose Permit

Proponent details 1.2.

Proponent's name: FMG Pilbara Pty Ltd

Property details

Property: Mining Lease 47/1461 **Local Government Area:** Shire of East Pilbara Colloquial name:

Application

Clearing Area (ha) No. Trees Method of Clearing For the purpose of: Mineral Production Mechanical Removal 370

Io Project

Decision on application

Decision on Permit Application:

Decision Date: 14 June 2012

2. Site Information

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. Three beard vegetation associations have been mapped within the application area (GIS Database):

- 29: Sparse low woodland; mulga, discontinuous in scattered groups;
- 82: Hummock grasslands, low tree steppe; snappy gum over Triodia wiseana; and
- 111: Hummock grasslands, shrub steppe; Eucalyptus gamophylla over hard spinifex.

A Level 2 flora survey was conducted by Cardno over the Nyidinghu area (which includes the application area) in March and July 2011. There were ten vegetation communities recorded within the application area (Cardno,

CoAdTs - Corymbia opaca and Eucalyptus gamophylla isolated trees over Acacia dictyophleba, Hakea chordophylla and Acacia ancistrocarpa sparse shrubland over Triodia schinzii, Triodia basedowii and Triodia pungens hummock grassland;

CoAsTb - Corymbia opaca, Eucalyptus gamophylla and Acacia inaequilatera open woodland over Acacia sclerosperma subsp. sclerosperma, Acacia dictyophleba and Acacia inaequilatera over Triodia basedowii hummock grassland;

CoAaTp - Corymbia opaca, Acacia inaequilatera and Eucalyptus gamophylla open woodland over Acacia ancistrocarpa, Petalostylis labicheoides and Grevillea wickhamii subsp. hispidula shrubland over Triodia pungens hummock grassland;

CoAdTp - Corymbia opaca and Acacia inaequilatera open woodland over Acacia sclerosperma subsp. sclerosperma, Acacia dictyophleba and Acacia pachyacra sparse shrubland over Triodia pungens grassland;

AcAhCc - Acacia citrinoviridis and Acacia pruinocarpa open woodland over Atalaya hemiglauca and Hakea lorea subsp. lorea isolated shrubland over *Cenchrus ciliaris tussock grassland;

ApAdCc - Acacia pruinocarpa, Corymbia hamersleyana and Acacia citrinoviridis open woodland over Acacia dictyophleba, Hakea lorea subsp. lorea and Acacia synchronicia sparse shrubland over *Cenchrus ciliaris and *Cenchrus setiger tussock grassland;

EvAhCc - Eucalyptus victrix, Acacia citrinoviridis and Acacia pruinocarpa open woodland over Atalaya hemiglauca and Hakea lorea subsp. lorea isolated shrubland over *Cenchrus ciliaris and *Cenchrus setiger

EIGwTs - Eucalyptus leucophloia subsp. leucophloia open woodland over Grevillea wickhamii subsp. hispidula and Acacia bivenosa sparse shrubland over Triodia sp. Shovelanna Hill (S. van Leeuwen 3835) and Triodia epactia hummock grassland; and

AaEfTp - Acacia aneura, Acacia pruinocarpa and Acacia aptaneura woodland over Eremophila forrestii, Acacia ancistrocarpa and Acacia tetragonophylla open shrubland over Triodia pungens hummock grassland.

Clearing Description

FMG Pilbara Pty Ltd (FMG) has applied to clear up to 370 hectares of native vegetation within an application area of approximately 1,174 hectares for the purposes of mineral production (GIS Database). The application area is located approximately 80 kilometres northwest of Newman (GIS Database).

The project will include the creation of an open pit, waste dump, crushing and screen hub, roads, water infrastructure, accommodation camp and associated infrastructure (FMG, 2012b).

Vegetation Condition

Pristine: No obvious signs of disturbance (Keighery, 1994);

to

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

Comment

The vegetation condition was assessed by botanists from Cardno (2012).

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 flora and vegetation survey undertaken by Cardno (2012) identified ten different vegetation associations within the application area. The majority of the vegetation was in 'good' to 'excellent' condition (Cardno, 2012). None of the vegetation communities were identified as being a Threatened or Priority Ecological Community (Cardno, 2012). Mulga vegetation communities on the Marillana Plain are of key environmental value for surface water management in the Fortescue Marsh because they are known to support sheet flow dependant Mulga communities (Cardno, 2012). There is one of these Mulga communities (AaEfTp) within the application area. There was over 700 hectares of this community recorded within the larger survey area (Cardno, 2012). Only one hectare of this community is proposed to be impacted by the proposed clearing, so it is not likely to be significantly impacted (FMG, 2012b).

The flora survey over the larger Nyidinghu area recorded a total of 361 flora taxa from 144 genera and 47 families (Cardno, 2012). There were six species of Priority Flora recorded during the flora survey, however, none of these species were located within the application area (FMG, 2012b). There were ten introduced flora species recorded during the flora survey, the most common and widespread of which was Buffel Grass (*Cenchrus ciliaris*) (Cardno, 2012). Potential impacts to biodiversity from introduced species may be minimised by the successful implementation of a weed management condition.

A fauna survey of the larger Nyidinghu area recorded a total of 162 fauna species including two fish, two amphibian, 52 reptile, 86 bird and 17 native mammal species (Bamford Consulting Ecologists, 2012). The total number of reptile species recorded is considered to be a high number (Bamford Consulting Ecologists, 2012). Of particular interest was the presence of two species of the *Lerista bipes* complex and three members of the *Lerista muelleri* complex, as it is unusual to record such a range of these species within the one survey (Bamford Consulting Ecologists, 2012). The total number of bird species recorded is also considered high for a single survey (Bamford consulting Ecologists, 2012). Trapping site three, which was within the application area had the lowest biodiversity of all the trapping sites (Bamford consulting Ecologists, 2012).

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

Methodology

Bamford Consulting Ecologists (2012)

Cardno (2012) FMG (2012b)

(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 Level 2 fauna survey was undertaken by Bamford Consulting Ecologists (2012) over the larger Nyidinghu area in April 2011. This survey identified four fauna habitat vegetation soil associations (VSAs) within the application area (Bamford Consulting Ecologists, 2012):

- Mulga over Buffel Grass on red clayey-loam;
- Open low shrubland of mixed Acacia over spinifex on red sandy loam plain;
- Open low shrubland of mixed Acacias over spinifex on rocky/gravelly lower slopes of hills; and
- Open woodland of Eucalypts over Buffel Grass on brown rocky loam bordering the Weeli Wolli Creek.

The clearing of the 'Open low shrubland of mixed Acacia over spinifex on red sandy loam plain' and 'Open woodland of Eucalypts over Buffel Grass on brown rocky loam' VSAs was assessed as having a moderate significance of impact whilst all the other VSAs had a minor significance of impact (Bamford Consulting Ecologists, 2012). Both VSAs with a moderate significance support a diverse range of vertebrate fauna

including a number of conservation significant fauna (Bamford Consulting Ecologists, 2012). The Weeli Wolli Creek is associated with the 'Open woodland of Eucalypts over Buffel Grass on brown rocky loam' VSA. Potential impacts on this habitat may be minimised by the implementation of a watercourse management condition.

There were six conservation significant fauna species recorded during the fauna survey (Bamford Consulting Ecologists, 2012). Only two of these species; Rainbow Bee-eater (*Merops ornatus* - Migratory under the *EPBC Act 1999*) and Peregrine Falcon (*Falco peregrinus* - Schedule 4) were recorded within the application area (Bamford Consulting Ecologists, 2012). The other species recorded were the Pilbara Olive Python (*Liasis olivaceus barroni* – Schedule 1), Australian Bustard (*Ardeotis australis* – Priority 4), Fork- tailed Swift (*Apus pacificus* – Migratory under *EPBC Act 1999*) and Eastern Great Egret (*Ardea modesta* – Migratory under *EPBC Act 1999*). Habitat for the avian species is widespread throughout the region so the proposed clearing is not expected to significantly impact these species. The Pilbara Olive Python has more restricted habitat usually associated with riverine woodland areas, gorges and large rock holes and swamps (Bamford Consulting Ecologists, 2012). Potential impacts on this species core habitat may be minimised by the implementation of a watercourse management condition for Weeli Wolli Creek. A number of other conservation significant species have the potential to utilise the application area, however, the proposed clearing is not expected to have a significant impact on these species.

A short range endemic (SRE) survey was undertaken by Dalcon Environmental (2012) over the larger Nyidinghu area in April 2011. The survey comprised 13 trap sites, however, only one of these was within the application area (Dalcon Environmental, 2012). Three other sites were located within 500 metres of the application area, whilst the rest were approximately five to 22 kilometres away. The survey identified 14 potential SRE species, of which five are likely to be found within the application area. Only two species of these species were recorded from within the application area and all five of these species were recorded at sites outside the application area (Dalcon Environmental, 2012). The SRE habitat within the study area was classified as having high, moderate or low SRE potential (Dalcon Environmental, 2012). The majority of the application area was mapped as low SRE potential. A small part of the application area was mapped as moderate SRE potential while the remainder was mapped as high SRE potential. There were similar amounts of high SRE potential areas mapped throughout the study area (Dalcon Environmental, 2012). The area mapped as having high SRE potential appears to correspond largely with areas associated with watercourses. Potential impacts to short range endemic species may be minimised by the implementation of a watercourse management condition.

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

Methodology

Bamford Consulting Ecologists (2012)

Dalcon Environmental (2012)

(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 databases, there are no records of Threatened Flora within the application area (GIS Database). The flora survey undertaken by Cardno (2012) did not record any instances of Threatened Flora.

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

Methodology

Cardno (2012)

GIS Database:

- Threatened and Prioirty 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 records of any Threatened Ecological Communities (TECs) within the application area (GIS Database). The vegetation survey undertaken by Cardno (2012) did not identify any vegetation communities as being a TEC.

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

Methodology

Cardno (2012)

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 Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99.9% of the pre-European vegetation remains (see table) (GIS Database, Government of

Western Australia, 2011).

The vegetation of the application area has been mapped as Beard vegetation associations 29, 82 and 111 (GIS Database).

Over 99% of these Beard vegetation associations remains at both a state and bioregional level (Government of Western Australia, 2011). Therefore the area proposed to be cleared does not represent a significant remnant of native vegetation within 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	17,804,193	17,785,000	~99.9	Least Concern	6.3
Beard veg assoc. – State		•			
29	7,903,991	7,900,200	~99.9	Least Concern	0.29
82	2,565,901	2,553,217	~99.5	Least Concern	10.2
111	762,963	762,326	~99.9	Least Concern	5.4
Beard veg assoc. – Bioregion					
29	1,133,219	1,132,939	~99.9	Least Concern	1.9
82	2,563,583	2,550,899	~99.5	Least Concern	10.2
111	550,286	550,232	~99.9	Least Concern	1.2

^{*} Government of Western Australia (2011)

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 (2011)

GIS Database:

- IBRA WA (Regions - Sub Regions)

(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 F

Proposal is at variance to this Principle

There are a number of ephemeral watercourses within the application area (GIS Database). The most significant of these is the Weeli Wolli Creek which passes through the western part of the application area. The vegetation community EvAhCc was identified as being associated with 'major creeklines' (Cardno, 2012). The communities AcAhCc, AtSaTp and ApAdCc were also identified as being associated with flowlines (Cardno, 2012). FMG has indicated that there will be 15 hectares of vegetation associated with major creeklines and 34 hectares associated with flowlines cleared for the project (FMG, 2012b). Clearing within the Weeli Wolli Creek will be for the purpose of constructing a road to a proposed explosives storage facility. Impacts to the Weeli Wolli Creek 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

Cardno (2012)

FMG (2012b)

GIS Database

- Hydrography, linear
- Rivers

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

Comments

Proposal may be at variance to this Principle

The application area is mapped as occurring on the Boolgeeda, Newman, River, Fan and Urandy land systems (GIS Database). The Boolgeeda, Newman and Urandy land systems are generally not prone to erosion (Van Vreeswyk et al., 2004). The washplain and drainage tract units of the Fan land system are moderately susceptible to soil erosion if vegetation cover is removed (Van Vreeswyk et al., 2004). The River land system is highly susceptible to erosion if vegetation cover is removed (Van Vreeswyk et al., 2004). Potential impacts

^{**} Department of Natural Resources and Environment (2002)

of erosion within the River land system may be minimised by the implementation of a watercourse management condition. The implementation of a staged clearing condition may also help minimise impacts from erosion within the application area.

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

Methodology

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 application area does not lie within any conservation areas or DEC managed lands (GIS Database). The nearest conservation area is Karijini National Park which is located approximately 75 kilometres west of the application area (GIS Database). At this distance the proposed clearing is not likely to have any impacts on the environmental values of Karijini National Park.

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

Methodology

GIS Database:

- DEC 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 not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

There are a number of ephemeral watercourses within the application area (GIS Database). The majority of the surface water within the application area is likely to occur as sheet flow following heavy rains. The most significant watercourse is the Weeli Wolli Creek that passes through the western part of the application area (GIS Database). Clearing within the Weeli Wolli Creek will be for the purpose of constructing a road to a proposed explosives storage facility. Potential impacts to the surface water quality within Weeli Wolli Creek may be minimised by a watercourse management condition.

The groundwater within the application area is between 500 – 1,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Groundwater sampling has indicated that the groundwater within the application area is fresh and pH neutral (FMG, 2012a). It would not be expected that the proposed clearing would cause salinity levels within the application or surrounding area to alter.

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

Methodology

FMG (2012a)

GIS Database:

- Evaporation Isopleths
- Groundwater Salinity, Satewide
- Hydrography, linear

(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

With an average annual rainfall of 400 millimetres and an average annual evaporation rate of 3,400-3,600 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2012; GIS Database). Whilst large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology

GIS Database:

- Evaporation Isopleths
- Rainfall, Mean Annual

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

Comments

There is one native title claim over the area under application (GIS Database). This claim (WC05/6) as been registered with the Native Title Tribunal on behalf of the claimant group (GIS Database). 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 no registered Aboriginal Sites of Significance within 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 and Conservation 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.

The project was referred to the Environmental Protection Authority (EPA) by the applicant on 20 February 2012. On 2 April 2012 the EPA determined that project was "Not Assessed - Public Advice Given".

The clearing permit application was advertised on 2 April 2012 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims Registered with the NNTT

4. References

Bamford Consulting Ecologists (2012) Fauna Assessment Nyidinghu Iron Ore Project. Unpublished report for Fortescue Metals Group, dated January 2012.

Cardno (2012) Nyidinghu Study Flora and Vegetation Assessment. Unpublished report for Fortescue Metals Group, dated January 2012.

Dalcon Environmental (2012) Terrestrial Invertebrate Short-range Endemic Assessment: Nyidinghu Mine Project. Unpublished report for Fortescue Metals Group Limited, dated January 2012.

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

FMG (2012a) Hydrogeological Assessment Io Project. Dated 25 January 2012.

FMG (2012b) Native Vegetation Clearing Permit Application Supporting Documentation. Dated 6 March 2012.

Government of Western Australia (2011) 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.

Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

5. Glossary

Acronyms:

BoM Bureau of Meteorology, Australian Government

CALM Department of Conservation and Land Management (now DEC), Western Australia

DAFWA Department of Agriculture and Food, Western Australia

DEC Department of Environment and Conservation, Western Australia

DEH Department of Environment and Heritage (federal based in Canberra) previously Environment Australia

DEP Department of Environment Protection (now DEC), Western Australia

DIA Department of Indigenous Affairs

DLI Department of Land Information, Western Australia

DMP Department of Mines and Petroleum, Western Australia

DoE Department of Environment (now DEC), Western Australia

DolR Department of Industry and Resources (now DMP), Western Australia

DOLA Department of Land Administration, Western Australia

DoW Department of Water

EP Act Environmental Protection Act 1986, Western Australia

EPBC Act Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)

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

RIWI Act Rights in Water and Irrigation Act 1914, Western Australia

- s.17 Section 17 of the Environment Protection Act 1986, Western Australia
- TEC Threatened Ecological Community

Definitions:

{Atkins, K (2005). Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia}:-

- P1 Priority One Poorly Known taxa: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2 Priority Two Poorly Known taxa: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3 Priority Three Poorly Known taxa: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4 Priority Four Rare taxa: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R Declared Rare Flora Extant taxa (= Threatened Flora = Endangered + Vulnerable): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X Declared Rare Flora Presumed Extinct taxa: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950]:-

- Schedule 1 Fauna that is rare or likely to become extinct: being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2 Schedule 2 Fauna that is presumed to be extinct: being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3 Birds protected under an international agreement: being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4 Other specially protected fauna: being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia}:-

- P1 Priority One: Taxa with few, poorly known populations on threatened lands: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2 Priority Two: Taxa with few, poorly known populations on conservation lands: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- Priority Three: Taxa with several, poorly known populations, some on conservation lands: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4 Priority Four: Taxa in need of monitoring: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands
- P5 Priority Five: Taxa in need of monitoring: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)

EX Extinct: A native species for which there is no reasonable doubt that the last member of the species has died.

EX(W) Extinct in the wild: A native species which:

- (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
- (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- **CR Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

EN Endangered: A native species which:

- (a) is not critically endangered; and
- (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

VU Vulnerable: A native species which:

- (a) is not critically endangered or endangered; and
- (b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- **CD Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.