Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4065/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Pilbara Manganese Pty Ltd**

1.3. Property details

Property: Mining Lease 45/430
Mining Lease 45/640
Local Government Area: Shire of East Pilbara
Colloquial name: Sardine Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 23 December 2010

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 at a 1:250,000 scale for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2007).

173: Hummock grasslands, shrub steppe; kanji over soft spinifex and *Triodia wiseana* on basalt; and
177: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* over hard spinifex, *Triodia brizoides*.

The application area within Mining Lease 45/430 was surveyed by Mattiske Consulting in May and June 2007 (MBS Environmental, 2010a). The following vegetation types were identified within the application area:

3: Scrub or thicket of *Carissa lanceolata*, *Petalostylis labicheoides*, *Acacia bivenosa* and *Acacia ancistrocarpa* over *Triodia pungens*, *Triodia basedowii*, **Cenchrus ciliaris* and *Chrysopogon fallax* along minor watercourses;

5: Scrub or low shrubland of *Acacia ancistrocarpa*, *Acacia arida*, *Acacia acradenia*, *Petalostylis labicheoides*, *Gossypium australe*, *Acacia synchronicia* and *Acacia inaequilatera* over *Triodia wiseana* with patches of **Cenchrus ciliaris* on flats, often associated with major watercourses;

6: Low shrubland of *Acacia arida* and *Acacia hilliana* over *Triodia wiseana* and *Dampiera candicans* on slopes and hilltops;

7: Hummock grassland of *Triodia longiceps* with scattered *Acacia bivenosa*, *Acacia synchronicia* and *Acacia ptychophylla* on flats and lower slopes; and

8: Hummock grassland of *Triodia longiceps* and *Triodia wiseana* with occasional *Grevillea wickhamii* subsp. *hispidula* on flats and lower slopes.

NB: * Denotes introduced species

Clearing Description

Pilbara Manganese Pty Ltd is proposing to clear up to 103 hectares of native vegetation for the purpose of mining operations including the expansion of existing pits, development of waste rock dumps, topsoil stockpiles and associated infrastructure.

Vegetation will be cleared with a bulldozer and vegetation will be stockpiled for rehabilitation.

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

Comment The application area is located in the Pilbara region of Western Australia and is situated approximately 115 kilometres east-north-east of Nullagine (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 lies within the Chichester (PIL1) sub-region of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This sub-region is characterised by undulating Archaean granite and basalt plains with significant areas of basaltic ranges (CALM, 2002). Broadly, the plains support a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands on plains, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

A vegetation survey by MBS Environmental (2010a) identified five intact vegetation types occurring within the application area. During the vegetation survey, 123 vascular plant taxa from 66 genera and 31 families were recorded within the application area. Previous surveys conducted on the Woodie Woodie tenements have resulted in a total of 335 vascular plant taxa from 136 genera and 48 families being recorded in the broader area (MBS Environmental, 2010a). The application area is considered to have similar biodiversity to that of the surrounding areas. The plant communities within the application area are well represented throughout the region and are therefore not thought to be regionally or locally significant.

A desktop survey of the application area and surrounding areas by Western Wildlife revealed the potential for seven amphibian, 78 reptile, 138 bird and 51 mammal species to occur (Western Wildlife, 2010). Inactive Western Pebble-mound Mouse (*Pseudomys chapmani* - DEC Priority 4) mounds have been recorded within the application area (Western Wildlife, 2010). The land systems, vegetation and habitats of the project area are common and widely represented in the region (MBS Environmental, 2010b). The application area is not likely to comprise a greater diversity than similar areas locally or regionally.

The application area is located within the buffer zone of a Priority 3 Ecological Community (Stony saline clay plains of the Mosquito Land System) (GIS Database). This community is described as saltbush community of the duplex plains - Mosquito Creek series (Nullagine), known to contain two endemic Acacias. This community is known to occur on stony plains and on rocky ground. Potential threats to this community include preferential grazing, prospecting and mining with erosion increasing. According to vegetation surveys conducted by Mattiske Consulting no saltbush communities were recorded within the application area (MBS Environmental, 2010a). The proposed clearing within the application area is not likely to significantly impact the Priority Ecological Community.

Two introduced species, Buffel Grass (*Cenchrus ciliaris*) and Kapok Bush (*Aerva javanica*), were recorded within the application area (MBS Environmental, 2010a). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Neither of these species are listed as 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity 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 is not likely to be at variance to this Principle.

Methodology

CALM (2002)
MBS Environmental(2010a)
MBS Environmental (2010b)
Western Wildlife (2010)
GIS Database:
- Declared Rare and Priority Flora List
- IBRA WA (Regions - Sub regions)
- 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

Western Wildlife (2010) have undertaken two detailed spring and autumn fauna surveys over the Woodie Woodie tenements in 2006/2007 and 2008/2009 as well as a spring survey in 2008. Methods used to survey the fauna of the Woodie Woodie tenements include:

- Trapping for reptiles, amphibians and small mammals;
- Spotlighting and head-torching;
- Bat surveys;
- Bird surveys; and

- Recoding of opportunistic sightings.

Western Wildlife (2010) identified three habitat types in the clearing permit application area:

- Spinifex on rocky hills;
- Spinifex on low stony hills; and
- Minor creek-lines.

A total of 274 fauna species have the potential to occur within the Woodie Woodie area. This includes up to seven amphibians, 78 reptiles, 138 birds and 51 mammal species. Of these, five amphibian, 60 reptile, 95 bird and 24 mammal species have been observed within the Woodie Woodie tenements (Western Wildlife, 2010).

Western Wildlife (2010) have recorded five fauna species of conservation significance within the Woodie Woodie tenements:

- Orange Leaf-nosed Bat - (*Rhinonicteris aurantius*) - Schedule 1 , *Wildlife Conservation Act 1950* and Vulnerable, *Environmental Protection and Biodiversity Conservation* (*EPBC*) *Act 1999*;
- Common Sandpiper (*Trigna hypoleucos*) - Schedule 3, *Wildlife Conservation Act 1950* and Migratory, *EPBC Act 1999;*
- Rainbow Bee-eater (*Merops ornatus*) - Schedule 3 , *Wildlife Conservation Act 1950* and Migratory, *EPBC Act 1999*;
- Wood Sandpiper (*Trigna glareola*) - Schedule 3 , *Wildlife Conservation Act 1950* and Migratory, *EPBC Act 1999*; and
- Great Egret (*Ardea alba*) - Migratory, *EPBC Act 1999*.

No suitable habitats for these fauna species occur within the application area, with the preferred habitat for the Common Sandpiper, Great Egret and Wood Sandpiper being wetlands, and the preferred habitat for the Rainbow Bee-eater being sandy slopes.

The Orange Leaf-nosed Bat has been recorded foraging near the clearing permit application area. No suitable roosting sites have been recorded in the Woodie Woodie tenements however these roost sites can be difficult to locate (Western Wildlife, 2010). The development of this project may result in the loss of some foraging habitat for this species however suitable foraging habitat is common and widespread in the region (MBS Environmental, 2010b).

Western Wildlife (2010) have identified a further four fauna species of conservation significance which have the potential to occur within the application area:

- Long Tailed Dunnart (*Sminthopsis longicaudata*) - Priority 4 on the Department of Environment and Conservation's (DEC's) Threatened and Priority Fauna list;
- Australian Bustard (*Ardeotis australis*) - Priority 4 on the DEC's Threatened and Priority Fauna list;
- Bush Stone Curlew - (*Burhinus grallarius*) - Priority 4 on the DEC's Threatened and Priority Fauna list; and
- Western Pebble mound Mouse (*Pseudomys chapmani*) - Priority 4 on the DEC's Threatened and Priority Fauna list.

Inactive Western Pebble-mound Mouse (*Pseudomys chapmani* - DEC Priority 4) mounds have been recorded within the application area (Western Wildlife, 2010). Suitable habitat for this species is common within the Woodie Woodie area (Western Wildlife, 2010). The loss of 103 hectares of native vegetation is not likely to have a significant impact on the conservation status of this species

Given the high levels of disturbance adjacent to the application area in the form of open pits, waste dumps and mine infrastructure and considering that the habitats present in the clearing permit application area are common on both a local and regional scale, it is not likely that the loss of 103 hectares of native vegetation will comprise a significant habitat for fauna indigenous to Western Australia.

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

Methodology MBS Environmental (2010b)
Western Wildlife (2010)

(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 GIS databases there are no known records of Declared Rare Flora (DRF) within the application area (GIS Database).

A flora survey was conducted over the application area by staff from Mattiske Consulting in May and June 2007 (MBS Environmental, 2010a). No DRF or species listed under the *Environmental Protection and Biodiversity Conservation Act 1999* were recorded within the application area (MBS Environmental, 2010a).

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

Methodology MBS Environmental (2010a)
GIS Database:
- Declared Rare and Priority Flora List

(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**
A search of available databases reveals that there are no Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest TEC is located approximately 220 kilometres south-west of the application area (GIS Database).

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

Methodology 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). Shepherd (2007) reports that approximately 99.95% of the pre-European vegetation remains in this bioregion.

The vegetation within the application area is recorded as Beard vegetation associations:
173: Hummock grasslands, shrub steppe; kanji over soft spinifex and *Triodia wiseana* on bassalt; and
177: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* over hard spinifex, *Triodia brizoides* (GIS Database; Shepherd, 2007).

According to Shepherd (2007) approximately 100% of these Beard vegetation associations remain within the Pilbara bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,188	17,794,647	99.95	Least Concern	6.32
Beard vegetation associations - State					
173	1,421,376	1,421,376	100	Least Concern	4.82
177	169,446	169,446	100	Least Concern	0
Beard vegetation associations - Bioregion					
173	1,420,793	1,420,793	100	Least Concern	4.82
177	169,446	169,446	100	Least Concern	0

* Shepherd (2007)
** 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)
Shepherd (2007)
GIS database:
- IBRA WA (regions - subregions)
- 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**
According to available GIS Databases, there are no permanent wetlands or watercourses within the application area, however there are several minor ephemeral watercourses within the application area (GIS Database).

Based on vegetation mapping conducted by Mattiske Consulting, one vegetation community associated with minor watercourses was found in the application area:

3: Scrub or thicket of *Carissa lanceolata*, *Petalostylis labicheoides*, *Acacia bivenosa* and *Acacia ancistrocarpa* over *Triodia pungens*, *Triodia basedowii*, *Cenchrus ciliaris* and *Chrysopogon fallax* along minor watercourses (MBS Environmental, 2010a).

This watercourse associated vegetation community is not unique and is considered common throughout the Woodie Woodie tenements. The proposed clearing is not likely to significantly impact on the conservation of vegetation growing in association with these watercourses.

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

Methodology MBS Environmental (2010a)
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**
According to the available datasets the application area intersects the Coongimah and McKay land systems (GIS Database).

The Coongimah land system is characterised by plateaux surfaces, low hills with steep slopes and undulating uplands supporting hard Spinifex grasslands (Van Vreeswyk et al, 2004). This system has a very low erosion risk (Van Vreeswyk et al, 2004).

The McKay land system is characterised by hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting hard Spinifex grasslands (Van Vreeswyk et al, 2004). This land system is not prone to degradation or 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:
- 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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest known conservation reserve is Unallocated Crown Land - Former leasehold proposed for conservation, located approximately 43 kilometres west of the application area.

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 East Pilbara is an arid environment. Surface water runoff only occurs during and immediately following significant rainfall events. Groundwater within the application area has low salinity levels of between 350 to 850 milligrams per litre Total Dissolved Solids and recharge is estimated to be approximately 15 % of annual rainfall. The depth to the water table in the application area is greater than 30 metres (MBS Environmental, 2010b) and it is therefore not likely that the removal of native vegetation will cause deterioration in the quality of surface or underground water.

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Nullagine Water Reserve which is located approximately 110 kilometres west of the application area at its closest point (GIS Database). Given the distance separating the application area and the nearest water supply area, the proposed clearing is unlikely to impact on the water quality of the Nullagine Water Reserve.

The application area is located within a *Rights in Water Irrigation Act 1914* Groundwater Management Area (GIS Database). The proponent is required to obtain permits to abstract groundwater in this area.

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

Methodology MBS Environmental (2010b)
GIS Database:
- Public Drinking Water Source Area (PDWSAs)
- 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

The application area experiences a semi-desert-tropical climate with an average annual rainfall of approximately 300 millimetres (CALM, 2002). The area is characterised by high intensity rainfall events associated with thunderstorms and cyclones (MBS Environmental, 2010b). Within the project area, surface runoff occurs only during and immediately following significant rainfall (MBS Environmental, 2010b).

Natural flood events do occur within the Pilbara region following cyclonic activity however the proposed clearing of 103 hectares is not expected to increase the incidence or intensity of such events.

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

Methodology CALM (2002)
MBS Environmental (2010b)

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

Comments

There is one Native Title Claim over the area under application (WC99/8). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. 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*.

There are two 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 purpose of works.

The clearing permit application was advertised on 15 November 2010 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title NNTT

4. References

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

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.

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

MBS Environmental (2010a) Site Wide Flora and Vegetation Report Woodie Woodie Manganese Operations, prepared for Pilbara Manganese Pty Ltd. Unpublished report. Martinick Bosch Sell Pty Ltd, Western Australia.

MBS Environmental (2010b) Woodie Woodie Operations, Clearing Permit (Purpose Permit) Application, Sardine Project Area, Native Vegetation Management Plan and Assessment of Clearing Principles, prepared for Pilbara Manganese Pty Ltd. Unpublished report. Martinick Bosch Sell Pty Ltd, Western Australia.

Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

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.

Western Wildlife (2010) Woodie Woodie Project Area: Level 1 fauna survey in five prospect areas, 2010. Unpublished report. Western Wildlife, 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
DoIR	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)
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
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 **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 **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 **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.

P3 **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.