Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3556/1
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: *Iron Ore (Hamersley Range) Agreement Act 1963*
Mineral Lease 4SA (AML70/4)
Local Government Area: Shire of Ashburton
Colloquial name: Marra Mamba East Pits Project

1.4. Application

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

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. One Beard Vegetation Association has been mapped within the application area (GIS Database).

567: Hummock grasslands, shrub steppe; mulga and kanji over soft spinifex and *T. basedowii*.

Keith Lindbeck and Associates conducted a flora and vegetation survey of the application area and surrounding vegetation between November 2006 and March 2007. Six vegetation types were identified within the application area (Keith Lindbeck and Associates, 2007).

1. Hilltops with Gently Rounded Slopes (H1-1): *Eucalyptus leucophloia* and *E. gamophylla* scattered low trees over *Acacia hamersleyensis* and *A. bivenosa* open shrubland over *Triodia wiseana* hummock grassland;

2. Very Steep Serrated Excarpments (H2-1): *Eucalyptus leucophloia* and *Acacia pruinocarpa* low woodland over *Dodonaea pachyneura* open heath over *Triodia wiseana* and *T. wiseana* hummock grassland with patches of *Themeda* sp. Mt Barricade tussock grassland;

3. Steep Colluvial Upper Slopes (H3): Open Shrubland over *Triodia wiseana* hummock grassland with patches of *Themeda* sp. Mt Barricade closed tussock grasslands. Sub-unit: *Eucalyptus leucophloia* low open forest (hillside drainage lines);

Clearing Description
Hamersley Iron Pty Ltd has applied to clear up to 34.8 hectares of native vegetation for the purpose of mineral production. Vegetation will be cleared for the purpose of extending the existing Marra Mamba east pits to recover additional high grade ore. Clearing will be undertaken by mechanical means, and all cleared topsoil and vegetation will be stockpiled for use in rehabilitation.

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

Comment
The application area is within an operating mine site and is adjacent to haul roads, waste dumps and open pit areas (Hamersley Iron Pty Ltd, 2010; Keith Lindbeck and Associates, 2007).

Keith Lindbeck and Associates (2007) noted that a large proportion of the proposed clearing area had been burnt by fire in the past 2 - 5 years. Vegetation was reported to be in a healthy regrowth stage, most likely due to the favourable climatic conditions experienced in the area during 2006 (Keith Lindbeck and Associates, 2007).

4. Moderately Inclined Colluvial Mid and Lower Slopes (H4): *Corymbia hamersleyana* scattered low trees over high shrubland over *Triodia wiseana* hummock grassland;

5. Undulating Rocky Hills (H8-1): *Acacia aneura* and *A. pruinocarpa* low open woodland over open shrubland over *Triodia wiseana* hummock grassland; and

6. Broad Ephemeral Creekbed (W2-1): *Acacia aneura*, *A. pruinocarpa* and *A. citrinoviridis* low open forest over low open shrubland over *Triodia epactia* hummock grassland.

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

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

A vegetation survey of the application area and the surrounding vegetation identified 295 native flora species belonging to 121 genera from 49 families (Keith Lindbeck and Associates, 2007). This constitutes a higher level of biological diversity in comparison to other vegetation and flora surveys undertaken in the bioregion. It is acknowledged that the Keith Lindbeck and Associates (2007) flora and vegetation survey was conducted over a four year period, including the unusually wet year of 2006 where more than 700 millimetres of rainfall was recorded and was carried out over a much larger area than the application area (Keith Lindbeck and Associates, 2007). Such favourable conditions as well as the size of the survey area can most likely account for the high number of plant taxa recorded. The recent fire history over much of the survey area may also have resulted in a species composition that reflects the early years of the regeneration cycle.

The application area is known to contain one Priority Flora species: *Olearia mucronata* (Priority 3) (Keith Lindbeck and Associates, 2007). The presence of Priority Flora within the application area increases its biodiversity significance; however this species is not confined to the application area. The Western Australian Herbarium (2010) has records for this species near Laverton, Cue, and in the Pilbara region near Paraburdoo, Tom Price, Wittenoom and Newman. It is considered unlikely that the proposed clearing will impact on the conservation status of this species.

Five introduced flora species were recorded within the vegetation survey area (Keith Lindbeck and Associates, 2007). These were: *Cenchrus ciliaris* (Buffel Grass), *Acetosa vesicaria* (Ruby Dock), *Bidens Bipinnata* (Bipinnate Beggars Tick), *Malvastrum americanum* (Spiked Malvastrum) and *Datura leichhardtii* (Native Thornapple). Apart from three localised alluvial areas which were infested with Buffel grass, there were no major weed infestations (Keith Lindbeck and Associates, 2007). Care must be taken to ensure that the proposed clearing activities do not spread or introduce the above listed weed species to non infested areas. Should the permit be granted, it is recommended that appropriate conditions be imposed on the permit for the purpose of weed management.

From a fauna perspective, no detailed surveys have been undertaken to measure the species richness of the application area. It is acknowledged that the Pilbara bioregion is known to support a diversity of arid zone reptiles. However, based on an assessment of fauna habitat it is not likely that the application area would support a higher level of fauna species diversity than any other area in the Hamersley Ranges (Keith Lindbeck and Associates, 2007).

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

Methodology

CALM (2002)
Keith Lindbeck and Associates (2007)
Western Australian Herbarium (2010)
GIS Database:
- IBRA Australia

(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

Of the six identified vegetation communities within the application area, none were considered as being restricted to the survey area (Keith Lindbeck and Associates, 2007). There were no unique, restricted, or fauna specific habitat types observed during the survey that are not well represented elsewhere throughout the local area or Pilbara region (Keith Lindbeck and Associates, 2007).

Aerial imagery demonstrates that the application area is situated adjacent to highly degraded areas which are being utilised for mining related purposes (i.e. open pits, waste dumps, access tracks and laydown areas) (Hamersley Iron Pty Ltd, 2010). It is probable that the disturbances associated with the mining activities such as noise, dust, vehicle movements and historic vegetation clearing have contributed to reducing the habitat value of the vegetation within the application area. Although it has been noted that some Schedule or Priority fauna species may utilise these habitats, neither the landforms nor vegetation types represent 'core habitat' for any of these species.

The proposed clearing is unlikely to result in a significant impact on fauna or the availability of fauna habitat in the local or regional area.

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

Methodology

Hamersley Iron Pty Ltd (2010)
Keith Lindbeck and Associates (2007)
GIS Database:
- Mount Lionel 50cm Orthomosaic - Landgate 2004

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments

Proposal is not likely to be at variance to this Principle

According to available datasets there are no known records of Declared Rare Flora (DRF) within the application area (GIS database). There are five records of the DRF species *Lepidium catapycnon* within 8 kilometres of the application area, with the closest population being recorded 3 kilometres north of the application area (GIS Database). There are no other records for this species within 70 kilometres of the application area (GIS Database).

Keith Lindbeck and Associates carried out a flora and vegetation survey of the proposed east, west and central pits at the Tom Price mine site. The application area was surveyed as part of the Marra Mamba East Ridge survey area (Keith Lindbeck and Associates, 2007). No DRF were recorded within the application area during this survey (Keith Lindbeck and Associates, 2007). Keith Lindbeck and Associates (2007) report that extensive vegetation surveys by Pilbara Iron between January 2003 and June 2006 have also failed to record any DRF species within the application area.

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

Methodology

Keith Lindbeck and Associates (2007)
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

There are no known Threatened Ecological Communities (TEC's) within or in the vicinity of the application area (GIS Database; Keith Lindbeck and Associates, 2007). The nearest known TEC is located approximately 38 kilometres north, north-east of the application area (GIS Database; Keith Lindbeck and Associates, 2007). Given the distance between the proposal and the nearest known TEC, the proposed clearing is not likely to impact on the conservation of the TEC.

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

Methodology

Keith Lindbeck and Associates (2007)
GIS Database:
- Threatened Ecological Communities

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

Comments

Proposal is not at variance to this Principle

The application area is located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2007) reports that approximately 99.95% of the pre-European vegetation

remains in the Pilbara bioregion. The vegetation association within the application area is broadly mapped as 567: Hummock grasslands, shrub steppe; mulga and kanji over soft spinifex and *T. basedowii* (GIS Database; Shepherd, 2007). According to Shepherd (2007), approximately 100% of this vegetation association remains (see table below).

According to the Bioregional Conservation Status of Ecological Vegetation Classes the conservation status for the Pilbara Bioregion and Beard Vegetation Association 567 is of "Least Concern" (Department of Natural Resources and Environment, 2002).

	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	~99.9	Least Concern	~6.32
Beard veg assoc. - State					
567	777,507	777,507	~100	Least Concern	~22.3
Beard veg assoc. - Bioregion					
567	776,824	776,824	~100	Least Concern	~22.4

* Shepherd (2007)
** Department of Natural Resources and Environment (2002)

Although several large scale mining operations are located within a 50 kilometre radius of the application area, the Pilbara bioregion remains largely uncleared (GIS Database). The vegetation to be cleared is not considered a remnant of vegetation in an area that has been extensively cleared.

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 Australia
- Pre European vegetation

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

Comments **Proposal is not likely to be at variance to this Principle**
There are no permanent wetlands or watercourses within the application area (GIS Database; Keith Lindbeck and Associates, 2007). Whilst there a numerous minor, non-perennial watercourses within the application area, the vegetation communities growing in association with these watercourses are not unique and are considered common and widespread in the Pilbara bioregion (Shepherd, 2007; GIS Database).

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

Methodology Keith Lindbeck and Associates (2007)
Shepherd (2007)
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 is characterised by the Newman Land System (GIS Database).

The Newman land system is described as rugged jaspilite plateaux, ridges and mountains with hard spinifex (Van Vreeswyk et al., 2004). The Newman land system is comprised of three land units and these are:

- Plateaux, ridges, mountains and hills;
- Lower slopes; and
- Narrow drainage floors with channels.

An analysis of the land units described by Keith Lindbeck and Associates (2007), and aerial photography (GIS

Database), indicates that the application area is most likely to occur within the 'plateaux, ridges, mountains and hills' and 'lower slopes' land units. The landforms within the application area are extremely erosion resistant being made up of bedded ironstone and chert formations with colluvial scree slopes and stony mantled plains (Keith Lindbeck and Associates, 2007). These landscapes are at the end point of millions of years of erosion and withstand massive rainfall events on an annual basis without any appreciable increase in land degradation or erosion (Keith Lindbeck and Associates, 2007).

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

Methodology Keith Lindbeck and Associates (2007)
Van Vreeswyk et al. (2004)
GIS Database:
- Mount Lionel 50cm Orthomosaic
- 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 is not situated within a Department of Environment and Conservation managed conservation area (GIS Database). The nearest conservation area is Karijini National Park, which is situated approximately 10 kilometres east of the application area (GIS Database). The area between the application area and Karijini National Park is uncleared pastoral rangeland that acts as a buffer. Given the distance between the proposal and the nearest conservation area, the proposed clearing is not likely to impact on the conservation 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**
There are no permanent wetlands or watercourses within or adjacent to the application area (GIS Database). A number of minor ephemeral creeklines are present, however these are minor systems that act as drainage channels from the ridges and upper slopes and only flow following significant rainfall (GIS Database; Keith Lindbeck and Associates, 2007). Whilst these may drain into larger ephemeral creek systems, the proposed clearing is unlikely to cause deterioration in the quality of surface water in the local area.

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Millstream Water Reserve which is located approximately 50 kilometres north of the application area (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 Millstream Water Reserve.

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

Methodology Keith Lindbeck and Associates (2007)
GIS Database:
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(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 is located within the Ashburton River catchment area (GIS Database). The size of the area to be cleared (34.8 hectares) in relation to the size of the Ashburton River catchment area (7,877,743 hectares) is not likely to lead to an increase in flood height or duration (GIS Database).

Flood events are naturally associated with the Pilbara bioregion following cyclonic downpours, and the broad valleys and drainage systems have evolved in response (Keith Lindbeck and Associates, 2007). Most of the proposed clearing area is located in an elevated environment (GIS Database). Precipitation falling in this area naturally runs off into the surrounding valleys and plains. The proposed clearing will alter natural surface water flow patterns, however, it is not likely that the incidence or intensity of natural flood events will be increased.

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

Methodology Keith Lindbeck and Associates (2007)
GIS Database:

- Hydrographic Catchments - Catchments
- Topographic Contours, Statewide

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

Comments

There is one native title claim over the area under application: WC97/089. This claim has been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenement 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 is one known Aboriginal site 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 Sites of Aboriginal Significance are damaged through the clearing process. Hamersley Iron Pty Ltd (2010) has advised that a heritage survey has been undertaken and no sites have been identified.

One direct interest submission was received during the public submissions period stating no objection to the proposal.

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.

Methodology

Hamersley Iron Pty Ltd (2010)
GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and the proposed clearing is not likely to be at variance to Principles (a), (b), (c), (d), (f), (g), (h), (i) and (j) and is not at variance to Principle (e).

It is recommended that should a permit be granted, conditions be imposed on the permit for the purposes of weed management, record keeping and permit reporting.

5. References

CALM (2002). Biological Summary of the 2002 Biodiversity Audit for Western Australia, A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 - Pilbara (PIL3 - Hamersley subregion), ed. N.L McKenzie, J.E May and S. McKenna, Government of Western Australia, Perth, 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.

Hamersley Iron Pty Ltd (2010). Documentation Accompanying Clearing Permit Application for CPS 3556/1, Prepared by Hamersley Iron Pty Ltd, January 2010.

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

Keith Lindbeck and Associates (2007). Vegetation Survey and Land Clearing Information for Proposed Mining Areas - East, West and Central Pits, Tom Price Minesite, prepare for Pilbara Iron Pty Ltd, prepared by Keith Lindbeck and Associates, October 2007).

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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Van Vreeswyk A.M.E., Payne A.L., Leighton K.A. and Hennig P. (2004). Technical Bulletin - An inventory and condition survey of rangelands in Pilbara Region, Western Australia, No 92, Department of Agriculture, Government of Western Australia, Perth, Western Australia.

Western Australian Herbarium (2010). Florabase - The Western Australia Flora, A search for *Oleria mucronata*, Department of Environment and Conservation, <http://florabase.calm.wa.gov.au.html>, accessed 24 February 2010.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), 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, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.