Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4520/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Xstrata Nickel Australasia Pty Ltd**

1.3. Property details

Property: Mining Lease 36/349
Mining Lease 36/371
Local Government Area: Shire of Leonora
Colloquial name: Cosmos Nickel Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 6 October 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area:

Beard vegetation association 39: Shrublands; mulga scrub (Shepherd, 2009; GIS Database).

Mattiske Consulting Pty Ltd *(2011)* conducted a flora survey of the application area and surrounding areas during February 2011, and described three vegetation communities of the application area:

1. Low woodland of *Acacia aneura* var. *aneura* with *Acacia craspedocarpa* and *Acacia aneura* var. *macrocarpa, Acacia aneura* var. *fuliginea* and *Santalum spicatum* over *Eremophila galeata, Eremophila spectabilis, Monachather paradoxus* and *Eragrostis eriopoda* on red loams and sandy loams along drainage lines;
2. Low open woodland of *Acacia aneura* var. *macrocarpa* and *Acacia aneura* var. *aneura* over *Eremophila galeata, Eremophila spectabilis, Eremophila latrobei* subsp. *latrobei, Senna artemisiodes* subsp. *helmsii* x *oligophylla* and *Eragrostis eriopoda* on sandy loam gravels, often covered by a stony mantle of quartz and dolerite; and
3. Open shrubland of *Eremophila galeata* and *Acacia tetragonophylla* with occasional emergent *Acacia aneura* var. *aneura* over *Senna artemisioides* subsp. *helmsii* x *oligophylla* and *Solanum lasiophyllum* on shallow red loams with an extensive stony mantle of dolerite or quartz.

Clearing Description

Xstrata Nickel Australasia Pty Ltd is proposing to clear up to 24.55 hectares of native vegetation for the Cosmos Nickel Project (Mattiske Consulting Pty Ltd, 2011). The clearing of vegetation is required for the establishment of a water management pond expansion at the Xstrata Nickel Australasia Pty Ltd Cosmos Nickel Project.

The vegetation will be cleared using general earthworks machinery. The vegetation and topsoil will be stockpiled separately for use in rehabilitation.

Vegetation Condition

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

To:

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

Comment

The application area is located in the East Murchison subregion of Western Australia and is situated approximately 40 kilometres north of the Leinster town site (GIS Database).

The vegetation condition was derived from a vegetation survey conducted by Mattiske Consulting Pty Ltd (2011).

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 East Murchison (MUR1) subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by its internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development. Salt lake systems associated with the occluded Paleodrainage system. Broad plains of red-brown soils and breakaway complexes as well as red sandplains. Vegetation is dominated by Mulga Woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (CALM, 2002).

The vegetation within the application area consists of Beard vegetation association 39, which is common and widespread throughout the Murchison bioregion with approximately 100% of the pre-European vegetation extent remaining (Shepherd, 2009; GIS Database). A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases revealed that no Declared Rare Flora (DRF) species and five Priority species may potentially occur within a 20 kilometre radius of the application area (DEC, 2011). Mattiske Consulting Pty Ltd (2011) identified no DRF or Priority flora species within the application area. A vegetation survey by Mattiske Consulting Pty Ltd (2011) during February 2010 of the application area and surrounding vegetation identified 50 species of flora taxa belonging to 17 Families. Mattiske Consulting Pty Ltd (2011) identified three vegetation communities within the application area, with the condition of these vegetation types were classified from 'degraded' to 'very good' (Keighery, 1994).

No Threatened Ecological Communities were recorded or identified within the application area (GIS Database). The application area sits within the buffer zone of three Priority Ecological Communities; Violet Range vegetation complexes (banded ironstone formation), and Lake Miranda (west and east) calcrete groundwater assemblage types on Carey palaeodrainage on Yakabindie Station. The flora survey identified no vegetation complexes resembling the Violet Range vegetation complexes (Mattiske Consulting Pty Ltd, 2011), and the low impact mining activity is not likely to affect the unique assemblages of invertebrates that have been identified in the groundwater calcretes of both East and West Lake Miranda calcrete groundwater assemblage types (GIS Database).

Two weed species were identified during the survey: Paddy Melon (*Cucumis myriocarpus*) and Pig Weed (*Portulaca oleracea*) (Mattiske Consulting Pty Ltd, 2011). None of these species are listed by the Western Australian Department of Agriculture and Food as Declared Plants. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The fauna habitats within the application area are considered to be common and widespread within the subregion and faunal assemblages are unlikely to be different to that found in similar habitat located elsewhere in the region (Ninox Wildlife Consulting, 2005). There were no habitat types of high ecological significance. The clearing of 24.55 hectares of native vegetation is unlikely to have a significant impact in a regional and local context.

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

Methodology

CALM (2002)
DEC (2011)
Keighery (1994)
Mattiske Consulting Pty Ltd (2011)
Ninox Wildlife Consulting (2005)
Shepherd (2009)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation
- Threatened Ecological Sites Buffered

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

Comments

Proposal is not likely to be at variance to this Principle

There were five broad fauna habitat types occurring within the survey area as recorded by Ninox Wildlife Consulting (2005);

1. Low open woodlands of Mulga (*Acacia aneura* subsp.) over a mixed shrub understorey on sandy loam gravels, often covered by a stony mantle of quartz and dolerite. The understorey is often very sparse in this community;

2. Drainage lines of Mulga (*Acacia aneura* subsp.) woodlands over a mixed shrub understorey on red loams or sands or sandy loams;

3. Mixed shrublands with emergent Mulga (*Acacia aneura* subsp.) on sandy and/or clay loams flats, some loam gravels with a stony mantle;

4. Low chenopod shrublands of *Cratystylis, Maireana,* and *Atriplex*; and

5. Salt lake margins with dense samphire (*Halosarcia* sp.).

Ninox Wildlife Consulting (2005) identified the vegetation condition to be 'degraded' to 'very good' (Keighery, 1994). The landforms and habitat found within the application area is considered as being well represented in the Pilbara bioregion (Ninox Wildlife Consulting, 2005; Mattiske Consulting Pty Ltd, 2011). The application area does contain habitats or faunal assemblages that are ecologically significant such as the gorges and rocky outcrops associated with the habitat type. Given the presence of locally significant habitat types such as the gorges and rocky outcrops, local fauna species are likely to be impacted by the proposed clearing of 24.55 hectares of native vegetation.

There is approximately 100% of the pre-European vegetation remaining within the Pilbara bioregion (Shepherd, 2009; GIS Database). Given the extent of the native vegetation remaining in the local area and bioregion, the vegetation to be cleared does not represent a significant ecological link.

There were no conservation significant fauna species listed as either Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* or protected under Western Australian legislation (*Wildlife Conservation Act, 1950*), that may potentially occur within a 20 kilometre radius of the application area (DEC, 2011). Ninox Wildlife Consulting (2005) conducted a level one fauna survey of the application area between 15 and 17 April 2005, and recorded no species of conservation significance within the application area. Fresh tracks of the Australian Bustard (Ardeotis australis) were noted in the sand in the south-west corner of the application area. This species is highly mobile and has a wide distribution therefore the proposed clearing is unlikely to significantly impact this species.

The proposed clearing of 24.55 hectares of native vegetation is not likely to impact critical feeding or breeding habitat for any conservation species (Ninox Wildlife Consulting, 2005).

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

Methodology
DEC (2011)
Keighery (1994)
Ninox Wildlife Consulting (2005)
Mattiske Consulting Pty Ltd (2011)
Shepherd (2009)
GIS Database:
- Pre-European Vegetation
- IBRA WA (regions - subregions)

(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 Declared Rare Flora (DRF) within the application area (GIS Database). A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases identified no DRF species as occurring within a 20 kilometre radius of the application area (DEC, 2011).

Mattiske Consulting Pty Ltd (2011) conducted a vegetation and flora survey of the application area during February 2011. No DRF were recorded within the survey area.

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

Methodology
DEC (2011)
Mattiske Consulting Pty Ltd (2011)
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 the available databases shows that there are no Threatened Ecological Communities situated within 100 kilometres 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 Murchison IBRA bioregion (GIS Database). The vegetation within the application area is recorded as Beard vegetation association 39: Shrublands; mulga scrub (GIS Database; Shepherd, 2009).

According to Shepherd (2009), Beard vegetation association 39 retains approximately 100**%** of its pre-European extent. Therefore, the area proposed to be cleared is not a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Murchison	28,120,586	28,120,586	~100	Least Concern	1.06
Beard vegetation associations - State					
39	6,613,569	6,613.469	~100	Least Concern	7.25
Beard vegetation associations - Bioregion					
39	1,148,400	1,148,400	~100	Least Concern	0.02

* Shepherd (2009)
** 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 (2009)
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 not likely to be at variance to this Principle

According to available databases there is a minor ephemeral watercourse which intersects the western side of the application area (GIS Database). This watercourse is only likely to flow after major rainfall events. Based on vegetation mapping by Mattiske Consulting Pty Ltd *(2011),* there is one riparian vegetation type associated with the watercourse;

- Low woodland of *Acacia aneura* var. *aneura* with *Acacia craspedocarpa* and *Acacia aneura* var. *macrocarpa, Acacia aneura* var. *fuliginea* and *Santalum spicatum* over *Eremophila galeata, Eremophila spectabilis, Monachather paradoxus* and *Eragrostis eriopoda* on red loams and sandy loams along drainage lines.

The condition of the riparian vegetation type is classified as 'good' (Keighery, 1994; GIS Database) and the clearing of some riparian vegetation is unlikely to result in any significant impact to vegetation growing in association with a watercourse or wetland. Xstrata Nickel Australasia Pty Ltd has expressed that the watercourse and vegetation type associated will not be affected by the proposed water management ponds (Mattiske Consulting Pty Ltd, 2011).

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

Methodology Mattiske Consulting Pty Ltd (2011)
GIS Database:
- Geodata, Lakes
- 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 available databases, the application area is comprised of the Violet land system (GIS Database). This land system is characterised by undulating stony and gravelly plains and low rises, supporting mulga shrublands (Pringle et al., 1994). Abundant mantles provide effective protection against soil erosion over most of this land system, except where the soil surface has been disturbed. In such circumstances, the soil becomes moderately susceptible to water erosion. Narrow drainage tracts are mildly susceptible to water erosion (Pringle et al., 1994).

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

Methodology

Pringle et al (1994)
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 is not located within any conservation area (GIS Database). The nearest conservation area is Wanjarri Nature Reserve, located approximately 12 kilometres north-east of the application area (GIS Database).

Given the distance of the application area from the Wanjarri Nature Reserve, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the environmental values of the conservation 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 application area is located within the proclaimed Goldfields groundwater area under the *Rights in Water and Irrigation Act 1994* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

There is one minor ephemeral watercourse passing through the application area which only supports surface water for short periods following significant rainfall events (GIS Database; Mattiske Consulting Pty Ltd, 2011). The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application area.

The application area lies within a low rainfall zone and any surface water within the application area is likely to only remain for short periods following significant rainfall events (BoM, 2011). The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application area.

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

Methodology

BoM (2011)
Mattiske Consulting Pty Ltd (2011)
GIS Database:
- Geodata, Lakes
- RIWI Act, Groundwater Areas
- Hydrography, Linear
- Public Drinking Water Source Areas

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

Comments

Proposal is not likely to be at variance to this Principle

The application area experiences an arid climate with mainly winter rainfall, with an annual average rainfall of approximately 261 millimetres per year (CALM, 2002; BoM, 2011). Based on an average annual evaporation rate of 2,800- 3,200 millimetres (BoM, 2011), any surface water resulting from rainfall events is likely to be relatively short lived.

Given the size of the area to be cleared (24.55 hectares) compared to the size of the Lake Carey catchment area (11,378,200 hectares) (GIS Database) it is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

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

Methodology BoM (2011)
CALM (2002)
GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, Linear

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

Comments

There is one Native Title claim (WC11/7) over the area under application. 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 is one registered Aboriginal Site of Significance within the application area (Site ID 821) (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 clearing permit application was advertised on 8 August 2011 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received in relation to the proposed clearing, stating no objection to the application.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

4. References

BoM (2011) Climate Statistics for Australian Locations. A Search for Climate Statistics for Leinster Aero, Australian Government Bureau of Meteorology, viewed 14 September 2011, <http://reg.bom.gov.au/climate/averages/tables/cw_012314.shtml>.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Murchison 1 (MUR1 - East Murchison subregion) Department of Conservation and Land Management, Western Australia.

DEC (2011) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, viewed 14 September 2011, <http://naturemap.dec.wa.gov.au>.

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.

Mattiske Consulting Pty Ltd (2011) Flora and Vegetation Survey of Proposed Evaporation Pond Extensions. Cosmos Nickel Project. Prepared for Xstrata Nickel Australasia Operations Pty Ltd, April 2011.

Ninox Wildlife Consulting (2005) Vertebrate fauna habitat assessment of the proposed expansions to the cosmos nickel mine, near Leinster, Western Australia. Prepared for URS Australia Pty Ltd, May 2005.

Pringle, H.J.R., Van Vreeswyk, A.M.E., & Gilligan, S.A (2004) An Inventory and Condition Survey of the north-eastern Goldfields, Western Australia, Department of Agriculture, Western Australia.

Shepherd, D.P. (2009) 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.

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.