



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4454/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: Mining Lease 45/629
Local Government Area: Shire of East Pilbara
Colloquial name: Quarry 8 Roadworks

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.3		Mechanical Removal	Road Construction

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 11 August 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database).</p> <p>175: Short bunch grassland - savanna/grass plain (Pilbara).</p> <p>A flora and vegetation survey of the application area and the surrounding Quarry 8 area was conducted by Ecologia Environment botanists in May 2008 (BHPBIO, 2008a). One vegetation association was identified within the application area and part of the application area was mapped as degraded (BHPBIO, 2008a).</p> <p>Sandy/clay plain: Sparse <i>Corymbia hamersleyana</i> low trees, over open to moderately dense <i>Acacia bivenosa</i>, <i>Acacia ancistrocarpa</i> and/or <i>Acacia pyrifolia</i> medium to tall shrubs, sometimes over sparse <i>Acacia maitlandii</i> low shrubs, over open mixed <i>Chrysopogon fallax</i> tussock and <i>Triodia pungens</i> hummock grasses.</p> <p>Degraded: No vegetation.</p>	<p>BHP Billiton Iron Ore Pty Ltd (BHPBIO) has applied to clear up to 0.3 hectares of native vegetation, within an application area of approximately 0.7 hectares, for the purpose of road construction. The clearing is required to expand a single lane creek crossing into a two way crossing. The application area is part of BHPBIO's Quarry 8 site, located approximately 70 kilometres east of Wittenoom.</p> <p>Vegetation will be cleared by mechanical means.</p>	<p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994);</p> <p>To:</p> <p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).</p>	<p>The vegetation condition was assessed by botanists from Ecologia Environment (BHPBIO, 2008a).</p>

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 Chichester subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by plains supporting a shrub steppe of *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation association 175, which has approximately 100% of its pre-European extent remaining in the bioregion (Shepherd, 2009; GIS Database). Ecologia Environment conducted a flora and vegetation survey of the application area and the surrounding Quarry 8 area in May 2008 and identified one vegetation type present within the application area (BHPBIO, 2008a). This vegetation type is common in the Pilbara region (BHPBIO, 2008a).

The Quarry 8 flora survey recorded 170 flora taxa with the most species rich genera being *Acacia*, *Ptilotus* and *Senna* (BHPBIO, 2008a). The survey area is much larger than the application area, 190 hectares compared to 0.7 hectares, and contains a greater range of vegetation types (BHPBIO, 2008a). The floristic richness of the Quarry 8 survey area is comparable with other areas surveyed in the Pilbara (BHPBIO, 2008a).

No Declared Rare Flora, Priority Flora species, Threatened Ecological Communities or Priority Ecological Communities were recorded within the application area (BHPBIO, 2008a; GIS Database). One previous Priority 3 flora species, *Hibiscus brachysiphonius*, was recorded during the Quarry 8 survey in close vicinity to the application area (BHPBIO, 2008a). However, this species has since been removed from the Priority Flora listings as its distribution is more widespread than previously thought (BHPBIO, 2011; Western Australian Herbarium, 2011).

Nine introduced flora species were recorded within the Quarry 8 flora survey area (BHPBIO, 2008a). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The fauna habitat within the application area is broadly described as "Sandy/clay plain" with the habitat type "Creek bank/bed" in very close proximity (BHPBIO, 2008b). These fauna habitat types are typical of the subregion (BHPBIO, 2008b).

The application area is adjacent to an existing operating quarry and the majority of the application area is already degraded (BHPBIO, 2011). Considering the amount of disturbance already present, and the wide availability of the vegetation type and fauna habitat types, the application area is not likely to comprise a greater diversity than similar areas either locally or at a bioregional scale.

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

Methodology

BHPBIO (2008a)
BHPBIO (2008b)
BHPBIO (2011)
CALM (2002)
Shepherd (2009)
Western Australian Herbarium (2011)
GIS Database:
- Declared Rare and Priority Flora List
- 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

A desktop fauna assessment was conducted by Ecologia Environment, combined with a reconnaissance survey over the Quarry 8 area including the application area (BHPBIO, 2008b). The reconnaissance survey was conducted in May 2008 and this included describing the fauna habitats of the survey area (BHPBIO, 2008b).

Five broad fauna habitat types were described for the Quarry 8 area and, based on the described vegetation type and landform, the fauna habitat type within the application area is "Sandy/clay plain" (BHPBIO, 2008b). The application area is also close to the habitat type "Creek bank/bed" (BHPBIO, 2008b). Plains with sandier substrates may attract fauna that occupy or nest in burrows while creeklines support a variety of fauna and can include microhabitats such as soft sandy walls, tree hollows and soft alluvial sands (BHPBIO, 2008b). Both of these fauna habitat types are typical of the Chichester subregion and occur both locally and throughout the subregion (BHPBIO, 2008b).

Several species of conservation significant fauna may utilise the application area for foraging activities but the area is unlikely to provide core habitat or significant breeding grounds for any species (BHPBIO, 2008b). There are no suitable roosting sites for bats or cracking clays within the application area (BHPBIO, 2008a, 2008b). Although a targeted fauna survey was not undertaken, observations were made of tracks, scats and burrows during the survey and none were found belonging to conservation significant fauna (BHPBIO, 2008b). There is free-standing water nearby in the Quarry 8 area but it does not have sandy embankments so the likelihood that migratory wader species utilise the habitats at Quarry 8 is low (BHPBIO, 2008b).

The application area is adjacent to an operating quarry and the majority of the application area is in degraded condition (BHPBIO, 2011). This severely diminishes the quality of fauna habitats available. Given the availability of similar fauna habitat types throughout the subregion, the degraded condition of the habitats and the small size of the application area, the application area is not likely to represent 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 BHPBIO (2008a)
BHPBIO (2008b)
BHPBIO (2011)

(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 known records of Declared Rare Flora (DRF) within the application area (GIS Database). The nearest record of DRF is located approximately 75 kilometres south-west of the application area (GIS Database).

A flora and vegetation survey of the Quarry 8 area, including the application area, was conducted by Ecologica Environment botanists in May 2008 (BHPBIO, 2008a). No DRF species were recorded during the survey (BHPBIO, 2008a).

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

Methodology BHPBIO (2008a)
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 revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC, *Themeda* grasslands on cracking clays, is located approximately 110 kilometres west of the application area (GIS Database).

No TECs were identified during the flora and vegetation survey conducted by Ecologica Environment over the application area (BHPBIO, 2008a).

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

Methodology BHPBIO (2008a)
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 clearing application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 99.9% of the pre-European vegetation remains (see table) (Shepherd, 2009; GIS Database). This gives it a conservation status of "Least Concern" according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation association 175 "Short bunch grassland - savanna/grass plain (Pilbara)" (GIS Database). According to Shepherd (2009) approximately 99.7% of Beard vegetation association 175 remains at the state level and approximately 100% remains at a bioregional level. This vegetation association would be given a conservation status of "Least Concern" at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in an area that has been extensively cleared.

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,193	17,785,001	~99.9	Least Concern	6.3
Beard Veg Assoc. – State					
175	526,206	524,861	~99.7	Least Concern	4.2
Beard Veg Assoc. – Bioregion					
175	507,036	507,006	~100	Least Concern	4.4

* 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 at variance to this Principle

The application area contains a creekline and the purpose of the clearing is to widen the existing single lane creek crossing, therefore the application will require the clearing of up to 0.3 hectares of riparian vegetation (BHPBIO, 2011; GIS Database). This creekline is ephemeral with flow dependent on rainfall events (BHPBIO, 2011). There are no permanent watercourses or wetlands within the application area (GIS Database).

The existing creek crossing has culverts to allow for the flow of water under the road and these will be extended underneath the enlarged section of the road (BHPBIO, 2011). Clearing will be minimised where possible and the road will be rehabilitated following the closure of the quarry (BHPBIO, 2011). Due to the small size of the proposed clearing, the degraded condition of the vegetation and the management strategies BHPBIO will implement, the clearing is expected to have limited environmental impact (BHPBIO, 2011).

Based on the above, the proposed clearing is at variance to this Principle. However, given the management strategies to be implemented and the small size of the clearing, the proposed clearing is unlikely to significantly impact on riparian vegetation other than the 0.3 hectares that will be cleared. Vegetation associated with minor drainage lines is widespread in the Pilbara region and given the degraded condition of the vegetation it is not considered to be high quality riparian vegetation.

Methodology BHPBIO (2011)
GIS Database:
- Hydrography, Linear
- Rivers

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

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

According to available datasets the application area is within the Wona Land System (GIS Database). The Wona Land System is characterised by basalt upland gilgai plains supporting tussock grasslands and minor hard spinifex grasslands (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion except if the stony mantle is removed (Van Vreeswyk et al., 2004).

The clearing of vegetation associated with the creekline has the potential to cause soil erosion but water flow will be managed through the extension of culverts under the expanded creek crossing (BHPBIO, 2011).

Given the small size of the proposed clearing and BHPBIO's management procedures, the clearing is not likely to result in appreciable land degradation.

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

Methodology BHPBIO (2011)
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 areas are the ex-Mulga Downs Station, a proposed DEC 2015 pastoral lease exclusion, and Karijini National Park (GIS Database). These are located approximately 25 kilometres south and 38 kilometres south-west of the application area, respectively (GIS Database). A large proportion of the vegetation in the Pilbara bioregion remains uncleared, approximately 99.9% (Shepherd, 2009), so it is unlikely that the application area provides an important buffer or ecological linkage to these conservation areas.

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

Methodology Shepherd (2009)
GIS Database:
- DEC Tenure
- DEC Proposed 2015 Pastoral Lease Exclusions

(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 watercourses or wetlands within the application area (GIS Database). There is an ephemeral creekline and up to 0.3 hectares of riparian vegetation associated with this creekline will be cleared (BHPBIO, 2011; GIS Database). The flow of this creekline is dependent on rainfall events (BHPBIO, 2011). The existing creek crossing has culverts to allow for the flow of water under the road and these will be extended underneath the enlarged section of the road (BHPBIO, 2011). While some soil erosion may occur during the construction phase of the creek crossing, given the surface water management procedures to be implemented by BHPBIO and the small size of the clearing, any decrease in surface water quality is likely to be minor and temporary.

According to available databases the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Nullagine Water Reserve, which is approximately 110 kilometres east of the application area (GIS Database). The small area of the proposed clearing (0.3 hectares) is unlikely to cause deterioration in the quality of underground water.

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

Methodology BHPBIO (2011)
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 Shaw River catchment area of the De Grey River basin (GIS Database). Given the size of the area to be cleared (0.3 hectares) in relation to the size of the catchment area (790,203 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

Massive surface water runoff and localised flooding occurs following intense rainfall events (BHPBIO, 2011), as is common in the Pilbara region. Given the small size of clearing and the proposed extension of the existing culverts to manage water flow of the creekline (BHPBIO, 2011), the proposed clearing is unlikely to concentrate water volumes enough to cause or exacerbate flooding.

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

Methodology BHPBIO (2011)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There are two Native Title Claims (WC98/62 and WC10/17) over the area under application (GIS Database). These claims have 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 no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 11 July 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology GIS Database:

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

4. References

- BHPBIO (2008a) Rapid Growth Project 5 (RGP5) Quarry Eight Extension Rare and Priority Flora Survey. Prepared by Ecologia Environment for BHP Billiton Iron Ore Pty Ltd, July 2008.
- BHPBIO (2008b) RGP5 Level 1 Fauna Survey: Quarry 8. Prepared by Ecologia Environment for BHP Billiton Iron Ore Pty Ltd, July 2008.
- BHPBIO (2011) Quarry 8 Roadworks, Application for a Native Vegetation Clearing Permit Under the *Environmental Protection Act 1986*. Prepared by BHP Billiton Iron Ore Pty Ltd, June 2011.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, 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.
- Van Vreeswyk A.M.E., Payne A.L., Leighton K.A. and Hennig P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Perth, Western Australia.
- Western Australian Herbarium (2011) FloraBase - The Western Australia Flora. Department of Environment and Conservation. URL: <http://florabase.dec.wa.gov.au> (Accessed 1/8/2011).

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.