Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2550/1

Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: Special Lease 3116/3687, Document No I 154279 L, *Iron Ore (Mt Newman) Agreement Act 1964.* Mineral Lease 244SA (AML 70/244).

Local Government Area: Shire of East Pilbara

Colloquial name: Jimblebar Junction to Newman Hub Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
98		Mechanical Removal	Railway construction and maintenance, and associated works.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The area applied to clear has been broadly mapped at a scale of 1:250,000 as:

Beard Vegetation Association 18 - Low woodland; Mulga (*Acacia aneura*);

Beard Vegetation Association 29 - Sparse low woodland; Mulga, discontinuous in scattered groups; and

Beard Vegetation Association 82 - Hummock grasslands, low tree steppe; Snappy Gum over *Triodia wiseana*.

Ecologia Environment Pty Ltd (2008a) conducted a level 1 flora and vegetation survey of the proposed clearing area between 18 and 19 October 2007 in order to describe finer scale vegetation types within the proposed rail duplication area than those described by Beard vegetation mapping. The flora and vegetation survey consisted of 12 quadrats, each 50 metres x 50 metres (the standard size for surveys carried out in the Pilbara). In addition, 12 transects were walked through different vegetation types along the length of the proposed rail duplication to ensure that a representative species list was produced for the survey area.

The following six vegetation units (associated with three distinct landforms) were described from the proposed clearing area:

Landform 1 - Rocky hillslope

Vegetation unit 1a - Sparse *Eucalyptus leucophloia subsp. leucophloia* low trees over sparse mixed low shrubs dominated by *Eremophila fraseri* over open mixed *Triodia wiseana* and *Triodia pungens* hummock grasses (transect 4);

Vegetation unit 1b - Open *Eucalyptus leucophloia subsp. leucophloia* low trees, over isolated *Eucalyptus gamophylla* mallee trees, over open to moderately dense *Acacia bivenosa* tall to medium shrubs, over moderately dense *Petalostylis labicheoides* medium shrubs, over open *Ptilotus obovatus* and *Tribulus suberosus* low shrubs, over open mixed tussock grasses with moderately dense mixed *Triodia sp.* Shovelanna Hill and *Triodia pungens* hummock grasses (quadrat 5);

Landform 2 - Drainage channels/ Creek line

Vegetation unit 2 - Open Eucalyptus spp. medium trees over mixed shrubs and tussock grasses sometimes with sedges.

This vegetation unit was recorded at three separate locations along the length of the proposed rail duplication, with slightly different species composition at each location:

Open *Eucalyptus camaldulensis var. obtusa* medium to low trees over sparse *Petalostylis labicheoides* tall shrubs over moderately dense *Typha domingensis* sedges with open **Cenchrus ciliaris* tussock grass (quadrat 4);

Open *Eucalyptus victrix* medium to low trees, over open *Abutilon amplum* low shrubs, over sparse *Pterocaulon sphaeranthoides* very low shrubs, with moderately dense **Cenchrus ciliaris* tussock grass (quadrat 9); and

Open *Eucalyptus camaldulensis var. obtusa* medium to tall trees, over sparse *Acacia citrinoviridis* tall shrubs, over

sparse *Acacia inaequilatera* low shrubs with open, mixed tussock and *Triodia pungens* hummock grasses (transect 10).

Landform 3 - Plain

Vegetation unit 3a - Moderately dense *Acacia citrinoviridis* woodland.

At a finer scale, Vegetation unit 3a consisted of:

Moderately dense *Acacia citrinoviridis*, sometimes with *Acacia aneura var. ?aneura* medium trees, over scattered mixed *Corymbia aspera* and *Corymbia ?candida subsp. dipsodes* low trees, over scattered *Rhagodia eremaea* medium shrubs, over moderately dense **Cenchrus ciliaris* tussock grass (transect 3 and quadrat 6); and

Open *Eucalyptus camaldulensis var. obtusa* tall to medium trees, over moderately dense *Acacia citrinoviridis* tall shrubs, over sparse *Acacia inaequilatera* low shrubs, with open mixed tussock and *Triodia pungens* hummock grasses (transect 10).

Vegetation unit 3b - Sparse to open patches of *Acacia aneura* low trees over sparse mixed shrubs and open mixed hummock and tussock grasses.

Vegetation unit 3b can be described at a finer scale and consisted of:

Occasional isolated *Corymbia aspera* medium trees, over open *Acacia aneura var. ?aneura* and sparse *Hakea lorea subsp. lorea* low trees, over sparse mixed Acacia spp. medium to tall shrubs (*Acacia aneura var. ?aneura*, *Acacia var. aff. aneura* (narrow fine veined; site 1259, *Acacia pyrifolia*, *Acacia pachyacra*, *Acacia bivenosa*, *Acacia synchronicia* and *Acacia dictyophleba*), sometimes with sparse *Petalostylis labicheoides* tall shrubs sometimes over sparse mixed Senna spp. low shrubs, with open mixed **Cenchrus ciliaris* tussock and *Triodia pungens* hummock grasses (quadrats 2 and 8; transects 1, 7, 8 and 11);

Isolated *Corymbia aff. hamersleyana* medium trees over isolated *Corymbia aspera* low trees over open *Acacia aff. aneura* (narrow fine veined; site 1259) over *Acacia pyrifolia* tall shrubs over moderately dense *Enneapogon intermedius* tussock grasses and sparse *Triodia pungens* hummock grass (quadrat 10);

Moderately dense *Acacia aff. aneura* (narrow fine veined; site 1259), *Corymbia aspera*, *Corymbia hamersleyana* and *Hakea lorea subsp. lorea* medium to low trees over open *Acacia synchronicia* and *Rhagodia eremaea* tall shrubs or *Senna artemisioides aff. subsp oligophylla* (thinly sericeous) shrubs, over open *Themeda triandra* and **Cenchrus ciliaris* tussock grasses (transect 5); and

Scattered *Acacia aff. aneura* (narrow fine veined; site 1259) tall shrubs, over sparse *Acacia aff. aneura* (narrow fine veined; site 1259) medium shrubs, over sparse *Senna artemisioides subsp. oligophylla x helmsii* medium shrubs, over sparse *Sclerolaena cornishiana* low shrubs, with open mixed tussock and sparse to open *Triodia pungens* hummock grasses (transect 9).

Vegetation unit 3c - Scattered Eucalyptus and Corymbia spp. low trees, over open to moderately dense Acacia spp. medium to high shrubs.

At a finer scale, Vegetation unit 3c consisted of:

Isolated individual *Corymbia hamersleyana* medium trees, over open *Eucalyptus xerothermica* mallee trees, over open *Petalostylis labicheoides*, *Acacia synchronicia* and *Acacia sclerosperma subsp. sclerosperma* tall shrubs, over open *Senna artemisioides subsp. oligophylla x helmsii*, *Senna artemisioides subsp. artemisioides* and *Acacia sclerosperma subsp. sclerosperma* low shrubs, with sparse to open **Cenchrus ciliaris* tussock and *Triodia pungens* hummock grasses (quadrats 3, 7 and 12; transect 2);

Isolated *Corymbia aspera* / *Hakea lorea subsp. lorea* low trees, over sparse *Eucalyptus gamophylla* mallee trees, over sparse *Acacia synchronicia* tall shrubs, over isolated *Senna artemisioides subsp. oligophylla x helmsii* low shrubs, with open **Cenchrus ciliaris* tussock and sparse *Triodia pungens* hummock grasses (quadrat 11);

Sparse *Eucalyptus xerothermica* and *Hakea lorea subsp. lorea* low trees, over moderately dense *Acacia pachyacra*, *Acacia bivenosa* and *Petalostylis labicheoides* tall to medium shrubs, over moderately dense **Cenchrus ciliaris* tussock grass (transect 6);

Isolated *Acacia citrinoviridis* and *Eucalyptus leucophloia subsp. leucophloia* low trees over open to moderately dense (in patches) *Acacia bivenosa* and *Acacia synchronicia* tall to medium shrubs, over open **Cenchrus ciliaris* tussock and open *Triodia pungens* hummock grasses (quadrat 1);

Sparse *Corymbia aspera* medium trees, over moderately dense *Petalostylis labicheoides* tall shrubs, over sparse *Eucalyptus gamophylla* low mallee trees, over open mixed Acacia spp. medium shrubs, over moderately dense **Cenchrus ciliaris* tussock grass (transect 8); and

Scattered *Corymbia aff. hamersleyana* low trees, over *Acacia sclerosperma subsp. sclerosperma* and *Acacia inaequilatera* medium shrubs, over open to moderately dense **Cenchrus ciliaris* tussock grass (transect 10).

* = introduced flora species

Clearing Description

BHP Billiton Iron Ore Pty Ltd (BHP Billiton) have applied for a Purpose Permit to clear up to 98 hectares of native vegetation within a boundary of approximately 161 hectares to duplicate a 21 kilometre section of the Newman to Port Hedland railway line between Jimbleber Junction and Newman Hub (BHP Billiton, 2008a). The Jimblebar Junction to Newman Hub rail duplication is one stage in the proposed duplication of the entire Newman to Port Hedland railway line.

The rail duplication project will consist of construction of additional rail formation and rail line, duplication of bridges

at Homestead Creek and Whaleback Creek, upgrades to signalling infrastructure, installation of power communications and cabling, establishment of access roads, installation of a weighbridge, monitoring equipment, borrow pits and laydown areas (BHP Billiton, 2008a).

All of the proposed vegetation clearing is within the existing rail lease (Special Lease 3116/3687) which is approximately 80 metres wide. Vegetation clearing will be undertaken using mechanical means.

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

Comment The vegetation condition rating is based on results from the flora and vegetation survey of the proposed clearing area which was conducted by Ecoogia Environment Pty Ltd (2008a) between 18 and 19 October 2007.

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 proposed clearing area is located north and east of Newman in the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Hamersley subregion is characterised by sedimentary ranges and plateaux, dissected by gorges (Kendrick, 2001). 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 (Kendrick, 2001). Subregional drainage flows into one of three major rivers, these being: Fortescue (to the north), Ashburton (to the south), or Robe (to the west) (Kendrick, 2001). Rare features of the subregion include gorges of the Hamersley Ranges (particularly those within Karijini National Park), Palm Spring, Duck Creek and Themeda grasslands (Kendrick, 2001).

The proposed vegetation clearing is located within the existing Newman to Port Hedland rail corridor (approximately 80 metres wide) and spans some 21 kilometres between Newman Hub and Jimblebar Junction. Ecologia Environment Pty Ltd (2008a) described six vegetation units from three broad landform types during a level 1 flora and vegetation survey of the proposed clearing area. A total of 126 vascular flora taxa were recorded from 58 genera and 29 families. This is considered to be a moderate level of floristic diversity in comparison to similar sized areas surveyed elsewhere in the region (Ecologia Environment Pty Ltd, 2008a). No Declared Rare Flora (DRF), Priority Flora, Threatened Ecological Communities (TEC's) or Priority Ecological Communities (PEC's) were recorded during the survey (Ecologia Environment Pty Ltd, 2008a).

Ecologia Environment Pty Ltd (2008a) recorded seven introduced flora species within the proposed clearing area: Buffel Grass (*Cenchrus ciliaris*), Ruby Dock (*Acetosa vesicaria*), Birdwood Grass (*Cenchrus setiger*), Kapok Bush (*Aerva javanica*), Feathertop Rhodes Grass/Windmill Grass (*Chloris virgata*), Spiked Malvastrum (*Malvastrum americanum*) and Mimosa Bush (*Vachellia farnesiana*). Of these introduced flora species, Buffel Grass was the most prevalent in the proposed clearing area. This species has become widespread in most vegetation types along roadsides, creeklines and river edges from Shark Bay to the Pilbara (Hussey et al, 1997 cited in Ecologia Environment Pty Ltd; 2008a). Within the proposed clearing area, Buffel Grass was recorded at 25 separate locations spanning the length of the proposed rail duplication (mostly at 10 - 30% but up to 30 - 70% cover in some areas). Spiked Malvastrum (recorded nine times) and Ruby Dock (recorded five times) were mostly restricted to a one kilometre section of the proposed duplication (chainages 417 - 418*), whilst the remaining introduced flora species were generally isolated occurrences.

The presence of introduced flora species lowers the biodiversity value of the proposed clearing area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

From a faunal perspective, three broad habitat types occur in the proposed clearing area, containing numerous micro - environments. Ecologia Environment Pty Ltd (2008b) concluded that none of the landforms or habitat types recorded are unique at the local or regional level. All habitat types recorded are well represented throughout the Hamersley Ranges and Pilbara bioregion. Whilst a number of fauna species indigenous to Western Australia are expected to use habitat within the proposed clearing area, this habitat is not considered significant habitat (Ecologia Environment Pty Ltd, 2008b).

Based on the above, the proposed clearing area is unlikely to support a high level of biological diversity. Furthermore, the proposed clearing area is degraded and is not likely to be as diverse as other undisturbed areas in the Pilbara bioregion or Hamersley subregion.

The proposed clearing is not likely to be at variance to this Principle.

* chainages are a kilometre distance along the railway from the zero point at Port Hedland.

Methodology

Ecologia Environment Pty Ltd (2008a).
Ecologia Environment Pty Ltd (2008b).
Kendrick (2001).
GIS Database:

- Interim Biogeographic Regionalisation for Australia (Subregions).

(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

Ecologia Environment Pty Ltd (2008b) were commissioned by BHP Billiton to undertake a level 1 vertebrate fauna survey of the proposed Newman Hub to Jimblebar Junction rail duplication project area. The survey was conducted in accordance with Environmental Protection Authority (EPA) Position Statement 3: 'Terrestrial Biological Surveys as an element of biodiversity protection' and Guidance Statement 56: 'Guidance for the Assessment of Environmental Factors - terrestrial fauna for Environmental Impact Assessment in Western Australia' (EPA, 2002; 2004a). The survey consisted of the following desktop and field-based methods:

- reviewing results of numerous level 2 fauna surveys previously undertaken in the surrounding area;
- consulting databases (Western Australian Museum FaunaBase, Department of Environment and Conservation (DEC) Threatened fauna database, Birds Australia Birdata and Department of Environment and Water protected matters database); and
- undertaking a reconnaissance survey of the project area between 13 and 14 November 2007.

The reconnaissance survey involved opportunistic sampling methods at 17 sites within the proposed clearing area. Site selection was based on vegetation and fauna habitat present, ensuring that all vegetation and habitat types along the rail corridor were sampled (Ecologia Environment Pty Ltd, 2008b). Twenty minute avifauna surveys were carried out at each of the 17 sites, concentrating on the optimal hours for bird surveying (three hours post dawn and three hours pre-dusk) and searching an area of two hectares at each site. Spotlighting, hand searching, opportunistic sightings and secondary evidence (tracks, scats, burrows, diggings, nests) were methods used to sample reptile and mammal fauna. One limitation of the survey was the inability to sample for amphibians given that the survey was conducted during Spring, prior to Summer rainfall (Ecologia Environment Pty Ltd, 2008b).

The purpose of the vertebrate fauna survey was to compile a potential species list for the proposed clearing area, broadly describe the main habitat types present, and search for the presence or evidence of conservation significant species. Following the survey, a risk assessment was undertaken to identify potential impacts to fauna associated with vegetation clearing and to recommend strategies to avoid, minimise and mitigate these impacts (Ecologia Environment Pty Ltd, 2008b).

Three broad habitat types were identified during the fauna survey:

1. Open floodplain;
2. Rocky hillside; and
3. Minor drainage line.

Open floodplain areas accounted for a majority of the project corridor. Habitat was predominately Mulga and other mixed Acacia species forming an open woodland or shrubland on grasses (Triodia spp, Eragrostis spp, Aristida spp and Buffel Grass) on stony and loam/sandy soils. Ecologia Environment Pty Ltd (2008b) reported that the vertebrate fauna assemblages in this habitat type would be expected to differ based on ground cover and soil type. One dragon species (*Ctenophorus isolepis*) was found to be localised to the open floodplain habitat, favouring areas of moderately dense to open Triodia spp. A number of generalist reptiles were present in this habitat type, whilst none of the birds recorded on the open floodplains were specialised to this habitat type.

Rocky hillside habitats included a variety of microhabitats such as crevices, rocky outcrops and rocky slopes which provide suitable habitat for a suite of species including the Rock Ring-tailed Dragon (*Ctenophorus caudicinctus*), Pygmy Python (*Antaresia perthensis*) and Western Pebble-mound Mouse (*Pseudomys chapmani*). Ecologia Environment Pty Ltd (2008b) also reported the potential for cave systems to be present within hillsides and gullies, although no such systems were recorded during the reconnaissance survey of the project area.

Minor drainage lines were described by Ecologia Environment Pty Ltd (2008b) as flat, stony creek beds lined with riparian vegetation including old and young Eucalypts and sparse to moderately dense *Acacia aneura* trees. The Long-nosed water Dragon (*Lophognathus longirostris*) was recorded in this habitat during the reconnaissance survey and was only recorded in this habitat type. Ecologia Environment Pty Ltd (2008b) reported that the Pilbara Olive Python (*Liasis olivaceus barroni*) (listed as Vulnerable under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999)* could potentially occur in this habitat type where suitable micro - environments occur.

Conservation significant fauna most likely to be impacted by the proposed clearing include:

- Rainbow Bee-eater (*Merops ornatus*) - Marine and Migratory (*EPBC Act 1999* and Japan-Australia Migratory Bird Agreement);
- Pilbara Olive Python (*Liasis olivaceus barroni*) - Vulnerable (*EPBC Act 1999*); and
- Western Pebble-mound Mouse (*Pseudomys chapmani*) - Priority 4 on the DEC's Threatened and Priority Fauna list.

The Rainbow Bee-eater was the only fauna species of conservation significance recorded within the proposed clearing area by Ecologia Environment Pty Ltd (2008b). This species is a widespread and common migrant to many parts of Australia, including the Pilbara bioregion. The Rainbow - Bee eater is known to occur in a variety of habitats including open forests, woodlands, shrublands, grasslands and semi-cleared habitats (including farmlands and areas of human habitation (Department of the Environment, Water, Heritage and the Arts, 2008a). In semi-arid and arid areas, this species often occurs in riparian and floodplain vegetation assemblages. The species nests from August to January, typically digging tunnels in sandy embankments (Ecologia Environment Pty Ltd, 2008b). If nesting in the proposed clearing area, disturbance from vegetation clearing may result in adults abandoning their chicks. Similarly, chicks face direct mortality from machinery during the clearing operations (Ecologia Environment Pty Ltd, 2008b). Given the wide distribution and habitat range of the Rainbow Bee-eater, the existing rail corridor is unlikely to be representative of significant habitat for this species.

The Pilbara Olive Python is restricted to ranges within the Pilbara region, preferring deep gorges and water holes. Radio telemetry has shown that individuals occupy a distinct home range and are usually in close proximity to water and rock outcrops (Department of the Environment, Water, Heritage and the Arts, 2008b). Males are known to travel long distances during the breeding season (June and July). The Pilbara Olive Python has previously been recorded in the vicinity of the Orebody 24 project area, located in the Ophthalmia Ranges approximately 1 - 4 kilometres west and north of the proposed clearing area. This species was found in a gorge near a creekline in this instance. ENV (2006) report that there is extensive habitat suitable for the Pilbara Olive Python in the Ophthalmia Ranges and the regional vicinity. It is noted that a large portion of this species habitat is conserved within the Karijini National Park (Department of the Environment, Water, Heritage and the Arts, 2008b).

Whilst not found within the proposed clearing area during the brief reconnaissance survey, Ecologia Environment Pty Ltd (2008b) report that the Pilbara Olive Python could potentially occur in rocky areas near the creekline in the western part of the proposed clearing area, close to Newman Hub. Given that no permanent pools of water were found within the rail corridor (including Homestead Creek and Whaleback Creek), Ecologia Environment Pty Ltd (2008b) advise that the proposed clearing area is unlikely to support resident Pilbara Olive Pythons. The species could occur transiently in the area when water is present, although habitat proposed to clear is considered marginal in comparison to other locations where the Pilbara Olive Python has been recorded previously, given there were no pools or gullies with watercourses present (Ecologia Environment Pty Ltd, 2008b).

The Western Pebble-mound Mouse has been frequently recorded in the Pilbara bioregion by Ecologia Environment Pty Ltd during vertebrate fauna surveys for BHP Billiton. Suitable habitat for this species typically consists of sloping land, between 2 and 6 degrees (Start et al, 2000). Soils are stony, often shallow and skeletal (Start et al, 2000). *Triodia basedowii* or *Triodia wiseana* dominate the understorey vegetation (Start et al, 2000). The Western Pebble-mound Mouse was not recorded during the reconnaissance survey of the proposed clearing area by Ecologia Environment Pty Ltd (2008b), nor were any pebble mounds located. Notwithstanding, Ecologia Environment Pty Ltd (2008b) report that this species could potentially utilise habitat in rocky areas near Newman Hub and Jimblebar Junction. BHP Billiton should make all contractors aware that Western Pebble-mound Mouse mounds may be present in rocky places within the project area, and that these should be avoided wherever possible.

Ecologia Environment Pty Ltd (2008b) reported that none of the landforms or fauna habitats encountered during the rail corridor survey were considered to be unique at the local or regional level. The Hamersley subregion is extensive (approximately 6.25 million hectares) and the proposed clearing is not expected to result in a significant loss of habitat types that are not well represented elsewhere in the subregion.

It is acknowledged that the proposed clearing area includes a variety of habitats which would be expected to support an array of vertebrate fauna species. Mortality (particularly of sedentary species) will be an inevitable impact of vegetation clearing. Other impacts include displacement of fauna, however this will be localised given that all of the proposed clearing will be within the existing rail corridor to within 40 metres of the existing rail line. Dust and noise associated with vegetation clearing and subsequent construction works is likely to disrupt local fauna populations temporarily (Ecologia Environment Pty Ltd, 2008b).

The existing rail line already represents a significant barrier for some fauna species and the proposed duplication is not likely to exacerbate this for the majority of species. Ecologia Environment Pty Ltd (2008b) rate fire as the greatest risk to adjacent habitats during the vegetation clearing and construction works. It is of paramount importance that BHP Billiton implement appropriate fire prevention strategies to minimise this risk.

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

Methodology

Department of Environment, Water, Heritage and the Arts (2008a).
Department of Environment, Water, Heritage and the Arts (2008b).
Ecologia Environment Pty Ltd (2008b).
ENV (2006).
EPA (2002).
EPA (2004a).
Start et al. (2000).

(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

Ecologia Environment Pty Ltd (2008a) undertook a level 1 flora and vegetation survey of the proposed clearing area in accordance with Environmental Protection Authority (EPA) Position Statement 3: 'Terrestrial Biological Surveys as an element of biodiversity protection' and Guidance Statement 51: 'Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia' (EPA, 2002; 2004b). The survey included a desktop literature review of other Ecologia flora and vegetation surveys undertaken in the Pilbara and a search of Department of Environment and Conservation (DEC) databases to compile a potential DRF and Priority Flora species list for the proposed clearing area.

According to available databases, there are no known records of Declared Rare Flora (DRF) within the proposed clearing area (GIS Database). Two Declared Rare Flora species are known from the Pilbara bioregion - *Lepidium catapycnon* and *Thryptomene wittweri*. *Lepidium catapycnon* has previously been recorded approximately six kilometres west of Newman Hub (GIS Database). Neither species was recorded by Ecologia Environment Pty Ltd (2008a) during a flora and vegetation survey of the proposed clearing area.

According to available databases, there are no known records of Priority Flora within the proposed clearing area (GIS Database). A total of 93 Priority Flora species are known from the Pilbara bioregion to date, of which Ecologia Environment Pty Ltd (2008a) deem 19 could potentially occur in the proposed clearing area based on habitat preferences and known distributions:

1. *Acacia levata* (P1)
2. *Acacia leeuweniana* (P1)
3. *Acacia subtiliformis* (P3)
4. *Bulbostylis burbidgeae* (P3)
5. *Cynanchum sp. Hamersley* (P3)
6. *Dampiera metallorum* (P3)
7. *Eremophila spongiocarpa* (P1)
8. *Eremophila sp. Ophthalmia Range* (P1)
9. *Eremophila youngii subsp. lepidota* (P4)
10. *Gonocarpus ephemerus* (P2)
11. *Goodenia nuda* (P3)
12. *Goodenia sp. East Pilbara* (P1)
13. *Gymnanthera cunninghamii* (P3)
14. *Hibiscus brachysiphonius* (P3)
15. *Ischaemum albovillosum* (P2)
16. *Rhynchosia bungarensis* (P3)
17. *Stylidium weeliwolli* (P2)
18. *Tephrosia sp. Cathedral Gorge* (P3)
19. *Triumfetta leptacantha* (P3)

Ecologia Environment Pty Ltd (2008a) did not locate any Priority Flora species during a flora and vegetation survey of the proposed clearing area.

The vegetation communities present within the proposed clearing area are typical of those found within the Hamersley subregion, as described by Kendrick (2001) and Beard (1975), cited in BHP Billiton (2008a). It is not expected that the proposed clearing will result in a loss of significant habitat necessary for the continued in situ existence of DRF or Priority Flora species.

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

Methodology

BHP Billiton (2008a).
Ecologia Environment Pty Ltd (2008a).
EPA (2002).
EPA (2004b).
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

According to available GIS Databases, there are no known Threatened Ecological Communities (TEC's) within the proposed clearing area (GIS Database).

Ecologia Environment Pty Ltd (2008a) undertook a level 1 flora and vegetation survey of the proposed clearing area between the 18th and 19th October 2007. Six vegetation units were described from the survey area, all of which are typical of those previously described for the local area. No TEC's or Priority Ecological Communities (PEC's) were recorded (Ecologia Environment Pty Ltd, 2008a).

It is noted that the proposed clearing area is within the buffer zone of TEC 78: Ethel Gorge groundwater aquifer stygobiont community (BHP Billiton, 2008a). This TEC occurs in the Ethel Gorge groundwater aquifer beneath the existing Orebody 23 open pit. Groundwater drawdown is listed as a threatening process for the Ethel Gorge stygofauna (Kendrick,2001), however the proposed clearing is not expected to have any effect on groundwater levels.

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

Methodology BHP Billiton (2008a).
Ecologia Environment Pty Ltd (2008a).
Kendrick (2001).
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 area applied to clear is within the Interim Biogeographic Regionalisation for Australia (IBRA) Pilbara bioregion (GIS Database). According to Shepherd et al (2001) there is approximately 99.9% of the pre-European vegetation remaining in the Pilbara bioregion. The vegetation of the application area is classified as Beard Vegetation Association 18 - Low woodland; mulga (*Acacia aneura*); Beard Vegetation Association 29 - Sparse low woodland; Mulga, discontinuous in scattered groups; and Beard Vegetation Association 82 - Hummock grasslands, low tree steppe; Snappy Gum over *Triodia wiseana*. There is approximately 100% of the pre-European vegetation remaining of Beard Vegetation Associations 18, 29 and 82 in the Pilbara bioregion (Shepherd et al, 2001). Approximately 16.8% and 10.2% of Beard Vegetation Associations 18 and 82 are represented in conservation reserves within the Pilbara bioregion respectively, however Beard Vegetation Association 29 is poorly represented (see table below). The area proposed to clear does not represent a significant remnant of vegetation in the wider regional area. The proposed clearing will not reduce the extent of Beard Vegetation Associations 18, 29, or 82 below current recognised threshold levels, below which species loss increases significantly.

It is acknowledged that iron ore mining activities in the Pilbara have resulted in an increase of native vegetation clearing at the bioregional scale in recent years. At the local scale, vegetation clearing around the Newman area has also increased in recent years and is expected to continue with proposed BHP Billiton expansion projects. It will therefore become increasingly important in the future to consider the cumulative impacts of native vegetation clearing both locally and regionally.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,164	17,794,651	~99.9	least concern	6.3
Beard veg assoc. – State					
18	19,892,437	19,890,348	~100	least concern	2.1
29	7,904,064	7,904,064	~100	least concern	0.3
82	2,565,930	2,565,930	~100	least concern	10.2
Beard veg assoc. – Bioregion					
18	676,561	676,561	~100	least concern	16.8
29	1,133,228	1,133,228	~100	least concern	1.9
82	2,563,610	2,563,610	~100	least concern	10.2

* Shepherd et al. (2001) updated 2005
** 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 et al (2001).
GIS Databases:
- Interim Biogeographic Regionalisation of 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 at variance to this Principle

The proposed rail duplication crosses a number of ephemeral drainage lines, including Homestead Creek and Whaleback Creek (BHP Billiton, 2008a). The existing rail line crosses these creek lines, and rail bridges are in place. The proposed rail duplication will involve the construction of two new bridges, at Homestead Creek and Whaleback Creek. In addition, 36 culverts will be installed where the proposed rail duplication crosses minor drainage channels and areas of sheet flow (BHP Billiton, 2008a).

Ecologia Environment Pty Ltd (2008a) described a distinctive vegetation unit associated with watercourses during a flora and vegetation survey of the proposed clearing area between 18 and 19 October 2007. This vegetation unit (Vegetation unit 2: Open Eucalyptus spp. medium trees over mixed shrubs and tussock grasses sometimes with sedges) constitutes riparian vegetation. Characteristic riparian species recorded within this vegetation unit included: Blunt-budded River Red Gum (*Eucalyptus camaldulensis var. obtusa*) and Bulrush (*Typha domingensis*).

Based on the above, the proposed clearing is at variance to this Principle. However, it is necessary to consider the proposed clearing in context:

- approximately one hectare of riparian vegetation will be cleared during the proposed rail duplication project. This constitutes 0.0002% of the river land habitat type in the Pilbara bioregion (Van Vreeswyk et al 2004; cited in BHP Billiton, 2008a); and
- all of the proposed vegetation clearing is within the existing rail corridor. Ecologia Environment Pty Ltd (2008a) described the vegetation condition of the proposed clearing area as 'degraded'.

The assessing officer considers the impacts of the proposed vegetation clearing on Homestead Creek, Whaleback Creek and numerous minor drainage lines are likely to be minimal.

Methodology

BHP Billiton (2008a).
Ecologia Environment Pty Ltd (2008a).

(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

Approximately 94% of the proposed clearing area has been mapped by the Department of Agriculture (Western Australia) as occurring within the Elimunna land system (GIS Database). Small parts of the project area fall within the Newman and River land systems (BHP Billiton, 2008a).

The Elimunna land system is characterised by stony plains on basalt, supporting Acacia and Senna shrublands and patchy tussock grasslands. Some drainage floors are slightly susceptible to erosion but most of the system is essentially resistant (Van Vreeswyk et al, 2004).

The Newman land system is characterised by hills and ranges, supporting hard spinifex grasslands. The Newman land system is generally not prone to erosion (Van Vreeswyk et al, 2004).

The River land system consists of active floodplains for major rivers, supporting grassy Eucalypt woodlands, tussock grasslands and soft spinifex grasslands. Erosion is uncommon, however susceptibility to erosion is high or very high if vegetative cover is removed (Van Vreeswyk et al, 2004).

BHP Billiton (2008b) will implement the following strategies to minimise land degradation risks associated with vegetation clearing:

- All cleared vegetation will be stockpiled for later use in rehabilitation. To minimise disturbance, stockpiles will be located on already cleared or disturbed areas;
- Topsoil will be stripped to a depth of 50 - 100 millimetres and stockpiled to a height no greater than 1.5 metres for later use in rehabilitation. To minimise disturbance, stockpiles will be located on already cleared or disturbed areas;
- Approximately 40 of the 98 hectares proposed for disturbance will be of a temporary nature. Borrow pits will be rehabilitated progressively, whilst laydown areas will be rehabilitated post construction;
- All surface water run-off from work areas shall be contained in sumps to prevent pollution and erosion. Sumps shall be filled and rehabilitated upon completion of works;
- Where the potential for erosion is high, appropriate methods for erosion control will be used (such as rip rap rock protection and reno mattresses). Designers for the civil works will determine erosion potential based on floodway reports and standard engineering experience. Rock protection is provided as a general specification in culvert design, and will be used in all 36 culverts installed

during construction. Post construction quality assurance monitoring will identify any additional erosion control which may be required (BHP Billiton, 2008a).

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

Methodology BHP Billiton (2008a).
BHP Billiton (2008b).
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 area is not located within close proximity to any conservation areas (GIS Database). The nearest DEC managed land is the Collier Range National Park, located approximately 120 kilometres to the south (GIS Database).

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

Methodology GIS Database:
- CALM Managed Lands and Waters.

(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**
A number of ephemeral creeklines dissect the proposed clearing area, including Homestead Creek and Whaleback Creek (BHP Billiton, 2008a). It is proposed that the existing two rail bridges will be duplicated to cross these creeklines, whilst 36 culverts will also be duplicated at numerous minor drainage lines and areas of sheet flow along the 21 kilometre length of the proposed rail duplication (BHP Billiton, 2008a). Engineering structures such as bridges and culverts will be used by the proponent to ensure natural surface water flow regimes are reinstated following duplication of the railway line.

During clearing, there is a potential for surface water quality to be impacted by sedimentation should adequate management measures not be put in place. BHP Billiton (2008b) will implement the following strategies to avoid, minimise and mitigate impacts to surface water quality:

- All surface water run-off from work areas shall be contained in sumps;
- Where the potential for erosion is high, appropriate methods for erosion control will be used (such as rip rap rock protection and reno mattresses). Designers for the civil works will determine erosion potential based on floodway reports and standard engineering experience. Rock protection is provided as a general specification in culvert design, and will be used in all 36 culverts installed during construction. Post construction quality assurance monitoring will identify any additional erosion control which may be required (BHP Billiton, 2008a);
- Topsoil and cleared vegetation shall be stockpiled away from watercourses; and
- Contractors shall maintain a minimum 50 metre set back from drainage lines for disturbances unless otherwise approved.

The proposed clearing area is located entirely within the Newman Water Reserve, a Public Drinking Water Source Area (PDWSA) gazetted under the *Country Areas Water Supply Act 1974* on 21 August 1983. This PDWSA is defined as 'Policy Use - Not Assigned' under the Priority Source Classification Scheme (BHP Billiton, 2008a). The Department of Water (DoW) does not have any objections to the proposed clearing, provided there are no impacts to surface or ground water quality (DoW, 2008). All activities within the Newman Water Reserve should be managed in accordance with an Environmental Management Plan (EMP) that meets the DoW's Water Quality Notes and Guidelines. The proponent is advised to liaise with the DoW and submit an EMP for review and sign off prior to undertaking the rail duplication (DoW, 2008).

The proposed clearing area is located within the Pilbara Groundwater Area, as proclaimed under the *Rights in Water and Irrigation Act 1914*. Any groundwater abstraction within this area will require a Water Licence from the Department of Water (DoW, 2008). Depth to groundwater within the proposed clearing area varies from just below the ground surface to more than 20 metres. Groundwater is expected to be fresh (less than 1,500 milligrams total dissolved solids per litre) to brackish (1,500 - 10,000 milligrams total dissolved solids per litre) (Aquaterra, 2007; cited in BHP Billiton, 2008a).

The proposed vegetation clearing is unlikely to result in any significant impacts to groundwater levels or quality given the size of the area to be cleared (98 hectares) in relation to the size of the Upper Fortescue River catchment (2,975,192 hectares) (GIS Database). It is also relevant to note that the proposed clearing is within

a narrow, linear rail corridor extending over a distance of approximately 21 kilometres.

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

Methodology BHP Billiton (2008a).
BHP Billiton (2008b).
DoW (2008).
GIS Database:
- Hydrographic Catchments - Catchments.

(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 proposed clearing area is located in the Pilbara bioregion, an arid environment characterised by two distinct seasons; a hot Summer from October to April and a mild Winter from May to September (BHP Billiton, 2008a). Peak rainfall typically occurs in the Summer months and is associated with tropical cyclones. A smaller rainfall peak is experienced between May and June and is associated with cold fronts. The average annual rainfall of Newman is approximately 310 millimetres. Annual evaporation rates in the Pilbara bioregion greatly exceed average annual rainfall (BHP Billiton, 2008a).

A number of ephemeral creeklines dissect the proposed clearing area, including Homestead and Whaleback Creeks (BHP Billiton, 2008a). It is proposed that the existing two rail bridges will be duplicated to cross these creeklines, whilst 36 culverts will also be duplicated at numerous minor drainage lines and areas of sheet flow along the 21 kilometre length of the proposed rail duplication (BHP Billiton, 2008a).

Whilst natural flood events do occasionally occur in the Pilbara following cyclonic activity, the proposed clearing of 98 hectares of native vegetation is not expected to increase the incidence or intensity of such events given the size of the area to be cleared (98 hectares) in relation to the size of the Upper Fortescue River catchment area (2,975,192 hectares)(GIS Database).

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

Methodology BHP Billiton (2008a).
GIS Database:
- Hydrographic Catchments - Catchments.

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

Comments

There is one native title claim over the area under application (GIS Database). This claim (WC99_004) has been registered with the National Native Title Tribunal on behalf of the claimant group (GIS Database). 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 are 12 Sites of Aboriginal Significance within two kilometres of the area applied to clear (BHP Billiton, 2008a). The buffer zones of four of these sites appear to intersect with the existing rail line according to the Department of Indigenous Affairs register (GIS Database). Recent archaeological and ethnographic surveys have verified that these sites are not located within the rail lease and will therefore be avoided by the proposed clearing (BHP Billiton, 2008a). 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.

BHP Billiton (2008a) is committed to the management and protection of Aboriginal heritage sites. BHP Billiton has a heritage protocol agreement with the Nyiyaparli people (traditional owners of the proposed clearing area), and regularly consult with the Nyiyaparli people to undertake Aboriginal heritage surveys. BHP Billiton also has an internal process; the Project Environment and Aboriginal Heritage Review (PEAHR), which is designed to prevent inadvertent disturbance of Aboriginal heritage sites. Prior to the commencement of any land disturbance activity, a PEAHR must be completed and submitted to BHP Billiton's Aboriginal Affairs Department for assessment. All land disturbance activities must be approved by BHP Billiton's Environment and Aboriginal Heritage staff (BHP Billiton, 2008a).

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 BHP Billiton (2008a).
GIS Databases:
- Aboriginal Sites of Significance.
- Native Title Claims.

4. Assessor's comments

Comment

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

Should the permit be granted, it is recommended that conditions be imposed for the purposes of weed management, rehabilitation, record keeping and permit reporting.

5. References

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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.
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.