



1. Application details

1.1. Permit application details

Permit application No.: 871/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: ML244SA (AML 70/244)
Local Government Area: Shire Of East Pilbara
Colloquial name: Orebody 25

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4		Mechanical Removal	Railway construction or maintenance

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
Beard Vegetation Association 18: Low woodland, mulga (<i>Acacia aneura</i>). Shepherd et al. reported in 2001 that approximately 99.9% of this vegetation type was remaining, with 2.3% located in reserves.	The majority of the application area is mature rehabilitated vegetation along an old access track, which was previously ripped and planted with mixed shrubs and grasses (Ecologia, 2005). The rehabilitated vegetation comprises a diverse shrubland community (Ecologia 2005). Dominant species in the rehabilitated area include <i>Acacia ancistrocarpa</i> , <i>A. aneura</i> var. <i>aneura</i> , <i>A. bivenosa</i> , <i>A. colei</i> subsp. <i>colei</i> , <i>A. dictyophleba</i> , <i>A. maitlandii</i> , <i>A. pruinocarpa</i> , <i>A. pyriformis</i> , <i>A. tumida</i> var. <i>pilbaraensis</i> , <i>Hakea lorea</i> subsp. <i>lorea</i> , <i>Petalostylis labicheoides</i> , <i>Senna artemisioides</i> subsp. <i>oligophylla</i> , <i>Rhagodia eremaea</i> , <i>Aclerplaema cornishiana</i> and <i>Triodia pungens</i> (Ecologia, 2005).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The proposed clearing area is a total of approximately 4ha for the extension and realignment of an existing railway siding and spur-line, and associated minor works. The application area is associated with an existing railway line and is immediately adjacent to an operational minesite, mine roads and infrastructure (BHP, 2005a).
	The eastern end of the application area is located within natural vegetation, comprising moderately dense mulga woodland over moderately dense <i>Triodia pungens</i> (Ecologia, 2005).		
	Ecologia (2005) conducted a flora and vegetation survey of the application area in March 2005. The survey recorded a total of 64 taxa from 40 genera and 22 families. No species of Declared Rare or Priority flora were located during the survey. One weed species, Flaxleaf fleabane <i>Conyza bonariensis</i> was recorded (Ecologia, 2005).		

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 vegetation type in the application area is well represented in the Pilbara Region (BHP Billiton, 2005a; GIS Database), and the area proposed to clear is unlikely to be of higher biodiversity than surrounding areas.

No flora or fauna species of conservation significance are known to occur within the application area (Ecologia, 2005; GIS Database).

The application area has suffered disturbance from an existing railway line and is immediately adjacent to an operational minesite, mine roads and infrastructure (BHP Billiton, 2005a).

The relatively small area of the proposed clearing for the extension and realignment of an existing railway siding and spur-line, and associated minor works, is unlikely to have any significant impact on the biological diversity of the region (CALM, 2006).

Methodology BHP Billiton (2005a).
CALM Advice (2006).
Ecologia (2005).
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05.
- Pre-European Vegetation - DA 01/01.
- Threatened Fauna - CALM 30/9/05.

(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

The application area is immediately adjacent to the existing Orebody 25 minesite. Ecologia conducted a fauna survey of the Orebody 25 minesite in 1995. No fauna species of conservation significance were recorded during that survey, however the Western Pebble-mound Mouse, *Pseudomys chapmani* (P4); Peregrine Falcon, *Falco peregrinus*; and the Desert Mouse, *Pseudomys desertor* were considered likely to occur in the area (Ecologia, 1995, as cited by BHP Billiton, 2005a).

The area proposed to clear is within close proximity of the Homestead Creepline, which is considered to be suitable habitat for the Desert Mouse (Ecologia, 1995, as cited by BHP Billiton, 2005a). However the relatively small area of additional clearing along the existing rail corridor is unlikely to have any significant impact on the habitat of this species, which has a wide distribution throughout the arid regions of Western Australia. The Western Pebble-mound Mouse is relatively widespread in the Pilbara and is well represented in areas outside the minesites (Ecologia, 1998). The Peregrine Falcon is a highly mobile and wide-ranging species (Ecologia, 1998), and is unlikely to be affected by the proposed clearing.

The area proposed to clear is immediately adjacent to an existing railway line, an operational mine site, mine roads and infrastructure (BHP Billiton, 2005a). The application area has suffered previous disturbance and is unlikely to support significant habitat for fauna.

Based on the relatively confined nature and limited spatial extent of the proposed clearing in a local context, and having regard to the findings of previous flora and fauna studies of the area, CALM concludes that the proposed clearing is unlikely to have any significant impact on fauna habitat in the region (CALM, 2006).

Methodology BHP Billiton (2005a).
CALM Advice (2006).
Ecologia (1998).

(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

The nearest known Declared Rare Flora are six populations of *Lepidium catapycnon* which occur fairly close together approximately 12-16km west/southwest of the western end of the application area (GIS Database). CALM databases have no records of any other populations of Declared Rare or Priority flora within a 50km radius of the area applied to clear (GIS Database).

A flora and vegetation survey of the application area was conducted by Ecologia in March 2005. Ecologia (2005) reported that the majority of the application area consists of mature rehabilitated vegetation along an old access track, which had been previously ripped and planted with mixed shrubs and grasses. The rehabilitated vegetation comprises a diverse shrubland community (Ecologia, 2005). The eastern end of the application area consists of natural vegetation, comprising moderately dense mulga woodland over moderately dense *Triodia pungens* (Ecologia, 2005).

The survey recorded a total of 64 taxa from 40 genera and 22 families, however no species of Declared Rare or Priority flora were recorded. One weed species, Flaxleaf fleabane *Conyza bonariensis* was located within the application area (Ecologia, 2005).

Based on the relatively confined nature and limited spatial extent of the proposed clearing in a local context, and having regard to the findings of previous flora studies of the area, CALM concludes that the proposed clearing is unlikely to impact on any Declared Rare or Priority flora (CALM, 2006).

Methodology CALM Advice (2006).
Ecologia (2005).
GIS Database: Declared Rare and Priority Flora List - CALM 01/07/05.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

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

There are no known Threatened Ecological Communities (TEC's) within the area applied to clear (CALM, 2006; GIS Database). The nearest known TEC is the Ethel Gorge aquifer stygobiont community which is located approximately 4.7km northeast of the northern end of the application area (GIS Database). Groundwater drawdown is listed as a threatening process for the Ethel Gorge stygofauna (CALM, 2002), however the proposed clearing is not expected to have any effect on groundwater levels.

CALM (2006) advises that the proposed clearing is unlikely to impact on any Threatened Ecological Communities.

Methodology CALM (2002).
GIS Database: Threatened Ecological Communities - CALM 12/04/05.
CALM Advice (2006).

(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 IBRA Pilbara Bioregion and the Shire of East Pilbara. Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion, although no specific information is available for the Shire of East Pilbara. The vegetation in the application area is recorded as Beard Vegetation Association 18: low woodland; mulga (*Acacia aneura*). According to Shepherd et al., (2001) there is approximately 99.9% of this vegetation type remaining, and 2.3% in reserves. The area proposed to clear does not represent a significant remnant of native vegetation.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion - Pilbara	17,944,694*	17,944,694*	100%	Least concern	
Shire of East Pilbara	No information available				
Beard vegetation associations - 18	24,675,970	24,659,110	~99.9%	Least concern	2.3%

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

Methodology Dept of Natural Resources and Environment (2002).
GIS Database: Pre-European Vegetation - DA 01/01.
Shepherd et al. (2001).

(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

The western end of the existing rail spur-line crosses Homestead Creek which is dry for most of the year, only flowing briefly immediately following significant rainfall (BHP Billiton, 2005a; GIS Database). Three other minor tributaries of the creek also cut through the application area (GIS Database).

However none of the proposed railway realignment work will be carried out in close proximity to Homestead Creek, and the creekline beds and banks and riparian vegetation will not be disturbed by the proposed works (BHP Billiton, 2005a).

The proposed clearing of a total area of approximately 4ha for the extension and realignment of an existing railway siding and spur-line, and associated minor works is unlikely to result in any significant additional impact on Homestead Creek or any other watercourse.

Methodology BHP Billiton (2005a).
GIS Database:
- Hydrography, Linear - DOE 01/02/04.
- Lakes, 1M - GA 01/06/00; GIS Database - Rivers 250K - GA.

(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

There are no recorded acid sulphate soils in the area and the clearing is unlikely to result in an increased risk of salinity (GIS Database).

The soils within the adjacent Orebody 25 Mine area are mainly stony, shallow loams (Ecologia, 2005). The application area is located on the northern edge of the Homestead Creek flood-plain, on gently rising slopes (BHP, 2005a). In their Environmental Management Plan for the project, the proponent has made a commitment to minimise erosion and implement sediment control measures as required (BHP Billiton, 2005b).

The relatively small area of the proposed clearing is unlikely to cause appreciable land degradation.

Methodology BHP Billiton (2005a).
BHP Billiton (2005b).
Ecologia (2005).
GIS Database:
- Acid Sulphate soil risk map, SCP - DOE 4/1/04.
- Salinity Risk LM 25m - DOLA 00.

(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 at variance to this Principle

There are no conservation areas in the vicinity of the application area. The nearest CALM managed lands are the Collier National Park, approximately 120km south/southwest of the application area; and the Karijini National Park, approximately 120km west/northwest of the application area (GIS Database).

CALM (2006) advises that the proposed clearing is unlikely to impact on the environmental values of any conservation area.

Methodology CALM Advice (2006).
GIS Database: CALM Managed Lands and Waters - CALM 1/07/05.

(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 Newman Water Reserve, a Public Drinking Water Source Area (GIS Database).

In their Environmental Management Plan for the project, the proponent has made a commitment to minimise impacts on the quality of surface water (BHP Billiton, 2005b). Groundwater quality monitoring is conducted as part of the existing mine operations at the adjacent Orebody 25 minesite (BHP Billiton, 2005b).

The comparatively small area of the proposed clearing is unlikely to have any significant impact on surface or underground water quality.

Methodology BHP Billiton (2005b).
GIS Database:
- Hydrography, Linear - DOE 1/02/04.
- Public Drinking Water Source Areas - DOE 09/08/05.

(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 on the northern edge of the Homestead Creek flood-plain, on gently rising slopes (BHP, 2005a). Natural flooding occurs occasionally during the wet season (November to March) following significant rainfall (BHP, 2005a). In their Environmental Management Plan for the project, the proponent has made a commitment to minimise disturbance to natural surface drainage flows (BHP Billiton, 2005b).

The relatively small area of the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology BHP Billiton (2005a).
BHP Billiton (2005b).

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

Comments

There is a native title claim (WC99/004) over the area under application. This claim has been registered with the National Native Title Tribunal on behalf of the Niyiyaparli claimant group. 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 (ie. 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 known Aboriginal sites of significance within the areas applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

An Environmental Protection Licence and a Works Approval Licence are not required for the proposed realignment of an existing railway line (DoE, 2006).

BHP Billiton Iron Ore's Orebody 25 minesite has a current groundwater licence GWL65219(4), granted in accordance with the *Rights in Water and Irrigation Act 1914*, for the purposes of dust suppression, mineral ore processing and potable water supply (DoE, 2006). The proponent has advised that any water required for dust suppression at the proposed railway realignment will be drawn from existing licensed water sources, and therefore a water licence under the *Rights in Water and Irrigation Act 1914* will not be required (DoE, 2006). However, if the proposed clearing requires water for any purpose other than those stated on the current water licence, an amendment to the licence will be required (DoE, 2006).

Methodology DoE Advice (2006).
GIS Database:
- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.

4. Assessor's recommendations

Purpose	Method Applied	Decision	Comment / recommendation
Railway construction or maintenance	Mechanical Removal	Grant	Recommend that the application be granted as it is not at variance to any of the Clearing Principles.

5. References

- BHP Billiton (2005a) Orebody 25 Rail Siding Vegetation Clearing Permit Supporting Documentation. BHP Billiton Iron Ore Pty Ltd, Western Australia.
- BHP Billiton (2005b) Rail Construction Environmental Management Plan - 0234-EMP-001 Revision 1. BHP Billiton Iron Ore Pty Ltd, Western Australia.
- CALM (2002) A biodiversity audit of Western Australia's 53 Biogeographic Subregions in 2002.
- CALM (2006) Land clearing proposal advice. Advice to Program Manager, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), 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.
- DoE (2006) Water Allocation/Licence Advice. Department of Environment, Western Australia.
- Ecologia (1998) Orebody 23 Extension Biological Assessment Survey. Report to BHP Billiton Iron Ore Pty Ltd. Ecologia Environmental Consultants, Western Australia.
- Ecologia (2005) BHPBIO Rail Sidings Flora and Vegetation Assessment. Ecologia Environment, Western Australia.
- 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., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAWA	Department of Agriculture, Western Australia.
DA	Department of Agriculture, Western Australia.
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.
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.

