



1. Application details

1.1. Permit application details

Permit application No.: 1306/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore

1.3. Property details

Property: State Agreement Act, Mineral Lease ML 244SA (AML 70/244)
Local Government Area: Shire of East Pilbara
Colloquial name: Orebody 25 minesite

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.6		Mechanical Removal	Miscellaneous

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>The vegetation of the application area is broadly mapped as: Beard Vegetation Association 18: low woodland; mulga (<i>Acacia aneura</i>); and Beard Vegetation Association 82: hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i>.</p> <p>A flora survey of the Orebody 25 minesite, conducted by Ecologia in 1995, recorded a total of 211 flora species, including two weed species: Ruby Dock, <i>Acetosa vesicaria</i>; and Common Sowthistle, <i>Sonchus oleraceus</i>. The vegetation of the Orebody 25 area was mapped in September-October 2005, and classified as five major vegetation types and twelve sub-types, broadly associated with topographic features (Ecologia, 1995 & 2005).</p> <p>The dominant vegetation association of the proposed emergency access road is: <i>Acacia inaequilatera</i>, <i>Hakea chordophylla</i>, <i>Eucalyptus leucophloia</i>, <i>Corymbia hamersleyana</i>, <i>Acacia ancistrocarpa</i>, <i>Grevillea wickhamii</i> and <i>Senna spp.</i>, over <i>Triodia basedowii</i>, <i>T. wiseana</i> and <i>T. pungens</i> (BHP Billiton, 2006).</p> <p>The dominant vegetation association of the proposed topsoil stockpile is: <i>T. basedowii</i> steppe with a sparse to very sparse overstorey of <i>Eucalyptus</i> emergents, typically including <i>E. leucophloia</i>, and open to moderately dense <i>E. gamophylla</i> over dense <i>T. pungens</i> (BHP Billiton, 2006).</p>	<p>The proposed clearing is for two separate areas, totalling approximately 2.6 ha. The northern area of approximately 1.1 ha is for an emergency access road, immediately to the north of the Orebody 25 Pit 1 and Pit 3 Overburden Storage Areas (OSA's). The southern area of approximately 1.5 ha is for a new topsoil stockpile, to the west of the Orebody 25 western OSA.</p>	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)</p>	<p>The two areas proposed to clear are immediately adjacent to the existing Orebody 25 minesite.</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 vegetation types and fauna habitats found within the application areas are all well represented in the Pilbara Region (BHP Billiton, 2006; GIS Database). No flora or fauna species of conservation significance are known to occur within the application areas (BHP Billiton, 2006; Ecologia, 2004; GIS Database), and the proposed clearing is not expected to impact on any flora or fauna of conservation significance or any critical fauna habitats.

The application areas are immediately adjacent to an operational minesite, mine roads and infrastructure (BHP Billiton, 2006), and the areas proposed to clear are unlikely to be of higher biodiversity than surrounding areas.

The proposed clearing of 2.6 ha for an emergency access road and a topsoil stockpile, is unlikely to have any significant impact on the biological diversity of the region (DEC, 2006).

Methodology BHP Billiton (2006).
DEC (2006).
Ecologia (2004).
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 two application areas are immediately adjacent to the existing Orebody 25 minesite. A fauna survey of the Orebody 25 minesite conducted in June 1995 recorded a total of 52 fauna species (three mammals, 40 birds and nine reptiles) within the spinifex steppe vegetation association, which is the dominant vegetation type within the application areas (Ecologia, 1995 & 2005).

No fauna species of conservation significance were recorded within the areas proposed to clear (BHP Billiton, 2006). However, two fauna species of conservation significance were recorded in the surrounding area: the Western Pebble-mound Mouse, *Pseudomys chapmani* (P4); and the Peregrine Falcon, *Falco peregrinus* (Schedule 4) (Ecologia, 1995).

One active mound of the Western Pebble-mound Mouse was recorded within the Orebody 25 survey area (Ecologia, 1995). This species is relatively widespread in the Pilbara, and is well represented in areas outside the minesite (Ecologia, 2005). The Peregrine Falcon has been recorded in areas adjacent to the minesite (Ecologia, 1995), however this species is highly mobile and is unlikely to be affected by the proposed clearing (Ecologia, 2005).

The landforms, vegetation types and fauna habitats found in the application areas are widespread in the Pilbara region (BHP Billiton, 2006).

The comparatively small areas of additional clearing within the existing minesite are unlikely to have any significant impact on fauna habitat in the region (DEC, 2006).

Methodology BHP Billiton (2006).
DEC (2006).
Ecologia (1995).
Ecologia (2005).

(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*, 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 areas applied to clear (GIS Database).

Two Priority Flora species have been recorded in the Orebody 25 area. *Eremophila magnifica*, which prefers rocky ridges and hilltops, was recorded by Ecologia in 1995, and by BHP Billiton in 2000 (Ecologia, 2004). A

targeted search conducted by Ecologia in 2004, recorded large numbers of this species in an area to the west of the Orebody 25 minesite (Ecologia, 2004). It was recorded at a further two sites in the Orebody 25 area, in September-October 2005 (Ecologia, 2005). *Eremophila magnifica* is now classified on the CALM Florabase database (WA Herbarium, 2006) as 'not threatened', however two subspecies are listed as Priority Flora: *E. magnifica subsp magnifica* (P4) and *E. magnifica subsp velutina* (P3). Florabase has records for all three subspecies in the Pilbara region, from areas outside the minesite. *Triumfetta leptacantha* (P3) was recorded by BHP Billiton in 2000 from the area surrounding the Orebody 25 minesite. Searches by Ecologia in 2004, failed to relocate this species (Ecologia, 2004), however it was later discovered at two sites within the minesite, in the proximity of Pit 3. *T. leptacantha* grows on rocky outcrops on upper slopes throughout the Pilbara (BHP Billiton, 2006). The two areas proposed to clear are located on lower slopes, which is not the preferred habitat for any of the abovementioned Priority flora species.

No Rare or Priority flora species have been found within the areas applied to clear, and the vegetation types to be cleared are well represented in the Pilbara Region (Ecologia, 1995, 2004 & 2005; GIS Database).

The comparatively small areas of additional clearing within the existing minesite are unlikely to have any significant impact on Rare or Priority flora in the region (DEC, 2006).

Methodology BHP Billiton (2006).
DEC (2006).
Ecologia (1995).
Ecologia (2004).
Ecologia (2005).
GIS Database: Declared Rare and Priority Flora List - CALM 01/07/05.
WA Herbarium (2006).

(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 areas applied to clear (GIS Database). The nearest known TEC is the Ethel Gorge aquifer stygobiont community which is located approximately 3.3km east/northeast of the eastern end of the proposed access road (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.

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

(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 Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA). Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 18: low woodland; mulga (*Acacia aneura*), and Beard Vegetation Association 82: hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*. Shepherd et al. (2001) report that there is approximately 99.9% and 100% respectively of these vegetation types remaining, and 2.3% and 9.1% respectively, in reserves. The area proposed to clear does not represent a significant remnant of native vegetation.

Pre-European	Current area (ha)	Remaining extent (ha)	Conservation %*	% in Status**	reserves/CALM-managed land
IBRA Bioregion - Pilbara Shire of East Pilbara	17,944,694*	17,944,694*	~100%	Least concern	
No information available					
Beard vegetation association					
- 18	24,675,970	24,659,110	99.9%	Least concern	2.3%
- 82	2,920,910	2,920,910	~100%	Least concern	9.1%

* 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

There are no permanent watercourses or wetlands within the areas proposed to clear (GIS Database). Creeks in the surrounding area are dry for most of the year, only flowing briefly immediately following significant rainfall (BHP Billiton, 2006). The nearest creekline to the application area is Homestead Creek which is located approximately 500m to the south of the proposed topsoil stockpile (at its nearest point) (GIS Database). The proposed clearing is unlikely to have any significant impact on Homestead Creek or any other watercourse.

Methodology BHP Billiton (2006).
GIS Database:
- Hydrography, Linear - DOE 01/02/04.
- Lakes, 1M - GA 01/06/00.
- 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 Orebody 25 area lies within the Newman Land System, which consists of jaspolite plateaux ridges and mountains, supporting hard Spinifex grasslands. This land system is generally not prone to soil erosion (Van Vreeswyk et al., 2004).

The soils within the Orebody 25 Mine area are mainly stony, shallow loams (Ecologia, 1995). 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, 2006).

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

Methodology BHP Billiton (2006).
Ecologia (1995).
GIS Database:
- Acid Sulphate soil risk map, SCP - DOE 4/1/04.
- Salinity Risk LM 25m - DOLA 00.
Van Vreeswyk et al., (2004).

(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

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).

Consequently the proposed clearing is unlikely to impact on the environmental values of any conservation area.

Methodology 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 areas are located within the Newman Water Reserve, a Public Drinking Water Source Area (GIS Database). The Department of Water has advised that the groundwater is regularly monitored, and the proposal is compatible with current land uses within the area (DoW, 2006).

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, 2006). Groundwater quality monitoring is conducted as part of the existing mine operations at the Orebody 25 minesite (BHP Billiton, 2006).

The comparatively small area of the proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.

Methodology BHP Billiton (2006).
DoW (2006)
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

Natural flooding occurs occasionally during the wet season (November to March) following significant rainfall (BHP Billiton, 2006). In their Environmental Management Plan for the project, the proponent has made a commitment to minimise disturbance to natural surface drainage flows (BHP Billiton, 2006).

The proposed clearing is for two small areas, which are not associated with any permanent watercourse (GIS Database). The proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology BHP Billiton (2006).

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. 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*.

One Aboriginal site of significance (ID 17395) partly overlaps the area applied to clear for the emergency access road. 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 access road and topsoil stockpile (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 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 (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 area (ha)	Decision	Comment / recommendation
Miscellaneous	Mechanical Removal	2.6	Grant	The proposal has been assessed against the clearing principles. The proposal is either not at variance, or not likely to be at variance to any of the clearing principles. The assessing officer therefore recommends that the permit should be granted.

5. References

- BHP Billiton (2006) Application to Clear Native Vegetation for the Purpose of Establishing an Emergency Access Road around Orebody 25 Waste Dumps, and a Topsoil Stockpile. BHP Billiton Iron Ore Pty Ltd, Western Australia.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DEC (2006) Land clearing proposal advice. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Environment and Conservation, 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. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Environment, Western Australia.
- DoW (2006) PDWSA Advice. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Environment, Western Australia.
- Ecologia (1995) Orebody 25 Biological Assessment Survey. Ecologia Environment, Western Australia.
- Ecologia (2004) Orebodies 18, 23 & 25 Flora and Fauna Review. Ecologia Environment, Western Australia.
- Ecologia (2005) Orebody 25 Biological Review and Environmental Impact 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.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.
- Western Australian Herbarium (2006) FloraBase - The Western Australian Flora. Department of Conservation and Land Management, Western Australia.

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.
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.