



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3609/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (Mount Newman) Agreement Act 1964, Mineral Lease 244SA (AML 70/244)
Miscellaneous Licence 52/108

Local Government Area:

Colloquial name: Construction water supply pipeline and ammonium nitrate storage facility

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. Two Beard Vegetation Associations are located within the proposed clearing area (GIS Database):

-Beard Vegetation Association 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and

-Beard Vegetation Association 216: Low woodland; mulga (with spinifex) on rises (GIS Database).

A flora and vegetation assessment was undertaken by ENV Australia on 17 September and 4 to 6 November 2009. During the survey, there were 19 vegetation associations recorded within the application area (ENV Australia, 2009b):

Vegetation Association THG01:

Hummock Grassland of *Triodia basedowii* with Shrubland of *Acacia ancistrocarpa*, *Acacia tenuissima*, *Acacia aneura* and *Acacia stowardii* with Scattered Low Trees of *Corymbia hamersleyana* and *Corymbia deserticola* subsp. *deserticola* on Redbrown Loam on Plains/Floodplains.

Vegetation Association THG02:

Open Hummock Grassland of *Triodia basedowii* with Low Open Shrubland of *Bonamia rosea*, *Indigofera georgei* and *Ptilotus obovatus* with Scattered Low Trees of *Corymbia hamersleyana* and *Eucalyptus gamophylla* (mallee) on Red-brown Loam on Plains.

Vegetation Association THG03:

Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia basedowii* and *Triodia brizoides* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* with Scattered Shrubs of *Acacia bivenosa*, *Grevilleaberryana* and *Eremophila latrobei* subsp. *latrobei* on Red-brown Loam on Hills.

Vegetation Association THG04:

Hummock Grassland of *Triodia brizoides* with Open Shrubland of *Acacia aneura* (mostly burnt) with Very Open Tussock Grassland of *Eriachne mucronata* on Red-brown Loam on Ridge.

Vegetation Association THG05:

Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Shrubland of *Eremophila fraseri* subsp. *fraseri*, *Senna ferraria* and *Senna artemisioides* subsp. *oligophylla* x *helmsii* with Scattered Shrubs of *Grevillea wickhamii* subsp. *hispidula* on Red-brown Loam on Plains.

Vegetation Association THG06:

Hummock Grassland of *Triodia pungens* and *Triodia angusta* with High Shrubland of *Acacia paraneura*, *Acacia aneura* and *Acacia tetragonophylla* with Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* and *Eucalyptus trivalva* on Redbrown Loam on Minor Drainage Lines.

Vegetation Association THG07:

Hummock Grassland of *Triodia brizoides* with Open Shrubland of *Acacia bivenosa* and *Senna glutinosa*

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal is not likely to be at variance to this Principle

The application area is located within the Fortescue sub-region of the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Vegetation of the region can be broadly described as Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (Kendrick, 2001). Known rare features of the region include the Gorges of Hamersley Range (particularly those of Karijini National Park), Palm Springs, Duck Creek and the Themeda grasslands (Kendrick, 2001).

A fauna habitat survey of the application area concluded that the the majority of the habitat types occurring within the application area were well represented in the Pilbara region and were not of specific conservation significance (ENV Australia, 2009a). One habitat type named 'Hill Tops/Breakaways' had moderate habitat value, it provided attributes such as caves and crevices which are suitable habitat for ground-dwelling fauna. It was also noted as being disjointed with regional ridge lines of the wider region, therefore, it is locally significant (ENV Australia, 2009a). BHP Billiton Iron Ore (2010) have committed to avoid clearing within this habitat type during the life of the project.

A flora and vegetation assessment of the application area was undertaken by ENV Australia on the 17 September and 4 to 6 November 2009. As a result of the flora and vegetation assessment, there were 213 taxa comprising 38 families and 91 genera recorded in the project area. The floristic composition of the Project area is considered to be typical of the Pilbara region (ENV Australia 2009b).

Three introduced flora species were recorded in the Project area including *Cenchrus ciliaris* (Buffel Grass), *Malvastrum americanum* and *Portulaca oleracea* (ENV Australia, 2009b). The proposed vegetation clearing has the potential to introduce further weed species into the local area should adequate hygiene practices not be put in place. Weeds can affect biodiversity in a number of ways, including out competing native species for resources and increasing the fire risk. Standard weed management protocols can manage the risks posed by the introduction and spread of weeds.

Most of the application area had vegetation in a 'Pristine' to 'Very Good' condition, including the low hills, plains, floodplains and drainage lines (ENV Australia, 2009b). However, the application area is partially located on the Koondra pastoral station, and ENV Australia (2009b) have stated that some areas within the application area showed signs of disturbance from cattle and fire. The vegetation most degraded being in a 'Good' to 'Very Good' condition was along the Orebody 18 to Wheelara Hill mine site access road (ENV Australia, 2009b). It is unlikely the vegetation of the application area is likely to exhibit a higher level of floristic diversity than other areas in the bioregion.

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

Methodology

BHP Billiton Iron Ore (2010).
ENV Australia (2009a).
ENV Australia (2009b).
Kendrick (2001).
GIS Database:
-IBRA WA (Regions - Sub Regions).
-IBRA Australia.
-Pastoral Leases

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

Comments

Proposal is not likely to be at variance to this Principle

A fauna assessment of the application area was undertaken by ENV Australia on 17 September 2009 and 4 - 6 November 2009. The fauna assessment included a detailed desktop review and a reconnaissance survey which included a habitat assessment and targeted search to document and map evidence of Western Pebble-mound Mouse (*Pseudomys chapmani*) (ENV Australia, 2009a).

The habitat assessment identified four habitat types in the application area, which included:

1. Low Hills/Stony Plains;
2. Hill Tops/Breakaways;
3. Alluvial Plains/Drainage Lines; and
4. Completely Degraded/Cleared habitats

(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

A flora and vegetation assessment of a larger project area which included the application area was undertaken by ENV Australia on the 17 September and 4 to 6 November 2009. This included a desktop study which involved reviews of literature, database searches and aerial photography and map interpretation relating to landforms likely to be found in the area (ENV Australia, 2009b). There was also a field survey of the project area, which included 23 quadrats and 8 releves which were selected as being representative of the flora and vegetation of the Project area. Additionally, habitats within the Project area that potentially support Declared Rare Flora (DRF) and Priority flora species identified by the Department of Environment and Conservation (DEC) database search were targeted and searched (ENV Australia, 2009b).

As a result of the field survey, there were no DRF or Priority flora species recorded in the application area (ENV Australia, 2009b).

There were twenty one Priority flora species which were listed as potentially occurring in the application area from the DEC database search (ENV Australia, 2009b). Six of these were annual Priority flora species, which may have been not recorded due to the timing of the survey; when there had been minimal rain prior to the survey being undertaken. However, ENV Australia (2009b) have stated that habitat suitable for these species was not recorded within the application area, therefore it is unlikely the application area comprises significant habitat for these species.

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

Methodology ENV Australia (2009b).
BHP Billiton Iron Ore (2009b).

(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 application area (GIS Database). The nearest known TEC is the Ethel Gorge aquifer stygobiont community which is located approximately 15 kilometres west of the application area (GIS Database). ENV Australia (2009b) have reported that no TEC's were identified during the flora survey of the application area.

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

Methodology ENV Australia (2009b).
GIS Database:
- Threatened Ecological Sites.

(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. Shepherd (2007) report that approximately 99.9% of the pre-European vegetation still exists in this Bioregion. The vegetation in the application area is recorded as:

- Beard Vegetation Associations 82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and

- 216: Low woodland; mulga (with spinifex) on rises (GIS Database).

According to Shepherd et al., (2001) there is approximately 100% of these vegetation types remaining at both a state and bioregion level. Although large scale mining operations are located in close proximity to the application area, the region in which the clearing is proposed to occur has not undergone broad scale clearing. Hence the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

The McKay land system consists of hills, ridges, plateaux remnants and breakaways of meta sedimentary and sedimentary rocks supporting predominantly hard spinifex grasslands. This land system is not prone to degradation or soil erosion (Van Vreeswyk et al., 2004).

The Jamindie land system is described as stony hardpan plains and rises supporting groved mulga shrublands, occasionally with Spinifex understorey. The majority of this land system is resistant to erosion; however, the drainage lines are moderately susceptible to erosion.

Given the land systems present, it is unlikely that there will be a large risk of erosion occurring within the application area from the proposed clearing. However, the central part of the application area (where the water pipeline will be installed) intersects a significant area of drainage (GIS Database). There is already an access track intersecting this area which has culverts and rip rap protection. BHP Billiton Iron Ore (2010) have stated that the pipeline will be installed above ground so it is the same vertical height as the access road (above the culvert which crosses the drainage line). It is possible some temporary erosion may result from the disturbance proposed within this drainage line. However, this disturbance is likely to be minimal given that surface flows will be maintained by the culvert and that rip rap will provide protection from erosion.

In other areas of the application area where drainage may be intersected, BHP Billiton Iron Ore (2010) have stated that the following management measures will be implemented during the project to mitigate the potential for erosion:

- Where necessary, surface drainage structures, including culverts and diversion drains will be incorporated to minimise impacts to surface water;
- Where the potential for erosion is high, appropriate infrastructure such as gabions, rip rap rock protection or reno mattresses will be installed;
- Table drains will flow to a sedimentation pond with overflow structures incorporated for larger, sporadic rainfall events;
- The ammonium nitrate storage facility will be situated away from major watercourses; and
- Catch drains will be installed around the ammonium nitrate storage facility.

Approximately 70 hectares (88%) of the disturbance associated with the proposed clearing will be for the construction of permanent infrastructure, such as the ammonium nitrate storage facility and access tracks. BHP Billiton Iron Ore (2010) have stated that they will rehabilitate disturbance areas not required for ongoing operations (approximately 10 hectares - or 12%) of the application area.

Given the risk of erosion occurring within the drainage tracts of the application area, the proposed clearing may be at variance to this Principle. However, the mitigation measures outlined above should adequately manage the risk of significant soil erosion occurring.

Methodology BHP Billiton Iron Ore (2010).
Van Vreeswyk et al., (2004).
GIS Database:
-Hydrography, linear.
- 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 closest conservation area to the application area is Collier Range National Park, located approximately 125 kilometres south-west of the application area (GIS Database). Given the large distance between the application area and the Collier Range National Park, it is unlikely that the proposed clearing will comprise the environmental values of this area.

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

Methodology GIS Database:
-DEC Tenure.

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

Comments

There is one native title claim over the area under application: WC99/004 (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenements have 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*.

According to available databases, there are no Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged throughout the clearing process.

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

The clearing permit application was advertised 8 March 2010 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received in relation to the clearing permit application.

Methodology

GIS Databases:

- Aboriginal Sites of Significance.
- Native Title Claims.

4. Assessor's comments

Comment

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

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

5. References

- Aplin, K.P. (1998) Three new blindsnakes (*Squamata: typhlopidae*) from northwestern Australia. Western Australian Museum, Western Australia.
- BHP Billiton Iron Ore (2010) Supporting information for clearing permit application CPS 3609/1.
- 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.
- ENV Australia (2008a) Construction water supply pipeline and Ammonium Nitrate Storage Facility - Fauna assessment. Unpublished report for BHP Billiton Iron Ore.
- ENV Australia (2008b) Construction water supply pipeline and Ammonium Nitrate Storage Facility - Flora and vegetation assessment. Unpublished report for BHP Billiton Iron Ore.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Kendrick, P (2001) Pilbara 3 (Hamersley subregion) Subregional description and biodiversity values, dated August 2001. In: "A biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002". Report published by the Department of Conservation and Land Management, Perth, Western Australia.
- Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Start, A.N., Anstee, S.D. & Endersby, M (1980) A review of the biology and conservation status of the Ngadji, *Pseudomys chapmani Kitchener*, 1980 (*Rodentia: Muridae*), in CALMScience 3(2): 125 147 (2000).
- Van Vreeswyk, A.M.E., & Payne, A.L. & Leighton, K.A. & Hennig, P (2004) An inventory and condition survey of the Pilbara region, Western Australia. Department of Agriculture, 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.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia

- 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.