Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3267/1
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 Goldsworthy) *Agreement Act 1964*, Special Lease 3116/6235, Lease J998591, Lot 47 on Deposited Plan 241374
Colloquial name: Boodarie Depot Siding Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
5.5		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	Clearing Description	Vegetation Condition	Comment
The vegetation of the application area is broadly mapped as Beard Vegetation Association: 127: Bare areas; mud flats; and 647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex (GIS Database). ENV Australia (2009a) describes the vegetation of the application area as consisting of the following vegetation association. 1. Open Shrubland of *Acacia stelaticeps* and *A. ampliceps* over scattered hummock grasses of *Tridia schinzii*, *T. secunda* and *T. epactia* over scattered Tussock grasses of *Eriachne obtuse*, *Aristida contorta* and **Cenchrus ciliaris* on Orange-Brown Sandy Loam on Sandplains. * Denotes weed species	BHP Billiton Iron Ore Pty Ltd (BHP Billiton) have applied to clear up to 5.5 hectares of native vegetation within a total application area of approximately 13.4 hectares. The proposed clearing is for the purposes of constructing a new rail formation, access tracks and borrow areas (BHP Billiton, 2009).	Very Good: vegetation structure altered; obvious signs of disturbance (Keighery, 1994). To Completely Degraded: no longer intact; completely/almost completely without native species (Keighery, 1994).	The vegetation condition was derived from a description by ENV Australia (2009a).

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 approximately 7.5 kilometres south-west of Port Hedland in the Roebourne subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). According to Shepherd (2007) there is approximately 99.5% of the pre-European vegetation remaining in the Roebourne subregion.

The application area is characterised by Beard Vegetation Assocation 127: Bare areas; mud flats; and 647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex . Both are common and widespread vegetation associations locally and regionally (Shepherd, 2007; GIS Database). There are no known records of Declared Rare Flora (DRF) or Threatened Ecological Communities (TEC's) within, or immediately surrounding the application area (GIS Database). The proposed clearing area does not contain any wetlands or watercourses, nor is it located within or adjacent to any areas managed for the conservation of biological diversity (GIS Database).

Fifity one flora taxa consisting of 17 families and 38 genera were recorded within the application area (ENV Environmental, 2009a). The species richness within the application area is considered to be typical of that found in the local region (ENV Environmental, 2009a).

The application area has been noted as having limited habitat and landform diversity and therefore unlikely to support high levels of biodiversity. Additionaly the application area has been impacted by two introduced flora taxa*; Aerva javanica* (Kapok bush); and *Cenchrus ciliaris* (Buffel Grass) (ENV Environmental, 2009b). Should a Clearing Permit be granted it is recommended a condition be placed on the permit for the purpose of weed management.

The application area has suffered from a high level of disturbance from existing road and rail infrastructure (ENV Environmental, 2009b).

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

Methodology

ENV Australia (2009a)
ENV Australia (2009b)
Shepherd (2007)
GIS Database:
- CALM Managed Lands and Waters.
- Declared Rare and Priority Flora list.
- Environmentally Sensitive Areas.
- Interim Biogeographic Regionalisation of Australia (subregions).
- Pre-European Vegetation.
- Threatened Ecological Communities.

(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

ENV Environmental (2009b) conducted a Level 1 terrestrial fauna survey over the application area in June 2009.

One fauna habitat type (sand plain) was recorded within the application area (ENV Environmental, 2009b). This habitat type was determined to be of low habitat value as it is widespread in the local area and few conservation significant species are likely to occur (ENV Environmental, 2009b). The application area has suffered from a high level of disturbance from existing road and rail infrastructure (ENV Environmental, 2009b). Few fauna species are expected to inhabit the application area with the majority of species present using the area as foraging grounds, or as part of a larger territory (ENV Environmental, 2009b).

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

Methodology

ENV Environmental (2009b)

(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

ENV Environmental (2009a) conducted a Level 1 flora and vegetation survey over the application area in June 2009. The survey comprised; a Declared Rare and Priority Flora search; assessment of vegetation condition; mapping of vegetation communities; and the compilation of a species inventory (ENV Environmental, 2009a).

No Declared Rare Flora was recorded during the ENV Environmental (2009a) flora and vegetation survey.

One Priority Flora species listed with the Department of Environment and Conservation (DEC) was recorded within the application area (ENV Australia, 2009a). *Tephrosia rosea var. venulose* (Priority 1) was recorded at 48 locations, with the population totalling approximately 480 individuals (ENV Australia, 2009a). This species is considered to be geographically restricted as it has only been recorded between Port Hedland and Cape Lambert. This species is therefore considered to be locally significant (ENV Australia, 2009a).

Previous surveys conducted by ENV Environmental (2009a) in the Port Hedland area have recorded approximately 1,800 plants across 18 locations of *Tephrosia rosea var. venulose.* Therefore, the addition of the plants recorded in the June 2009 flora survey brings the total number of recorded plants by ENV Environmental (2009a) to 2,280. The species is known to occur from six locations separate to the application area, including populations on Finucane Island and at the Peawah River (Western Australian Herbarium, 1998-2009).

Based on field observations recorded by ENV Environmental (2009a), the distributions of *Tephrosia rosea var. venulose* suggest that it is a disturbance specialist, a pioneer species and/or a post-fire germinant.

Although there will be an impact on this species locally it is unlikely that vegetation of the application area would be necessary for the continued existence of this species. Especially considering this species has been highlighted as a disturbance specialist and has been recorded at a number of locations outside of the application area (ENV Environmental, 2009a).

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

Methodology ENV Environmental (2009a)
Western Australian Herbarium (1998-2009)

(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 200 kilometres of the application area (ENV Environmental, 2009a; GIS Database).

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

Methodology ENV Environmental (2009a)
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 application area is located within the Pilbara Bioregion of the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). Shepherd (2007) reports that approximately 99.9% of the pre-European vegetation still exists in the Pilbara Bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 127: Bare areas; mud flats and 647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex (GIS Database). Both of these vegetation types are very well represented at a state and bioregional level (Shepherd, 2007).

Although the town site of Port Hedland and several mining operations are located within a 50 kilometre radius of the application area (BHP Billiton, 2009; GIS Database), on a broader scale the Pilbara region has not been extensively cleared. Hence, the application area is not considered to represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,188	17,794,646	~99.9	Least Concern	6.3
Beard vegetation associations - WA					
127	742,644	719,966	~96.9	Least	0
647	196,372	196,372	~100	Concern	0
Beard vegetation associations - Pilbara Bioregion					
127	180,401	177,739	~98.5	Least	0
647	196,371	196,371	~100	Concern	0

* Shepherd (2007)
** Department of Natural Resources and Environment (2002)

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

Methodology BHP Billiton (2009)
Department of Natural Resources and Environment (2002)
Shepherd (2007)
GIS Database:
- 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 not at variance to this Principle

There are no watercourses, wetlands or ephemeral drainage lines within the application area (GIS Database). None of the vegetation associations identified from the application area are associated with watercourses or wetlands (ENV Environmental, 2009a).

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

Methodology

ENV Environmental (2009a)
GIS Database:
- Hydrography, Linear
- Lakes, 1M
- Rivers 250K

(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

It is unlikely the proposed clearing will cause appreciable land degradation. Wind and water erosion will be mitigated by the the construction of a new rail formation, access tracks and borrow areas over any areas that are cleared (BHP Billiton, 2009).

The application area is not within an acid sulfate soil risk area (GIS Database) and it is unlikely that the proposed clearing will cause a noticeable rise in salinity, given its relatively small size (5.5 hectares). There may be some loss of soil structure and organic matter, however, should the permit be granted it is recommended that a condition be placed on the permit for the purpose of retaining topsoil and vegetative matter.

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

Methodology

BHP Billiton (2009)
GIS Database:
- Acid Sulfate Soil Risk Areas

(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 within a 50 kilometres radius of the application area (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

The application area is not located within a Public Drinking Water Source Area (GIS Database).

There are no watercourses or wetlands within the application area (GIS Database). Given the nature and small scale of the proposal, it unlikely to impact upon groundwater levels or quality.

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

Methodology

GIS Database:
- Hydrography, linear.
- Public Drinking Water Source Areas.

(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 is unlikely to cause, or exacerbate, the incidence or intensity of flooding for the following reasons:

- low annual rainfall of approximately 300 millimetres per year (GIS Database);
- high evaporation rates of approximately 3600 millimetres per year (GIS Database);
- gently undulating topography (GIS Database);
- the relatively small size of the proposed clearing (5.5 hectares); and
- the lack of standing waterbodies or watercourses (GIS database)

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

Methodology

GIS Database:
- Evaporation Isopleths
- Hydrography, linear
- Rainfall, Mean Annual
- Topographic Contours, Statewide

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 31 August 2009 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim over the application area (GIS Database). This claim (WC99-003) has been registered with the National Native Title Tribunal on behalf of the 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 is one known Aboriginal Site 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 Sites of Aboriginal Significance are damaged through the clearing process.

BHP Billiton has an internal process; the Project Environment and Aboriginal Heritage Review (PEAHR), which is designed to prevent inadvertent disturbance of Aboriginal heritage sites within BHP Billiton operations. 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, 2005).

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 (2005)
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 not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principles (e) and (f).

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

5. References

BHP Billiton (2005) Aboriginal Heritage Induction Handbook. BHP Billiton Iron Ore Pty Ltd, Western Australia.

BHP Billiton (2009) Boodarie Depot Siding Extension Project Clearing Permit Application. BHP Billiton Iron Ore Pty Ltd, 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.

ENV Australia (2009a) Boodarie Depot Flora and Vegetation Assessment. Unpublished report prepared for Calibre Engenium Joint venture, Perth, Western Australia.

ENV Australia (2009b) Boodarie Depot Terrestrial Fauna Assessment. Unpublished report prepared for Calibre Engenium Joint venture, Perth, 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. (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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Western Australian Herbarium (1998-2009). Florabase - The Western Australia Flora, A search for *Tephrosia rosea var. venulose*, Department of Environment and Conservation, <http://florabase.calm.wa.gov.au.html>, accessed 24 August 2009.

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.
DMP	Department of Mines and Petroleum, 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.