Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4441/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Robe River Mining Co Pty Ltd**

1.3. Property details

Property: *Iron Ore (Robe River) Agreement Act 1964*, Special Lease for Mining Operations 3116/4629 (Document I 195322 L) (Lease Extension E 877836), Lot 208 on Deposited Plan 187691
Local Government Area: Shire of Roebourne
Colloquial name: Wickham Site Offices

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.7		Mechanical Removal	Construction of site offices and associated infrastructure

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 28 July 2011

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 associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area: **157:** Hummock grasslands, grass steppe; hard spinifex, *Triodia wiseana* (GIS Database). A flora and vegetation survey of the application area was conducted by ENV Australia Pty Ltd (ENV) in March 2011 (ENV, 2011). One vegetation association was identified within the application area: **ApAsCc -** A high open shrubland of *Acacia pyrifolia*, *A. bivenosa*, *A. ancistrocarpa*, *A. inaequilatera* and *A. trachycarpa* over a low shrubland of *A. stellaticeps* over a tussock grassland of *Cenchrus ciliaris*, *Paraneurachne muelleri* and *Themeda triandra* over scattered hummock grasses of *Triodia epactia* (ENV, 2011).	Robe River Mining Co Pty Ltd has applied to clear up to 0.7 hectares of native vegetation. The purpose of the clearing is for the construction of site offices and associated infrastructure. The construction is part of the expansion of the Wickham Townsite. Vegetation will be cleared using a dozer with the blade down. Vegetation will be stockpiled and used in rehabilitation.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994). To: Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	The vegetation condition was assessed by botanists from ENV (2011). The vegetation conditions were described using a scale based on Trudgen (1991) and have been converted to the corresponding conditions from the Keighery (1994) scale.

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 occurs within the Chichester subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by plains supporting a shrub steppe of *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation association 157, which has approximately 99.9% of its pre-European extent remaining in the bioregion (Shepherd, 2009; GIS Database).

ENV conducted a flora and vegetation survey of the application area in March 2011 and identified one vegetation association (ENV, 2011). This vegetation association has a large distribution within the Pilbara (ENV, 2011).

No Declared Rare Flora, Priority Flora species, Threatened Ecological Communities or Priority Ecological Communities were recorded within the application area (ENV, 2011; GIS Database).

Four introduced flora species were recorded within the application area (ENV, 2011). These weed species were Buffel Grass (*Cenchrus ciliaris*), Kapok Bush (*Aerva javanica*), Purlane (*Portulaca oleracea*) and Stinking Passion Flower (*Passiflora foetida* var. *hispida*) (ENV, 2011). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The fauna habitat within the application area is limited to the 'Stony Plains' habitat type which is well represented outside of the application area (ENV, 2011). This habitat type in the Pilbara generally has a low level of fauna diversity and provides core habitat for a low number of conservation significant species (ENV, 2011).

The application area is adjacent to existing buildings and part of it has already been cleared or disturbed (ENV, 2011; GIS Database). Considering the amount of disturbance already present, and the wide availability of the vegetation association and fauna habitat type, the application area is not likely to comprise a greater diversity than similar areas either locally or at a bioregional scale.

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

Methodology

CALM (2002)
ENV (2011)
Shepherd (2009)
GIS Database:
- Cape Lambert 20 cm Orthomosaic - Landgate 2005
- Declared Rare and Priority Flora List
- IBRA WA (Regions - Subregions)
- Pre-European Vegetation
- Threatened Ecological Sites Buffered

(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

No targeted fauna surveys were undertaken within the application area. A desktop analysis was conducted and observations of the fauna habitats present within the application area were recorded during the field survey in March 2011 (ENV, 2011).

The application area consists of one fauna habitat type 'Stony Plain' (ENV, 2011). The vegetation structure of this habitat type consists of high open *Acacia* shrubland over a low *Acacia* shrubland over a tussock grassland. Microhabitat diversity is low with logs, debris and litter being scarce (ENV, 2011). The substrate is favourable for burrowing animals, especially reptiles (ENV, 2011). This habitat type is generally well represented in the Pilbara (ENV, 2011).

The application area contains some areas that have already been cleared or developed and these areas provide little to no habitat value (ENV, 2011; GIS Database).

The application area may provide habitat for a variety of fauna species but the fauna habitat type is well represented outside the application area and partly degraded (ENV, 2011). No conservation significant fauna were observed during the field survey or have previously been recorded within the application area (ENV, 2011; GIS Database). These factors, combined with the small size of the application area, indicate that the application area is unlikely to provide significant habitat for fauna indigenous to Western Australia.

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

Methodology

ENV (2011)
GIS Database:
- Cape Lambert 20 cm Orthomosaic - Landgate 2005
- Threatened Fauna

(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

According to available databases there are no known records of Declared Rare Flora (DRF) within the application area (GIS Database). The nearest record of DRF is located approximately 215 kilometres south-

east of the application area (GIS Database).

A flora and vegetation survey of the application area was conducted by ENV botanists in March 2011 (ENV, 2011). No DRF species were recorded during the survey (ENV, 2011).

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

Methodology ENV (2011)
GIS Database:
- Declared Rare and Priority Flora List

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

Comments

Proposal is not likely to be at variance to this Principle

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC, *Themeda* grasslands on cracking clays, is located approximately 160 kilometres south-east of the application area (GIS Database).

No TECs were identified during the flora and vegetation survey conducted by ENV botanists over the application area (ENV, 2011).

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

Methodology ENV (2011)
GIS Database:
- Threatened Ecological Sites Buffered

(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 clearing application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 99.9% of the pre-European vegetation remains (see table) (Shepherd, 2009; GIS Database). This gives it a conservation status of "Least Concern" according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation association 157 "Hummock grasslands, grass steppe; hard spinifex, *Triodia wiseana*" (GIS Database). According to Shepherd (2009) approximately 99.8% of Beard vegetation association 157 remains at the state level and approximately 99.9% remains at a bioregional level. This vegetation association would be given a conservation status of "Least Concern" at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in an area that has been extensively cleared.

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,193	17,785,001	~99.9	Least Concern	6.3
Beard Veg Assoc. – State					
157	502,729	501,514	~99.8	Least Concern	17.9
Beard Veg Assoc. – Bioregion					
157	198,634	198,519	~99.9	Least Concern	5.7

* Shepherd (2009)
** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (Regions - Subregions)

- 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 likely to be at variance to this Principle

There are no permanent watercourses or wetlands within the application area (GIS Database). One minor non-perennial watercourse has previously been mapped through the application area (GIS Database) but this is indistinguishable on ground (ENV, 2011). Roads, buildings and other infrastructure have been constructed adjacent to the application area (GIS Database) and this is likely to have influenced the flow of ephemeral drainage lines in the area. The on ground vegetation survey did not describe the one vegetation association identified within the application area as growing in association with a watercourse (ENV, 2011).

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

Methodology

ENV (2011)
GIS Database:
- Cape Lambert 20 cm Orthomosaic - Landgate 2005
- Hydrography, Linear

(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

According to available datasets the application area is within the Ruth Land System (GIS Database). The Ruth Land System is characterised by hills and ridges of volcanic and other rocks supporting hard spinifex (occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

Robe River Mining Co Pty Ltd has applied to clear up to 0.7 hectares to construct site offices. The proposed clearing activities are not likely to result in large areas of disturbed or open land. Given the small size of the proposed activities, the clearing is not likely to result in appreciable land degradation.

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

Methodology

Van Vreeswyk et al. (2004)
GIS Database:
- Rangeland Land System Mapping

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal is not likely to be at variance to this Principle

The proposed clearing is not located within a conservation reserve (GIS Database). The nearest known conservation areas are on islands off the Western Australian coast (GIS Database) and the application area is unlikely to provide any ecological linkage to these. The nearest mainland conservation area is Millstream Chichester National Park, located approximately 54 kilometres south of the application area (GIS Database). At this distance the proposed clearing is unlikely to impact on the environmental values of the National Park.

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

Methodology

GIS Database:
- DEC Tenure
- Register of National Estate (Status)

(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

According to available databases the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Roebourne Water Reserve, which is approximately 11 kilometres south of the application area (GIS Database). The small area of the proposed clearing is unlikely to cause deterioration in the quality of underground water.

The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the size of the area to be cleared (0.7 hectares) compared to the size of the Pilbara Groundwater Province (5,557,665 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels to alter significantly.

There are no permanent wetlands or watercourses within the application area (GIS Database). There are ephemeral drainage lines surrounding the application area (GIS Database) but these would only flow for short

periods following heavy rainfall. The proposed clearing is unlikely to cause deterioration in the quality of surface water in the local area.

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

Methodology GIS Database:
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSAs)

(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 within the Coastal catchment area of the Port Hedland Coast basin (GIS Database). Given the size of the area to be cleared (0.7 hectares) in relation to the size of the catchment area (744,301 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

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

Methodology GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC99/14) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered 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 through 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 on 4 July 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court

4. References

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. 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.

ENV (2011) Cape Lambert Contractor Office/Laydown Flora, Vegetation and Fauna Assessment. Report Prepared by ENV Australia Pty Ltd for Rio Tinto Iron Ore, June 2011.

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. (2009) 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.

Van Vreeswyk A.M.E., Payne A.L., Leighton K.A. and Hennig P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Perth, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), 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 (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
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 Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

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.