Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3056/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Cliffs Asia Pacific Iron Ore Pty Ltd**

1.3. Property details

Property: Mining Lease 77/990
Local Government Area: Shire of Yilgarn
Colloquial name: Koolyanobbing Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.6		Mechanical Removal	Road Construction

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description
Vegetation within the application area has been mapped at a 1:250,000 scale as Beard Vegetation Association:

144: Medium woodland; wandoo, salmongum, morel, gimlet & rough fruited mallee.

Western Botanical undertook a flora and vegetation survey over the application area on 18 November 2008. The botanical survey identified the following vegetation community within the application area (Cliffs Asia Pacific Iron Ore, 2009):

- *Eucalyptus longicornis* woodland over Sclerophyll and Chenopod understorey.

Clearing Description
Cliffs Asia Pacific Iron Ore has applied to clear up to 0.6 hectares of native vegetation within an application area of 1.2 hectares for the purpose of constructing a road.

The proposal is for the construction of a road that will bypass the existing Run of Mine (ROM) pad and provide an alternative and safer route for driving between the A and K pits (Cliffs Asia Pacific Iron Ore, 2009). Clearing will be by mechanical means.

Vegetation Condition
Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment
The vegetation condition rating is based on information reported by Western Botanical (Cliffs Asia Pacific Iron Ore, 2009).

The application area is adjacent to an existing ROM pad and has a number of weed species present (Cliffs Asia Pacific Iron Ore, 2009).

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 Southern Cross subregion of the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Southern Cross subregion is characterised by gently undulating uplands dissected by broad valleys with bands of low greenstone hills (CALM, 2002). At a broad scale, vegetation can be described as Eucalyptus woodlands rich in endemic eucalypts around chains of saline playa-lakes, *Borya constricta* with stands of *Acacia acuminata* and *Eucalyptus loxophleba* on mid-levels of granite basement outcrops with mallees and scrubheaths on the uplands (CALM, 2002).

Western Botanical has identified one plant community within the application area (Cliffs Asia Pacific Iron Ore, 2009). This community is not identified as being a Threatened Ecological Community or a Priority Ecological Community (Cliffs Asia Pacific Iron Ore, 2009). The condition of this vegetation has been described as 'degraded' and is adjacent to an existing ROM pad (Cliffs Asia Pacific Iron Ore, 2009).

Thirty species of flora were identified during the botanical survey (Cliffs Asia Pacific Iron Ore, 2009). Two of these species are weed species. Wards Weed (*Carrichtera annua*) and Maltese Cockspur (*Centaurea melitensis*) are widespread in the eastern and north-eastern goldfields (Cliffs Asia Pacific Iron Ore, 2009). Wards Weed was found distributed evenly throughout the application area whilst Maltese Cockspur was found in a smaller population (Cliffs Asia Pacific Iron Ore, 2009). Neither of these species is listed as a Declared Plant for the Shire of Yilgarn by the Department of Agriculture and Food. The presence of these introduced

species lowers the biodiversity value of the proposed cleared area.

Due to its degraded state and proximity to an existing ROM pad, the application area is likely to support a low number of fauna species. Given the condition of the vegetation and high numbers of weeds found it is not likely that the application area comprises a higher level of biological diversity than nearby undisturbed areas.

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

Methodology CALM (2002)
Cliffs Asia Pacific Iron Ore (2009)
GIS Database
- Interim Biogeographic Regionalisation of Australia

(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 fauna surveys have been conducted over the area. The habitat within the application area has been described as plains, and is widely distributed around the region (Cliffs Asia Pacific Iron Ore, 2009). The vegetation within the application area has been described as 'degraded' and isn't expected to support high numbers of fauna. Vertebrate fauna may be present within the application area but impacts will be minimal given the transient nature of the fauna likely to be present and high numbers are unlikely around areas of high disturbance (Cliffs Asia Pacific Iron Ore, 2009).

There is a population of Tree-stem Trapdoor Spiders (*Aganippe castellum*) (Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) that inhabit the Koolyanobbing range. The Tree-stem Trapdoor Spider has been recorded in various vegetation associations from the lower slopes to the top of the Koolyanobbing ridge (Bamford Consulting Ecologists, 2009). They are not known to occur in Eucalypt woodland plains that are present within the application area (Bamford Consulting Ecologists, 2009). Given the lack of suitable habitat this species is unlikely to be found in the application area.

Given the degraded nature of the vegetation, its close proximity to existing disturbance and the small scale of the proposed clearing, the application area is unlikely to represent significant habitat for indigenous fauna.

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

Methodology Bamford Consulting Ecologists (2009)
Cliffs Asia Pacific Iron Ore (2009)

(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 Declared Rare Flora (DRF) or Priority Flora within the application area (GIS Database).

A flora survey was conducted over the application area by Western Botanical on 18 November 2008. No species listed as DRF or Priority Flora were recorded within the application area (Cliffs Asia Pacific Iron Ore, 2009). The vegetation within the application area is adjacent to an existing ROM pad and has been described as 'degraded' (Cliffs Asia Pacific Iron Ore, 2009). Therefore, the vegetation within the application area is not likely to represent vegetation necessary for the continued existence of rare flora.

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

Methodology Cliffs Asia Pacific Iron Ore (2009)
GIS Databse
- 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**
According to available databases, there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). No vegetation communities described as a TEC were recorded during the botanical survey of the application area (Cliffs Asia Pacific Iron Ore, 2009). The nearest known TEC is located approximately 45 kilometres north-east of the application area.

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

Methodology Cliffs Asia Pacific Iron Ore (2009)

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 falls within the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) region in which approximately 98.4% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd et al., 2001).

The vegetation of the application area has been mapped as Beard Vegetation Association 144: Medium woodland; wandoo, salmon gum, morel, gimlet & rough fruited mallee.

According to Shepherd et al., (2001) approximately 100% of Beard Vegetation Association 144 remains at both the state and bioregional level. Therefore the area proposed does not represent a remnant of native vegetation within an area that has been extensively cleared.

Whilst a small percentage of the vegetation types within the Coolgardie bioregion are protected within conservation reserves, the bioregion remains largely uncleared. As a result, the conservation of vegetation associations within the bioregion is not likely to be impacted by this proposal.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european % in IUCN Class I-IV Reserves (and post clearing %)*
IBRA Bioregion – Coolgardie	12,912,208	12,707,623	~98.4	Least Concern	10.3 (10.4)
Beard veg assoc. – State					
144	3988	3988	~100	Least Concern	0 (0)
Beard veg assoc. – Bioregion					
144	3988	3988	~100	Least Concern	0 (0)

* Shepherd et al. (2001)
** Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct	Probably no longer present in the bioregion
Endangered+	<10% of pre-European extent remains
Vulnerable+	10-30% of pre-European extent exists
Depleted+	>30% and up to 50% of pre-European extent exists
Least concern+	>50% pre-European extent exists and subject to little or no degradation over a majority of this area

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

Methodology

Department of Natural Resources and Environment (2002)
Shepherd et al. (2001)
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

According to available databases, there are no permanent or ephemeral watercourses or wetlands within the application area (GIS Database). The vegetation proposed to be cleared is not associated with any watercourses, wetlands or wetland dependant vegetation (Cliffs Asia Pacific Iron Ore, 2009). The nearest significant waterbody is Lake Deborah located approximately 2.5 kilometres west of the application area (GIS Database). Lake Deborah is a non-perennial salt lake, upon which the proposed clearing will not have a significant impact.

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

Methodology Cliffs Asia Pacific Iron Ore (2009)
GIS Database
- Hydrology, 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**
The application area is located within the Southern Cross Soil-Landscape Zone. This zone is characterised by undulating plains and uplands (with some salt lake and low hills) on deeply weathered mantle, colluvium and alluvium over greenstone and granitic rocks of the Yilgarn Craton (Tille, 2006).

The soil pH of the application area is 5.9 and there is an extremely low probably of acid sulphate soil occurrence (CSIRO, 2009). The application area is flat throughout, however the clearing of native vegetation could lead to some instances of localised erosion (GIS Database).

The average annual evaporation rate is approximately 9 times greater than the average annual rainfall, so it is unlikely the proposed clearing will result in increased groundwater recharge causing rising saline water tables (GIS Database). Given the small linear nature of the proposed clearing, it is unlikely that the proposed clearing will result in appreciable land degradation.

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

Methodology CSIRO (2009)
Tille (2006)
GIS Database
- Evaporation Isopleths
- Rainfall, Mean Annual
- Topographic Contours, Statewide

(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**
According to available database, the application area does not lie within any conservation areas or DEC managed lands (GIS Database). The nearest conservation reserve is an un-named nature reserve located approximately 11 kilometres west of the application area (GIS Database). Based on the distance between the application area and the nature reserve, the proposed clearing is not likely to impact on the environmental values of any conservation areas.

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**
According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

Groundwater within the application area is saline, between 14,000 – 35,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the groundwater is already saline, it is not likely that the proposed clearing will result in the deterioration of groundwater in the region.

There are no permanent or ephemeral waterbodies located within the application area (GIS Database). Lake Deborah is the closest waterbody to the application area, located approximately 2.5 kilometres west (GIS Database). Given the low average annual rainfall in the area (300 millimetres) and there are no watercourses within the application area, the proposed clearing is not likely to cause sedimentation or deteriorate the quality of surface water in nearby areas (GIS Database).

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

Methodology GIS Database
- Groundwater Salinity
- Rainfall, Mean Annual
- Public Drinking Water Source Areas (PDWSA's)
- Hydrography, linear

(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 receives an average annual rainfall of approximately 300 millimetres (GIS Database). Based on an average annual evaporation rate of 2600 – 2800 millimetres (GIS Database), any surface water resulting from rainfall events is likely to be relatively short lived.

The application area is within the Swan Avon/Yilgarn River catchment area which covers 5,836,045 hectares (GIS Database). The application area is relatively flat with no depressions that are susceptible to flooding (Cliffs Asia Pacific Iron Ore, 2009). Given the size of the area to be cleared (0.6 hectares) in relation to the size of the catchment area (5,836,045 hectares), the proposed clearing is not likely to increase the incidence or intensity of flooding.

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

Methodology

Cliffs Asia Pacific Iron Ore (2009)
GIS Database
- Evaporation Isopleths
- Hydrographic Catchments - catchments
- Rainfall, Mean Annual

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

Comments

The clearing permit application was advertised by the Department of Mines and Petroleum, inviting submissions from the public. There were no submissions received.

There is one native title claim over the area under application; WC99/029 (GIS Database). 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 (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 registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponents' 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.

Methodology

GIS Database
- 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 weed management, retention of vegetative material and topsoil, record keeping and permit reporting.

5. References

Bamford Consulting Ecologists (2009) Investigations Into the Distribution and Abundance of the Tree-stem Trapdoor Spider in the Koolyanobbing Area, December 2008. Unpublished report for Cliffs Asia Pacific Iron Ore Pty Ltd, Western Australia.

Cliffs Asia Pacific Iron Ore (2009) Koolyanobbing ROM Road Extension - Clearing Permit Application (Tenement M77/990). Unpublished report for Cliffs Asia Pacific Iron Ore Pty Ltd, Western Australia.

Commonwealth Scientific and Industrial Research Organisation (2009) Australian Soil Resource Information System. Available online at: http://www.asris.csiro.au/index_ie.html Accessed on 12 April, 2009.

Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.

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.

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.
Tille. P. (2006) Soil-landscapes of Western Australia?s Rangelands and Arid Interior. Technical Report 313. Department of Agriculture and Food, Western Australia. ISSN 1039-7205.

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.
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.