Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4343/1
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*, Mineral Lease 248SA (AML 70/248)
Local Government Area: Shire of Ashburton
Colloquial name: Robe Valley Drilling Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 21 July 2011

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 for the whole of Western Australia. Four Beard vegetation associations have been mapped within the application area (GIS Database).

82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;
93: Hummock grasslands, shrub steppe; kanji over soft spinifex;
583: Hummock grasslands, sparse shrub steppe; kanji and *Acacia bivenosa* over hard spinifex *Triodia basedowii* and *T. wiseana*; and
620: Hummock grasslands, shrub steppe; snakewood over soft spinifex.

Two large flora and vegetation surveys have been conducted by Biota Environmental Sciences that cover the application area and its surrounds (Biota, 2011a, 2011b). The survey of Mesa G was undertaken in August 2009 and the survey for Mesas B, C and F was undertaken in October 2010, with both incorporating the results of previous surveys in the area (Biota, 2011a, 2011b).

The following vegetation types were recorded within the application area (Biota, 2011a, 2011b):

Vegetation of the Plains

AatAbTe: *Acacia atkinsiana* open heath to tall shrubland over *Acacia bivenosa* open shrubland over *Triodia epactia* hummock grassland.

AatAbTw: *Acacia atkinsiana* tall open shrubland over *Acacia bivenosa* open shrubland over *Triodia wiseana* hummock grassland.

AatAbTw/AatAbTe: Mosaic of *Acacia atkinsiana* tall open shrubland over *Acacia bivenosa* open shrubland over *Triodia wiseana* hummock grassland and *Acacia atkinsiana* open heath to tall shrubland over *Acacia bivenosa* open shrubland over *Triodia epactia* hummock grassland.

AiAaAbTw: *Acacia inaequilatera* scattered tall shrubs over *Acacia ancistrocarpa*, *Acacia bivenosa* open shrubland to shrubland over *Triodia wiseana* hummock grassland.

AsyAbAaTe: *Acacia synchronicia*, *Acacia bivenosa*, *Acacia ancistrocarpa* open shrubland to shrubland over *Triodia epactia* open hummock grassland.

AsyAbAaTw: *Acacia synchronicia, Acacia bivenosa, Acacia ancistrocarpa* open shrubland over *Triodia wiseana* open hummock grassland.

AxTw: *Acacia xiphophylla* low woodland to tall shrubland over *Triodia wiseana* open hummock grassland.

AxTw/AxTe: Mosaic of *Acacia xiphophylla* low woodland to tall shrubland over *Triodia wiseana* open hummock grassland and *Acacia xiphophylla* low woodland to tall shrubland over *Triodia epactia* open hummock grassland.

ChAbTw: *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* open shrubland to open heath over *Triodia wiseana* hummock grassland.

Vegetation of the Mesas, Hills and Slopes

AacTw: *Acacia acradenia* open shrubland to open heath over *Triodia wiseana* hummock grassland.

AatTEuTw: *Acacia atkinsiana, A. inaequilatera, Petalostylis labicheoides* tall shrubland over *Tephrosia uniovulata* open shrubland over *Triodia wiseana* hummock grassland.

AarTw: *Acacia arida* scattered shrubs to open heath over *Triodia wiseana* hummock grassland.

AarTw/AbTw: Mosaic of *Acacia arida* scattered shrubs to open heath over *Triodia wiseana* hummock grassland and *Acacia bivenosa* open shrubland to open heath over *Triodia wiseana* hummock grassland.

AbTw: *Acacia bivenosa* open shrubland to open heath over *Triodia wiseana* hummock grassland.

AtuPlAacTw: *Acacia tumida* var. *pilbarensis* (*Petalostylis labicheoides*) tall closed scrub over *Acacia acradenia* low open shrubland over *Triodia wiseana* (*Triodia* sp. Robe River) very open hummock grassland.

ElAarTw: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia arida* shrubland to tall shrubland over *Triodia wiseana* hummock grassland.

ElGwAacTw: *Eucalyptus leucophloia* scattered low trees over *Grevillea wickhamii* scattered tall shrubs to tall shrubland over *Acacia acradenia* scattered shrubs to shrubland over *Triodia wiseana* hummock grassland.

ElTwTsr: *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Triodia wiseana*, *Triodia* sp. Robe River very open to open hummock grassland.

Vegetation of the Creeks and Rivers

CzAtrAaTeTw: *Corymbia zygophylla* scattered low trees to low open woodland over *Acacia trachycarpa*, *Acacia ancistrocarpa* tall shrubland over *Triodia epactia*, *Triodia wiseana* hummock grassland.

Vegetation of Minor Creeks and Drainage Lines

AtuTw: *Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia wiseana* open hummock grassland.

ChAacTw: *Corymbia hamersleyana* low open woodland over *Acacia acradenia* open heath over *Triodia wiseana* open hummock grassland.

ChAtuTw: *Corymbia hamersleyana* scattered low trees over *Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia wiseana* open hummock grassland.

ChAtuTwTe: *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia wiseana*, *Triodia epactia* open hummock grassland.

ElChAatTw: *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* scattered low trees over *Acacia atkinsiana* tall shrubland over *Triodia wiseana* open hummock to hummock grassland.

ElChPlGwAacTw: *Eucalyptus leucophloia, Corymbia hamersleyana* scattered low trees to low open woodland over *Petalostylis labicheoides, Grevillea wickhamii* tall open shrubland over *Acacia acradenia* open heath over *Triodia wiseana* hummock grassland.

Clearing Description

Robe River Mining Co Pty Ltd has applied to clear up to 16 hectares of native vegetation within an application area of approximately 1,704 hectares. The purpose of the clearing is mineral exploration.

The application area comprises of five separate areas with four located on mesas in the Robe Valley and the fifth area adjacent to the mesas. The mesas within the application area are Mesas B, C, F and G. The application area is approximately 85 kilometres west of Onslow.

Vegetation will be cleared using mechanical equipment.

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);
To
Pristine: No obvious signs of disturbance (Keighery, 1994).

Comment

The vegetation condition was assessed by botanists from Biota (2011a, 2011b). The vegetation conditions were described using a scale based on Trudgen (1988) 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 Hamersley (PIL3) Interim Biogeographic Regionalisation of Australia (IBRA) subregion (GIS Database). This subregion is generally 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 (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation associations 82, 93, 583 and 620, all of which have approximately 100% of their pre-European vegetation extent remaining in the bioregion (Shepherd, 2009; GIS Database).

Two large flora and vegetation surveys have been conducted by Biota Environmental Sciences (Biota) that cover the application area and its surrounds (Biota, 2011a, 2011b). The survey of Mesa G was undertaken in August 2009 and the survey for Mesas B, C, F and other neighbouring mesas was undertaken in October 2010, with both incorporating the results of previous surveys in the area (Biota, 2011a, 2011b). A total of 206 native flora species were recorded for the Robe Valley Mesas survey area (Biota, 2011b). The total flora species is lower than expected for an area with the size and habitat diversity of the Robe Valley survey area but this result is likely to be a reflection of the poor growing conditions at the time of the survey, rather than an indication of low floristic richness (Biota, 2011b). The genera with the highest number of taxa recorded were *Acacia*, *Senna*, *Sida* and *Triodia*. This is typical of vegetation in the Pilbara (Biota, 2011b).

No Declared Rare Flora (DRF) or Threatened Ecological Communities (TECs) were recorded within the application area (Biota, 2011a, 2011b; GIS Database).

Vegetation types corresponding to the Priority Ecological Community (PEC) '*Triodia* sp. Robe River assemblages of mesas of the Robe Valley area (Pilbara)' have been mapped within the application area on Mesas C, F and G (Biota, 2011a, 2011b). This PEC occurs at the edges of the mesas and only occupies a very small proportion of the application area (Biota, 2011a, 2011b). Most of the occurrences of the PEC have been excluded from the application area and the proposed drill hole and track locations do not intersect the remaining PEC vegetation types (Robe River Mining Co Pty Ltd, 2011). Robe River Mining Co Pty Ltd (2011) will aim to avoid these vegetation types.

One Priority Flora species has been recorded within the application area, *Triodia* sp. Robe River (Priority 3) (Biota, 2011a, 2011b). The main populations of this species occur within the vegetation types corresponding to the PEC '*Triodia* sp. Robe River assemblages of mesas of the Robe Valley area (Pilbara)' on the rocky edges of the mesas (Biota, 2011a, 2011b). Most occurrences of *Triodia* sp. Robe River on the mesas have been excluded from the application area and the proposed drill hole and track locations do not intersect the PEC vegetation types (Robe River Mining Co Pty Ltd, 2011). Robe River Mining Co Pty Ltd (2011) will aim to avoid the vegetation types associated with this Priority Flora species.

A total of 21 introduced flora species were recorded over the two survey areas (Biota, 2011a, 2011b). Six of these species are considered serious environmental weeds: Birdwood Grass (*Cenchrus setiger*), Buffel Grass (*Cenchrus ciliaris*), Kapok Bush (*Aerva javanica*), Mimosa Bush (*Vachellia farnesiana*), Ruby Dock (*Acetosa vesicaria*) and Stinking Passion Flower (*Passiflora foetida* var. *hispida*) (Biota 2011a, 2011b). While not all of the weed species present within the study areas are likely to occur within the application area, there are some weeds present due to previous disturbances in the application area. 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.

A large fauna survey was undertaken in October 2010 over several of the mesas within the application area and several other surrounding mesas within the Robe Valley (Biota, 2011c). A total of 128 vertebrate species were recorded, comprising 48 reptile, one amphibian, 61 avifauna, 17 native mammal and 1 introduced mammal species (Biota, 2011c). The species recorded are representative of the taxa commonly recorded in the Hamersley subregion and are consistent with the available habitat data (Biota, 2011c).

There are occurrences of the PEC 'Subterranean invertebrate communities of mesas in the Robe Valley region' on Mesas B, C, F and G within the application area (GIS Database). The habitat of the troglobitic faunal communities is the humidified pisolitic strata (DEC, 2010) and this subterranean habitat is unlikely to be affected by the small amount (16 hectares) of clearing above ground.

The application area may represent a relatively high level of biological diversity. However, the application area is much larger than the area proposed to be cleared, 1,704 hectares compared to 16 hectares. The landforms and vegetation associated with the PECs and Priority Flora are unlikely to be extensively cleared or impacted on during the proposed clearing activities (Robe River Mining Co Pty Ltd, 2011).

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

Methodology

Biota (2011a)
Biota (2011b)

Biota (2011c)
CALM (2002)
DEC (2010)
Robe River Mining Co Pty Ltd (2011)
Shepherd (2009)
GIS Database:
- 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

Two targeted fauna surveys have been undertaken over the application area and its surrounds, one over Mesa G and the other over Robe Valley Mesas B, C, D, E, F, H and I. The Mesa G survey was undertaken in August 2009 and the Robe Valley Mesas survey was undertaken in October 2010, both by Biota Environmental Sciences (Biota 2009, 2011c).

Three fauna habitats dominated the Mesa G application area: mesa tops, breakaways and plains (Biota, 2009). Five habitat types were described during the Robe Valley Mesas survey and three of these were recorded within the application area:

- *Acacia* spp. shrubland, over *Triodia* sp. hummock grassland on mesa plateau or plain;
- *Corymbia hamersleyana* trees over *Acacia* spp. in creeklines or mesa gullies; and
- *Eucalyptus leucophloia* scattered trees, over *Acacia* spp. shrubs, over *Triodia* sp. hummock grassland on mesa breakaway or gorge (Biota, 2011c).

Each of these habitat types are well represented in the locality and wider region and not of elevated conservation significance (Biota, 2009, 2011c).

One conservation significant vertebrate species has been recorded within the application area (Biota, 2009, 2011c). The Rainbow Bee-eater (*Merops ornatus*) is a Migratory species that was recorded on Mesa B as well as the surrounding mesas (Biota, 2011c). The Rainbow Bee-eater is widely distributed throughout Australia and uses a variety of habitats (Department of Sustainability, Environment, Water, Population and Communities, 2011) so the clearing of 16 hectares of potential habitat is unlikely to impact on the species.

Two conservation significant vertebrate fauna species have been recorded in the Mesa G area but not within the application area. The Orange Leaf-nosed Bat (*Rhinonicteris aurantius*) (Schedule 1) and Ghost Bat (*Macroderma gigas*) (DEC Priority 4) have been recorded on the southern face of Mesa G (Biota, 2009) but this habitat area has been excluded from the application area. Five species of conservation significance were recorded during the Robe Valley Mesas survey but not within the application area: Australian Bustard (*Ardeotis australis*), Ghost Bat, Northern Quoll (*Dasyurus hallucatus*), *Notoscincus butleri* and Star Finch (*Neochmia ruficauda*) (Biota, 2011c). While the application area may provide foraging habitat for some of these species, it is unlikely to represent core habitat for any of them.

Short range endemics (SREs) were targeted in both the Mesa G and Robe Valley Mesas surveys. While both surveys recorded specimens from invertebrate groups considered to potentially support SRE, nearly all the specimens recorded within the application area are unlikely to represent SREs (Biota, 2009, 2011c). This is because for the majority of specimens recorded during the surveys, similar representative taxa and morphospecies have been recorded at other locations in the vicinity and within the Pilbara region in general (Biota, 2009, 2011c). Pseudoscorpions collected from the Mesa G area may potentially represent SRE taxa but these were not recorded within the application area (Biota, 2009). Two species of mygalomorph spiders collected during the Robe Valley Mesa survey may potentially represent SREs and one specimen of one of these species was recorded within the application area (Biota, 2011c). Further study is needed before the species status as a SRE can be confirmed or refuted (Biota, 2011c).

Two Threatened Fauna arachnid species have been recorded on Mesas C and G (GIS Database). *Paradraculoides blythius* and *Paradraculoides gnophicola* are troglofauna species and the small amount of proposed clearing for exploration activities is unlikely to impact on the subterranean habitat of these species (Robe River Mining Pty Ltd, 2011).

According to Biota (2009), the fauna habitats available within the application area are well represented in the locality and wider region. Therefore it is considered unlikely that the application area represents 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

Biota (2009)
Biota (2011c)

Department of Sustainability, Environment, Water, Population and Communities (2011)
Robe River Mining Co Pty Ltd (2011)
GIS Database:
- 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 200 kilometres south-east of the application area (GIS Database).

Flora and vegetation surveys were conducted by Biota botanists in August 2009 and October 2010 over the application area and its surrounds (Biota, 2011a, 2011b). No DRF species were recorded during the surveys (Biota, 2011a, 2011b).

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

Methodology

Biota (2011a)
Biota (2011b)
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 120 kilometres south-east of the application area (GIS Database).

No TECs were identified during the flora and vegetation surveys conducted by Biota botanists over the application area (Biota, 2011a, 2011b).

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

Methodology

Biota (2011a)
Biota (2011b)
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 broadly mapped as the following Beard vegetation associations:

82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;
93: Hummock grasslands, shrub steppe; kanji over soft spinifex;
583: Hummock grasslands, sparse shrub steppe; kanji and *Acacia bivenosa* over hard spinifex *Triodia basedowii* and *T*. *wiseana*; and
620: Hummock grasslands, shrub steppe; snakewood over soft spinifex (GIS Database).

According to Shepherd (2009) approximately 100% of all of these Beard vegetation associations remains at the state and bioregional levels. These vegetation associations 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					
82	2,565,901	2,565,901	~100	Least Concern	10.2
93	3,044,308	3,044,249	~100	Least Concern	0.4
583	243,112	243,112	~100	Least Concern	35.2
620	15,539	15,539	~100	Least Concern	
Beard Veg Assoc. – Bioregion					
82	2,563,583	2,563,583	~100	Least Concern	10.2
93	3,042,113	3,042,064	~100	Least Concern	0.4
583	243,112	243,112	~100	Least Concern	35.2
620	15,539	15,539	~100	Least Concern	

* 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 Envirnment (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 at variance to this Principle**
There are no permanent watercourses or wetlands within the application area (GIS Database). However, there are several minor non-perennial watercourses through parts of the application area (GIS Database).

Robe River is in close proximity to each of the mesas within the application area so several small parts of the application area are mapped as vegetation types associated with drainage lines or creeks stemming from Robe River (Biota, 2011a, 2011b). Seven vegetation types within the application area are associated with creeks, minor creeklines or drainage lines (Biota, 2011a, 2011b). Minor drainage lines are common in the Pilbara and the vegetation types mapped within the application area are regionally well represented (Biota, 2011b).

Robe River and the vegetation types associated with the river are not found within the application area (Biota, 2011a, 2011b; GIS Database).

Based on the above, the proposed clearing is at variance to this Principle. However, the vegetation types associated with the minor watercourses are common in the local and regional area, and the small amount of proposed clearing is unlikely to have any significant impact on any watercourse or wetland.

Methodology Biota (2011a)
Biota (2011b)
GIS Database:
- Hydrography, Linear
- Natmap 250K Series Mapping

(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 intersects the Boolgeeda, Newman, River and Robe Land Systems (GIS Database).

The Boolgeeda Land System is characterised by stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). The vegetation is generally not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Newman Land System is characterised by rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). Each of the landforms in the land system have a mantle of abundant pebbles of ironstone and other rocks, which translates to a low soil erosion risk (Van Vreeswyk et al., 2004).

The River Land System is characterised by active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands (Van Vreeswyk et al., 2004). Susceptibility to erosion is high or very high if vegetation cover is removed (Van Vreeswyk et al., 2004). The application area contains approximately 1.5 hectares of this land system, less than 1% of the application area (GIS Database).

The Robe Land System is characterised by low limonite mesas and buttes supporting soft spinifex (and occasionally hard spinifex) grasslands (Van Vreeswyk et al., 2004). The system is not generally susceptible to vegetation degradation or erosion (Van Vreeswyk et al., 2004).

Robe River Mining Co Pty Ltd has applied to clear up to 16 hectares within an application area totalling approximately 1,704 hectares. Disturbance will be for exploration activities using machinery with the blade up where practicable to ensure soil is not removed (Robe River Mining Co Pty Ltd, 2011). 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
Robe River Mining Co Pty Ltd (2011)
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 conservation area is Cane River Conservation Park, which is located approximately 24 kilometres south-west of the application area (GIS Database). A large proportion of the vegetation in the Pilbara bioregion remains uncleared, approximately 99.9% (Shepherd, 2009), so it is unlikely that the application area provides an important buffer or ecological linkage for the conservation park.

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

Methodology
Shepherd (2009)
GIS Database:
- DEC Tenure
- Register of National Estate

(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

There are no permanent watercourses or wetlands within the application area (GIS Database). There are several minor ephemeral drainage lines within the application area that would only flow following substantial rainfall events (Biota, 2011a). Robe River is the major drainage feature in the locality (Biota, 2011a) and it is in close proximity to all parts of the application area (GIS Database). However, the small scale of the proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.

According to the available databases the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Cane River Water Reserve, which is approximately 53 kilometres west of the application area (GIS Database). The proposed clearing is unlikely to affect the water quality of the water reserve due to the large distance between it and the application area.

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

Methodology
Biota (2011a)
GIS Database:
- 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 intersects the Coastal and Robe River catchment areas of the Onslow Coast basin (GIS Database). Given the size of the area to be cleared (16 hectares) in relation to the size of the catchment areas (423,129 hectares and 757,138 hectares, respectively) (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 (WC99/12) 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 multiple registered Aboriginal Sites of Significance in the vicinity of 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 23 May 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 - Registered with the NNTT

4. References

Biota (2009) Mesa G Baseline Fauna Survey. Report by Biota Environmental Sciences Pty Ltd for Rio Tinto Iron Ore, December 2009.

Biota (2011a) A Vegetation and Flora Survey of Mesa G. Report by Biota Environmental Sciences Pty Ltd for Rio Tinto Iron Ore, January 2011.

Biota (2011b) Baseline Flora and Vegetation Assessment of Robe Valley Mesas (Mesas B, C, D, E, F, H and I). Report by Biota Environmental Sciences Pty Ltd for Rio Tinto Iron Ore, April 2011.

Biota (2011c) Robe Valley Mesas Fauna Survey. Report by Biota Environmental Sciences Pty Ltd for Rio Tinto Iron Ore, March 2011.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 3 (PIL3 - Hamersley Subregion). Department of Conservation and Land Management, Western Australia.

DEC (2010) Priority Ecological Communities for Western Australia. Species and Communities Branch, Department of Environment and Conservation, December 2010.

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.

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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.