Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2193/2

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Nickel West Pty Ltd**

1.3. Property details

Property: M36/156
M36/230
State Agreement Act Mineral Lease 225SA (AML70/255)

Local Government Area: Shire Of Leonora

Colloquial name: Leinster Nickel Operations

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Beard vegetation associations have been mapped at a 1:250 000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. Two Beard vegetation associations are located within the application area:

18: Low woodland; mulga (*Acacia aneura*). According to the Shared Land Information Platform (SLIP, 2007), Beard vegetation association 18 is a low woodland dominated by *Acacia aneura*.

39: Shrublands; mulga scrub. According to the Shared Land Information Platform (SLIP, 2007), Beard vegetation association 39 is a shrubland dominated by *Acacia aneura*, with subdominants *A. quadrimarginea*, *A. grasbyi*, *Hakea lorea* shrubland over *Senna* sp., *Eremophila* sp. shrubs over *Ptilotus obovatus*, *Clianthus formosus*, *Podolepis auriculata*, *Swainsona incei*, *Waitzia aurea*, *Ptilotus alopecuroideus*, *P. helipteroides*.

A flora and vegetation survey conducted by Western Botanical (2007) utilised Land Systems and Habitat Units defined by Pringle at al (1994) to describe the vegetation within the application area. These are:

SIMS: Stony Ironstone Mulga Shrublands occuring on ironstone ridges and associated slopes. Dominated by *Acacia aneura* scrub *over Eremophila latrobei ssp. latrobei*, *Scaevola spinescens* open low scrub over *Ptilotus schwartzii var. schwartzii, P. obovatus var. obovatus* open dwarf scrub.

LHMS: Lateric Hardpan Mulga Shrublands occuring on footslopes and plains surrounding SIMS. Dominated by *A. aneura*, *A. ramulosa var. linophylla* open low woodland over *E. latrobei ssp. latrobei*, *E. spectabilis ssp. brevis*, *P. obovatus*, *P. schwartzii var. schwartzii* open low scrub over *Eragrostis eriopoda* very open grasses.

GRMU: Mulga Groves on Hardpan Plain occuring in drainage lines and depressions. Dominated by *A. aneura*, *Brachychiton gregorii* low forest over *E. spectabilis*, *E. serrulata*, low scrub over *Aristida contorta*, *Eragrostis eriopoda*, *Enneapogon caerulescens* open grasses.

SAES: Scattered Acacia-Eremophila Shrublands occurring on a gentle slope of a SIMS ridge. Dominated by *A. aneura*, *A. ramulosa var linophylla* scrub over *E. galeata*, *A. tetragonophylla* open low scrub *over Eriochiton sclerolaenoides*, *Maireana triptera*, *Sclerolaena fusiformis* dwarf scrub.

GRSS: Granite Rock Sclerophyll Shrublands occuring subcropping Archaean granite sheets and minor outcrops. Dominated by *A. aneura*, *A. balsamea*, *A. quadrimarginea* scrub over *Dodonaea microzyga var microzyga*, *E. shonae ssp. shonae*, *E. latrobei ssp. latrobei* open dwarf scrub.

LMWS: Lateritic mulga wanderrie grassy shrublands occuring on level to very gently inclined plains. Not described by Western Botanical in their flora and vegetation assessment report (Western Botanical, 2007). Pringle et al (1994) describes this habitat unit as dominated by *A. aneura*, *A. linophylla*, *A. ramulosa* shrubs over *E. foliosissima*, *E. forrestii*, *E. gilesii*, *E. latrobei* low shrubs over *Eragrostis eriopida*, *Eriachne mucronatua*.

Clearing Description

BHP Billiton - Nickel West Leinster Nickel Operations (BHPB-NWLO) have applied to clear 80 ha within two separate application areas totalling approximately 221 hectares for the purpose of construction of waste rock dumps and topsoil stockpiles. Vegetation and topsoil will be progressively removed and a waste rock landform progressively constructed.

Vegetation Condition

Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

To

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

Comment

Vegetation condition was described by Western Botanical as moderate. During a site visit, the assessing officer noted that there were multiple disturbances present due to proximity to the existing mine and grazing by feral goats. The assessing officer considers the vegetation condition within the application area to be 'Degraded to 'Good' on the Keighery (1994) scale.

BHP Billiton Nickel West Leinster Nickel Operations have applied to amend their permit to alter the reporting period for the permit. The amended permit will now report from 1 August to 31 July, with report due 31 October.

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 areas are located within the East Murchison Sub-Biogeographic Region (GIS Database). This sub-region is characterised by internal drainage and extensive areas of elevated red desert sandplains with minimal dune development. Salt lake systems are associated with the occluded paleodrainage system. Broad plains of red-brown soils and breakaway complexes as well as red sandplains are widespread. Vegetation is dominated by mulga woodlands and is often rich in ephemerals, hummock grasslands, Saltbush shrublands and *Halosarcia* shrublands (CALM, 2002). The application areas are dominated by Mulga shrublands with some Mulga groves. One vegetation type within the application areas (Stony Ironstone Mulga Shrublands - SIMS) is considered to be an ecological community at risk (Western Botanical, 2007). SIMS vegetation community comprises the majority of the application area and some SIMS will be cleared if the permit is granted. However, SIMS is common in the wider area.

The sub-region is rich and diverse in both its flora and fauna but most species are wide ranging and usually occur in adjoining regions (CALM, 2002). Six priority flora species and two taxonomic significant species occur within the application areas (Western Botanical, 2007). These are mostly associated with ironstone ridges running roughly north-south through the application areas. A flora survey of the application area identified 84 flora species from 24 families (Western Botanical, 2007). This is considered to be moderately diverse. Chenopodiaceae, Mimosaceae and Myoporaceae were of highest diversity (Western Botanical, 2007), which is typical of the region's vegetation.

Vegetation communities within the bioregion is generally in fair or good condition and are either declining or show a static trend (CALM, 2002). All of these communities are threatened by grazing (stock, goats and rabbits) and changed fire regimes. Within the application areas, grazing by goats is apparent and is impacting negatively on the condition of the vegetation. Following a site inspection, the assessing officer considers most vegetation communities present within the application area to be in good condition, although some are degraded due to impact from the adjoining mine site.

The East Murchison IBRA sub-region is recognised as being rich and diverse in faunal assemblages, with low levels of endemism (Biota, 2007). However, given the proximity to mining and the multiple disturbances observed during a site inspection, it is likely that the faunal assemblages present within the application areas will be depauparate in relation to the IBRA sub-region.

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

Methodology

Biota (2007)
CALM (2002)
Western Botanical (2007)
GIS Database:
- Interim Biogeographic Regionalisation of Australia (sub-regions) - EA 18/10/00

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

Comments

Proposal is not likely to be at variance to this Principle

A site visit was conducted by the assessing officer on 30 November 2007. The assessing officer noted that the vegetation within the application area was in "good" to “degraded” condition (Keighery, 1994) and that there were no unique or restricted fauna habitat types. The assessing officer did not consider the vegetation within

the application area to be significant habitat for fauna, due to past disturbances, proximity to mining and the prevalence of the habitat types within the IBRA Bioregion.

Biota Environmental Sciences (Biota) conducted a level 1 fauna survey for the Rocky Reward Cutback 2. This involved a desktop assessment of the fauna species that may occur within the application area based on database searches, and an impact risk assessment of those species of conservation significance identified during the database search. A cursory site visit was also conducted by Biota to assess geographic and habitat descriptions (Biota, 2007). The Level 1 Fauna survey adequately meets the requirements of EPA Guidance Statement 56 Guidance for the Assessment of Environmental Factors - terrestrial fauna for Environmental Impact Assessment in Western Australia (EPA, 2004).

As a result of this survey, Biota determined that 9 habitat types, based on landform mapping, occur within BHPB-NWLO lease areas, of which 6 occur within the application area (Biota, 2007). None of these habitat types are restricted in nature, and occur repeatedly across the North East Goldfields Region. It is noted that habitat type SIMS (Stony Ironstone Mulga Shrublands) is considered to be an ecological community at risk (CALM, 2002). The main threatening process to this habitat type is grazing by feral goats. The assessing officer observed goats within the SIMS vegetation type during a site visit and noted that the vegetation was heavily grazed with little understorey. The assessing officer does not consider the loss of a very small proportion of degraded SIMS vegetation type within the region to be significant.

As a result of the fauna survey, Biota (2007) identified 14 species of conservation significance that have been recorded within the general vicinity of the application area. These are: Mulgara (*Dasycercus cristicauda*), Malleefowl (*Leipoa ocellata*), Giant Desert Skink (*Egernia kintorei*), Orange Leaf-Nosed Bat (*Rhinonicteris aurantius*), Peregrine Falcon (*Falco peregrinus*), Trapdoor Spider (*Kwonkan moriartii*), Princess Parrot (*Polytelis alexandrae*), Striated Grasswren (*Amytornis striatus striatus*), Slender-billed Thornbill (*Acanthiza iredalei iredalei*), Oriental Plover (*Charadrius veredus*), Fork-tailed Swift (*Apus pacificus*), Rainbow Bee-eater (*Merops ornatus*) and Great Egret (*Ardea alba*).

Of these species, based on habitat preference, the Australian Bustard and Rainbow Bee-eater are most likely to occur within the application area.

The Australian Bustard (DEC Priority 4) prefers tussock grassland, *Triodia* hummock grassland, grassy woodland and low shrublands (Garnett et al, 2000). This species may occur within the application area, however, given the widespread distribution of this species and the degraded nature of the vegetation to be cleared, the habitat within the application area is not significant habitat for this species.

The Rainbow Bee-eater (Migratory species under the *Environmental Protection and Biodiversity Conservation Act 1996*) is able to utilise a wide range of habitat types and nests in sandy soils. Given the lack of sandy soils within the application area, the species cosmopolitan distribution and the degraded nature of the vegetation to be cleared, the habitat within the application area is not significant habitat for this species.

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

Methodology

Biota (2007)
CALM (2002)
EPA (2004)
Keighery (1994)
Garnett et al (2000)

(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

The applicant has applied to clear vegetation in two separate application areas, a western area, and an eastern area. According to available databases, no species of Declared Rare or Priority Flora species have been recorded within the application areas (GIS Database).

Western Botanical conducted a flora survey and vegetation assessment over the application areas and surrounding areas. This involved a desktop database search of threatened flora and ecological community databases to identify conservation significant flora species that may occur within the area, and a botanical survey to describe vegetation types and condition and to identify any species of conservation significance that occur within the application area (Western Botanical, 2007). The vegetation survey and report adequately meet the requirements of EPA Guidance Statement 51 - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia (EPA 2004).

As a result of the botanical survey, no Declared Rare Flora species were identified within the application areas. However, a number of Priority and conservation significant flora species were located within the application areas. These are (Western Botanical, 2007): *Thryptomene sp.* Leinster (P1), *Baeckea sp.* Melita Station (P3), *Calytrix uncinata* (P3), *Acacia balsamea* (P4), *Eremophila pungens* (P4), *Eremophila pungens x spectabilis* hybrid, *Ptilotus obovatus* Upright Form.

Most conservation significant species are concentrated around rocky outcrops and ridges, mapped by Western Botanical (2007) as vegetation type GRSS (Granite Rock Sclerophyll Shrublands), occuring within the western application area and rocky outcrops and associated slopes in vegetation type SIMS (Stony Ironstone Mulga Shrublands), occurring within the eastern application area.

Within the western application area GRSS occurs on subcropping Archaean granite sheets and minor outcrops. Four of the five species of conservation significance recorded during the survey were located within GRSS: *T. sp*. Leinster, *B. sp*. Melita Station, *C. uncinata* and *A. balsamea* (Western Botanical, 2007). The assessing officer considers the GRSS within the application area to be significant habitat for Priority flora.

Within the eastern application area, rocky outcrops and associated slopes within SIMS hosts large populations of *B. sp*. Melita Station and *C. uncinata*. The assessing officer considers that the SIMS rocky outcrop and associated slopes is significant habitat for Priority flora.

BHPB-NWLO has positioned their clearing footprint within the western application area to avoid the large concentrations of Priority flora found within GRSS. In doing so, this significant habitat has been avoided. As a result of the clearing, 2 plants of the conservation significant species *E. pungens x spectabilis* hybrid occurring within SIMS and LHMS (Lateritic Hardpan Mulga Shrublands) will be removed. This represents approximately 2% of the total number of plants of this hybrid recorded.

However, the SIMS rocky outcrop and associated slopes within the eastern application area will be cleared. 95 *B. sp*. Melita Station plants and 312 *C. uncinata* plants will be removed as a result of the clearing. This represents less than 2.12% and 2.5% of the total number of these plants recorded in the Leinster area respectively.

The DEC have advised that the removal of 95 *B. sp*. Melita Station plants and 312 *C. uncinata* plants is not likely to be at variance to this Principle (DEC, 2008).

Therefore the vegetation within the application area is not significant habitat for the conservation of these two priority flora species.

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

Methodology DEC (2008)
EPA (2004)
Western Botanical (2007)
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05

(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 within the application area (GIS Database).

A vegetation survey of the area conducted by Western Botanical (2007) identified one vegetation type (SIMS) which is considered an ecological community at risk (CALM, 2002). Its conservation status is considered vulnerable and condition as fair to good, remaining static. This vegetation type is under threat from grazing pressure (CALM, 2002). SIMS is known to cover a substantial area (2,905.9 ha) across BHPB-NWLO tenements (Western Botanical, 2007), and constitutes the largest area within the application area. Pringle et al (1994) state that SIMS is found throughout the NE Goldfields but is most extensive between Laverton and Leonora. However, only a very small amount of SIMS vegetation will be cleared (approximately half of the eastern application area). This minimal amount of clearing is not likely to affect the conservation status of SIMS.

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

Methodology CALM (2002)
Pringle et al (1994)
Western Botanical (2007)
GIS Database:
Threatened Ecological Communities - CALM

(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**
According to available databases, the application area falls within the Murchison IBRA Bioregion (GIS

Database). This bioregion's vegetation extent remains at approximately 100% of its Pre-european extent*. According to available databases, the application area falls within the Murchison IBRA Bioregion (GIS Database). This bioregion's vegetation extent remains at approximately 100% of its Pre-European extent (see table). Beard Vegetation Association's 18 and 39 occur within the application area (GIS Database). These vegetation associations remain at 100% of their Pre-European extent (see table). Although not well represented in conservation estate, their conservation status is secure considering the total area of these vegetation types and their remaining 100% uncleared (see table).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european ha in IUCN Class I-IV Reserves
IBRA Bioregion – Murchison	28,120,558	28,120,558	100	Least Concern	295,435
Beard veg assoc. – State					
18	19,890,795	19,890,029	100	Least Concern	421,016
39	6,613,453	6,613,453	100	Least Concern	479,439
Beard veg assoc. – Bioregion					
18	12,403,248	12,403,248	100	Least Concern	45,626
39	1,148,411	1,148,411	100	Least Concern	232

* Shepherd et al. (2001) updated 2005
** Department of Natural Resources and Environment (2002)

Therefore, the application areas do not constitute a significant remnant in an area that is otherwise cleared.

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 - EA 18/10/00
- Pre-European Vegetation - DA 01/01

(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**
According to available databases, several minor, non-perrenial drainage lines intersect with the application area (GIS Database). During a site inspection the assessing officer noted that the drainage lines are very shallow and are not likely to experience water flows except during times of intense rainfall. The vegetation within the drainage lines is not riparian in nature, although the vegetation type (GRMU) is restricted to the drainage line.

However, the assessing officer noted that a 1 in 50 year drain had been constructed upstream of the application area. This drain diverts run-off during these high rainfall events around the mine area, to be discharged into other drainage lines away from the mine area. Subsequently very little water flows through the drainage lines within the application area even during high rainfall events.

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

Methodology GIS Database:
- Hydrography, Linear - DoE 1/2/04

(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 areas have been surveyed by the Department of Agriculture and Food (Pringle et al 1994).

The application areas are composed of the following land systems (GIS Database):

Bevon

Brooking
Sherwood
Violet

The Bevon Land System is described as irregular low ironstone hills with stony lower slopes supporting mulga shrublands (Pringle et al, 1994). The Bevon Land System is located within the western application area and is divided into 8 land units of which two are most likely to occur within the western application area - Hill and Hill slope (HIL) and Stony Plain (PLN). These units are not susceptible to soil erosion.

The Brooking Land System is described as prominent ridges of banded iron formation, supporting mulga shrublands; occasional minor halophytic communities in the south-east (Pringle et al, 1994). The Brooking Land System is divided into 4 land units of which two occur within both west and east application areas, Ridge (RDG), Hillslope (HSL). Unit RDG occurs in both the western and eastern application areas and hosts the majority of Priority Flora species found within the application areas. Removal of the stony mantle may initiate soil erosion.

The Sherwood Land System occurs within the eastern application area and is described as Granite breakaways and extensive stony granitic plains, with mulga shrublands and minor halophytic shrublands (Pringle et al, 1994). However, only a very small area within this eastern application area is mapped as Sherwood and it is more likely that the area mapped as Sherwood within the eastern application area is part of the Brooking Land System.

The Violet Land System occurs within the western application area and is described as undulating stony gravelly plains and low rises, supporting mulga shrublands (Pringle et al, 1994). The Violet Land System is divided into 5 land units of which one, Stony Plain (PLG), is most likely to occur. Removal of stony mantles can make soils moderately susceptible to water erosion.

The areas cleared will have permanent waste dumps and soil dumps placed upon them. This would suggest that soil erosion occurring as a result of the removal of shrub layer and stony mantle is not likely. A 1 in 50 year drain has been constructed around the mine area and surface water flows are diverted into existing drainage tracts.

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

Methodology Pringle et al (1994)
GIS Database:
- Rangeland Land System Mapping - DA

(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 at variance to this Principle**
There are no conservation areas within close proximity to the application areas. The nearest conservation estate is Wanjarri Nature Reserve, located approximately 30 km to the north (GIS Database).

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

Methodology GIS Database:
- CALM Managed Lands and Waters

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments **Proposal is not likely to be at variance to this Principle**
The application area occurs in a very arid climate. The Bureau of Meteorology have recorded an average yearly rainfall of 290.8 mm (BOM, 2007), with most rainfall occuring in the summer months between December and March. This rainfall is likely to be associated with low pressure troughs bringing warm moist air from the tropics. Rainfall during these tropical thunderstorms is likely to be short and intense. Surface water run-off in these events is likely to be as sheet flow towards existing natural drainage lines.

However, a 1 in 50 year drainage line has been constructed around the western application area. This drain diverts surface flows away from the application area into existing natural drainage lines. This drain means that it is unlikely that sufficient water will flow over the application area to create turbidity or cause sedimentation downstream.

The application occurs within a surface water management area (GIS Database). DoW (2007) advise that 'In line with the administrative agreement between the Water and Rivers Commission (DoW) and the Department of Industry and Resources for mineral exploration and prospecting activities and mining operations in water resource areas of western Australia - schedule AA1 "Exploration activities or mining operations that may disrupt the natural flow of any watercourse or hydrology of a wetland is prohibited unless written approval is first

obtained from the Waters and Rivers Commission (DoW)".' It is the applicant's responsibility to determine whether a beds and banks permit is required.

Groundwater in the application areas ranges from fresh to brackish (GIS Database). Given the small amount of clearing relative to the size of the groundwater basins, it is unlikely that the proposed clearing will lead to increased groundwater salinity.

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

Methodology BOM (2007)
DoW (2007)
GIS Database:
- Groundwater Salinity, Statewide
- Surface Water Management Areas (DRAFT)

(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 areas are located within the Lake Carey catchment area which is approximately 113,782 sq km in size. The removal of 80 ha of native vegetation within this catchment area represents an extremely small amount of clearing in relation to the catchment.

Given the low rainfall experienced by the catchment and the large size of the catchment, the proposed clearing is not likely to lead to an increase the amount of run-off within the catchment. Therefore there will not be any increase in flood height or duration within the catchment.

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 no native title claim over the area under application (GIS Database).

Aboriginal Heritage Sites DIA 686, 687 and 24081 occur within 2 kilometres of the application area (GIS Database). BHPB-NWLO have undertaken previous Aboriginal Heritage studies to confirm the true location of these sites. As a result, BHPB-NWLO have confirmed that no Aboriginal Heritage Site will be disturbed or destroyed by the application (BHPB-NWLO, 2007). The assessing officer does not consider it necessary to refer the application to the EPA on the grounds of impact to heritage sites. It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no sites of aboriginal significance are damaged though the clearing process.

The application occurs in a surface water management area (GIS Database). DoW (2007) advise that 'In line with the administrative agreement between the Water and Rivers Commission (DoW) and the Department of Industry and Resources for mineral exploration and prospecting activities and mining operations in water resource areas of Western Australia - schedule AA1 "Exploration activities or mining operations that may disrupt the natural flow of any watercourse or hydrology of a wetland is prohibited unless written approval is first obtained from the Waters and Rivers Commission (DoW)".' It is the applicants responsibility to determine whether a beds and banks permit is required.

No submissions were received from interested third parties during the public submission period.

BHP Billiton Nickel West Leinster Nickel Operations have applied to amend their permit to alter the reporting period for the permit. The amended permit will now report from 1 August to 31 July, with report due 31 October.

Methodology BHPB-NWLO (2007)
DoW (2007)
GIS Database:
- Native Title Claims
- Aboriginal Sites of Significance (STATUS)
- Surface Water Management Areas (DRAFT)

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment

State Agreement	Mechanical Removal	200	The amended proposal has been assessed against the Clearing Principles and the proposal has been found to be at variance to Principle (f), is not likely to be at variance to Principle (a), (b), (c), (d), (g), (i) and (j) and is not at variance to Principle (e) and (h). It is recommended that should a permit be granted, conditions be endorsed on the permit with regards to recording areas cleared and reporting those areas so cleared.

5. References

BHPB-NWLO (2007). Supporting Documentation supplied with clearing permit application for Rocky's Reward Cutback #2. BHP Billiton Nickel West Leinster Operations.

Biota (2007). Leinster Nickel Operations: Rocky's Reward Cutback # 2 and TSF Desktop Fauna Review. Unpublished report prepared by Biota Environmental Sciences Pty Ltd for BHP Billiton Nickel West.

BOM (2007). Burea of Meteorology Website - Climate Averages by Number, Averages for LEINSTER AERO. http://www.bom.gov.au/climate/averages/tables/cw_012314.shtml

DEC (2006) Biodiversity advice for land clearing application. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received DATE. Biodiversity Coordination Section, Department of Environment and Conservation, Western Australia.

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.

DoW (2007). Advice to assessing officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received 21/12/07. Department of Water, Western Australia.

EPA (2004) Guidance for the Assessment of Environmental Factors - terrestrial fauna for Environmental Impact Assessment in Western Australia. Report by the EPA under the Environmental Protection Act 1986. No 56 WA.

EPA (2004) Guidance for the Assessment of Environmental Factors - terrestrial flora and vegetation surveys for Environmental Impact Assessment in Western Australia. Report by the EPA under the Environmental Protection Act 1986. No 51 WA.

Garnett ST & Crowley GM (2000). Action Plan for Australian Birds 2000. Environment Australia, Canberra.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Pringle HJR, Van Vreeswyk AME & Gilligan SA (1994). Technical Bulletin No. 87 An Inventory and condition survey of the North Eastern Goldfields, Western Australia. Department of Agriculture, 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.

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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.