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Permit application details

Clearing Permit Decision Report

1. Application details

Permit application No.:	3877/1						
Permit type:	Purpose	Purpose Permit					
1.2. Proponent details							
Proponent's name:	Hamersley Iron Pty Ltd						
1.3. Property details							
Property:	Iron Ore (Hamersley Range) Agreement Act 1963, Mineral Lease 246SA (AML 70/246)						
Local Government Area: Shire		hire of Ashburton					
Colloquial name:	Paraburd	loo Project					
1.4. Application							
Clearing Area (ha) No.	Trees	Method of Clearing	For the purpose of:				
3.4		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 scale of 1:250,000 for the whole of Western Australia. One Beard Vegetation Association is located within the application area (GIS Database):

Beard Vegetation Association 82: hummock grasslands, low tree steppe, Snappy Gum over *Triodia wiseana*.

Rio Tinto conducted a flora and vegetation survey of an area that included the application area in March and May 2009. The survey identified 21 vegetation units within the survey area; of which the following five were present within the application area (Rio Tinto, 2009):

Vegetation Unit 1:

Eucalyptus camaldulensis open woodland over Acacia citrinoviridis, Melaleuca lasiandra, Acacia ampliceps scattered tall shrubs over Cenchrus ciliaris tussock grassland over Aerva javanica open herbs. This vegetation unit was observed in the main channel of the riparian zone and consists of silty clay loam and a sparse cover of river pebble and cobbles overlying (at varying depth between 2-10 millimetres) silts and clays. Associated species include; Leptopus decaisnei, Cleome viscosa, Eriachne pulchella, Pluchea dentex, Tephrosia gardneri, Urochloa pubigera, Ipomoea muelleri, Acacia pruinocarpa, Grevillea berryana.

Vegetation Unit 2:

Eucalyptus camaldulensis woodland over Melaleuca glomerata, Acacia coriacea, Acacia citrinoviridis low open forest over Acacia ampliceps high open shrubland over Cenchrus ciliaris, Chloris pectinata, Cynodon dactylon tussock grassland over Cyperus vaginatus very open sedges over Sisymbrium orientale, Argemone ochroleuca very open herbs.

Vegetation Unit 3:

Eucalyptus camaldulensis open forest over *Petalostylis labicheoides*, *Acacia ampliceps*, *Acacia citrinoviridis* open scrub over *Cenchrus ciliaris*, *Cynodon dactylon* open tussock grassland. This vegetation unit was observed on a narrow floodplain, forming a buffer between the broad shallow creek channel and the adjacent hill slope.

Vegetation Unit 4:

Eucalyptus camaldulensis open woodland over Melaleuca glomerata low open woodland over Petalostylis labicheoides, Acacia citrinoviridis, Acacia coriacea high open shrubland over Tephrosia rosea low open shrubland over Cenchrus ciliaris very open tussock grassland over Argemone ochroleuca very open herbs.

Clearing Description

Hamersley Iron (2010) has applied to clear up to 3.4 hectares of native vegetation. The application areas are located approximately 9 kilometres south-west of Paraburdoo (GIS Database).

The application is for the construction of a bund wall (Hamersley Iron, 2010). Clearing will be conducted with a dozer with the blade down and vegetation will be stockpiled for use in rehabilitation (Hamersley Iron, 2010).

Vegetation Condition

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

to

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

Comment

The vegetation condition was assessed by botanists from Rio Tinto in December 2009.

The vegetation within the application areas has been impacted by grazing, fire, weed infestations and mining operations (Rio Tinto, 2009).

Vegetation Unit 5:

Eucalyptus camaldulensis open woodland over Melaleuca linophylla, Acacia ampliceps, Petalostylis labicheoides open scrub over Cenchrus ciliaris very open tussock grassland over Cyperus vaginatus very open sedges.

8. 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 Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Hamersley subregion is described by CALM (2002) as being rich in *Acacia, Triodia, Ptilotus* and *Sida* species.

A flora and vegetation survey of the application area was conducted by Rio Tinto across seven days from 11 to 16 March and on 21 March 2009. Rio Tinto (2009) identified a total of 136 native and introduced flora species from 74 genera representing 38 families. Rio Tinto (2009) reports that this represents fairly low species richness for the Pilbara region and attributes this to the high proportion of disturbed land within the survey area. Furthermore, the rocky slopes and hilltop habitats are typically dry for most of the year and hence do not exhibit high flora species richness (Rio Tinto, 2009). The creekline is reported by Rio Tinto (2009) as being heavily disturbed from historical clearing activities towards the southern end, however the northern section remains intact and demonstrates relatively high flora species richness. Rio Tinto (2009) states that the low diversity of habitat types, and on a broader scale land systems, represented within the survey area is also considered to contribute to low species richness.

Numerous weed species were identified within the survey area (Rio Tinto, 2009). The presence of introduced weed species lowers the biodiversity value of the proposed clearing area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. The risk of spreading weed species can be mitigated by imposing a condition for the purpose of weed management.

The vegetation and landforms within the application area are well represented within the Pilbara bioregion (Rio Tinto, 2009). No Declared Rare Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded within the application area during the flora and vegetation survey (Rio Tinto, 2009).

The application area would not be expected to be particularly diverse in fauna species. The application area is located within an active mining area and has been disturbed by mining and grazing activities. Furthermore, the application area does not contain significant fauna habitat such as permanent waterholes, caves or breakaways (Rio Tinto, 2009). The vegetation associations within the application area are well represented throughout the Pilbara region and in the local area (Rio Tinto, 2009). Given this, the application area is unlikely to host high fauna diversity.

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

Methodology CALM (2002) Rio Tinto (2009) GIS Database - IBRA WA (Regions - Subregions)

(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

Rio Tinto (2009) conducted a flora and vegetation survey of an area that included the application area. This survey documented fauna habitats, and included a desktop search for fauna that could occur within a 50 kilometres radius of the survey area. Rio Tinto (2009) reports that the fauna habitats within the survey area were dominated by rocky breakaways and overhangs, stony plains supporting Mulga, and Eucalypt and *Acacia* forest and woodland within the creekline. Vegetation mapping and descriptions provided by Rio Tinto (2009) indicates that rocky breakaways and overhangs would not be present within the application area and suggests that the primary habitat within the application area would consist of *Acacia* forest and woodland within the creekline.

The majority of the application area is quite sparsely vegetated due to previous disturbance and modification. The main proportion of good quality creekline habitat is located adjacent to, but outside of the application area. Therefore, whilst fauna species may pass through the area, the vegetation within the application area is unlikely to represent significant habitat for any fauna species.

The vegetation units within the application area are reported by Rio Tinto (2009) as being widespread throughout the region and fauna would not be restricted to the application area.

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

(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

A flora and vegetation survey of an area that included the application area was conducted by botanists from Rio Tinto across seven days from 11 to 16 March and on 21 March 2009. This survey was conducted by traversing the survey area on foot, mapping vegetation communities and recording the locations of conservation significant flora, weeds and other flora of interest (Rio Tinto, 2009).

No Declared Rare Flora species were recorded within the application area during the flora and vegetation survey (Rio Tinto, 2009).

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

Methodology Rio Tinto (2009)

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

Comments Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) within the area applied to clear (GIS Database). The nearest known TEC is located approximately 70 kilometres north of the application area (GIS Database).

Rio Tinto (2009) reports that no TECs were identified within the application area during the flora and vegetation survey.

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

Methodology Rio Tinto (2009) 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 application area falls within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2007) reports that approximately 100% of the pre-European vegetation still exists within this bioregion (see table below). The vegetation within the application area is recorded as the following Beard Vegetation Association (Shepherd, 2007):

Beard Vegetation Association 82: hummock grasslands, Snappy Gum over Triodia wiseana.

According to Shepherd (2007) approximately 100% of this vegetation association remains within the bioregion (see table below).

The vegetation within the application area is not a remnant of native vegetation within 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	17,804,188	17,794,647	~99.9	Least Concern	~6.3	
Beard vegetation associations - State						
82	2,565,901	2,565,901	~100	Least Concern	~10.2	
Beard vegetation associations - Bioregion						
82	2,563,583	2,563,583	~100	Least Concern	~10.2	
* Chaphard (2007)						

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002) Shepherd (2007) GIS Database - IBRA WA (Regions - Subregions)

(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 may be at variance to this Principle**

According to available databases there are no permanent watercourses within the application area, however there is one ephemeral watercourse that transects the application area (GIS Database).

The section of the watercourse that crosses the application area is reported by Rio Tinto (2009) as being degraded and modified from mining activities and grazing. The linear nature of the application area would mean that any disturbance to vegetation associated with the watercourse would be minimal. Given this it is unlikely that the proposed clearing would significantly impact on any watercourse or wetland.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology Rio Tinto (2009) GIS Database - Hydrography, linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal is not likely to be at variance to this Principle

The application area has been mapped as occurring within the River land systems (GIS Database).

The River land system is described by Van Vreeswyk et al. (2004) as consisting of active flood plains and major rivers supporting grassy Eucalypt woodlands, tussock grasslands and soft Spinifex grasslands. This system is largely stabilised by Spinifex (and Buffel Grass if present) and accelerated erosion is uncommon, however, susceptibility to erosion is high or very high if vegetative cover is removed (Van Vreeswyk et al., 2004).

Given that the vegetation within the application area is sparse and has been disturbed by mining practices and grazing, the further removal of 3.4 hectares of native vegetation in a linear corridor, is unlikely to exacerbate soil erosion within the application area.

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

- Methodology Van Vreswyk et al. (2004)
 - GIS Database

- Rangelands land systems 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 any conservation areas (GIS Database). The nearest Department of Environment and Conservation managed land is Karijini National Park located approximately 40 kilometres east of the application area (GIS Database).

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

Methodology GIS Database - DEC Tenure

(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 is an ephemeral watercourse that transects the application area (GIS Database).

The section of creekline that occurs within the application area is already disturbed due to impacts from the clearing of topsoil, grading and drilling activities (Rio Tinto, 2009). Aerial photography, maps and descriptions provided by Rio Tinto (2009) suggest that the section of creekline within the application area is quite sparsely vegetated. The better quality vegetated area of creekline is located adjacent to, but outside of the application area (Rio Tinto, 2009). Given that the proposed works are in a narrow linear pattern and will occur within the

disturbed section of the creek, it is unlikely that the proposed clearing will cause the further deterioration of surface water quality.

The application area is primarily degraded and is located adjacent to an active mine site. Furthermore, the vegetation within the application area is quite sparse. Given this, the clearing of 3.4 hectares of native vegetation is unlikely to have a further impact on groundwater quality.

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

Methodology Rio Tinto (2009) GIS Database - 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 is located in a semi-arid region where the annual evaporation rate greatly exceeds the average annual rainfall (Rio Tinto, 2009). Natural local flooding occurs seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (Rio Tinto, 2009).

Rio Tinto (2009) states that the proposed clearing will not alter the morphology of the riparian zone and the surface hydrology during flood events would not be expected to change. Therefore, the proposed clearing of 3.4 hectares is unlikely to increase the incidence or intensity of flooding in the region.

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

Methodology Rio Tinto (2009)

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

Comments

There are three Native Title claims (WC96/061, WC97/043 and WC98/069) over the area under application (GIS Database). These claims have been registered with the Native Title Tribunal on behalf of the claimant groups, however, 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 two Aboriginal Sites of Significance (site ID's 11215 and 17435) within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks permit or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 16 August 2010 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received in relation to the application.

Methodology GIS Database

- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

This application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.510 of the *Environmental Protection Act 1986*, and the proposed clearing may be at variance to Principle (f), is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

5. References

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

Hamersley Iron (2010) Clearing Permit Application Supporting Documentation, Western Australia.

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

Rio Tinto (2009) Flora and Vegetation Survey of the Paraburdoo Mine Development and Supporting Documentation for a Native Vegetation Clearing Permit Application. Unpublished report. Rio Tinto Iron Ore, Western Australia.

Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P. and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.

6. Glossary

Acronyms:

BoM CALM DAFWA DA DEC DEH	Bureau of Meteorology, Australian Government. Department of Conservation and Land Management, Western Australia. Department of Agriculture and Food, Western Australia. Department of Agriculture, Western Australia. Department of Environment and Conservation Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DMP	Department of Mines and Petroleum, Western Australia.
DoE	Department of Environment, Western Australia.
DolR	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.

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: is not critically endangered; and (a) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the (b) prescribed criteria. VU Vulnerable: A native species which: is not critically endangered or endangered; and (a) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with (b) 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.

Declared Rare Flora - Presumed Extinct taxa: taxa which have not been collected, or otherwise verified.

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