



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4593/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Hamersley Resources Limited

1.3. Property details

Property: Iron Ore (Rhodes Ridge) Agreement Authorisation Act 1972, Temporary Reserve 70/4266
Local Government Area: Shire of East Pilbara
Colloquial name: Hope Downs Road Realignment Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 20 October 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. One Beard vegetation association has been mapped within the application area (GIS Database; Shepherd, 2009):

29: Sparse low woodland; mulga, discontinuous in scattered groups.

A flora and vegetation survey of the infrastructure corridor between Hope Downs 1 and Hope Downs 4, which included the application area, was conducted by Mattiske Consulting (2008) in April, May and September 2008. This survey identified two vegetation communities within the application area (Mattiske Consulting, 2008):

- RR – S1: Hummock Grassland of *Triodia epactia* with pockets of *Triodia basedowii* and *Triodia pungens* with emergent *Corymbia hamersleyana*, *Eucalyptus gamophylla*, *Eucalyptus leucophloia* over *Acacia aneura* var. *aneura*, *Acacia pruinocarpa*, *Acacia rhodophloia*, *Codonocarpus cotinifolius*, *Psyrax latifolia* and *Grevillea berryana* over *Acacia adoxa* var. *adoxo*, *Acacia arida*, *Acacia tenuissima*, *Acacia tetragonophylla*, *Acacia bivenosa*, *Acacia distans*, *Acacia hilliana*, *Eremophila latrobei* and *Eremophila forrestii* subsp. *forrestii* over a range of annual species on gravelly soils on lower slopes; and

- MG – M1: Low Woodland to Low Open Forest of *Acacia aneura* var. *aneura*, *Acacia pruinocarpa*, *Acacia catenulata* subsp. *occidentalis*, *Acacia rhodophloia*, *Grevillea berryana* with an occasional emergent *Eucalyptus leucophloia* and *Eucalyptus gamophylla* over *Psyrax latifolia*, *Keraudrenia nephrosperma*, *Acacia distans*, *Eremophila fraseri*, *Acacia tetragonophylla*, *Eremophila forrestii* subsp. *forrestii*, *Solanum lasiophyllum* over *Chrysopogon fallax*, *Triodia pungens* and *Triodia epactia* and a range of annual species on sandy-loam flats and broad plains.

Clearing Description Hamersley Resources Limited is proposing to clear up to 2.3 hectares of native vegetation for the purpose of road realignment and associated activities such as lay down areas and borrow pits for earthworks.

Clearing will be conducted using a dozer with blade down techniques. Vegetation will be stockpiled and used in rehabilitation.

Vegetation Condition Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);

To

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

Comment

The application area is located within the Pilbara region of Western Australia and is situated approximately 50 kilometres north west of Newman.

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 proposed clearing is located approximately 50 kilometres north west of Newman in the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). At a broad scale, vegetation can be described as Mulga low woodlands over bunch grasses on fine textured soils in valley floors and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002). Rare features of the subregion include gorges of the Hamersley Ranges (particularly those within Karijini National Park), Palm Spring, Duck Creek and Themeda grasslands (CALM, 2002). Permanent spring systems such as Weeli Wolli are also listed for their importance as refugia (CALM, 2002).

A flora and vegetation survey of the infrastructure corridor between Hope Downs 1 and Hope Downs 4, which included the application area, was conducted by Matiske Consulting (2008) in April, May and September 2008. This survey identified one Declared Rare Flora (DRF) species, *Lepidium catpynon*, five Priority Flora species, *Rhagodia* sp. Hamersley (M.E. Trudgen 17794) (P1), *Olearia fluvis* (P2), *Stylidium weeliwollii* (P2), *Eremophila youngii* subsp. *lepidota* and *Eremophila forrestii* subsp. *viridis* (Matiske Consulting, 2008). None of these species were recorded within the application area (Rio Tinto, 2011).

Six introduced taxa *Bidens bipinnata*, *Cenchrus ciliaris*, *Datura leichhardtii*, *Portulaca oleracea*, *Tribulus terrestris* and *Vachellia farnesiana*, were recorded in the infrastructure corridor vegetation survey conducted by Matiske Consulting (2008). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. None of these species are listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

There are no known Priority Ecological Communities (PEC's) within the application area (GIS Database). The nearest known PEC is approximately 17 kilometres north west of the application area (GIS Database). At this distance, there is little likelihood of any impact to the PEC as a result of the proposed clearing.

A search of the Department of Environment and Conservations (DEC's) online database, NatureMap, identified three conservation significant fauna species that have been recorded within 10 kilometres of the application area (DEC, 2011). A total of four broad fauna habitats have been assessed as potentially occurring within the application area (Rio Tinto, 2011). These habitats are well represented locally and regionally (Rio Tinto, 2011).

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

Methodology

CALM (2002)
DEC (2011)
Matiske Consulting (2008)
Rio Tinto (2011)
GIS Database:
- IBRA WA (regions – subregions)
- 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

Based on vegetation mapping of the application area conducted by Matiske Consulting (2008), a total of four broad fauna habitats have been defined within the application area (Rio Tinto, 2011):

- Hummock grasslands of *Triodia* species with emergent *Eucalypt/Corymbia* species over mixed shrubland layer dominated by *Acacia* species on low hills and hill slopes;
- Hummock grasslands of *Triodia* species with emergent *Eucalypt/Corymbia* species over mixed shrubland layer characterised by Mulga (*Acacia aneura*) on lower slopes and breakaways;
- Low woodlands to low open forests of *Acacia* species dominated by Mulga (*Acacia aneura*) over mixed shrublands, *Triodia* hummock grasslands and annual tussock grasses and herbs on sandy-loam plains; and
- Tall shrublands of *Acacia* species with emergent *Eucalypt/Corymbia* species over *Triodia* hummock grasslands in minor gullies.

A search of the Department of Environment and Conservations (DEC's) online database, NatureMap, identified three conservation significant fauna species that have been recorded within 10 kilometres of the application

area (DEC, 2011):

Australian Bustard (*Ardeotis Australia*) (Priority 4) – this species is highly mobile with a broad home range; Pilbara Olive Python (*Liasis olivaceous* subsp. *barroni*) (Threatened) – the preferred habitats for this species are gullies and gorges near water. These habitats are not present within the application area; and Western pebble-mound Mouse (*Pseudomys chapmani*) (Priority 4) – this species is common within the Pilbara bioregion and it is unlikely that the proposed clearing of 2.3 hectares of native vegetation will impact the conservation of this species.

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

Methodology DEC (2011)
Mattiske Consulting (2008)
Rio Tinto (2011)

(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

There are no known records of Declared Rare Flora (DRF) within the application area (GIS Database). A flora and vegetation survey conducted by Mattiske Consulting (2008) did not identify any rare plants within the application area.

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

Methodology Mattiske Consulting (2008)
GIS Database:
- Threatened and Priority Flora

(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 records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is approximately 45 kilometres south east of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

Methodology 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 is located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.89% of the pre-European vegetation remains in the Pilbara bioregion.

The vegetation in the application area has been broadly mapped as Beard vegetation association:

29: Sparse low woodland; mulga, discontinuous in scattered groups.

According to Shepherd (2009) approximately 100% of Beard vegetation association 29 remains within the Pilbara bioregion (see table on next page).

	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	~99.89	Least Concern	~6.32
IBRA Subregion - Hamersley	5,634,727	5,634,727	~100	Least Concern	~12.88
Beard vegetation associations - State					
29	7,903,991	7,903,991	~100	Least Concern	~0.29
Beard vegetation associations - Bioregion					
29	1,133,220	1,133,220	~100	Least Concern	~1.91

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of native vegetation in an area that has been extensively cleared.

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (regions – subregions)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is not at variance to this Principle

There are no wetlands or watercourses within the application area (GIS Database). A vegetation survey of the application area conducted by Mattiske Consulting (2008) did not identify any riparian vegetation within the application area.

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

Methodology Mattiske Consulting (2008)
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 in the following land systems (GIS Database):

The Newman land system is described by Van Vreeswyk et al. (2004) as having rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. Van Vreeswyk et al. (2004) reports that much of this system is inaccessible or poorly accessible. The dominant vegetation type is spinifex and the system is burnt fairly frequently (Van Vreeswyk et al., 2004). The land system has low soil erosion risk and approximately 91% of the vegetation is reported as being in very good condition (Van Vreeswyk et al., 2004).

The Spearhole land system is reported by Van Vreeswyk et al. (2004) as consisting primarily of gently undulating hardpan plains supporting grooved mulga shrublands and hard spinifex. This system is not prone to erosion (Van Vreeswyk et al., 2004).

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

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

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

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

The proposed clearing is not located within a conservation reserve (GIS Database). The nearest conservation reserve is Karijini National Park, located approximately 71 kilometres west of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the environmental values of any conservation areas.

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

Methodology GIS Database:
- 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

According to available Databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Newman Water Reserve, located approximately 23 kilometres south east of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the quality of the Newman Water Reserve.

The groundwater salinity within the application area is approximately 500 - 1,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the small amount of clearing proposed (2.3 hectares) within the Hamersley Groundwater Province (101,668,326 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

According to available Databases, there are no permanent wetlands or watercourses within the application area (GIS Database). It is therefore considered unlikely that the proposed clearing will impact on the quality of any surface water.

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

Methodology GIS Database:
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Area (PDWSA)

(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

Local flooding occurs seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (Rio Tinto, 2011). Given the small size of the application area (2.3 hectares) it is considered unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

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

Methodology Rio Tinto (2011)

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

Comments

There is one Native Title Claim (WC05/6) over the area under application (GIS Database). This claim has been registered with the Native Title Tribunal on behalf of the claimant group. However, the tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

The clearing permit application was advertised on 19 September 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – Registered with the NNTT

4. References

- DEC (2011) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>
- CALM (Department of Conservation and Land Management) (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting (2008) Flora and Vegetation on the Hope Downs 4 Mine Infrastructure Corridor. Unpublished Report Prepared for Pilbara Iron dated December 2008.
- Rio Tinto (2011) Statement Addressing the 10 Clearing Principles - Hope Downs 4 Shire Road Realignment. Unpublished Report dated August 2011.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia, Department of Agriculture, Western Australia.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under

consideration for declaration as 'rare flora', but are in need of further survey.

- P4 Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1 Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2 Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3 Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4 Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1 Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2 Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3 Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4 Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5 Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W) Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD

Conservation Dependent: A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.