



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3561/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Hamersley Iron Pty Ltd**

1.3. Property details

Property: Temporary Reserve 70/4737
Local Government Area: Shire of East Pilbara
Colloquial name: Rhodes Ridge Access Road

1.4. Application

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

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. The following Beard Vegetation Associations are located within the application area (GIS Database):

- 18: Low woodland; mulga (*Acacia aneura*);
- 29: Sparse low woodland; mulga, discontinuous in scattered groups;
- 82: Hummock grasslands, low tree steppe; snappy gum over soft spinifex; and
- 175: Short bunch grassland – savanna/grass plain (Pilbara).

A flora and vegetation survey of the application area was undertaken by a botanist from Rio Tinto on 28 October 2009. The following five vegetation communities were identified within the application area (Rio Tinto, 2010):

1. *Eucalyptus gamophylla* low woodland over *Acacia pruinocarpa*, *Acacia aneura*, *Acacia catenulate* high shrubland over *Acacia sibirica* shrubland over *Triodia melvillei*, *Triodia basedowii* hummock grassland;
2. *Acacia var. aneura*, *Acacia pruinocarpa* low woodland over *Eremophila forrestii* open shrubland over *Triodia melvillei* hummock grassland;
3. *Acacia catenulata*, *Acacia aneura*, *Acacia pruinocarpa* low forest over *Psydrax latifolia* high open shrubland over *Triodia wiseana* hummock grassland over *Eriachne benthamii*, *Aristida latifolia* very open tussock grassland over various bunch grasses, very open bunch grass;
4. *Acacia aneura*, *Acacia pruinocarpa* low open forest over *Acacia pachyacra* high open shrubland over *Triodia basedowii* closed hummock grassland; and
5. *Eucalyptus gamophylla*, *Eucalyptus leucophloia* low open forest over *Acacia bivenosa*, *Acacia sibirica*, *Acacia pruinocarpa* high open shrubland over *Triodia basedowii*, *Triodia wiseana* closed hummock grassland.

Clearing Description Hamersley Iron has applied to clear up to 10 hectares within an application area of approximately 34.9 hectares (GIS Database). The application area is located approximately 50 kilometres north-west of Newman (GIS Database).

The purpose of the application is to realign the Rhodes Ridge access track to remove a number of blind corners (Rio Tinto, 2010). Clearing will be by mechanical means.

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

to

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

Comment The vegetation condition was assessed by a botanist from Rio Tinto. The vegetation conditions were described

using a scale based on Trudgen (1988) and have been converted to the corresponding conditions from the Keighery (1994) scale.

The assessing officer visited the application area on the 25 September 2009. The assessing officer noted that there was some areas of old tracks and exploration previously cleared within the application area, but overall the vegetation was in excellent condition.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

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

The application area occurs within the Hamersley (PIL3) Interim Biogeographic Regionalisation of Australia (IBRA) subregion (GIS Database). At a broad scale vegetation can be described as Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002).

A flora and vegetation survey was undertaken over the application area and identified five vegetation types ranging from 'excellent' to 'very good' (Rio Tinto, 2010). These vegetation communities are well represented within the bioregion, however, vegetation communities 2 and 3 may be considered at risk from grazing by cattle, donkeys and horses as well as changed fire regimes (Rio Tinto, 2010).

A total of 73 flora species from 36 genera and 18 families were recorded within the application area (Rio Tinto, 2010). The species recorded appears to be in the expected range for a survey in this locality (Rio Tinto, 2010). No Declared Rare or Priority Flora species were recorded during the survey. No weed species were recorded within the application area (Rio Tinto, 2010).

Given the fauna habitats present, the application area is not likely to comprise a higher level of faunal diversity than surrounding areas.

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

Methodology CALM (2002)
Rio Tinto (2010)
GIS Database
- IBRA WA (Regions – Sub Regions)

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

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

No targeted fauna surveys have been conducted over the application area. A desktop search and general observations of the application area have been conducted by Rio Tinto (2010). Two broad fauna habitats have been identified within the application area (Rio Tinto, 2010):

1. Stony slopes of *Eucalyptus spp.* or *Acacia spp.* low open forest over *Acacia* open shrubland over *Triodia* closed hummock grassland stony slopes; and

2. Clay flats of *Eucalyptus spp.* or *Acacia spp.* low woodland/open forest over *Acacia* shrubland over *Triodia spp.* grasslands.

These fauna habitats are well represented throughout the Pilbara bioregion (Rio Tinto, 2010). There is the potential for species of conservation significance to occur within the application area, however, given the small scale of clearing and the habitats present, the proposed clearing is not likely to have a significant impact.

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

Methodology Rio Tinto (2010)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

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

According to available databases, there are no records of Declared Rare Flora (DRF) or Priority Flora species within the application area (GIS Database). Rio Tinto conducted a flora survey over the application area on 28 October 2009. No DRF or Priority Flora was recorded within the application area (Rio Tinto, 2010).

There are four records of the DRF species *Lepidum catapycnon* within five kilometres of the application area (GIS Database). There is also suitable stony plains habitat within the application area (Rio Tinto, 2010). Despite this it is the botanists opinion that is highly unlikely that it would have been missed during the survey given the species' perennial growth form, its distinctive zig zag stem and the botanists familiarity with this species (Rio Tinto, 2010).

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

Methodology Rio Tinto (2010)
GIS Database
- Declared Rare and Priority Flora List

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

Comments **Proposal is not likely to be at variance to this Principle**
According to available databases, there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). The vegetation survey did not identify any vegetation communities described as a TEC (Rio Tinto, 2010).

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

Methodology Rio Tinto (2010)
GIS Database
- Threatened Ecological Sites
- 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 Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99.9% of the Pre-European vegetation remains (see table) (GIS Database, Shepherd, 2007).

The vegetation of the application area has been mapped as the following Beard Vegetation Associations:

18: Low woodland; mulga (*Acacia aneura*);

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

82: Hummock grasslands, low tree steppe; snappy gum over soft spinifex; and

175: Short bunch grassland – savanna/grass plain (Pilbara).

According to Shepherd (2007) approximately 100% of these Beard Vegetation Associations remains at both a state and bioregional level, except Beard Vegetation Association 175 which has approximately 99.7% remaining at a state level. Therefore the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared.

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

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)*
IBRA Bioregion – Pilbara	17,804,187	17,794,646	~99.9	Least Concern	6.3 (6.3)
Beard veg assoc. – State					
18	19,892,305	19,890,195	~100	Least Concern	2.1 (2.1)
29	7,903,991	7,903,991	~100	Least Concern	0.3 (0.3)
82	2,565,901	2,565,901	~100	Least Concern	10.2 (10.2)
175	526,206	524,861	~99.7	Least Concern	4.2 (4.2)
Beard veg assoc. – Bioregion					
18	676,557	676,557	~100	Least Concern	16.8 (16.8)
29	1,133,219	1,133,219	~100	Least Concern	1.9 (1.9)
82	2,563,583	2,563,583	~100	Least Concern	10.2 (10.2)
175	507,036	507,006	~100	Least Concern	4.4 (4.4)

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

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

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

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2007)
GIS Database
- IBRA WA (Regions – Sub Regions)
- 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 may be at variance to this Principle

According to available databases, the application area contains one indefinite watercourse (GIS Database). The botanical survey did not identify any vegetation types associated with a watercourse within the application area (Rio Tinto, 2010).

This watercourse is only likely to flow during significant rainfall events. Given the relatively small and linear nature of the proposed clearing, it not likely to have a significant impact on vegetation growing near this ephemeral watercourse.

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

Methodology Rio Tinto (2010)
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

According to available databases, the application area is comprised of the Newman, Boolgeeda,

Wannamunna, and Spearhole land systems (GIS Database). These land systems all have a low to no susceptibility to erosion (Van Vreeswyk et al., 2004). During a site visit of the application area the assessing officer did not observe any signs of erosion within uncleared areas or previously disturbed areas.

At a broad scale the surface soil pH in the application area is 5.5 to 6.0 and there is no known occurrence of acid sulphate soils (CSIRO, 2009). The average annual evaporation rate is over 8 times the average annual rainfall, so it is unlikely the proposed clearing will result in increased groundwater recharge causing raised saline water tables (GIS Database).

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

Methodology CSIRO (2009)
Van Vreeswyk et al. (2004)
GIS Database
- Evaporation Isopleths
- Rainfall, Mean Annual
- 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

According to available databases, the application area is not located within a conservation area or any DEC managed lands (GIS Database). The nearest conservation reserve is Karijini National Park located approximately 75 kilometres west of the application area (GIS Database). Based on the distance between the proposed clearing and the nearest conservation area, the project is not likely to impact on the environmental values of any conservation area.

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). There are no permanent waterbodies or watercourses within the application area (GIS Database).

Rainfall in the area is mainly restricted to a wet summer season, where precipitation can be variable (BoM, 2009). Rain can be either intense falls associated with cyclonic events or scattered falls associated with local thunderstorms (Van Vreeswyk et al., 2004). The average annual evaporation rate for the application area is 3,400 – 3,600 millimetres and the average annual rainfall is 400 millimetres (GIS Database). Therefore, during normal rainfall events surface water in the application area is likely to evaporate quickly. However, substantial rainfall events create surface sheet flow which is likely to have a higher level of sediments. During normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of watercourses within the application area.

The groundwater salinity within the application area is between 500 – 1000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. Given the small scale and linear nature of the proposed clearing (10 hectares), it is not likely to cause salinity levels within the application area to alter (GIS Database).

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

Methodology BoM (2010)
Van Vreeswyk et al. (2004)
GIS Database
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Public Drinking Water Source Areas (PDWSA's)
- Rainfall, Mean Annual

(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

With an average annual rainfall of 400 millimetres and an average annual evaporation rate between 3,400 – 3,600 millimetres there is likely to be little surface flow during normal seasonal rains (GIS Database). Given

the likelihood of little surface flow, the proposed clearing of 10 hectares within a 34.9 hectare project area is not likely to cause or increase the incidence of flooding.

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

Methodology GIS Database
- Evaporation Isoleths
- Rainfall, Mean Annual

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

Comments

The clearing permit application was advertised by the Department of Mines and Petroleum on 8 February 2010, inviting submissions from the public. There were no submissions received.

There is one native title claim over the area under application; WC99/004 (GIS Database). This claim has been registered with the National Native Title Tribunal. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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

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

Methodology GIS Database
- Native Title Claims
- Sites of Aboriginal Significance

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and 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).

Should the permit be granted it is recommended that conditions be imposed on the permit for the purposes of weed management, record keeping and permit reporting.

5. References

- Bureau of Meteorology (2010) BOM Website - Climate Averages by Number, Averages for Newman. Available online at: http://www.bom.gov.au/climate/averages/tables/cw_007151.shtml accessed on 22 February 2010.
- Commonwealth Scientific and Industrial Research Organisation (2009) Australian Soil Resource Information System. Available online at: http://www.asris.csiro.au/index_ie.html Accessed on 14 February, 2010.
- 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.
- Rio Tinto (2010) Botanical Survey for the Realignment of the Rhodes Ridge Camp Access Road & Supporting Document to a Native Vegetation Clearing Permit Application. Unpublished document for Hamersley Iron Pty Ltd.
- 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
- Trudgen M.E. (1988) A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished report prepared for Bowman Bishaw and Associates, West 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	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.
DMP	Department of Mines and Petroleum, 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.