



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4375/1  
Permit type: Purpose Permit

### 1.2. Proponent details

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

### 1.3. Property details

Property: Miscellaneous Licence 47/284  
Miscellaneous Licence 47/287  
Local Government Area: Shire of Roebourne  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
16		Mechanical Removal	Borrow pits and associated activities

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 7 July 2011

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

##### Vegetation Description

Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations are located within the application areas (GIS Database):

**Beard vegetation association 152:** hummock grasslands, grass steppe, soft and hard Spinifex soft Spinifex; and

**Beard vegetation association 589:** mosaic: short bunch grassland – savanna / grass plain (Pilbara) / hummock grasslands, grass steppe; soft Spinifex.

A botanical survey of an area that included the application areas was conducted by Rio Tinto Iron Ore (RTIO) in August 2010. This survey identified eight vegetation communities with the following three mapped as occurring within the application areas (RTIO, 2011):

#### STONY RISES AND LOWER FOOTSLOPES

##### Vegetation Community 1

*Acacia inaequilatera* scattered tall shrubs over *Acacia bivenosa*, *Acacia ancistrocarpa* scattered shrubs over *Triodia wiseana* hummock grassland.

#### PLAINS

##### Vegetation Community 2

*Acacia bivenosa*, *Acacia ancistrocarpa*, *Acacia inaequilatera* tall shrubland over *Triodia wiseana* hummock grassland on stony clay plains.

##### Vegetation Community 3

*Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* high open shrubland over *Grevillea pyramidalis*, *Acacia bivenosa* open shrubland over *Diplopeltis eriocarpa* very open herbs over *Triodia wiseana* hummock grassland.

##### Clearing Description

Hamersley Iron Pty Ltd (2011) proposes to clear up to 16 hectares of native vegetation, within two separate areas that equal approximately 21 hectares in total. The northern-most application area is located approximately 12 kilometres south-west of Karratha, whilst the southern-most application area is located approximately 40 kilometres south of Karratha (GIS Database).

The purpose of the proposed clearing is for the construction of borrow pits and associated infrastructure (Hamersley Iron Pty Ltd, 2011). This includes laydown areas, access tracks, topsoil stockpiles and water bores (Hamersley Iron Pty Ltd, 2011). Vegetation will be cleared by bulldozer with the blade down, and vegetation will be stockpiled for rehabilitation purposes (Hamersley Iron Pty Ltd, 2011).

##### 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 vegetation condition rating is derived from a botanical survey conducted by RTIO in August 2010 (RTIO, 2011).

### 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 Chichester and Roebourne subregions of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Within the Chichester subregion CALM (2002) reports that high species and ecosystem diversity is focussed around hummock grasses, which host reptile and small mammal communities, and around the cracking clay communities of the Chichester Range and Mungarooona Range. Within the Roebourne subregion areas of endemism and high diversity tend to be focussed around the Burrup Peninsula and offshore islands (CALM, 2002).

A botanical survey was conducted over an area that included the application areas by RTIO in August 2010. RTIO (2011) reports that a total of 81 native and introduced vascular flora species from 56 genera representing 24 families were recorded within the survey area. The most common families were *Fabaceae*, *Poaceae* and *Malvaceae* (RTIO, 2011). The RTIO botanists perceive this to be within the expected range for a study area of this size (RTIO, 2011).

RTIO (2011) has reported that three introduced flora species have been identified within the application areas; Buffel Grass (*Cenchrus ciliaris*), Spiked Malvastrum (*Malvastrum americanum*) and Kapok Bush (*Aerva javanica*). The presence of weed species lowers the biodiversity value of the proposed clearing areas. It is important to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The vegetation and landforms present within the application areas are well represented within the Pilbara bioregion (RTIO, 2011). No Declared Rare Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities were recorded within the application areas during the botanical survey (RTIO, 2011).

A desktop fauna survey searching for conservation significant fauna was conducted by RTIO for the application areas, however, no targeted fauna field survey has been carried out. A search by the assessing officer of the Department of Environment and Conservation's NatureMap database has revealed that the application areas are potentially high in bird and reptile diversity (DEC, 2011). Given the previous and existing disturbance within the application areas and the amount of higher quality vegetation available in adjacent areas, the proposed clearing is unlikely to have a significant impact upon fauna diversity in the region.

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

**Methodology**

CALM (2002)  
DEC (2011)  
RTIO (2011)  
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**

RTIO conducted a botanical survey and desktop fauna search over an area that included the application areas in August 2010. RTIO (2011) has recorded the following fauna habitats within the application areas:

- Low hills;
- Colluvial stony and colluvial / alluvial clay plains with ephemeral drainage floors supporting *Eucalyptus* and *Acacia* low woodlands / shrublands over Spinifex; and
- Gilgai plains supporting a mosaic of tussock and Spinifex grasslands.

RTIO (2011) states that these fauna habitats are generally in a good to very good condition. The fauna habitats are reported as having been impacted by dry seasonal conditions, historical clearing, weed invasions and some low-level grazing on the stony and clay plains (RTIO, 2011).

The proposed clearing of 16 hectares is spread across two separate application areas. These areas are located adjacent to railway infrastructure and contain existing borrow pits. It is therefore considered unlikely that the vegetation of the application areas would represent significant habitat for any fauna species.

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

**Methodology** RTIO (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**

According to available databases there are no Declared Rare Flora (DRF) within the application areas (GIS Database).

A botanical survey of an area that included the application areas was conducted by RTIO in August 2010. No Declared Rare Flora species were recorded within the survey area during the botanical survey (RTIO, 2011).

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

**Methodology** RTIO (2011)  
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**

There are no known Threatened Ecological Communities (TECs) within the areas applied to clear (GIS Database). The nearest known TEC is located approximately 160 kilometres south-east of the application areas (GIS Database).

RTIO (2011) reports that no TECs were identified within the application areas during the flora and vegetation surveys.

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

**Methodology** RTIO (2011)  
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 areas fall within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.9% of the pre-European vegetation still exists within the Pilbara bioregion (see table below). The vegetation within the application areas is recorded as the following Beard vegetation associations (Shepherd, 2009):

**Beard vegetation association 152:** hummock grasslands, grass steppe; soft and hard Spinifex soft Spinifex; and

**Beard vegetation association 589:** mosaic: short bunch grassland - savanna / grass plain (Pilbara) / hummock grasslands, grass steppe; soft Spinifex.

According to Shepherd (2009) approximately 100% of these vegetation associations still exists within the bioregion (see table below).

The vegetation within the application areas 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	17,804,193	17,785,001	~99.9	Least Concern	~6.30
Beard vegetation associations - State					
152	306,407	306,407	~100	Least Concern	~2.22
589	809,754	809,637	~100	Least Concern	~1.60
Beard vegetation associations - Bioregion					
152	177,946	177,946	~100	Least Concern	~3.80
589	730,718	730,683	~100	Least Concern	~1.77

\* Shepherd (2009)

\*\* Department of Natural Resources and Environment (2002)

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

**Methodology** Department of Natural Resources and Environment (2002)  
Shepherd (2009)  
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 is not likely to be at variance to this Principle**

According to available databases there are no permanent watercourses or waterbodies within the application areas, however, there is one minor ephemeral drainage line that crosses into the northern application area (GIS Database). This watercourse is only likely to flow following significant rainfall.

RTIO (2011) has not mapped any vegetation communities growing in association with watercourses as occurring within the application areas. The area the drainage line crosses through has been mapped as completely degraded and the watercourse has been impacted by an existing borrow pit and railway infrastructure. The proposed work is therefore unlikely to have a significant impact upon any vegetation growing in association with a watercourse.

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

**Methodology** RTIO (2011)  
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 areas have been mapped as occurring within the Capricorn, Horseflat and Paraburdoo land systems (GIS Database).

The Capricorn land system is described by Van Vreeswyk et al. (2004) as consisting of hills and ridges of sandstone and dolomite supporting shrubby hard and soft Spinifex grasslands. The stoniness of this land system confers resistance to erosion (Van Vreeswyk et al., 2004).

Van Vreeswyk et al. (2004) described the Horseflat land system as consisting of gilgaied clay plains supporting tussock grasslands and minor grassy Snakewood shrublands. Some units of this system (non-gilgaied plains, alluvial plains and dissected slopes) are moderately to highly susceptible to erosion if vegetation is depleted, other flat units with clay soils and stony mantles are inherently resistant (Van Vreeswyk et al., 2004).

The Paraburdoo land system is described by Van Vreeswyk et al. (2004) as consisting of basalt derived stony gilgai plains supporting Snakewood and Mulga shrublands with Spinifex and tussock grasses. Van Vreeswyk et al. (2004) states that much of this system is inherently resistant to erosion, except for drainage zones which are moderately susceptible.

Given the above, it is unlikely that areas of the Capricorn and Paraburdoo land systems that occur within the application areas will be susceptible to erosion. Some sections of the Horseflat land system may be susceptible to localised erosion, however, given that only a relatively small proportion of the northern-most application area is classified as this system, it is unlikely that the proposed clearing will cause any significant erosion.

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 any conservation areas (GIS Database). The nearest Department of Environment and Conservation managed land is the Millstream - Chichester National Park located approximately 15 kilometres south-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**  
The application areas are not located within a Public Drinking Water Source Area (GIS Database).  
  
The application areas are located within an arid environment. No permanent waterbodies or watercourses occur within the application area, however, there is one ephemeral drainage line that crosses into the northern most application area (GIS Database). Surface water runoff is only likely to occur during and immediately following significant rainfall events. The removal of 16 hectares of native vegetation and the shallow ground disturbance related to this clearing, is unlikely to cause deterioration in the quality of surface or underground water.

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

**Methodology** GIS Database:  
- Hydrography, linear  
- Public Drinking Water Source Areas (PDWSAs)

**(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

**Comments** **Proposal is not likely to be at variance to this Principle**  
According to available databases there is one minor, ephemeral watercourse that crosses into the northernmost application area (GIS Database).  
  
Natural flood events occur seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (RTIO, 2011). The ephemeral watercourse within the application area could experience natural seasonal flooding from the run off of surface water following significant rainfall events, however, the proposed clearing of 16 hectares across two separate application areas is unlikely to increase the incidence or intensity of flood events.

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

**Methodology** RTIO (2011)  
GIS Database:  
- Hydrography, linear

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

**Comments**  
According to available databases there are no Native Title Claims over the areas under application (GIS Database). The mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993*, and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process. Therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

According to available databases there are numerous registered Aboriginal Sites of Significance within the

application areas (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 was advertised by the Department of Mines and Petroleum on 13 June 2011, inviting submissions from the public. No submissions were received.

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

#### 4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- DEC (2007) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>.
- 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 Pty Ltd (2011) Clearing Permit Application Supporting Documentation. Hamersley Iron Pty Ltd, 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.
- RTIO (2011) Botanical Survey of the borrow pits on the Dampier to Tom Price rail line: Native Vegetation Clearing Permit Supporting Report. Unpublished report. Rio Tinto Iron Ore, Western Australia.
- 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:

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