



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 3708/1  
Permit type: Purpose Permit

### 1.2. Proponent details

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

### 1.3. Property details

Property: Miscellaneous Licence 47/234  
Local Government Area: Shire of Ashburton  
Colloquial name: Marandoo Mine Phase 2

### 1.4. Application

|                           |                  |                           |                            |
|---------------------------|------------------|---------------------------|----------------------------|
| <b>Clearing Area (ha)</b> | <b>No. Trees</b> | <b>Method of Clearing</b> | <b>For the purpose of:</b> |
| 38                        |                  | Mechanical Removal        | Construction Camp/Village  |

## 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. Three Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2007):

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

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

**82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*.

The application area was surveyed by Biota Environmental Sciences staff between 25 and 28 April 2008 (Biota Environmental Sciences, 2008). The following vegetation types were identified within the application area.

**EIAmTw:** *Eucalyptus leucophloia* scattered low trees over *Acacia maitlandii* shrubland over *Triodia wiseana* hummock grassland on the low stony hills of the Newman Land System along the north-western section of the study area (approximately 30.16 hectares);

**AanAprTmTw:** *Acacia aneura*, *A. pruinocarpa* low open woodland over *Triodia melvillei*, *T. wiseana* hummock grassland on the broad plains of the Boolgeeda Land System which dominate the study area (approximately 175.85 hectares);

**EvAcITHT:** *Eucalyptus victrix* low open woodland over *Acacia citrinoviridis* tall open scrub over *Themeda triandra* open tussock grassland along the creekline which runs through the centre of the study area, comprising part of the Jurrawarrina Land System (approximately 1.94 hectares); and

**AanTHT:** *Acacia aneura* low open forest over *Themeda triandra* tussock grassland on plains fringing the above creekline (approximately 4.09 hectares) (Biota Environmental Sciences, 2008).

**Clearing Description** The applicant has applied to clear up to 38 hectares of native vegetation within an area of approximately 220 hectares for the purpose of establishing temporary camp facilities.

The clearing of the application area is required for the placement of buildings and infrastructure for the proposed construction camp and village (Biota Environmental Sciences, 2008).

Clearing of the application area will be by a bulldozer with the blade down (Hamersley Iron, 2010). Cleared vegetation and topsoil will be stockpiled for use in rehabilitation (Hamersley Iron, 2010).

**Vegetation Condition** Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);  
To  
Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

**Comment** The application area is located in the Pilbara region, approximately 25 kilometres north-east of Tom Price (GIS Database). The vegetation condition was derived from a vegetation survey conducted by Biota Environmental Sciences (2008).

### 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) sub-region of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This sub-region is characterised by sedimentary ranges and plateaux, dissected by gorges (CALM, 2002). 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).

Karijini National Park comprises a complete north-south transverse section of the Hamersley Ranges (Australian Heritage Database, 2010). Karijini National Park shows considerable biological diversity and is especially rich in species of the genus acacia, with forty-six of the fifty-four acacia species which occur in the Pilbara region (Australian Heritage Database, 2010). Many flora and fauna species of special significance occur within Karijini National Park. The area is scenically outstanding and the landscape is characterised by naturalness, ruggedness and diversity (Australian Heritage Database, 2010). The proposed clearing area is approximately 1.1 kilometres from the boundary of Karijini National Park at its nearest point (GIS Database). Karijini National Park is listed on the Register of the National Estate as an Environmentally Sensitive Area as it is a representative example of the Hamersley Ranges enhanced by most of the area being relatively unmodified by pastoralism or large scale mining operations (Australian Heritage Database, 2010).

A vegetation survey of the application area and surrounding vegetation identified four intact vegetation types within the application area (Biota Environmental Sciences, 2008). During the vegetation survey, 183 flora species from 100 genera belonging to 39 families were recorded (Biota Environmental Sciences, 2008). Poaceae (40), Mimosaceae (17) and Malvaceae (15) families are particularly species rich and diverse within the application area (Biota Environmental Sciences, 2008). The number of flora species recorded within each of the application areas is considered diverse. However, this is considered typical of the floristic diversity for similar landform features which are widespread throughout the Pilbara region.

The proposed clearing area is known to contain three Priority Flora species: *Josephinia* sp. Marandoo (P1), *Calotis latiuscula* (P3) and *Goodenia nuda* (P3) (Biota Environmental Sciences, 2008). The presence of Priority Flora within the proposed clearing area increases its biodiversity significance; however Priority Flora were found in small numbers. According to Shepherd (2007) approximately 100% of the Beard Vegetation Associations within the application area remain within the Pilbara bioregion, therefore it is not expected that the proposed clearing will threaten the conservation status of any Priority Flora species.

Seven alien weed species were recorded within the application area (Biota Environmental Sciences, 2008). These were: Bipinnate Beggartick (*Bidens bipinnata*), Ulcardo Melon (*Cucumis melo* subsp. *agrestis*), Spiked Malvastrum (*Malvastrum americanum*), Mimosa Bush (*Vachellia farnesiana*), Birdwood Grass (*Cenchrus setiger*), Awnless Barnyard Grass (*Echinochloa colona*) and Native Thornapple (*Datura leichhardtii*). 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 in turn can 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 (DAFWA). Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Two broad habitat types were recorded within the application area;

1. Scattered *Corymbia* and *Acacia* spp. over tussock and hummock grasslands on loam to stony loam; and
2. Drainage line with loamy banks supporting occasional *Eucalypt* spp. over tussock grasses (Biota Environmental Sciences, 2008).

The vegetation communities within the application area are not likely to be considered as rare, geographically restricted or of significant conservation value. The vegetation communities and potential fauna habitats within the application area are considered common within the Pilbara region, and are unlikely to be of higher biodiversity than the surrounding areas. The proposed clearing is unlikely to have a significant impact on the biological diversity of the region, or comprise of a high level of biological diversity.

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

**Methodology** Australian Heritage Database (2010)  
Biota Environmental Sciences (2008)  
CALM (2002)  
Shepherd (2007)  
GIS Database

- DEC Tenure
- 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**

Two broad habitat types were recorded within the application area. These were;

1. Scattered *Corymbia* and *Acacia* spp. over tussock and hummock grasslands on loam to stony loam; and
2. Drainage line with loamy banks supporting occasional *Eucalypt* spp. over tussock grasses (Biota Environmental Sciences, 2008).

The drainage line and associated vegetation within the application area may provide significant fauna habitat. The fauna habitats identified within the application area are not considered as necessary for the on-going maintenance of any significant fauna habitat. It is likely that equal or higher quality vegetation and fauna habitats would exist throughout the surrounding area, and Pilbara region. Therefore, it is unlikely that the proposed clearing will significantly impact on fauna habitat. Furthermore, the habitat types described by Biota Environmental Sciences (2008) are well represented within Karijini National Park, which provides potentially important contemporary refugia for many species.

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

**Methodology** Biota Environmental Sciences (2008)

**(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, no Declared Rare Flora (DRF) or Priority flora species occur within the application area (GIS Database). The nearest recorded location of DRF (*Lepidium catapycnon*) occurs approximately 43 kilometres north-east of the application area (GIS Database).

Prior to a flora survey being undertaken a desktop database search of the following databases was carried out:

- Department of Environment and Conservation's (DEC) Rare and Priority Flora Database;
- Western Australian Herbarium Declared Rare Flora (DRF) and Priority Flora Database; and
- *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* 'protected matters' relevant to the study area (Biota Environmental Sciences, 2008).

According to these searches no species of DRF and 18 Priority flora species may occur within the application area (Biota Environmental Sciences, 2008). These are:

**P1** - *Josephinia* sp. Marandoo (M.E. Trudgen 1554) and *Brachyscome* sp. Wanna Munna Flats;

**P2** - *Euphorbia* sp. Mt Bruce Flats, *Indigofera ixocarpa*, *Scaevola* sp. Hamersley Range and *Spartothamnella puberula*;

**P3** - *Acacia dawweana*, *A. effusa*, *Calotis latiuscula*, *Dampiera anonyma*, *Eremophila magnifica* subsp. *velutina* ms, *Geijera salicifolia*, *Rostellularia adscendens* var. *latifolia*, *Sida* sp. Marandoo and *Swainsona* sp. Hamersley Station; and

**P4** - *Acacia bromilowiana*, *Eremophila magnifica* subsp. *magnifica* and *Ptilotus mollis* (Biota Environmental Sciences, 2008).

A flora survey was conducted over the application area by Biota Environmental Sciences between 25 and 28 April 2008 which followed considerable rainfall and there was optimal observation of many annual species (Biota Environmental Sciences, 2008). This survey involved three standard 50 metre by 50 metre floristic survey quadrats being established within the major vegetation units in the application area (Biota Environmental Sciences, 2008). On-foot traverses were completed of all major habitats and the vegetation associations were examined for the presence or absence of any DRF and Priority Flora species (Biota Environmental Sciences, 2008).

No DRF were recorded whilst three Priority flora species were recorded during the flora survey, namely *Josephinia* sp. Marandoo (P1), *Calotis latiuscula* (P3) and *Goodenia nuda* (P3) (Biota Environmental Sciences, 2008).

*Josephinia* sp. Marandoo (M.E. Trudgen 1554) (P1) is associated with gritty soil and granite on plains with mixed shrublands of *Senna* and *Acacia* (Western Australian Herbarium, 2009). This species was recorded by Biota Environmental Sciences (2008) from a single location from dense Mulga vegetation fringing the main creekline through the application area. This species has previously been recorded from 7 locations including; West Marandoo, West Angelas Deposits, Hope Downs and the Marandoo Camp, with population sizes ranging from 1 individual to 50+ individuals (Rio Tinto, 2009).

*Calotis latiuscula* (P3) is associated with sand and loam soils on rocky hillsides, floodplains, rocky creeks or riverbeds (Western Australian Herbarium, 2009). Biota Environmental Sciences (2008) recorded a population associated with Mulga vegetation fringing the creekline within the application area.

*Goodenia nuda* (P4) had a single record from the broad plain in the north-eastern section of the application area (Biota Environmental Sciences, 2008).

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

**Methodology** Biota Environmental Sciences (2008)  
Rio Tinto (2009)  
Western Australian Herbarium (2009)  
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**

A search of available databases reveals that there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database).

The nearest known TEC to the area applied to clear is the Themeda Grasslands, located approximately 13 kilometres north-west (GIS Database; Biota Environmental Sciences, 2008). It is not expected that the proposed clearing will impact the conservation of this TEC.

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

**Methodology** Biota Environmental Sciences (2008)  
GIS Database  
- Threatened Ecological Sites

**(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 Bioregion (GIS Database). Shepherd (2007) report that approximately 99.95% of the pre-European vegetation still exists in this Bioregion.

The vegetation in the application area is recorded as Beard vegetation associations

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

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

**82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database; Shepherd, 2007).

According to Shepherd (2007) approximately 100% of these Beard vegetation associations remain within the Pilbara Bioregion (see table below).

|                              | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | % of Pre-European area in IUCN Class I-IV Reserves |
|------------------------------|-------------------------|----------------------|--------------|-----------------------|--|
| IBRA Bioregion – Pilbara     | 17,804,188              | 17,794,645           | ~99.95%      | Least Concern         | ~6.32%   |
| Beard veg assoc. – State     |                         |                      |              |                       |  |
| 18                           | 19,892,305              | 19,890,195           | ~100%        | Least Concern         | ~2.1%  |
| 29                           | 7,903,991               | 7,903,991            | ~100%        | Least Concern         | ~0.3%  |
| 82                           | 2,565,901               | 2,565,901            | ~100%        | Least Concern         | ~10.2%   |
| Beard veg assoc. – Bioregion |                         |                      |              |                       |  |
| 18                           | 676,557                 | 676,557              | ~100%        | Least Concern         | ~16.8%   |
| 29                           | 1,133,219               | 1,133,219            | ~100%        | Least Concern         | ~1.9%  |
| 82                           | 2,563,583               | 2,563,583            | ~100%        | Least Concern         | ~10.2%   |

\* 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)  
- 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 at variance to this Principle**

According to known GIS datasets, there are no known permanent watercourses or water bodies within the application area (GIS Database). However, there are numerous minor non-perennial watercourses running through the application area (GIS Database).

Vegetation mapping of the application area by Biota Environmental Sciences (2008) indicates that 6.03 hectares (~2.74%) of the native vegetation within the application area is riparian vegetation. The riparian vegetation is likely to be disturbed due to the construction of haul roads crossing the drainage lines which may alter the watercourses natural regime. To minimise the impact and ensure the natural water flow is maintained it is recommended that culverts and floodways be installed where haul roads intersect drainage lines.

Based on the above, the proposed clearing is at variance to this Principle. However, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland. The vegetation communities growing in association with the watercourses are not unique and are considered common and widespread in the Pilbara bioregion (Shepherd, 2007; GIS Database). The proposed clearing is unlikely to significantly impact on vegetation communities growing in association with these drainage channels. Should any watercourses be disturbed the proponent should liaise with the Department of Water to determine whether a Bed and Banks permit is necessary for the proposed works.

**Methodology** Biota Environmental Sciences (2008)  
Shepherd (2007)  
GIS Database  
- Geodata, Lakes  
- 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 surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 2004). The application area is composed of the following land systems (GIS Database);

- Newman Land System;
- Boolgeeda Land System; and
- Jurrawarrina Land System.

The Newman Land System is described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'plateaux, ridges, mountains and hills' and 'lower slopes' land units. These land units are not susceptible to erosion due to a surface mantle of very abundant pebbles and cobbles of ironstone and other rocks, with outcrops of parent rock. The vegetation described by Van Vreeswyk et al. (2004) accurately reflects the vegetation types described in the vegetation surveys conducted over the area (Biota Environmental Sciences, 2008).

The Boolgeeda Land System is described as stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'stony lower plains' land unit. The soils of this land unit (red loamy earths) are not susceptible to erosion due to a surface mantle of very abundant pebbles of ironstone and other rocks. The vegetation described by Van Vreeswyk et al. (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota Environmental Sciences, 2008).

The Jurrawarrina Land System is described as hardpan plains and alluvial tracts supporting mulga shrublands with tussock and spinifex grasses (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'drainage tracts' and 'channels' land

units. The soils of these land units are red loamy earths and river bed soils are not susceptible to erosion. The vegetation described by Van Vreeswyk et al. (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota Environmental Sciences, 2008).

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

**Methodology** Biota Environmental Sciences (2008)  
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**

Karijini National Park is approximately 620,000 hectares in size and represents considerable biodiversity (Australian Heritage Database, 2010). The area is considered to be scenically outstanding, with views from a series of hills such as Mount Vigors, Mount Barricade and Mount Bruce (Australian Heritage Database, 2010). Karijini National Park comprises a complete north-south transverse section of the Hamersley Ranges (Australian Heritage Database, 2010). The application area is approximately 1.1 kilometres from the boundary of Karijini National Park at its nearest point (GIS Database).

Karijini National Park is a representative example of the Hamersley Ranges enhanced by most of the area being relatively unmodified by pastoralism or large scale mining operations (Australian Heritage Database, 2010). It is on the Register of the National Estate for its considerable biological diversity with many flora and fauna species of special significance occurring there (Australian Heritage Database, 2010).

The National Park is especially rich in species of the genus acacia, with forty-six of the fifty-four acacia species which occur in the Pilbara region (Australian Heritage Database, 2010). The twenty-nine species of native mammal which inhabit Karijini National Park include three small mammals which are endemic to the Pilbara, which are the Little Red Antechinus (*Antechinus rosamondae*), Pilbara Ningui (*Ningui timealeyi*) and the Western Pebble-mound Mouse (*Pseudomys chapmanii*) (Australian Heritage Database, 2010). In addition to this, Karijini National Park contains an unusually large number of raptor species (twenty-nine) in the total of 133 species of birds (Australian Heritage Database, 2010).

The application area contains vegetation types and habitats which are well represented and conserved within Karijini National Park (GIS Database; Australian Heritage Database, 2010). The area under application (38 hectares) is highly unlikely to be acting as an important buffer for, or ecological linkage to, Karijini National Park given that the area surrounding Karijini National Park is largely uncleared.

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

**Methodology** Australian Heritage Database (2010)  
GIS Database  
- DEC Tenure  
- Pre-European Vegetation  
- Register of National Estate

**(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 groundwater salinity within the application area is approximately 500 - 1,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. Given the size of the area to be cleared (38 hectares) compared to the size of the Hamersley Groundwater Province (10,166,833 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

The application area is located within a proclaimed area under the *Rights in Water and Irrigation Act 1914* (GIS Database; DoW, 2010). The proponent is required to obtain licences to take or divert water within this area (DoW, 2010). The application area is located within a Rights in Water Irrigation Act 1914 (RIWI Act) Groundwater Management Area (GIS Database). The proponent is required to obtain permits to abstract groundwater in this area.

The application area is located in a semi-desert-tropical region, with an average annual rainfall of approximately 284 millimetres recorded from the nearest weather station at Paraburdoo approximately 25 kilometres south-west of the application area (BoM, 2010; CALM, 2002). The small size of the proposed clearing area within the

above climate is unlikely to result in significant changes to surface water flows.

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

**Methodology** BoM (2010)  
CALM (2002)  
DoW (2010)  
GIS Database  
- Groundwater - Provinces  
- Groundwater Salinity  
- Public Drinking Water Source Areas (PDWSA)  
- RIWI Act, Groundwater Areas  
- RIWI Act, Surface Water Areas

**(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 experiences a semi-desert, tropical climate with an average annual rainfall of 284 millimetres (CALM, 2002; BoM, 2010). Rainfall is usually experienced during summer months and can be either cyclonic or thunderstorm events (CALM, 2002). It is likely that during times of intense rainfall there may be some localised flooding in adjacent areas. Local flooding occurs seasonally within the Pilbara region as a result of cyclonic activity and sporadic thunderstorm events. The proposed clearing of 38 hectares is unlikely to significantly alter the intensity of flooding within the application area and surrounding areas.

The application area is located within the Fortescue River catchment area (GIS Database). However, the small area to be cleared (38 hectares) in relation to the size of the Fortescue River catchment area (1,860,784 hectares) (GIS Database) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database).

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

**Methodology** BoM (2010)  
CALM (2002)  
GIS Database  
- Hydrographic Catchments - Catchments

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

**Comments**

There is one native title claim (WC97/089) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the 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*.

There are numerous registered Aboriginal sites of significance within and in close proximity to 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.

Hamersley Iron Pty Ltd referred the Marandoo Mine Phase 2 (MMP2) proposal to the Environmental Protection Authority (EPA) on 3 July 2007. The EPA provided the following recommendation on 26 July 2007 - "Formal Assessment - Public Environmental Review". Following the assessment and subsequent appeal periods the Minister for Environment; Youth determined on the 7 July 2010 that the proposal may be implemented subject to conditions and procedures.

The application area was referred to the Environmental Protection Authority (EPA) by the Department of Mines and Petroleum (DMP) on the 14 August 2008. The application triggered referral criteria as per the Memorandum of Understanding (MoU) between DMP (previously The Department of Industry and Resources DoIR) and the EPA. The EPA set the level of assessment as 'Not Assessed - Managed under Part V of the EP Act (Clearing)'. This decision was subsequently appealed and the appeal was dismissed by the Minister for Environment on 23 March 2009.

The clearing permit application was advertised on 26 April 2010 by DMP inviting submissions from the public. One submission was received stating no objection to the proposed clearing.

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

#### 4. Assessor's comments

##### Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing is 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

- Australian Heritage Database (2010) Register of National Estate: Hamersley Range National Park. <http://www.environment.gov.au> (Accessed 17 June 2010).
- Biota Environmental Sciences (2008) Marandoo Construction Camp: Native Vegetation Clearing Permit Report. Prepared for Hamersley Iron Pty Ltd. Unpublished report dated June 2008.
- BoM (2010) BOM Website - Climate Averages by Number, Averages for PARABURDOO. [www.bom.gov.au/climate/averages/tables/cw\\_007178.shtml](http://www.bom.gov.au/climate/averages/tables/cw_007178.shtml) (Accessed 17 June 2010).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 3 (PIL3 - Hamersley subregion) 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.
- DoW (2010) Clearing Permit CPS 3708/1 - Hamersley Iron Pty Ltd - Marandoo Mine Phase 2 Project - Construction Camp/Village. Advice to assessing officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP). Received 21 May 2010. Department of Water, Western Australia.
- Hamersley Iron (2010) Application for Purpose Clearing Permit - Additional Clearing - Marandoo Construction Camp Miscellaneous Licence 47/234. Supporting documentation.
- 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) Priority Flora Records. Advice to assessing officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP), received (18 August). Rio Tinto, 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.
- Western Australian Herbarium (2009) - FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 21 May 2009).

#### 6. Glossary

##### Acronyms:

|                 |   |
|-----------------|---|
| <b>BoM</b>      | Bureau of Meteorology, Australian Government.   |
| <b>CALM</b>     | Department of Conservation and Land Management, Western Australia.  |
| <b>DAFWA</b>    | Department of Agriculture and Food, Western Australia.  |
| <b>DA</b>       | Department of Agriculture, Western Australia.   |
| <b>DEC</b>      | Department of Environment and Conservation  |
| <b>DEH</b>      | Department of Environment and Heritage (federal based in Canberra) previously Environment Australia                       |
| <b>DEP</b>      | Department of Environment Protection (now DoE), 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, Western Australia.   |
| <b>DoIR</b>     | Department of Industry and Resources, Western Australia.  |
| <b>DOLA</b>     | Department of Land Administration, Western Australia.   |
| <b>DoW</b>      | Department of Water   |
| <b>EP Act</b>   | Environment 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>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</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>TECs</b>     | 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.