



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5427/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: FMG Iron Bridge Limited

### 1.3. Property details

Property: Mining Lease 45/1226  
Local Government Area: Shire of East Pilbara  
Colloquial name: North Star Hematite Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 4 July 2013

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database):

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

A flora and vegetation survey of the application area and surrounding areas (referred to as the survey area from hereon) was conducted by Ecologia in April, August and September 2011 (FMG, 2012). This survey identified the following 33 vegetation communities within the survey area (FMG, 2012):

#### **Rocky Hills and Plains**

EIApEm - *Eucalyptus leucophloia* isolated low trees over *Grevillea wickhamii* isolated mid shrubs, over *Acacia ptychophylla* low shrubland, over *Eriachne mucronata* isolated hummock grasses;

AaTw - *Grevillea wickhamii*, *Acacia acradenia* and *Acacia orthocarpa* sparse mid shrubland, over *Triodia wiseana* sparse hummock grassland, over *Dampiera candidans* isolated herbs;

AtEm - *Acacia tumida* and *Grevillea wickhamii* open tall shrubland, over *Acacia orthocarpa* open mid shrubland over *Eriachne mucronata* isolated tussock grasses, over *Dampiera candidans* isolated herbs;

AtTw - *Acacia tumida* and *Grevillea wickhamii* open tall shrubland, over *Triodia wiseana* open hummock grassland;

AoTw - *Acacia orthocarpa* open tall shrubland, over *Triodia wiseana* open hummock grassland and *Eriachne pulchella* isolated tussock grasses;

Tw - *Triodia wiseana* and *Triodia schinzii* hummock grassland and *Eriachne mucronata* isolated hummock grasses;

EIApTw - *Eucalyptus leucophloia* isolated trees, over *Acacia ptychophylla* sparse shrubland, over *Triodia wiseana* open hummock grassland, over *Dampiera candidans* and *Polycarpha holtzei* isolated herbs;

Tw - *Triodia wiseana* open hummock grassland, over *Bonamia media* isolated herbs;

#### **Calcrete**

Tw - *Triodia wiseana* and *Triodia basedowii* hummock grassland;

#### **Rocky Hills and Plains**

AaTw - *Acacia acradenia* open mid shrubland, over *Triodia wiseana* hummock grassland;

AaTw - *Acacia tumida* and *Grevillea wickhamii* sparse tall shrubland, over *Acacia acradenia* open mid shrubland,

over *Triodia wiseana* hummock grassland;

AaTw - *Acacia acradenia* and *Acacia inaequilatera* sparse mid shrubland over *Triodia wiseana* and *Triodia lanigera* hummock grassland;

Tw - *Triodia wiseana* hummock grassland;

#### **Shrubby Drainage Lines**

At - *Acacia tumida* and *Grevillea wickhamii* tall shrubland, over *Indigofera monophylla* sparse low shrubland;

#### **Sandy Loams and Gravelly Plains**

ImTs - *Indigofera monophylla* isolated low shrubs, over *Triodia schinzii* open hummock grassland, over *Ptilotus astrolasius* isolated herbs;

AsTI - *Acacia stellaticeps* sparse low shrubland, over *Triodia longiceps* hummock grassland, over *Bulbostylis barbata* isolated sedges;

CI - *Grevillea wickhamii* isolated tall shrubs, over *Corchorus laniflorus* and *Solanum phlomoides* sparse shrubland;

AaTb - *Petalostylis labicheoides* and *Acacia acradenia* sparse mid shrubland, over *Corchorus laniflorus* sparse low shrubland, over *Chrysopogon fallax* sparse tussock grassland and *Triodia basedowii* sparse hummock grassland;

AiTb - *Acacia inaequilatera* and *Grevillea wickhamii* sparse tall shrubland, over *Acacia acradenia* sparse mid shrubland, over *Triodia basedowii* and *Triodia wiseana* hummock grassland;

AoTb - *Acacia orthocarpa* open mid shrubland, over *Indigofera monophylla* sparse low shrubland, over *Triodia basedowii* open hummock grassland;

#### **Drainage Lines**

GwTe - *Grevillea wickhamii* sparse mid shrubland, over *Triodia epactia* or *Triodia schinzii* open hummock grassland and isolated *Eriachne ciliata* grasses and *Polycarphae holtzei* herbs;

GwTp - *Grevillea wickhamii* sparse tall shrubland, over *Triodia pungens* open hummock grassland and isolated *Eragrostis cumingii* tussock grasses, *Cyperus squarrosus* sedges, and *Stemodia viscosa* herbs;

Ap - *Acacia pyrifolia*, *Gossypium robinsonii*, *Tephrosia rosea* and *Cajanus cinereus* mid shrubland;

ApTp - *Acacia pyrifolia*, *Acacia acradenia*, *Tephrosia rosea* and *Indigofera monophylla* mid shrubland, over *Triodia pungens* open hummock grassland;

#### **Rocky Outcrops**

TI - *Triodia lanigera* open hummock grassland, with *Cyperus hesperius* isolated sedges, *Eriachne ciliate* isolated grasses and *Cleome viscosa* isolated herbs;

GaTw - *Gossypium australe* sparse mid shrubland, over *Triodia wiseana* open hummock grassland;

#### **Rivers, Gorges, Creeks and Floodplains**

FpAtCo - *Ficus platypoda* open woodland, over *Acacia tumida* and *Gossypium robinsonii* sparse tall shrubland, over *Cymbopogon oblectus* and *Eriachne mucronata* sparse tussock grassland and *Cyperus hesperius* isolated sedges;

ChAbTp - *Corymbia hamersleyana* open low woodland, over *Acacia bivenosa* mid shrubland, over *Triodia pungens* open hummock grassland and *Cenchrus ciliaris* sparse tussock grassland;

EvCc - *Cenchrus ciliaris* tussock grassland;

PfTp - *Pluchea ferdinand muelleri* open low shrubland, over *Triodia pungens* sparse hummock grassland and *Cenchrus ciliaris*, *Eriachne lanata* and *Chrysopogon fallax* open tussock grassland;

#### **Granite Sandy Plains and Outcrops**

ImTp - *Indigofera monophylla* and *Solanum phlomoides* sparse open shrubland, over *Triodia pungens* and *Triodia basedowii* sparse hummock grassland with *Mollugo molluginea* and *Bonamia linearis* isolated herbs;

SpTI - *Solanum phlomoides* isolated low shrubs, over *Triodia lanigera* open hummock grassland; and

Tp - *Triodia pungens* open hummock grassland.

#### **Clearing Description**

FMG Iron Bridge Limited has applied to clear up to 319 hectares of native vegetation within a 2,145 hectare boundary. The purpose of the proposed clearing is to develop an open pit and construct a processing plant, accommodation camp, roads and other associated infrastructure.

#### **Vegetation Condition**

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

To

Pristine: No obvious signs of disturbance (Keighery, 1994).

**Comment**

The application area is located within the Pilbara region of Western Australia and is situated approximately 70 kilometres west of Marble Bar.

### 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 may be at variance to this Principle**

The proposed clearing is located approximately 70 kilometres west of Marble Bar within the Chichester subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This sub-region is characterised by undulating Archaean granite and basalt plains with significant areas of basaltic ranges (CALM, 2002). Broadly, the plains support a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands on plains, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

A flora and vegetation survey conducted by Ecologia in April, August and September 2011 identified 453 plant taxa from 55 families and 168 genera within the survey area (FMG, 2012). The families and genera within the application area are considered to be common within the Pilbara region (FMG, 2012). A high representation from the sedge family (Cyperaceae) was due to the presence of waterpools, many of which were in Pristine condition (FMG, 2012).

According to available databases there are no Threatened or Priority Ecological Communities within the application area (GIS Database).

According to available databases and a flora and vegetation survey, there are no Threatened Flora species within the application area (GIS Database; FMG, 2012).

Ecologia identified eight priority flora species within the flora and vegetation survey area (FMG, 2012):

- *Abutilon pritzelianum* (Priority 1);
- *Heliotropium muticum* (Priority 1);
- *Pityrodia* sp. Marble Bar (Priority 1);
- *Euphorbia clementii* (Priority 2);
- *Acacia glaucocaesia* (Priority 3);
- *Gymnanthera cunninghamii* (Priority 3);
- *Goodenia nuda* (Priority 4); and
- *Ptilotus mollis* (Priority 4).

Of these species only *Pityrodia* sp. Marble Bar (Priority 1) was recorded within the application area (Ecologia, 2012a). A total of approximately 38 individuals of this species were recorded within the application area with approximately 638 recorded outside of the application area (Ecologia, 2012a). It is considered unlikely that the proposed clearing will significantly impact on the conservation of any of the above Priority Flora species.

Ten weed species, *Aerva javanica*, *Bidens bipinnata*, *Cenchrus ciliaris*, *Cucumis melo* subsp. *agrestis*, *Digitaria ciliaris*, *Echinochloa colona*, *Indigofera oblongifolia*, *Malvastrum americanum*, *Portulaca oleracea* and *Sonchus oleraceus*, within the survey area (FMG, 2012). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna survey of the application area and the local surrounds was conducted by Ecologia (2012b) in March/April and October/November 2011. This survey identified 19 native mammal species, 81 bird species, 75 reptile species and six amphibian species (Ecologia, 2012b). The species recorded within the application area are typically found within the Pilbara region, however there is an elevated variety of species which is attributed to the numerous habitat types within the area (Ecologia, 2012b). The majority of fauna species within the area are expected to be able to egress to adjacent suitable habitats, and the impacts to regional biodiversity are expected to be low (Ecologia, 2012b).

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

**Methodology**

- CALM (2002)
- Ecologia (2012a)
- Ecologia (2012b)
- FMG (2012)
- GIS Databases:
  - IBRA WA (regions – subregions)
  - Threatened Ecological Sites Buffered
  - Threatened and Priority Flora

**(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 at variance to this Principle**

A fauna survey of the application area and surrounds undertaken by Ecologia (2012b) identified the following three fauna habitats within the application area:

- Rocky spinifex hills;
- Rocky ridge / breakaway / gorge; and
- Creek lines.

Ecologia (2012b) has identified the following seventeen conservation significant fauna species as occurring, or potentially occurring within the application area:

- Northern Quoll (*Dasyurus hallucatus*) Endangered under the *EPBC Act 1999*; Schedule 1 under the *Wildlife Conservation Act 1950* – this species was captured at four locations within the application area. The high number of Northern Quolls recorded within areas surrounding the application area (36 records of a minimum of 20 individuals) is likely to be due to the quality of habitat and the availability of permanent surface water in some of the gorges nearby the application area. No permanent water bodies were recorded within the application area, however there are numerous gorges in which the Northern Quoll has been recorded. DEC (2013) recommends that significant habitat for this species be avoided. Potential impacts to the Northern Quoll as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.
- Pilbara Leaf-nosed Bat (*Rhinonictis aurantius*) Vulnerable under the *EPBC Act 1999*; Schedule 1 under the *Wildlife Conservation Act 1950* – a roost cave for this species was recorded within the application area. This species is known to be sensitive to disturbance and activities within 50 metres of roost caves has been known to cause this species to abandon caves. Impacting upon roost caves may result in loss of local population of this species. Roost caves for the Pilbara Leaf-nosed Bat should be avoided during the proposed clearing activities. Potential impacts to this species as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.
- Pilbara Olive Python (*Liasis olivaceus barroni*) Vulnerable under the *EPBC Act 1999*; Schedule 1 under the *Wildlife Conservation Act 1950* – a sloughed skin and scats for this species have been recorded within the application area. The preferred habitat for this species, permanent waterbodies, is not present within the application area, however it is present in the areas adjacent the application area. This species is not highly mobile and is not known to move across extensively cleared areas (DEC, 2013). Potential impacts to this species as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.
- Rainbow Bee-eater (*Merops ornatus*) Migratory under the *EPBC Act 1999*; Schedule 3 under the *Wildlife Conservation Act 1950* – this species is scarce to common throughout Western Australia. It has been recorded within the application area and suitable nesting habitat has been identified within the Creekline and Ridge / Breakaway / Gorge habitats. FMG Iron Bridge Ltd has committed to avoiding the Ridge / Breakaway / Gorge habitat. Potential impacts to this species may be minimised by the implementation of conditions requiring the Ridge/Breakaway/Gorge to be avoided and a condition requiring riparian vegetation to be avoided where possible.
- Spectacled Hare-wallaby (*Lagorchestes conspicillatus leichardti*) Priority 3 – this species is considered highly likely to occur within the application area as it is broadly distributed throughout the Pilbara and there have been 107 recordings of this species within 100 kilometres of the application area. Habitat for this species is common outside of the application area and therefore the proposed clearing is unlikely to impact on the conservation of this species.
- Ghost Bat (*Macroderma gigas*) DEC Priority 4 – one call from this species was recorded within the application area suggesting that it is either a transient or foraging individual. No roost caves have been recorded within the application area however there is suitable habitat present (Rocky Ridge / Gorge / Gully habitat type) for such roost caves. While the low number of records suggest a low density of this species within the application area, suitable roost habitat should be avoided where possible.
- Long-tailed Dunnart (*Sminthopsis longicaudata*) DEC Priority 4 – five individuals of this species were captured at one location within the application area. The preferred habitat for this species is rocky country with occasional occurrences being noted in open country with gravel/stone mantle. A further six individuals of this species were recorded in areas adjacent to the application area. Suitable habitat for this species is extensive throughout the local area and the proposed clearing is therefore not likely to impact on the conservation of this species.
- Western Pebble-mound Mouse (*Pseudomys chapmani*) DEC Priority 4 – one active Western Pebble-mound Mouse mound was recorded within the application area. This species has very limited ability to move away from disturbances, and therefore any impacts to active mounds will likely impact local populations. However, this species has been recorded across the Pilbara and is common in suitable habitat. The proposed clearing is not likely to impact upon the conservation of this species.

The following six avian species, while potentially occurring within the application area, are highly mobile and therefore unlikely to be significantly impacted by the proposed clearing:

- Eastern Great Egret (*Ardea modesta*) Migratory under the *EPBC Act 1999*; Schedule 3 under the *Wildlife Conservation Act 1950*;
- Fork-tailed Swift (*Apus pacificus*) Migratory under the *EPBC Act 1999*; Schedule 3 under the *Wildlife Conservation Act 1950*;
- Grey Falcon (*Falco hypoleucos*) Schedule 1 under the *Wildlife Conservation Act 1950*;
- Peregrine Falcon (*Falco peregrinus*) Schedule 4 under the *Wildlife Conservation Act 1950*;
- Australian Bustard (*Ardeotis australis*) Priority 4; and
- Bush Stone-curlew (*Burhinus grallarius*) Priority 4.

The rocky ridge / breakaway / gorge habitat has been identified as being of high conservation significance. FMG has advised that it is feasible to avoid his habitat for this project. Potential impacts to the rocky ridge / breakaway / gorge habitat may be minimised by the implementation of a fauna management condition.

The Northern Quoll and Pilbara Leaf-nosed Bat have both been recorded within the application area. As these species are listed as Endangered and Vulnerable, respectively, it is important to ensure the impact to these species as a result of the proposed clearing is kept to a minimum. Potential impacts to these species as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.

Scats and sloughed skin of the Pilbara Olive Python have also been recorded within the application area. While the preferred habitat for this species, permanent water pools, is not present within the application area, the Pilbara Olive Python also utilised similar habitat to the Northern Quoll. Potential impacts to the Pilbara Olive Python may be minimised by the implementation of a fauna management condition.

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

**Methodology** DEC (2013)  
Ecologia (2012b)

**(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 Threatened Flora species within the application area (GIS Database).

A flora and vegetation survey conducted by Ecologia (2012a) did not identify and Threatened Flora species within the application area.

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

**Methodology** Ecologia (2012)  
GIS Database:  
- Threatened and Priority Flora

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

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

There are no known records of Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 150 kilometres south west of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

**Methodology** GIS Database:  
- Threatened Ecological Sites Buffered

**(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.**

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

The application area is located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 99.58% of the pre-European vegetation remains within the Pilbara

bioregion (Government of Western Australia, 2013).

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

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

Approximately 99.51% of Beard vegetation association 82 remains within the Pilbara bioregion (see table below) (Government of Western Australia, 2013).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Extent in DEC Managed Lands %*
IBRA Bioregion - Pilbara	17,808,657	17,733,584	~99.58	Least Concern	~8.41
Beard vegetation associations - State					
82	2,565,901	2,553,217	~99.51	Least Concern	~10.56
Beard vegetation associations - Bioregion					
82	2,563,583	2,550,899	~99.51	Least Concern	~10.57

\* Government of Western Australia (2013)

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

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

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

**Methodology** Department of Natural Resources and Environment (2002)  
Government of Western Australia (2013)  
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 available databases there are no permanent wetlands or watercourses within the application area, however there are numerous non-perennial watercourses (GIS Database). No significant riparian vegetation was identified within the application area during a flora and vegetation survey conducted by Ecologia (2012a). Numerous permanent pools have been recorded within the area adjacent to the application area (Ecologia, 2012a); therefore it is important to ensure that natural water flow is maintained within the application area. Potential impacts to water flow as a result of the proposed clearing may be minimised by the implementation of a watercourse management condition.

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

**Methodology** Ecologia (2012a)  
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 may be at variance to this Principle**  
According to available databases the application area intersects the Capricorn, Rocklea and Talga land systems (GIS Database). According to Van Vreeswyk et al. (2004), none of these land systems are susceptible to erosion. However, given the proposed clearing is of a large scale (319 hectares), the impacts of any erosion would be significant. Potential erosion impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

Based on the above, the proposed clearing may 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 application area is not located within a conservation area (GIS Database). The nearest conservation area is Mungaroona Range Nature Reserve, located approximately 67 kilometres south west of the application area (GIS Database). At this distance the proposed clearing is considered unlikely to impact on the values of any conservation areas.

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

**Methodology** GIS Database:  
- DEC Tenure

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

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

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Marble Bar Water reserve located approximately 65 kilometres east of the application area (GIS Database). At this distance it is considered unlikely that the proposed clearing will impact on the quality of water within the Marble Bar Water Reserve.

According to available databases there are no permanent wetlands or watercourses within the application area (GIS Database). The annual average rainfall for the application area is approximately 335.6 millimetres and the average annual evaporation rate for the application area is approximately 3,600 millimetres (BoM, 2013; GIS Database). Therefore, during normal rainfall events surface water within 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.

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

**Methodology** BoM (2013)  
GIS Database:  
- Evaporation Isopleths  
- Hydrography, linear

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

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

The application area experiences an average annual rainfall of approximately 335.6 millimetres and an average annual evaporation of approximately 3,600 millimetres (BoM, 2013; GIS Database). While large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

**Methodology** BoM (2013)  
GIS Database:  
- Evaporation Isopleths

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

**Comments**

There is one native title claim over the area under application (GIS Database). This claim (WC99/8) has been registered with the Native Title Tribunal on behalf of the claimant group (GIS Database). However, 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 no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation 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 project was referred to the Department of Sustainability, Environment, Water, Population and Communities

(DSEWPaC) by the applicant and determined as a controlled action. DSEWPaC determined on 14 June 2013 that there should be no clearing within the rocky ridge / breakaway / gorge habitat and that the open pit should be set back 50 metres from this habitat. Additionally, DSEWPaC determined that no more than 645 hectares shall be cleared on Mining Lease M45/1226 and that all clearing must be conducted in accordance with the EPBC Listed Threatened Fauna Management Plan approved by the Minister.

The clearing permit application was advertised on 14 January 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

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

#### 4. References

- BoM (2013) Climate Statistics for Australian Locations. A Search for Climate Statistics for Hillside Station, Australian Government Bureau of Meteorology, Viewed 16 April 2013, <<http://www.bom.gov.au/climate/data/>>.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.
- DEC (2013) Species and Communities Branch advice received 26 March 2013.
- 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.
- Ecologia (2012a) Fortescue Metals Group Ltd North Star Vegetation and Flora Assessment. Unpublished report prepared for Fortescue Metals Group Ltd dated July 2012.
- Ecologia (2012b) Fortescue Metals Group Ltd North Star Project Level 2 Terrestrial Vertebrate Fauna Assessment. Unpublished report prepared for Fortescue Metals Group Ltd dated July 2012.
- FMG (2012) Application to Clear Native Vegetation (Purpose permit) for M45/1226 – North Star Hematite Project. Unpublished report dated December 2012.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Government of Western Australia, Perth, 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.