



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4989/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Hamersley Iron Pty Ltd

### 1.3. Property details

Property: Iron Ore (Hamersley Range) Agreement Act 1963, Mineral Lease 4SA (AML70/4)  
General Purpose Lease 47/1225  
Miscellaneous Licence 47/141  
Miscellaneous Licence 47/153  
Local Government Area: Shire of Ashburton  
Colloquial name: Brockman 2 to Brockman 4 Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
303		Mechanical Removal	Access road and associated activities, water pipeline, geotechnical investigations

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 19 July 2012

## 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 and are useful to look at vegetation in a regional context. Three Beard vegetation associations have been mapped within the application area:

**Beard vegetation association 18:** Low woodland; mulga (*Acacia aneura*);

**Beard vegetation association 82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and

**Beard vegetation association 175:** Short bunch grassland - savanna/grass plain (Pilbara) (Government of Western Australia, 2011; GIS Database).

Hamersley Iron Pty Ltd identified 17 vegetation communities in the application area within four vegetation types, using a primary vegetation survey of the application area by Biota (2005a) and supporting flora surveys by Biota (2007; 2009). Hamersley Iron Pty Ltd described the vegetation communities of the application area as follows:

#### Vegetation of Drainage Areas:

**C1 - *Eucalyptus victrix* scattered low trees to open woodland over *Goodenia lamprosperma*, *Pluchea dentex* very open herbland.** Other associated species: *Ammannia multiflora*, *Bergia trimera*, *Digitaria brownie*, *Gomphrena cunninghamii* and *Stemodia grossa*;

**C2 - *Acacia pyrifolia*, *A. ancistrocarpa*, *Petalostylis labicheoides* shrubland over *Bonamia rosea*, *Tephrosia rosea* var. *glabrior* low open shrubland over *Triodia epactia* hummock grassland and *Themeda triandra* very open tussock grassland.** Other associated species: *Acacia citrinovirdis*, *Corchorus lasiocarpus*, *Cullen lachnostachys*, *Eragrostis eriopoda*, *Eriachne mucronata*, *Indigofera monophylla*, *Jasminum didymium* subsp. *lineare*, *Ptilotus heliopteroides* var. *heliopteroides*, *P. obovatus* var. *obovatus*, *Scaevola spinescens* (broad form) and *Trichodesma zeylanicum* var. *zeylanicum*;

**C5 - *Eucalyptus xerothermica*, *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa*, *A. cowleana*, *A. elachantha*, *A. exilis* tall shrubland over *Triodia epactia* open hummock grassland and *Eulalia aurea* open tussock grassland.** Other associated species: *Acacia ancistrocarpa*, *A. pyrifolia*, *Alternanthera nana*, *Bonamia rosea*, *Cassia oligophylla*, *Chrysopogon fallax*, *Digitaria brownie*, *Eremophila longifolia*, *Paraneurachne muelleri*, *Ptilotus obovatus* var. *obovatus*, *Solanum sturtianum*, *Themeda triandra* and *Triodia wiseana*;

**C6 - *Eucalyptus xerothermica* scattered low trees over *Gastrolobium grandiflorum* open heath over *Chrysopogon fallax*, *Eulalia aurea* tussock grassland.** Other associated species: *Acacia pyrifolia*, *Alternanthera nana*, *Jasminum didymium* subsp. *lineare*, *Ptilotus obovatus* var. *obovatus* and *Themeda triandra*;

**C8 - *Corymbia hamersleyana* low open woodland over *Triodia epactia* hummock grassland and *Eriachne tenuiculmis*, *E. mucronata*, *Themeda triandra* open tussock grassland.** Other associated species: *Digitaria*

*brownie*, *Gossypium robinsonii*, *Grevillea wickhamii* subsp. *aprica* and *Rulingia luteiflora*;

**C9 – *Corymbia hamersleyana*, *Eucalyptus leucophloia* low woodland over *Grevillea wickhamii* tall shrubland over *Gossypium robinsonii* open shrubland over *Themeda triandra*, *Eulalia aurea* and *Paraneurachne muelleri* open tussock grassland and *Triodia epactia* open hummock grassland.** Other associated species: *Acacia ancistrocarpa*, *A. bivenosa*, *A. exilis*, *A. monticola*, *A. pyrifolia*, *Eriachne tenuiculmis*, *Gastrolobium grandiflorum* and *Jasminum didymium* subsp. *lineare*;

**C10 – *Eucalyptus leucophloia*, *Corymbia deserticola* scattered low trees over *Acacia tumida* var. *pilbarensis* tall open scrub over *Triodia epactia*, *T. wiseana* open hummock grassland.** Some areas also had *Acacia monticola* as a dominant. Other associated species: *Acacia atkinsiana*, *A. bivenosa*, *Corymbia hamersleyana*, *Digitaria brownie*, *Eulalia aurea* and *Themeda triandra*;

**C13 – *Corymbia hamersleyana*, *Eucalyptus gamophylla* low open woodland over *Acacia monticola*, *A. ancistrocarpa*, *A. bivenosa*, *Rulingia luteiflora* tall closed scrub over *Triodia epactia* hummock grassland.** Other associated species: *Acacia atkinsiana*, *A. exilis*, *Aristida contorta*, *Dysphania rhadinostachya* subsp. *rhadinostachya*, *Goodenia microptera* and *Pterocaulon sphaeranthoides*;

**C17 – *Acacia aneura* low woodland to low open forest over *Chrysopogon fallax*, *Triodia epactia* open tussock/hummock grassland.** Other associated species: *Alternanthera nana*, *Digitaria brownie*, *Goodenia heterochila*, *Ptilotus macrocephalus*; and

**C19 – *Corymbia hamersleyana* scattered low trees over *Acacia atkinsiana* tall shrubland over *Triodia epactia* hummock grassland.** Other associated species: *Acacia kempiana*.

#### **Vegetation of Plains:**

**P6 – *Corymbia deserticola* scattered low trees over *Acacia atkinsiana*, *A. exilis* tall open shrubland over *Triodia wiseana* closed hummock grassland.** The shrub overstorey was dominated by varying amounts of *Acacia atkinsiana* and *A. exilis*, sometimes with other species such as *A. inaequilatera*. Other associated species: *Acacia ancistrocarpa*, *A. bivenosa*, *A. stowardii*, *Cassia pruinosa*, *Goodenia stobbsiana*, *Haloragis gossei*, *Ptilotus rotundifolius* and *Stackhousia intermedia*;

**P7 – *Corymbia deserticola* low open woodland over *Acacia atkinsiana* shrubland to tall shrubland over *Triodia epactia*, *T. wiseana* hummock grassland.** The vegetation was similar to the vegetation type P6 but had a more dense shrub overstorey and included *Triodia epactia* in the hummock grassland understorey. Other associated species: *Acacia ancistrocarpa*, *A. aneura* var. *longicarpa*, *A. exilis*, *A. tenuissima*, *Amphipogon sericeus*, *Codonocarpus cotinifolius*, *Eucalyptus gamophylla*, *Hakea lorea* subsp. *lorea*, *Paraneurachne muelleri* and *Ptilotus helipteroides* var. *helipteroides*;

**P9 – *Eucalyptus socialis* low open woodland over *Triodia wiseana* open hummock grassland.** Other associated species: *Goodenia microptera*, *Haloragis gossei*, *Paraneurachne muelleri*, *Ptilotus exaltatus* var. *exaltatus*, *P. clementii*, *Salsola tragus* and *Templetonia egena*; and

**P14 – *Acacia inaequilatera*, *A. exilis*, *A. bivenosa* open shrubland over *Triodia epactia* hummock grassland.**

#### **Vegetation of Stony Hills:**

**H1 – *Corymbia hamersleyana* scattered trees over *Cassia pruinosa* open shrubland over *Triodia wiseana* open hummock grassland.** Other associated species: *Acacia exilis*, *A. inaequilatera*, *Amphipogon sericeus*, *Aristida contorta*, *Eriachne aristidea* and *Hibiscus sturtii* var. *aff. platychlams*;

**H14 – *Eucalyptus leucophloia* scattered low trees over *Triodia wiseana* hummock grassland.** Apart from the dominant flora, other species occurred at very low densities. Other associated species: *Acacia pruinocarpa*, *Hakea chordophylla* and *Solanum lasiophyllum*; and

**H15 – *Eucalyptus leucophloia* scattered low trees over *Triodia epactia* hummock grassland.** As for vegetation type H14, species other than the dominant flora occurred as only scattered individuals. Other associated species: *Acacia pruinocarpa*, *Goodenia stobbsiana*, *Indigofera monophylla* and *Ptilotus calostachyus* var. *calostachyus*.

**Disturbed** – Areas completely devoid of vegetation or with significant weed invasion.

#### **Clearing Description**

Hamersley Iron Pty Ltd is proposing to clear up to 303 hectares of native vegetation within a larger application area of 1,372 hectares for the Brockman 2 and Brockman 4 Projects (Hamersley Iron Pty Ltd, 2012). The clearing of vegetation is required for the purpose of an access road and associated activities, water pipeline and geotechnical investigations.

The vegetation will be cleared using a dozer, blade down. The vegetation and topsoil will be stockpiled separately for use in rehabilitation.

#### **Vegetation Condition**

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

To:

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

#### **Comment**

The application area is located in the Hamersley subregion of Western Australia and is situated approximately 55 kilometres north-west of the Tom Price town site (GIS Database).

### 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 occur within the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by mountainous area of Proterozoic sedimentary ranges and plateaux, dissected by gorges. Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002).

Biota (2007) conducted a flora and vegetation survey over the application area during late May and June 2007, then another small section during January 2007. The intensive flora searches identified a total of 337 vascular plant taxa from 129 genera and 49 families within the application area. Biota (2007) state that the application area has a moderate species richness and the application area does not support a high diversity of flora or vegetation units which may be important for the locality or the subregion (Rio Tinto Iron Ore, 2011). The flora and vegetation survey identified 17 vegetation communities within the application area (Biota, 2005a; 2007). The condition of the vegetation type was classified from 'very good' to 'degraded' (Keighery, 1994; GIS Database). Of these, two vegetation types were associated with the ephemeral Boolgeeda Creek which crosses through the application area (Biota, 2005a). These units are considered to have moderate conservation significance as they are known to support numerous species which may be restricted to these habitats (Biota, 2005a). Rio Tinto Iron Ore (2011) stated that where possible, disturbance to the vegetation within the Boolgeeda Creek will be avoided or activities kept within existing cleared areas. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition.

There were two Priority Flora species recorded within the application area (Biota, 2007). A search on the Department of Environment and Conservation's Threatened and Priority Flora databases revealed no Threatened Flora species and three Priority Flora species that may potentially occur in the application area. Biota (2005a; 2007) recorded a single individual of *Goodenia nuda* Priority 4 (P4) which is will not be disturbed by Hamersley Iron Pty Ltd's clearing activities (Hamersley Iron Pty Ltd, 2012). The P4 species *Eremophila magnifica* subsp. *velutina* is relatively localised along the eastern boundary of the application area and 19 individuals were surveyed within the application area (Biota, 2007). Rio Tinto Iron Ore (2011) has designated the entire population as an "environmentally sensitive area" on the Pilbara Iron GIS system and no individuals of these identified populations will be impacted by the proposed works. The clearing of 303 hectares of native vegetation within a 1,372 hectare application area is not likely to significantly influence the conservation status of these flora species as their habitat type is well represented in a local and regional context within the Hamersley subregion (Biota 2005a; 2007; GIS Database).

There are no Threatened Flora species, Threatened Ecological Communities or Priority Ecological Communities recorded within the application area (GIS Database).

Seven species of weed were identified during the survey (Biota, 2005a; 2007). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

There were four faunal habitats identified within the application area, two of which were considered to be of 'high significance' due to their potential to support conservation significant fauna (Biota, 2005b). All of the habitats within the application area are considered to be common and widespread within the subregion and faunal assemblages are unlikely to be different to that found in similar habitat located elsewhere in the region (Biota, 2005b). The clearing of 303 hectares of native vegetation within a 1,372 hectare application area is unlikely to have a significant impact on a regional and local context.

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

##### Methodology

Biota (2005a)  
Biota (2005b)  
Biota (2007)  
CALM (2002)  
Hamersley Iron Pty Ltd (2011)  
Keighery (1994)  
Rio Tinto Iron Ore (2012)  
GIS Database:  
- IBRA WA (Regions - Subregions)  
- Pre-European vegetation  
- Threatened Ecological Sites Buffered

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

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

There were four broad fauna habitat types recorded within the survey area by Biota (2005b);

1. Creepline – comprising minor drainage lines to wide flood channels with *Acacia* shrubland over *Triodia epactia* hummock grasslands;
2. Mulga – Dense *Acacia aneura* tall shrublands over *Triodia epactia* and *T. Wiseana* hummock grasslands in drainage areas within plains;
3. *Acacia* over *Triodia* – situated on stony soils and on soft soil in a wide valley; and
4. *Triodia* hilltop - crests of the Brockman 4 range.

Biota (2005a; 2005b) identified the vegetation condition to be 'degraded' to 'very good' (Keighery, 1994). The landforms and habitat found within the application area is considered as being well represented in the Pilbara bioregion (Biota, 2005b). The application area contains two habitats or faunal assemblages that are ecologically significant: the creeklines and hilltops, however, it is unlikely that any species of conservation significance will be significantly impacted by the clearing of native vegetation in the application areas. The clearing of 303 hectares of native vegetation within a 1,372 hectare application area is not likely to contain significant habitat for fauna.

The Mulga woodlands and calcareous outcrops and soils fauna habitat has been identified by Biota (2005b) as fauna habitats of local significance. The Mulga woodlands were identified as having a relatively restricted distribution. Calcrete outcrops were regarded by Biota (2005b) as being of particular significance for stygal, troglobitic and land snail communities. The calcrete outcrops are associated with the P9 vegetation type, which encompasses 48 hectares within the application area. Only a small amount of this vegetation type is expected to be disturbed (Hamersley Iron Pty Ltd, 2012). The habitats present within the broader application area are well represented within the locality and Hamersley sub-region (Biota, 2005b; Rio Tinto Iron Ore, 2011).

Biota (2005b) conducted a level two fauna survey of the application area and surrounding areas during 18 to 30 October 2004 and again during 12 to 21 April 2005. Biota (2005b) recorded 159 vertebrate species from 54 families, consisting of 83 avifauna, 54 reptile, 13 non-volant mammal, seven bat and two amphibian species. There were four species of conservation significance recorded within the application area. These species; the Australian Bustard (*Ardeotis australis*), *Notoscincus butleri* (*Notoscincus butleri*), Western Pebble-mound Mouse (*Pseudomys chapmani*) and Bush Stone-curlew (*Burhinus grallarius*) may use the study area for foraging as part of a larger territory area. The habitat present within the application areas is not considered significant habitat for these species (Biota, 2005b; Hamersley Iron Pty Ltd, 2012). The proposed clearing of 303 hectares of native vegetation is not likely to impact critical feeding or breeding habitat for any conservation significant fauna species as the application area does not contain significant habitat for the potential species. The recorded conservation significant species are considered highly mobile and/or have a wide distribution; therefore the proposed clearing is unlikely to significantly impact these species (Biota, 2005b).

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

**Methodology**

Biota (2005a)  
Biota (2005b)  
Hamersley Iron Pty Ltd (2012)  
Keighery (1994)  
Rio Tinto Iron Ore (2011)  
GIS Database:  
- IBRA WA (regions - subregions)  
- Pre-European Vegetation  
- Jeerinah 50cm Orthomosaic - Landgate 2004  
- Rocklea 50cm Orthomosaic - Landgate 2004

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

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

According to available databases, there are no records of Threatened Flora within the application area (GIS Database). A search of the Department of Environment and Conservation's Threatened and Priority Flora databases identified no Threatened Flora species as occurring within a 20 kilometre radius of the application area (DEC, 2012).

Biota Environmental Sciences (2007) conducted a vegetation and flora survey of the application area during late May and June 2006. No Threatened Flora was recorded within the survey area.

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

**Methodology** Biota Environmental Sciences (2007)  
 DEC (2012)  
 GIS Database:  
 - Threatened 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 the available databases shows that there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database).

The nearest TEC 'Themeda Grasslands' is situated 15 kilometres east of the application area. Given the distance separating the TEC buffer zone and the application area, the proposed clearing is not likely to impact the environmental values of the TEC.

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 falls within the Pilbara IBRA bioregion (GIS Database). The vegetation within the application area is recorded as:

**Beard vegetation association 18:** Low woodland; mulga (*Acacia aneura*);  
**Beard vegetation association 82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;  
**Beard vegetation association 175:** Short bunch grassland - savanna/grass plain (Pilbara) (Government of Western Australia, 2011; GIS Database).

According to the Government of Western Australia (2011), Beard vegetation associations 18, 82 and 175 retain approximately 99% of their pre-European extent. The local area has been extensively cleared, however the area proposed to be cleared is not a significant remnant of native vegetation.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,427.34	17,729,352.37	~99.58	Least Concern	6.32
Beard vegetation associations - State					
18	19,892,305	19,843,823	~99.76	Least Concern	2.13
82	2,565,901	2,553,217	~99.51	Least Concern	10.24
175	526,203	523,800	~99.54	Least Concern	4.24
Beard vegetation associations - Bioregion					
18	676,557	672,424	~99.39	Least Concern	16.79
82	2,563,583	2,550,899	~99.51	Least Concern	10.25
175	507,033	506,626	~99.92	Least Concern	4.38

\* Government of Western Australia (2011)

\*\* 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)  
 Government of Western Australia (2011)  
 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**

Based on vegetation mapping by Biota (2007), the vegetation types C1, C2, C5, C6, C8, C9, C10, C13, C17 and C19 are riparian vegetation types associated with drainage lines. There are several minor ephemeral drainage lines which intersect the application area (GIS Database). These drainage lines only flow after major rainfall events (Biota, 2007). The condition of the riparian vegetation type is classified as 'degraded' to 'very good' (Keighery, 1994; GIS Database).

The application area intersects a small portion of the Boolgeeda Creek in the southern section, which comprises the main drainage feature in the locality (GIS Database). This area supports the C1 and C2 vegetation units that are associated with "major ephemeral watercourse" ecosystems at risk (CALM, 2002) and represent major surface drainage features (primarily Boolgeeda Creek). These habitats support numerous species which are restricted, including phreatophytic species such as *Eucalyptus victrix* (Biota, 2005b; Rio Tinto Iron Ore, 2011). These vegetation units are susceptible to degradation from weed infestation, cattle grazing and trampling pressures, which have been observed within the drainage feature by Biota (2005b), classifying the vegetation as a 'good' condition (Keighery, 1994). The proposed clearing is likely to have some impact to the drainage vegetation and Hamersley Iron Pty Ltd will minimise disturbance where possible (Rio Tinto Iron Ore, 2011). The C1 vegetation type only intercepts a small portion of the proposed road corridor, and Hamersley Iron Pty Ltd (2012) is unable to completely avoid this vegetation community. Total disturbance to the C2 vegetation type will be approximately two hectares to facilitate the construction of the road (Hamersley Iron Pty Ltd, 2012). To minimise disturbance, the road will be positioned adjacent to the existing railway and rail access track, therefore utilising previously disturbed areas where possible (Hamersley Iron Pty Ltd, 2012). This however, may vary slightly with requirements to install appropriate culvers and drainage structures in order to maintain flows along Boolgeeda Creek and to prevent damage to the road during flood events (Hamersley Iron Pty Ltd, 2012).

Provided disturbance to riparian habitats is avoided or minimised where possible, and strict weed hygiene procedures are followed, the proposed works are not expected to substantially impact these vegetation units. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition.

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

- Methodology**
- Biota (2005c)
  - Biota (2007)
  - CALM (2002)
  - Hamersley Iron Pty Ltd (2012)
  - Keighery (1994)
  - Rio Tinto Iron Ore (2011)
  - 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**

According to available datasets the application area is located within the Boolgeeda, Platform and Newman land systems (GIS Database).

The Boolgeeda land system is characterised by Stony lower slopes and plains below hill systems supporting hard and soft spinifex grasslands and mulga shrublands. Hard spinifex grasslands are not preferred by livestock but soft spinifex is moderately preferred for a few years following fire. Vegetation is generally not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Platform land system is characterised by dissected slopes and raised plains supporting hard spinifex grasslands. This system has a very low erosion hazard (Van Vreeswyk et al., 2004).

The Newman land system consists of rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands. This Newman land system soils are not particularly prone to soil erosion (Van Vreeswyk et al., 2004).

The above land systems generally have a low erosion hazard, however, due to the large area of native vegetation proposed to be cleared (303 hectares), potential land degradation 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 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 application area is not located within any conservation areas (GIS Database). The nearest conservation area is Karijini National Park, located approximately 66 kilometres east of the application area (GIS Database). Given the distance separating Karijini National Park and the application area, the proposed clearing is not likely to impact the environmental values of the conservation area.

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

**Methodology** GIS Database:  
- DEC Tenure

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

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

The application area is not located within a Public Drinking Water Source Area (GIS Database). The application areas are located within the proclaimed Pilbara groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

Several drainage tracts transect the application areas (GIS Database). The drainage patterns in the surrounding area have been impacted by existing railway activities and infrastructure. These drainage tracts are dry for most of the year and only flow and hold surface water for short durations following significant rainfall events. Sediment loads are typically high in flowlines in the Pilbara following large rainfall events and any increase to the sediment load caused by the proposed clearing is likely to be negligible (Rio Tinto Iron Ore, 2011). The application area has a groundwater salinity that ranges from potable to marginal (500 - 1,000 milligrams/Litre Total Dissolved solids (TDS) (GIS Database). The proposed clearing of 303 hectares of native vegetation over an application area of 1,372 hectares is unlikely to further deteriorate the quality of underground water (GIS Database).

Any clearing proposed within the applied clearing area is likely to avoid low-lying areas where possible or clearing will occur along the existing rail network where impact has already occurred. If clearing of riparian vegetation is required there may be some localized short term sedimentation during the clearing process however, this is not likely to be an ongoing issue. Areas to be cleared have been selected to minimise disturbance to the Boolgeeda Creek (Rio Tinto Iron Ore, 2011). Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management condition. The clearing of vegetation as a result of this proposal is therefore unlikely to result in any further deterioration in surface or groundwater quality in the local area.

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

**Methodology** Rio Tinto Iron Ore (2011)  
GIS Database:  
- Geodata, Lakes  
- Hydrography, Linear  
- Public Drinking Water Source Areas  
- RIWI Act, Groundwater Areas  
- Groundwater Salinity, Statewide

**(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 topical climate with rainfall usually in summer cyclonic or thunderstorm events (CALM, 2002), where the annual evaporation rate exceeds the annual rainfall (BoM, 2012). Any surface water resulting from normal rain events is expected to be short lived.

The application areas are located within the Ashburton catchment area which covers a total area of approximately 7,877,743 hectares (GIS Database). The proposed clearing of 303 hectares is not likely to cause or exacerbate the incidence or intensity of floods in the catchment or local areas.

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

**Methodology** BoM (2012)  
CALM (2002)  
GIS Database:  
- Hydrographic Catchments - Catchments

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

##### Comments

There are two Native Title claims over the area under application (WC01/5 and WC97/89). The claim WC97/89 was determined by the Federal Court on 1 March 2007. The claim WC01/5 was registered with the NNTT on 29 November 2001. 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*.

There is one registered Aboriginal Site of Significance within the application area (Site ID: 25067) (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal sites of significance are damaged through the clearing process.

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

The clearing permit application was advertised on 23 April 2012 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

**Methodology** GIS Database:  
- Aboriginal Sites of Significance  
- Native Title Claims - Determined by the Federal Court  
- Native Title Claims - Registered with the NNTT

#### 4. References

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#### 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.