



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5636/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Hamersley Exploration Pty Ltd

### 1.3. Property details

Property: Exploration licence 47/584  
Exploration licence 47/631  
Local Government Area: Shire of Ashburton  
Colloquial name: Juna Downs

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 29/08/2013

## 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 entirety of Western Australia. Two Beard vegetation associations have been mapped in the application area (GIS Database);

- 18: Low woodland; mulga (*Acacia aneura*); and
- 567: Hummock grasslands, shrubb steppe; mulga and kanji over soft spinifex and *Triodia basedowii*.

Hamersley Exploration Pty Ltd commissioned Pilbara Flora to undertake a flora and vegetation survey and a fauna habitat assessment of the application area and other areas of interest to Hamersley Exploration Pty Ltd for mineral exploration (the surveyed area) in 2011 (Pilbara Flora, 2012). A total of 31 vegetation associations were recorded in the surveyed area. The following vegetation associations were recorded in the application area.

- Vegetation association 1: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia atkinsiana*, *A. maitlandii*, *A. trudgenii* and *Senna glutinosa* subsp. *glutinosa* over tall scattered shrubs over *Triodia wiseana* open hummock grassland;
- Vegetation association 2: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia deserticola* subsp. *deserticola* low open woodland over *Eucalyptus gamophylla* very open mallee over *Acacia steedmanii* subsp. *borealis*, *A. bivenosa*, *A. cowleana* and *A. trudgenii* over high open shrubland over *Triodia wiseana* and *T. epactia* open hummock grassland;
- Vegetation association 3: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low open woodland over *Acacia maitlandii*, *A. hamersleyensis*, *A. bivenosa* and *Gossypium robinsonii* high open shrubland over *Triodia wiseana* and *T. sp.* Mt Ella (M.E. Trudgen 12739) hummock grassland with *Cymbopogon ambiguus*, *Themeda* sp. Mt Barricade (M.E. Trudgen 2471) and *Eriachne mucronata* Tussock Grassland;
- Vegetation association 4: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low open woodland over *Acacia bivenosa*, *A. maitlandii* and *Sida* sp. Pilbara (A. A. Mitchell PRP 1543) open shrubland over *Triodia wiseana* and *T. epactia* hummock grassland with *Themeda* sp. Mt Barricade (M.E. Trudgen 2471) and *Eriachne mucronata* very open tussock grassland;
- Vegetation association 6: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low open woodland over *Acacia bivenosa*, *A. maitlandii* and *Senna glutinosa* subsp. *glutinosa* shrubland over *Mirbelia viminalis* and *Acacia adoxa* var. *adoxo* low shrubland over *Triodia wiseana* hummock grassland;
- Vegetation association 12: *Corymbia deserticola* subsp. *deserticola* low open woodland over *Eucalyptus gamophylla* very open to open mallee over *Acacia cowleana*, *Acacia atkinsiana* and *Acacia pruinocarpa* open shrubland to shrubland

over *Triodia epactia*, *Triodia wiseana* and *Triodia melvillei* very open hummock grassland to hummock grassland;

- Vegetation association 13: *Acacia aptaneura* low woodland over *Triodia epactia* very open hummock grassland to hummock grassland with *Aristida contorta*, *Themeda triandra* and *Chrysopogon fallax* very open tussock grassland;
- Vegetation association 14: *Acacia aptaneura* low open woodland over *Acacia pruinocarpa* high open shrubland over *Triodia epactia* and *Triodia melvillei* open to very open hummock grassland with *Themeda triandra*, *Aristida holathera* var. *holathera* and *Paraneurachne muelleri* very open tussock grassland;
- Vegetation association 15: *Corymbia deserticola* subsp. *deserticola*, *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Eucalyptus gamophylla* very open mallee with *Acacia cowleana* high open shrubland over *Triodia wiseana* and *Triodia epactia* very open hummock grassland to hummock grassland;
- Vegetation association 16: *Acacia aptaneura* low open woodland on *Triodia epactia* scattered hummock grass;
- Vegetation association 17: *Corymbia deserticola* subsp. *deserticola* low open woodland with *Eucalyptus gamophylla* very open mallee over *Acacia atkinsiana*, *Acacia pruinocarpa* and *Acacia ancistrocarpa* high shrubland over *Triodia epactia*, *Triodia wiseana* and *Triodia melvillei* open hummock grassland;
- Vegetation association 18: *Acacia aptaneura* and *Corymbia hamersleyana* scattered low trees over *Eucalyptus gamophylla* very open mallee over *Triodia epactia* open hummock grassland with *Keraudrenia velutina* subsp. *elliptica* low open shrubland with *Themeda triandra* very open tussock grassland;
- Vegetation association 19: *Senna hamersleyensis* and *Salsola australis* low scattered shrubs over *Panicum decompositum* scattered tussock grass;
- Vegetation association 20: *Acacia aptaneura* and *Acacia pteraneura* low woodland with *Acacia pruinocarpa* high open shrubland over *Triodia brizoides* and *Triodia epactia* open hummock grassland to very open grassland;
- Vegetation association 21: *Acacia cowleana* high shrubland over *Triodia epactia* and *Triodia longiceps* hummock grassland over *Themeda triandra* very open tussock grassland;
- Vegetation association 22: *Acacia aptaneura* shrubland to low woodland over *Themeda triandra* and *Aristida inaequiglumis* very open tussock grassland with *Triodia epactia* scattered hummock grass;
- Vegetation association 24: *Acacia aptaneura* and *Eucalyptus xerothermica* low closed forest over *Malvastrum americanum*, *Bidens bipinnata*, *Pterocaulon sphaeranthoides* and *Eremophila longifolia* open shrubland over *Themeda triandra*, *Sporobolus australasicus* and *Chrysopogon fallax* scattered tussock grasses with *Triodia epactia* scattered hummock grasses;
- Vegetation association 25: *Acacia aptaneura* and *Eucalyptus xerothermica* low closed forest over *Malvastrum americanum*, *Bidens bipinnata*, *Pterocaulon sphaeranthoides* and *Eremophila longifolia* open heath over *Themeda triandra*, *Sporobolus australasicus* and *Chrysopogon fallax* scattered tussock grasses with *Triodia epactia* scattered hummock grasses;
- Vegetation association 26: *Corymbia hamersleyana* low open woodland over *Eucalyptus gamophylla*, *Gossypium robinsonii*, *Acacia cowleana*, *A. steedmanii* subsp. *borealis*, *A. bivenosa* and *Jasminum didymum* subsp. *lineare* open scrub over *Themeda triandra*, *Cymbopogon procerus* and *Eulalia aurea* tussock grassland with *Triodia epactia* and *Triodia wiseana* open tussock grassland;
- Vegetation association 27: *Corymbia hamersleyana* low open woodland over *Rulingia luteiflora*, *Acacia pyrifolia* var. *morrisonii*, *A. monticola*, *Gossypium robinsonii*, *Tephrosia rosea* var. *glabrior* Pedley ms and *Corchorus lasiocarpus* subsp. *lasiocarpus* ? low open shrubland over *Cymbopogon procerus*, *Themeda* sp. Mt Barricade (M.E. Trudgen 2471) and *Eulalia aurea* open tussock grassland with *Triodia epactia* very open hummock grassland;
- Vegetation association 28: *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* low open woodland over *Gossypium robinsonii*, *Acacia hamersleyensis* and *Dodonaea pachyneura* high shrubland over *Themeda* sp. Mt Barricade (M.E. Trudgen 2471), *Cymbopogon ambiguus* and *Eriachne mucronata* tussock grassland with *Triodia* sp. Mt Ella (M.E. Trudgen 12739) and *Triodia wiseana* open hummock grassland;
- Vegetation association 29: *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Gossypium robinsonii*, *Acacia bivenosa*, *A. atkinsiana*, *A. cowleana* and *Grevillea wickhamii* subsp. *aprica* ? high shrubland over *Triodia epactia*, *T. wiseana*, *Themeda triandra*, *T.* sp. Mt Barricade (M.E. Trudgen 2471) and *Eriachne mucronata* very open tussock grassland; and
- Vegetation association 30: *Vachellia farnesiana* open scrub over *Malvastrum americanum*, *Senna artemisioides* subsp. *oligophylla* x *helmsii* and *Solanum lasiophyllum* low scattered shrubs over *Ptilotus gomphrenoides* and *Operculina aequisejala* scattered herbs (creepers).

#### Clearing Description

Hamersley Exploration Pty Ltd has applied to clear 35 hectares within an area approximately 778 hectares in size to support mineral exploration activities. Clearing will be for the creation of 350 drill pads and the establishment of access tracks. The proposed exploration

programme is located within the Juna Downs exploration prospect, situated approximately 75 kilometres east-southeast of the town of Tom Price. Raised blade clearing will be undertaken where possible, with blade down clearing performed where necessary. Cleared vegetation and topsoil will be stockpiled and used in rehabilitation.

**Vegetation Condition**

Pristine (pristine or nearly so, no obvious signs of disturbance) (Keighery, 1994);

to

Degraded (basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management) (Keighery, 1994).

**Comment**

The vegetation condition was assessed by botanists from Pilbara Flora (2012). The vegetation condition of the surveyed area was described using the scale developed by Trudgen (1988) and has been converted to corresponding conditions from the Keighery scale (1994).

### 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 subregion (PIL 3) of the Pilbara bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This subregion is generally described as Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002). A flora and vegetation survey undertaken by Pilbara Flora in 2011 recorded 31 vegetation associations within the surveyed area, none of which were found to be rare, restricted or unique (Pilbara Flora, 2012). No Threatened Ecological Communities (TEC's) or Priority Ecological Communities (PEC's) were recorded in the surveyed area (Pilbara Flora, 2012). All vegetation associations recorded in the surveyed area had been observed extensively throughout the Pilbara region by Pilbara Flora botanists (Pilbara Flora, 2012).

A total of 304 flora taxa from 139 genera and 49 families were recorded in the surveyed area. Three families were dominant in terms of taxa and genera numbers; *Fabaceae*, *Poaceae* and *Malvaceae*. The recorded number of flora taxa was considered representative of the typical floristic diversity expected within the region (Pilbara Flora, 2012). No threatened flora taxa were recorded within the surveyed area (Pilbara Flora, 2012). Three priority flora species were recorded in the application area; *Rhagodia* sp. Hamersley (M.E. Trudgen 17794) (Priority 3), *Triodia* sp. Mt Ella (M.E. Trudgen 12739) (Priority 3) and *Eremophila magnifica* subsp. *magnifica* (Priority 4). These priority flora species, with the exception of *Triodia* sp. Mt Ella (M.E. Trudgen 12739), were found in small, spatially scattered populations which could be avoided during mineral exploration activities (Pilbara Flora, 2012). *Triodia* sp. Mt Ella (M.E. Trudgen 12739) was found throughout part of the application area in extensive populations which could not be avoided by exploration activities (Pilbara Flora, 2012).

*Triodia* sp. Mt Ella (M.E. Trudgen 12739) has been recorded by Rio Tinto 285 times from 2005 to 2013 between the south eastern corner of Karijini National Park and 30 kilometres east of Newman, a range of approximately 160 kilometres (Rio Tinto, 2013a). Whilst not all of the recorded populations of *Triodia* sp. Mt Ella (M.E. Trudgen 12739) included the size of the population in terms of number of individuals, the average recorded population size was approximately 46 individuals. As *Triodia* sp. Mt Ella (M.E. Trudgen 12739) appears to enjoy a widespread distribution within the Pilbara region with numerous recorded populations consisting of several individuals occurring outside the application area, it is unlikely the proposed clearing activities will result in adverse impacts to this species conservation status or distribution. Three weed species were recorded in the application area (Pilbara Flora, 2012). These weed species were Feathertop Rhodes Grass (*Chloris virgate*), Beggars Ticks (*Bidens bipinnata*) and Spiked Malvastrum (*Malvastrum americanum*) (Pilbara Flora, 2012). Care must be taken to ensure clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna habitat assessment was undertaken in the survey area during the flora and vegetation survey. The fauna habitat types observed in the survey area are common and widespread in the Pilbara region (Pilbara Flora, 2012). No fauna habitat types considered as supporting high levels of fauna biodiversity were recorded in the application area and there was no indication that the survey area enjoyed greater than normal levels of faunal biodiversity (Pilbara Flora, 2012). Therefore, fauna diversity is expected to be within expected levels for the region.

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

**Methodology**

CALM (2002)  
Pilbara Flora (2012)  
Rio Tinto (2013a)

GIS Database:  
-IBRA WA (Regions – Subregions).

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

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

No targeted fauna surveys have been undertaken to date within the application area. A desktop search for native fauna species recorded previously within the Juna Downs exploration prospect and surrounds was undertaken and fauna habitats observed within the surveyed area were noted during the flora and vegetation survey (Pilbara Flora, 2012). The primary habitat types identified within the surveyed area are common to the region (Pilbara Flora, 2012). Seven habitat types suitable for conservation significant fauna were observed in the surveyed area: rock ledges, sheltered valleys, caves, large roosting trees, steep elevated cliffs, scree slopes with pebbles and soil suitable for burrowing/nesting. These habitat types occur throughout the Pilbara region and the surveyed area was considered to have a low level of conservation value in regards to the presence of unique or specialised habitat types associated with conservation significant fauna species. (Pilbara Flora, 2012). In addition, areas of conservation significant fauna habitat were removed from the application area due to their inaccessibility to drilling equipment.

Pilbara Flora identified 19 occurrences of the Western Pebble-mound Mouse within the surveyed area (Pilbara Flora, 2012). All Western Pebble-mound Mouse mounds recorded during the survey were found to be either active or recently active (Pilbara Flora, 2012). The locations of the recorded Western Pebble-mound Mouse mounds have been excised from the clearing permit application area, and will not be impacted by the proposed clearing activities (Rio Tinto, 2013a).

Based on the above, the application area is considered unlikely to constitute significant habitat for fauna indigenous to Western Australia; therefore the proposed clearing is not likely to be at variance to this principle.

Methodology Pilbara Flora (2012)  
Rio Tinto (2013a)

**(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**

No known records of threatened flora taxa exist within the application area (GIS Database). The nearest recorded occurrences of a threatened flora taxa, *Thryptomene wittweri*, exist approximately 13.7 kilometres east-southeast of the application area (GIS Database; DEC, 2007). *Thryptomene wittweri* occurs in skeletal red stony soils, breakaways and stony creek beds (Western Australian Herbarium, 2013). The occurrences of *Thryptomene wittweri* recorded to the east-southeast of the application area were situated on steep uneven terrain (GIS Database). Such habitat is not present within the application area which predominantly consists of level terrain.

No occurrences of threatened flora taxa were recorded within the application area during the flora and vegetation survey (Pilbara Flora, 2012).

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

Methodology Pilbara Flora (2012)  
DEC (2007).  
Western Australian Herbarium (2013)  
GIS Database:  
-Threatened and Priority Flora  
-Topographic Contours, Statewide Properties

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

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

According to available databases, no known Threatened Ecological Communities (TEC's) exist in the application area. The nearest recorded TEC; the Ethel Gorge aquifer stygobiont community, is situated approximately 170 kilometres southeast of the application area. No vegetation associations matching the descriptions of any TEC's were recorded in the application area (Pilbara Flora, 2012).

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

**Methodology** Pilbara Flora (2012)  
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 IBRA bioregion and is contained within two beard vegetation associations; 18 and 567. Over 99% of these vegetation associations remain in situ at the state and bioregional level (see table). The vegetation in the application area is therefore not significant as a remnant of vegetation in an area which has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Land
IBRA Bioregion – Pilbara	17,808,657.06	17,733,583.95	~99.6	Least Concern	~6.3
Beard veg assoc. – State					
18	19,892,304.78	19,843,727.37	~99.8	Least Concern	~2.1
567	777,506.85	774,895.91	~99.66	Least Concern	~22.3
Beard veg assoc. – Bioregion					
18	676,556.73	672,424.33	~99.39	Least Concern	~16.8
567	776,823.96	774,213.03	~99.66	Least Concern	~22.4

\* Government of Western Australia (2013)

\*\* 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 (2013)

**(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**

There are no wetlands or permanent watercourses within the application area; however numerous ephemeral watercourses traverse through the application area (GIS Database). It is likely the proposed clearing activities will impact on vegetation communities associated with these watercourses. Based on the above, the proposed clearing is at variance to this principle.

Pilbara Flora determined that none of the vegetation associations present in the surveyed area were rare, restricted or unique (Pilbara Flora, 2012). Clearing activities will impact approximately 4.5% of the application area, leaving much of the application area's riparian vegetation associations intact. Therefore it is not anticipated the proposed clearing will adversely impact the conservation status or distribution of riparian vegetation associations or the integrity of watercourses.

The proponent has committed to undertake the clearing activities in accordance with the *Environmental Management Plan – Evaluation and exploration within areas of conservation significance* (Rio Tinto, 2013b). This management plan states that disturbance to drainage lines will be avoided where practicable during the planning and execution of mineral exploration drilling programmes (Rio Tinto, 2009).

**Methodology** Pilbara Flora (2012)  
Rio Tinto (2009)  
Rio Tinto (2013b)  
GIS Database:  
-Hydrography, linear properties

**(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 is situated within the Boolgeeda, Wannamunna, Newman and Paraburdoo land systems as mapped by the Western Australian Department of Agriculture (Vreeswyk et al, 2004). These land systems are either resistant to erosion or have experienced little erosion to date (Vreeswyk et al, 2004).

The proposed clearing activities consist of the clearing of 35 hectares within an area approximately 778 hectares in size to facilitate mineral exploration. The mineral exploration programme will consist of drill holes spaced 100 metres apart situated on drill pads 20 metres in length and width which will be accessed via access tracks (Rio Tinto, 2013b). As such the cleared areas will be dispersed over a wide area and surrounded by intact vegetation. Therefore, the proposed activities are not likely to result in large areas of cleared ground and the presence of intact vegetation around the cleared areas should ensure erosion does not occur by slowing the prevailing wind speed and surface water flows over the cleared areas.

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

**Methodology** Van Vreeswyk et al (2004)  
Rio Tinto (2013b)  
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 situated within a conservation reserve (GIS Database). The nearest conservation reserve is the Karijini National Park which abuts the application area. The application area is situated within the Register of the National Estate site 'Hamersley Range National Park (1977 Boundary)' (GIS Database). Hamersley Range National Park is now known as the Karijini National Park and the boundary of this National Park has changed since it was originally demarcated in 1977. As a result of this change to the National Park's boundary, the application area is not situated within the conservation estate.

The close proximity of the application area to Karijini National Park means the exploration activities pose the risk of spreading weed species into the National Park. The exploration activities will be undertaken in accordance with the *Environmental Management Plan - Evaluation and exploration drilling within areas of conservation significance* (Rio Tinto, 2013b). This management plan was developed in consultation with the Department of Environment and Conservation (now Department of Parks and Wildlife) and contains weed hygiene procedures which are to be implemented during all exploration and evaluation activities (Rio Tinto, 2009). Potential impacts to the National Park may be minimised by the implementation of a weed management condition.

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

**Methodology** Rio Tinto (2009)  
Rio Tinto (2013b)  
GIS Database:  
-Clearing Regulations (Environmentally Sensitive Areas)

**(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**

No permanent watercourses or wetlands exist in the application area (GIS Database; Pilbara Flora, 2012). There are several ephemeral watercourses within the application area; however these watercourses would only be expected to flow during and immediately after significant rainfall events. During these events, it is likely surface water flows within these watercourses would contain sediment and debris. While the cleared areas could contribute additional sediment to these surface water flows, it is unlikely the contribution of additional sediment to these surface water flows would adversely impact surface water quality. In addition, once the exploration activities have been completed the proponent will be required to rehabilitate ground disturbance associated with these activities, therefore any additional sediment contribution to surface water flows caused by the clearing will be temporary in nature.

The nearest Public Drinking Water Source Area to the application area is the Priority 1 Marandoo Water Reserve, located approximately 35 kilometres to the north west of the application area (GIS Database). The clearing activities will result only in surficial disturbance and are unlikely to adversely impact the quality of any groundwater bodies underlying the application area.

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

**Methodology** Pilbara Flora (2012)  
GIS Database:  
-Hydrography, Linear Properties  
-Public Drinking Water Source Areas (PDWSA's)

**(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 is situated within the Ashburton River Catchment (GIS Database). This catchment has a total area of approximately 7,877,743.21 hectares (GIS Database). The clearing of a 35 hectare area within this catchment is not expected to cause or exacerbate flooding within the local area or the region.

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

**Methodology** GIS Database:  
-Hydrographic Catchments – Catchments Properties

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

**Comments**

There is one Native Title Claim (WC2011/006) 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 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 are no registered Aboriginal Sites of Significance in the vicinity of 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 (formerly 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 17 June 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received

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

#### 4. References

- DEC (2007 - ) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed July 2013
- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- 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.
- Pilbara Flora (2012) Flora and vegetation survey for drilling areas at Juna Downs and Native Vegetation Clearing Permit supporting information. Prepared for Rio Tinto Iron Ore by Pilbara Flora.
- Rio Tinto (2009) Environmental Management Plan - Evaluation and exploration drilling within areas of conservation significance Version 1.4.
- Rio Tinto (2013a) Additional application information provided by the proponent. Received 17 July 2013.
- Rio Tinto (2013b) Application for a clearing permit (Purpose Permit) (Juna Downs) Mineral Exploration and Assorted Activities - Tenements E47/631 and E47/584.
- Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed July 2013).

## 5. Glossary

### Acronyms:

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

