



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4394/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Robe River Ltd

### 1.3. Property details

Property: Iron Ore (Robe River) Agreement Act 1964, Mineral Lease 248SA (AML 70/248)  
Local Government Area: Shire of East Pilbara  
Colloquial name: West Angelas Deposit D Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
196		Mechanical Removal	Mineral Exploration and Access Tracks

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 14 July 2011

## 2. Site Information

### 2.1. Existing environment and information

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

##### Vegetation Description

Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area:

- 18:** Low woodland; mulga (*Acacia aneura*); and  
**82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database).

A Rio Tinto botanist conducted a flora and vegetation survey over the application area in September 2010 (Rio Tinto, 2011). Twenty-seven intact vegetation types were recorded within the application area (Rio Tinto, 2011):

##### Vegetation of Plains

- P1: *Acacia aneura*, *Corymbia deserticola* low open forest over *Acacia marramamba*, *Rhagodia eremaea*, *Rhagodia* sp. Hamersley (M. Trudgen 17794) open shrubland over *Triodia pungens* hummock grassland.
- P2: *Acacia aneura*, *Acacia pruinoarpa* open scrub over *Triodia pungens* very open hummock grassland over *Chrysopogon fallax* scattered tussock grass.
- P3: *Acacia aneura*, *Eucalyptus gamophylla*, *Grevillea berryana* low open forest over *Acacia marramamba*, *Acacia pruinoarpa* high open shrubland over *Acacia bivenosa* open shrubland over *Maireana villosa* low open shrubland over *Triodia pungens* hummock grassland.
- P4: *Acacia aneura*, *Grevillea berryana* low open forest over *Triodia pungens* very open hummock grassland.
- P5: *Acacia aneura*, *Acacia ayersiana* low open forest over *Maireana villosa* low open shrubland over *Chrysopogon fallax* very open tussock grassland.
- P6: *Acacia catenulata*, *Acacia aneura*, *Acacia pruinoarpa* low woodland over *Exocarpos sparteus*, *Eremophila fraseri* open shrubland over *Triodia pungens* very open hummock grassland.
- P7: *Acacia aneura*, *Acacia pruinoarpa* low open forest over *Eremophila fraseri* open shrubland over *Eremophila caespitosa* low open shrubland over *Triodia pungens*, *Triodia melvillei* hummock grassland.
- P8: *Acacia aneura* low woodland over *Triodia pungens* scattered hummock grassland over *Themeda triandra*, *Chrysopogon fallax*, *Eriachne benthamii* tussock grassland.
- P9: *Acacia aneura* low closed woodland over *Triodia pungens* very open hummock grassland over *Chrysopogon fallax* very open tussock grassland.
- P10: *Acacia aneura* low open forest over *Senna artemisioides* shrubland over *Eremophila caespitosa* low open shrubland over *Triodia pungens* very open hummock grassland.

P11: *Senna hamersleyensis* low open shrubland over *Eriachne benthamii*, *Aristida latifolia*, *Astrebla ?pectinata* tussock grassland.

P12: *Acacia ayersiana*, *Acacia aneura* open scrub over *Acacia bivenosa* open shrubland over *Triodia pungens* very open hummock grassland.

P13: *Acacia aneura*, *Acacia pruinocarpa* open scrub over *Eremophila fraseri* open shrubland over *Triodia pungens* hummock grassland.

#### **Vegetation of Foothills, Rocky Hill Slopes and Crests**

H1: *Acacia aneura*, *Acacia ayersiana*, *Corymbia hamersleyana*, *Grevillea berryana* low open forest over *Eremophila fraseri* shrubland over *Triodia pungens* hummock grassland over *Amphipogon caricinus* very open tussock grassland.

H2: *Eucalyptus leucophloia* low woodland over *Acacia bivenosa*, *Acacia marramamba* shrubland over *Eremophila jucunda* low open shrubland over *Triodia pungens* hummock grassland.

H3: *Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Acacia inaequilatera*, *Acacia pruinocarpa* high open shrubland over *Acacia bivenosa* open shrubland over *Triodia pungens*, *Triodia basedowii* hummock grassland.

H4: *Acacia aneura*, *Corymbia ferritcola* low woodland over *Eremophila tietkensis*, *Eremophila latrobei*, *Senna glutinosa* shrubland over *Triodia pungens* very open hummock grassland.

H5: *Grevillea berryana* low open woodland over *Acacia marramamba* open shrubland over *Ptilotus rotundifolius* low open shrubland over *Triodia pungens* hummock grassland.

H6: *Eucalyptus leucophloia* low open woodland over *Acacia pruinocarpa* high shrubland over *Acacia bivenosa* open shrubland over *Triodia pungens* hummock grassland.

H7: *Acacia aneura* low woodland over *Acacia marramamba*, *Acacia bivenosa*, *Eremophila fraseri* open shrubland over *Ptilotus rotundifolius*, *Eremophila phyllopoda* low open shrubland over *Triodia pungens* hummock grassland.

H8: *Eucalyptus leucophloia* scattered low trees over *Acacia pruinocarpa* high open shrubland over *Acacia bivenosa* shrubland over *Triodia basedowii*, *Triodia pungens* hummock grassland.

H9: *Eucalyptus leucophloia* low open woodland over *Acacia marramamba*, *Acacia tenuissima* open shrubland over *Ptilotus rotundifolius* low open shrubland over *Triodia basedowii*, *Triodia wiseana*, *Triodia pungens* hummock grassland.

H10: *Corymbia ferritcola*, *Acacia aneura* low open forest over *Psydrax latifolia*, *Astrotricha hamptonii*, *Acacia marramamba* high open shrubland over *Eremophila tietkensis*, *Hibiscus haynaldii* open shrubland over *Ptilotus obovatus* low open shrubland over *Triodia pungens* very open hummock grassland over *Aristida inaequiglumis*, *Cymbopogon ambiguus*, *Eriachne mucronata* open tussock grassland.

#### **Vegetation of Creeklines**

C1: *Eucalyptus xerothermica* low woodland over *Acacia bivenosa*, *Acacia pruinocarpa* open scrub over *Rhagodia eremaea*, *Senna artemisioides*, *Senna oligophylla* shrubland over *Ptilotus obovatus* low open shrubland over *Triodia pungens* very open hummock grassland over *Eulalia aurea*, *Chrysopogon fallax* very open tussock grassland.

C2: *Eucalyptus camaldulensis*, *Eucalyptus victrix* low woodland over *Acacia citrinoviridis* high open shrubland over *Acacia pyrifolia* shrubland over *Tephrosia rosea*, *Corchorus crozophorifolius* low open shrubland over *Triodia pungens* very open hummock grassland over *Eriachne tenuiculmis*, *Cymbopogon ambiguus* open tussock grassland.

C3: *Corymbia hamersleyana* low woodland over *Acacia pyrifolia*, *Acacia bivenosa* shrubland over *Ptilotus rotundifolius* low open shrubland over *Triodia pungens*, *Triodia basedowii* open hummock grassland over *Themeda triandra* very open tussock grassland.

C4: *Corymbia hamersleyana*, *Grevillea wickhamii* low woodland over *Rulingia luteiflora*, *Acacia citrinoviridis*, *Acacia pyrifolia* open scrub over *Corchorus lasiocarpus*, *Tephrosia rosea* low open shrubland over *Triodia pungens* very open hummock grassland over *Cymbopogon ambiguus*, *Themeda triandra*, *Eriachne tenuiculmis* open tussock grassland over *Enneapogon lindleyanus* very open bunch grass.

#### **Degraded Vegetation**

D1: *Acacia pruinocarpa* scattered shrubs over *Triodia pungens* scattered hummock grass.

#### **Clearing Description**

Robe River Ltd has applied to clear up to 196 hectares of native vegetation within an application area totalling approximately 1,346.8 hectares for the purpose of mineral exploration and access tracks. Clearing will be for the maintenance and establishment of tracks, clearing of drill lines and access tracks, creation of drill pads and sumps, and the drilling of 3,849 drill holes.

The evaluation drilling program is at West Angelas Deposit D and is several kilometres west of Rio Tinto Iron Ore's existing West Angelas mine. The application area is located approximately 103 kilometres west of Newman.

The vegetation will be cleared using dozers or other machinery. The vegetation and topsoil will be stockpiled and used in rehabilitation.

<b>Vegetation Condition</b>	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); To Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).
<b>Comment</b>	The vegetation condition was assessed by a botanist from Rio Tinto (2011). The vegetation conditions were described using a scale based on Trudgen (1988) and have been converted to the corresponding conditions from the Keighery (1994) scale.

### 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 application area occurs within the Hamersley (PIL3) Interim Biogeographic Regionalisation of Australia (IBRA) subregion (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).

The vegetation within the application area is broadly mapped as Beard vegetation associations 18 and 82, both of which have approximately 100% of their pre-European vegetation extent remaining in the bioregion (Shepherd, 2009; GIS Database). Vegetation mapping of the application area was conducted by a Rio Tinto botanist in September 2010 (Rio Tinto, 2011). Parts of the application area had also previously been mapped by Trudgen and Casson (1998) and Biota (2010). Nearly all of the vegetation types identified within the application area are widely distributed and relatively well represented within the subregion (Rio Tinto, 2011).

One Priority Ecological Community (PEC) 'West Angelas Cracking-Clays' occurs within the application area (Rio Tinto, 2011; GIS Database). This occurrence of the PEC has been previously been mapped by Trudgen and Casson (1998) and occupies approximately 13.9 hectares of the 1,346.8 hectare application area (Rio Tinto, 2011). Robe River Ltd will be avoiding this PEC and no clearing of the PEC will occur (Robe River Ltd, 2011).

A total of 170 native vascular plant taxa from 72 genera belonging to 31 families were recorded within the application area (Rio Tinto, 2011). This low number of taxa is likely to be the result of the dry conditions and lack of recent rainfall at the site prior to the survey, rather than an indication of low floristic diversity (Rio Tinto, 2011). The genera with the highest number of taxa recorded were *Acacia*, *Eremophila*, *Senna* and *Sida*. This is typical of vegetation in the Pilbara (Rio Tinto, 2011).

Four Priority Flora species have been recorded within the application area (Rio Tinto, 2011). The species recorded were *Eremophila forrestii* subsp. Pingandy (Priority 2), *Rhagodia* sp. Hamersley (Priority 3), *Sida* sp. Barlee Range (Priority 3) and *Triodia* sp. Mt Ella (Priority 3) (Rio Tinto, 2011). There were only a small number of records for each species within the application area, including only one record of *Eremophila forrestii* subsp. Pingandy, and each recorded location had a small number of plants with most between one to ten plants (Rio Tinto, 2011). None of these species are restricted to the application area and the clearing is unlikely to impact on the conservation status of the species (Rio Tinto, 2011).

Three introduced flora species were recorded from the application area (Rio Tinto, 2011). These weed species were Buffel Grass (*Cenchrus ciliaris*), Spiked Malvastrum (*Malvastrum americanum*) and Whorled Pigeon Grass (*Setaria verticillata*) (Rio Tinto, 2011). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Four primary fauna habitats were identified within the application area:

- Broad colluvial plains dominated by *Acacia aneura*;
- Lower stony footslopes at the interface between *Acacia* dominated and eucalypt dominated communities;
- Stony hilltops and upper slopes dominated by eucalypts over *Triodia*; and
- Incised gullies and creeks (Rio Tinto, 2011).

These fauna habitats types are considered to be widespread and relatively well represented in the Hamersley subregion of the Pilbara bioregion (Biota, 2005). Therefore fauna diversity is likely to be within expected levels for the area.

There are existing disturbances in the application area from previous exploration tracks and a cleared area from an old airfield which has adversely affected the vegetation condition in some parts of the application area (Rio Tinto, 2011; GIS Database). The application area is also situated in close proximity to the existing West Angelas mine (Rio Tinto, 2011).

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

**Methodology** Biota (2005)  
Biota (2010)  
CALM (2002)  
Rio Tinto (2011)  
Robe River Ltd (2011)  
Shepherd (2009)  
Trudgen and Casson (1998)  
GIS Database:  
- Governor 50 cm Orthomosaic - Landgate 2004  
- 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**

No targeted fauna surveys have been conducted over the application area. A desktop search was conducted and fauna habitat observations of the application area were noted by Rio Tinto (2011).

Four primary fauna habitats were identified within the application area:

- Broad colluvial plains dominated by *Acacia aneura*;
- Lower stony footslopes at the interface between *Acacia* dominated and eucalypt dominated communities;
- Stony hilltops and upper slopes dominated by eucalypts over *Triodia*; and
- Incised gullies and creeks (Rio Tinto, 2011).

One fauna habitat is considered to have moderate conservation significance within the application area, based on the vegetation types to which it relates:

- Broad colluvial valleys dominated by *Acacia aneura* (Rio Tinto, 2011).

The moderate conservation significance is based on the mulga vegetation type being listed as an “ecosystem at risk” within the Hamersley subregion (CALM, 2002). The other fauna habitats are considered to be widely distributed and relatively well represented in the Hamersley subregion of the Pilbara bioregion (Biota, 2005). No significant habitat features such as caves, water holes or major creeklines were identified within the application area (Rio Tinto, 2011; GIS Database).

The Western Pebble-mound Mouse (*Pseudomys chamanii*) (DEC Priority 4) is known from the area and 14 mounds have been recorded within the application area (Rio Tinto, 2011). The nature of the clearing, for exploration purposes, makes it likely that the impacts will be restricted to a small number of individual animals (Rio Tinto, 2011). This species is widespread within the ranges of the central and southern Pilbara (Van Dyck and Strahan, 2008). Given that similar habitat for the Western Pebble-mound Mouse is available both locally and throughout the Pilbara, the impact on this species is not likely to be significant.

According to Biota (2005), the fauna habitats available within the application area are not restricted in the local area or at a subregional scale. Therefore it is considered unlikely that the application area represents significant habitat for fauna indigenous to Western Australia.

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

**Methodology** Biota (2005)  
CALM (2002)  
Rio Tinto (2011)  
Van Dyck and Strahan (2008)  
GIS Database:  
- Geodata, Lakes  
- Natmap 250K Series Mapping

**(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 known records of Declared Rare Flora (DRF) within the application area (GIS Database). The nearest record of DRF is located approximately 13 kilometres north-east of the application area (GIS Database).

A flora and vegetation survey was conducted over the application area by a Rio Tinto botanist in September 2010 and no DRF were recorded (Rio Tinto, 2011).

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

**Methodology** Rio Tinto (2011)  
GIS Database:  
- Declared Rare and Priority Flora List

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

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

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC, *Themeda* grasslands on cracking clays, is located approximately 104 kilometres north-west of the application area (GIS Database).

No TECs were identified during the flora and vegetation survey conducted by a Rio Tinto botanist (Rio Tinto, 2011).

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

**Methodology** Rio Tinto (2011)  
GIS Database:  
- Threatened Ecological Sites Buffered

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

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

The clearing application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 99.9% of the pre-European vegetation remains (see table) (Shepherd, 2009; GIS Database). This gives it a conservation status of "Least Concern" according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation associations:

**18:** Low woodland; mulga (*Acacia aneura*); and  
**82:** Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (Shepherd, 2009; GIS Database).

According to Shepherd (2009), over 99% of both of these vegetation associations remain at a state level and 100% of vegetation remains at a bioregional level (see table). These vegetation associations would be given a conservation status of "Least Concern" at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in an area that has been extensively cleared.

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,193	17,785,001	~99.89	Least Concern	6.32
<b>Beard Veg Assoc. – State</b>					
18	19,892,305	19,890,275	~99.99	Least Concern	2.13
82	2,565,901	2,565,901	~100	Least Concern	10.24
<b>Beard Veg Assoc. – Bioregion</b>					
18	676,557	676,557	~100	Least Concern	16.80
82	2,563,583	2,563,583	~100	Least Concern	10.25

\* Shepherd (2009)

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

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

**Methodology** Department of Natural Resources and Environment (2002)  
Shepherd (2009)  
GIS Database:  
- IBRA WA (Regions - Subregions)  
- 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**

There are no permanent watercourses or wetlands within the application area (Rio Tinto, 2011; GIS Database). However, there are a multitude of minor non-perennial watercourses that cross through the application area (GIS Database).

Rio Tinto (2011) described and mapped 27 vegetation types within the application area and four of these are associated with creeklines. The vegetation types are C1, C2, C3 and C4 (Rio Tinto, 2011).

Based on the above, the proposed clearing is at variance to this Principle. However, vegetation associated with minor drainage lines is widespread in the region and due to the minor nature of the proposed clearing for exploration activities there is unlikely to be significant impacts on any watercourse or wetland.

**Methodology** Rio Tinto (2011)  
GIS Database:  
- Hydrography, Linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

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

According to available datasets the application area intersects the Boolgeeda, Newman and Platform 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 (Van Vreeswyk et al., 2004). The vegetation is generally not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Newman Land System is characterised by rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). Each of the landforms in the land system have a mantle of abundant pebbles of ironstone and other rocks, which translates to a low soil erosion risk (Van Vreeswyk et al., 2004).

The Platform Land System is characterised by dissected slopes and raised plains supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). The land forms in this land system generally have surface mantles of very abundant pebbles and cobbles and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

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

**Methodology** Van Vreeswyk et al. (2004)  
GIS Database:  
- Rangeland Land System Mapping

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

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

The proposed clearing is not located within a conservation reserve (GIS Database). The nearest conservation area is Karijini National Park, which is located approximately 1 kilometre west of the application area at its closest point (GIS Database). The exploration drilling is spread evenly over the application area (Robe River Ltd, 2011) so the clearing will range from approximately 1 to 17 kilometres in distance from the national park. A large proportion of the vegetation in the Pilbara bioregion remains uncleared, approximately 99.89% (Shepherd, 2009), and in the local area there is still a large proportion of the vegetation remaining to provide a buffer for the national park (GIS Database).

The close proximity to Karijini National Park means that the proposed clearing poses a risk of spreading weeds into the national park (Rio Tinto, 2011). The proposed clearing will be conducted under the Rio Tinto Iron Ore Environmental Management System standards, which includes strict weed hygiene during clearing and drilling (Robe River Ltd, 2011). Potential impacts to the conservation area 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 (2011)  
Robe River Ltd (2011)  
Shepherd (2009)  
GIS Database:  
- DEC Tenure  
- Governor 50 cm Orthomosaic - Landgate 2004  
- Register of National Estate

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

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

There are no permanent watercourses or wetlands within the application area (GIS Database). There are several minor ephemeral drainage lines within the application area that would only flow following substantial rainfall events (Rio Tinto, 2011; GIS Database). The rocky-sloping topography of much of the upper catchments in the Pilbara often produces considerable runoff following the erratic rainfall events, which causes high sedimentation and turbidity in ephemeral watercourses during the flows (Van Vreeswyk et al., 2004). The proposed clearing is unlikely to significantly increase the sediment load of the surface water compared to the surrounding areas (Rio Tinto, 2011). The proposed clearing is unlikely to cause deterioration in the quality of surface water in the local area.

According to available databases the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Newman Water Reserve, which is approximately 74 kilometres to the east (GIS Database). The proposed clearing is unlikely to affect the water quality of the water reserve due to the large distance between it and the application area.

The proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.

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

**Methodology** Rio Tinto (2011)  
Van Vreeswyk et al. (2004)  
GIS Database:  
- Geodata, Lakes  
- Hydrography, Linear  
- Public Drinking Water Source Areas (PDWSAs)

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

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

The application area is located within the Ashburton River catchment area (GIS Database). Given the size of the area to be cleared (196 hectares) in relation to the size of the catchment area (7,877,743 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

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

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

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

**Comments**

There is one Native Title Claim (WC10/11) 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 is one registered Aboriginal Site of Significance (Site ID 21303) 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 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 13 June 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

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

#### 4. References

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- Van Dyck, S. and Strahan, R. (2008) The Mammals of Australia, Third Edition. Reed New Holland, Sydney.
- 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.