



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6558/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (Mount Newman) Agreement Act 1964, Mineral Lease 244SA (AML 70/244)
Local Government Area: Shire of East Pilbara
Colloquial name: No Name Deposit East

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
150		Mechanical Removal	Mineral Exploration, Hydrogeological Investigations, Geotechnical Investigations and Associated Works

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 11 June 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The clearing permit application area has been broadly mapped as Beard vegetation association:
82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*.

A flora and vegetation survey conducted by ENV Australia Pty Ltd (ENV, 2012) over the application area identified the following six broad vegetation types:

Cenchrus Tussock Grassland: Tussock Grassland *Cenchrus ciliaris* and *Cenchrus setiger* with Low Woodland of *Eucalyptus victrix*, *Acacia citrinoviridis* and *Atalaya hemiglauca* on brown sandy loam on major drainage lines and adjacent flood plains.

Acacia Shrubland: Dense Thicket of *Acacia assimilis*, *Allocasuarina acutivalvis* subsp. *prinsepiana* and *Melaleuca nematophylla* over Low Shrubland of *Hemigenia* sp. Paynes Find and *Hibbertia crassifolia* in loam pockets in jaspilite rocks.

Eucalyptus Low Woodland: Tussock Grassland of *Themeda triandra*, *Eulalia aurea* and *Eriachne tenuiculmis* with High Shrubland of *Acacia pyrifolia* var. *pyrifolia*, *Acacia tumida* var. *pilbarensis* and *Petalostylis labicheoides* and Open Woodland of *Eucalyptus victrix* and *Corymbia hamersleyana* on red brown silty loam on medium drainage lines and flood plains.

Eucalyptus Woodland: Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* and *Eucalyptus victrix* over High Open Shrubland of *Acacia citrinoviridis*, *Acacia pyrifolia* var. *pyrifolia* and *Melaleuca glomerata* over Tussock Grassland of *Cenchrus ciliaris*, *Eulalia aurea* and *Themeda triandra* on brown clay loam on banks of major drainage lines.

Triodia Hummock Grassland: Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over Low Open Shrubland of *Acacia hilliana* and *Acacia adoxa* var. *adoxo* on red brown sandy loam on hill slopes.

Triodia Open Hummock Grassland: Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Corymbia ferritcola*, *Ficus brachypoda* and *Acacia catenulata* subsp. *occidentalis* over High Open Shrubland of *Dodonea pachyneura* and *Acacia hamersleyensis* on red sandy clay loam in gullies and on breakaways.

Clearing Description

No Name Deposit

BHP Billiton Iron Ore Pty Ltd (BHP) proposes to clear up to 150 hectares of native vegetation within a total boundary of approximately 3,842 hectares for the purpose of mineral exploration, hydrogeological investigations geotechnical investigations and associated works. The project is located approximately 5 kilometres east of Newman, in the Shire of East Pilbara.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

to

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Comment

Vegetation condition was determined by ENV (2012) using the Keighery 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 is not likely to be at variance to this Principle**

The application area is located within the Hamersley and Fortescue sub-regions of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Hamersley subregion is dominated by 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 (GIS Database). The Fortescue subregion is described as extensive salt marsh, mulga-bunch grass, and short grass communities on alluvial plains (GIS Database).

A flora and vegetation survey was conducted by ENV Australia Pty Ltd over the application area in 2012 (ENV, 2012). A total of 455 flora taxa (including subspecies and varieties) representing 52 families and 170 genera were recorded from the survey area during the flora and vegetation survey (ENV, 2012).

The application area is located within the Ethyl Gorge Aquifer Stygobiont Threatened Ecological Community (TEC) (GIS Database). Clearing of vegetation for mineral exploration is unlikely to impact this groundwater community.

No Threatened Flora, Priority flora or vegetation associations of restricted distribution were recorded within the application area during the flora and vegetation survey (BHP, 2015).

Three introduced flora species (weeds) were recorded within the application area: *Bidens bipinnata* (Bipinnate beggartick), *Cenchrus ciliaris* (Buffel grass) and *Setaria verticillata* (Whorled pigeon grass). These introduced flora species are not Declared Pests or listed as weeds of National Significance (BHP, 2015). Potential impacts on biological diversity from weeds may be minimised by the implementation of a weed management condition.

A fauna assessment was conducted by Biologic over the application area in 2014 (Biologic, 2014). The fauna survey recorded 358 individual reptiles, mammals and avifauna, representing 81 species (45 species of birds, 18 species of reptiles and 17 species of mammals (Biologic, 2014).

Six conservation significant species (Pilbara Leaf-nosed Bat (*Rhinonicteris aurantia*), Pilbara Olive Python (*Liasis olivaceus*), Australian Bustard (*Ardeotis australis*), Bush-tailed Mulgara (*Dasyercus blythi*), Rainbow Bee-eater (*Merops ornatus*) and the Western Pebble-mond mouse (*Pseudomys chapmani*) were recorded during the fauna assessment (Biologic, 2014). None of these conservation significant fauna species are expected to be restricted to the application area or rely exclusively on fauna habitats present within the application area.

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

Methodology

BHP (2015)
Biologic (2014)
ENV (2012)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Threatened and Priority Flora
- Threatened Fauna
- 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**

A fauna assessment was conducted by Biologic over the application area in 2014 (Biologic, 2014). The fauna survey recorded 358 individual reptiles, mammals and avifauna, representing 81 species (45 species of birds, 18 species of reptiles and 17 species of mammals) (Biologic, 2014). The following five fauna habitat types occurred within the application area:

Crest / Slope: These fauna habitats tend to be more open and structurally simple due to their recent depositional history than other fauna habitats, and are dominated by varying species of spinifex. A common

feature of these habitats is a rocky substrate, often with exposed bedrock, and skeletal red soils. These are usually dominated by Eucalyptus woodlands, Acacia and Grevillea scrublands and Triodia species low hummock grasslands.

Major Drainage Line: Major Drainage Lines comprise mature River Red Gums, Coolibahs and stands of Silver Cadjeput over river pools. Open, sandy or gravelly riverbeds characterise this habitat type. In ungrazed areas, the vegetation adjacent to the main channel or channels is denser, taller and more diverse than adjacent terrain and can include reedbeds around pools.

Minor Drainage Line: Located within the minor gullies and depressions, generally through the Crest/Slope habitat. Consists primarily of Acacia low shrubland. The understorey generally lacks density and often consists solely of sparse tussock grassland, often including the weed Buffel Grass *Cenchrus ciliaris* where it has been introduced. The substrate can be sandy in places but generally consists of a skeletal loam gravel or stone.

Sand Plain: Sand Plain habitat is characterised by relatively deep sandy soils supporting dense spinifex grasslands and sparse shrubs. This habitat transitions into patches of Mulga in places. This habitat often occurs as terraces along Major Drainage Lines.

Stony Plain: These are erosional surfaces of gently undulating plains, ridges and associated footslopes, mainly supporting hard spinifex (and occasionally soft spinifex) with a mantle of gravel and pebbles.

The fauna habitats within the application area were not considered to be unique and extended beyond the proposed application area (GIS Database; BHP, 2015). Therefore, the proposed clearing is unlikely to have a significant impact on habitat critical for the survival of fauna indigenous to Western Australia.

BHP have implemented the following buffer areas in order to reduce potential impacts associated with the proposed clearing on conservation significant fauna:

- 50 meter buffer around rock pools;
- 50 meter buffer around the Pilbara Olive Python records; and
- 100 meter buffer around the Pilbara Leaf-nosed Bat caves.

All areas identified as Gorge/Gully habitat have also been excluded from the application area.

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

Methodology BHP (2015)
Biologic (2014)
GIS Database
- Pre-European Vegetation

(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

There are no records of Threatened Flora within the application area (GIS Database).

The flora and vegetation survey conducted over the application area by ENV (2012) did not record any Threatened Flora species.

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

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

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

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

The application area is located within the Ethyl Gorge Aquifer Stygobiont Threatened Ecological Community (TEC) (BHP, 2015; GIS Database). Clearing of vegetation for mineral exploration is unlikely to impact this groundwater community.

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

Methodology BHP (2015)
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 Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99% of the Pre-European vegetation remains (see table) (GIS Database; Government of Western Australia, 2013).

The vegetation of the application area has been mapped as the following Beard vegetation association (GIS Database):

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

Approximately 99% of vegetation association 82 remains at state and bioregion level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared is unlikely to represent a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Pilbara	17,808,657	17,733,583	~99.58	Least Concern	6.34
Beard vegetation associations - State					
82	2,565,901	2,553,217	~99.51	Least Concern	10.25
Beard vegetation associations - Bioregion					
82	2,563,583	2,550,898	~99.51	Least Concern	10.26

* 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)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- 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 not likely to be at variance to this Principle

There are no permanent water bodies or watercourses within the application area (GIS Database). No vegetation associated with a permanent watercourse or wetland was recorded within the application area during the flora and vegetation survey (ENV, 2012).

There are several ephemeral drainage lines that intersect the application area. Potential impacts on surface water flow may be minimised by the implementation of a watercourse management condition.

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

Methodology ENV (2012)
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

The application area is located within the Boolgeeda, Newman and Rocklea land systems which are characterised by low hills, rises and slopes, banded Iron and colluvium (GIS Database).

The soil type within the application area is described as loamy soils with weak pedological development and plains associated with surface cover of stony gravels close to the ranges and hills (GIS Database).

Given the small scale and the relatively low impact of the proposed clearing for mineral exploration activities and the low susceptibility of the soils to erosion, it is unlikely that the clearing will cause appreciable land degradation.

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

Methodology GIS Database:
- Rangeland Land System Mapping
- Soils, Statewide

(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 does not lie within any conservation areas (GIS Database).

The nearest conservation area is Karijini National Park which lies approximately 90 kilometres east of the application area (GIS Database). Given the distance between the application area and the National Park, the proposed clearing is not likely to impact the environmental values of this conservation area.

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

Methodology GIS Database:
- DPaW 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 located within the Newman Public Drinking Water Source Area however the proposed clearing is not expected to significantly impact the water source area.

There are no permanent water bodies or watercourses within the application area (GIS Database).

Groundwater salinity within the application area is between 7,000 and 14,000 milligrams/Litre Total Dissolved Solids (TDS) which is considered to be relatively saline (GIS Database). The proposed clearing is not likely to cause groundwater or surface water quality within the application area to alter significantly.

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

Methodology GIS Database:
- Groundwater Salinity, Statewide
- 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 climate of the Pilbara region is mostly hot and dry, with highly variable rainfall throughout the year (BoM, 2015). The Pilbara has an arid-tropical climate with two distinct seasons, a hot and wet summer from October to April; and a mild, drier season from May to September (BoM, 2015).

There are no permanent water bodies or watercourses within the application area (GIS Database). The proposed clearing is unlikely to cause or exacerbate the incidence of flooding or localised waterlogging.

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

Methodology BoM (2015)
GIS Database:
- Hydrography, linear

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

Comments
There is one Native Title Claim (WC05/6) over the application area (GIS Database). This claim has been filed at the federal court on behalf of the claimant groups. 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 several Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation, the Department of Water, and the Department of Parks and Wildlife, 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 11 May 2015 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

Methodology GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims, Determined by the Federal Court
- Native Title Claims, Filed at the Federal Court
- Native Title Claims, Registered with the NNTT

4. References

- BHP (2015) Application for an Exploration NVCP: No Name Deposit East – Native Vegetation Clearing Permit Application Supporting Document, April 2015. Report prepared by BHP Billiton Iron Ore Pty Ltd, Western Australia.
- Biologic (2014) Consolidation of Regional Fauna Habitat Mapping, May 2014. Report prepared by Biologic for BHP Billiton Iron Ore Pty Ltd, Western Australia.
- BoM (2015) Bureau of Meteorology (WWW Document). Retrieved from <http://www.bom.gov.au> on 18 May 2015.
- 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.
- ENV (2012) Eastern Ridge (OB23/24/25) Flora and Vegetation Assessment, June 2012. Report prepared by ENV Australia Pty Ltd for BHP Billiton Iron Ore Ltd, Western Australia.
- 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.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
s.17	Section 17 of the <i>Environment Protection Act 1986</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}-

- T** **Threatened species:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened Fauna and Flora are further recognised by DPaW according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorhynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.

Rankings:
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
EN: Endangered - considered to be facing a very high risk of extinction in the wild.
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.
- X** **Presumed Extinct species:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).
- IA** **Migratory birds protected under an international agreement:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.
- S** **Other specially protected fauna:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P1** **Priority One - Poorly-known species:**
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
- P2** **Priority Two - Poorly-known species:**
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
- P3** **Priority Three - Poorly-known species:**
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.
- P4** **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
- P5** **Priority Five - Conservation Dependent species:**
Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.