



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5926/2
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)
Iron Ore (McCamey's Monster) Agreement Authorisation Act 1972, Mining Lease 266SA (AM 70/266)
Local Government Area: Shire of East Pilbara
Colloquial name: Western Ridge Exploration Drilling Project

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|---|
| 300 | | Mechanical Removal | Mineral Exploration, Hydrogeological Investigations, Geotechnical Investigations and Associated Works |

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 4 December 2014

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. 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 large-scale flora and vegetation survey was conducted over the original permit boundary and its surrounds in May and August 2010. A level 2 flora and vegetation survey was conducted over the additional areas during June 2014. A total of 28 vegetation associations from 12 broad floristic formations have been mapped within the permit area (BHP Billiton Iron Ore, 2014).

Acacia Low Open Forest

HS AcaAaAprSaEIIAbTbrTw: Low Open Forest of *Acacia catenulata* subsp. *occidentalis*, *Acacia aptaneura* and *Acacia pruinocarpa* over Open Shrubland of *Scaevola acacioides*, *Eremophila latrobei* subsp. *latrobei* and *Acacia bivenosa* over Open Hummock Grassland of *Triodia brizoides* and *Triodia wiseana* on red brown clay loam on breakaways and steep hill slopes;

1a: Low Open Forest (to Low Open Woodland) of *Acacia aptaneura*, *Acacia pruinocarpa*, *Acacia ayersiana* and *Acacia catenulata* subsp. *occidentalis* over Shrubland of *Eremophila forrestii* subsp. *forrestii* and *Senna artemisioides* subsp. *oligophylla* and Open Hummock Grassland of *Triodia pungens* forming groves on hardpan plains;

1b: Low Open Forest (to Low Woodland) of *Acacia aptaneura*, *Acacia pruinocarpa* and *Eucalyptus xerothermica* over Shrubland of *Eremophila forrestii* subsp. *forrestii*, *Sida ectogama* and *Eremophila latrobei* subsp. *latrobei* over Open Tussock Grassland of *Themeda triandra*, *Aristida inaequiglumis* and **Cenchrus ciliaris* on stony floodplains and unincised drainage zones;

Acacia High Open Shrubland

5: High Open Shrubland of *Acacia aptaneura*, *Acacia synchronicia* and *Acacia tetragonophylla* over Low Open Shrubland of *Eremophila cuneifolia*, *Solanum lasiophyllum* and *Maireana georgei* over Very Open Bunch Grassland of *Aristida contorta* on stony chert ironstone plains and rises;

Acacia Low Open Woodland

3: Low Open Woodland of *Acacia aptaneura* over High Open Shrubland of *Acacia tetragonophylla* and *Acacia synchronicia* over Very Open Tussock Grassland of **Cenchrus ciliaris*, *Aristida latifolia* and *Eriachne mucronata*

on quartz plains;

Acacia Low Woodland

FP AcaAaExEffTp: Low Woodland of *Acacia catenulata* subsp. *occidentalis*, *Acacia aptaneura* and *Eucalyptus xerothermica* over Open Shrubland of *Eremophila forrestii* subsp. *forrestii* over Open Hummock Grassland of *Triodia pungens* on red sandy loam on floodplains;

Acacia Shrubland

MI AmoAanPIChEITtAin: Shrubland of *Acacia monticola*, *Acacia ancistrocarpa* and *Petalostylis labicheoides* with Scattered Low Trees of *Corymbia hamersleyana* and *Eucalyptus leucophloia* subsp. *leucophloia* over Open Tussock Grassland of *Themeda triandra* and *Aristida inaequilatera* on red loamy sand on minor drainage lines;

Acacia Open Scrub

4: Open Scrub of *Acacia bivenosa* over Hummock Grassland of *Triodia angusta* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* on undulating ironstone and chert hills;

Corymbia Low Woodland

2: Low Woodland of *Corymbia hamersleyana*, *Eucalyptus xerothermica* and *Acacia aptaneura* over High Open Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* subsp. *pyrifolia* and *Acacia maitlandii* over Open Tussock Grassland of *Eriachne tenuiculmis*, *Themeda triandra* and **Cenchrus ciliaris* along medium drainage lines;

Eucalyptus Woodland

MA EcEvAciApyMgCcEaTt: 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

HC TsTpEkEg: Hummock Grassland of *Triodia* sp. Shovelanna Hill and *Triodia pungens* with Very Open Mallee of *Eucalyptus kingsmillii* subsp. *kingsmillii* and *Eucalyptus gamophylla* on red sandy loam on hill slopes and hill crests;

HS TwElChHcAanAbAa: Hummock Grassland of *Triodia wiseana* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Hakea chordophylla* and Open Shrubland of *Acacia ancistrocarpa*, *Acacia bivenosa* and *Acacia aptaneura* on red sandy loam on hill slopes;

SP TsAi: Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with High Open Shrubland of *Acacia inaequilatera* on red brown loamy sand on hill slopes and stony plains;

HS TsTpAaAprAciAaEIIISgl: Hummock Grassland of *Triodia* sp. Shovelanna Hill and *Triodia pungens* with High Open Shrubland of *Acacia aptaneura*, *Acacia pruinocarpa* and *Acacia citrinoviridis* and Open Shrubland of *Acacia aptaneura*, *Eremophila latrobei* subsp. *latrobei*, *Senna glutinosa* subsp. *x luerssenii* on red loamy sand on upper hill slopes;

ME TpTTIExAciChPIApyGr: Hummock Grassland of *Triodia pungens* and *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica*, *Acacia citrinoviridis* and *Corymbia hamersleyana* over High Shrubland of *Petalostylis labicheoides*, *Acacia pyrifolia* var. *pyrifolia* and *Gossypium robinsonii* on red brown clay loam on medium drainage lines and surrounding floodplains;

SP TpTbEgPIAbAan: Hummock Grassland of *Triodia pungens* and *Triodia basedowii* with Open Mallee of *Eucalyptus gamophylla* and Shrubland of *Petalostylis labicheoides*, *Acacia bivenosa* and *Acacia ancistrocarpa* on red brown loamy sand on stony plains and footslopes;

7a: Hummock Grassland of *Triodia wiseana* ± *Triodia brizoides* with Open Shrubland of *Acacia bivenosa* and *Acacia inaequilatera* and Low Open Shrubland of *Senna artemisioides* subsp. *oligophylla* on dolerite footslopes and undulating low hills;

7b: Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835), *Triodia wiseana* and/or *Triodia brizoides* with Open Shrubland of *Acacia bivenosa*, *Acacia tenuissima* and *Senna glutinosa* subsp. *glutinosa* and Low Open Shrubland of *Eremophila canaliculata*, *Ptilotus obovatus* and *Acacia spondylophylla* on hill crests, steep scree slopes and banded iron formation (BIF) ridges;

7c: Hummock Grassland of *Triodia angusta* and *Triodia wiseana* with High Shrubland of *Acacia bivenosa*, *Acacia kempeana* and *Acacia sibirica* and Low Open Mallee of *Eucalyptus socialis* subsp. *eucentrica* or *Eucalyptus gamophylla* on calcrete, quartz and dolerite low hills, stony rises and stony plains;

7d: Hummock Grassland of *Triodia wiseana* and *Triodia angusta* with High Shrubland of *Acacia bivenosa*, *Acacia kempeana* and *Acacia sibirica* on quartz / dolerite mixed plains;

7e: Hummock Grassland of *Triodia longiceps* with Low Woodland of *Eucalyptus xerothermica* and *Acacia aptaneura* and High Open Shrubland of *Acacia aptaneura*, *Acacia sibirica* and *Acacia kempeana* on stony floodplains;

7f: Hummock Grassland of *Triodia pungens* with High Open Shrubland of *Acacia kempeana*, *Acacia sibirica* and *Acacia bivenosa* and Scattered Trees of *Corymbia hamersleyana* on dolerite derived sandy plains in broad valleys;

7g: Hummock Grassland of *Triodia pungens* with Open Scrub of *Acacia bivenosa* and *Acacia tenuissima* on minor drainage lines;

Triodia Closed Hummock Grassland

6: Closed Hummock Grassland of *Triodia brizoides* and *Triodia wiseana* with Shrubland of *Eremophila fraseri* and High Open Shrubland of *Acacia bivenosa* and *Acacia kempeana* on high dolerite hills;

Triodia Open Hummock Grassland

GG TpCfeFbAcaDpaAh: Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Corymbia ferriticola*, *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;

HS TsTpTbAaAprAwAteEexEll: Open Hummock Grassland of *Triodia* sp. Shovelanna Hill, *Triodia pungens* and *Triodia basedowii* with Low Open Woodland of *Acacia aptaneura*, *Acacia pruinocarpa* and *Acacia wanyu* and Open Shrubland of *Acacia tetragonophylla*, *Eremophila exilifolia* and *Eremophila latrobei* subsp. *latrobei* on red sandy loam on hill slopes;

8: Open Hummock Grassland of *Triodia brizoides* and *Triodia pungens* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Open Shrubland of *Dodonea pachyneura*, *Eremophila latrobei* subsp. *latrobei* and *Acacia bivenosa* on cliff faces;

Aristida Tussock Grassland

10: Tussock Grassland of *Aristida latifolia*, *Aristida jerichoensis* var. *subspinulifera* and *Eragrostis xerophila* with High Open Shrubland of *Acacia aptaneura*, *Acacia tetragonophylla* and *Acacia synchronicia* and Low Open Shrubland of *Sida fibulifera*, *Senna artemisioides* subsp. *oligophylla* and *Senna hamersleyensis* on gilgai drainage flats and minor drainage lines.

*indicates introduced species

| | |
|-----------------------------|--|
| Clearing Description | Western Ridge Exploration Drilling Project. BHP Billiton Iron Ore Pty Ltd (BHP Billiton Iron Ore) proposes to clear up to 300 hectares of native vegetation within a total boundary of approximately 4,379 hectares for the purposes of mineral exploration, hydrogeological investigations, geotechnical investigations and associated works. The application area is located immediately south-west of BHP Billiton Iron Ore's existing Mount Whaleback mining operations, approximately 8 kilometres south-west of Newman, in the Shire of East Pilbara. |
| Vegetation Condition | Pristine: No obvious signs of disturbance (Keighery, 1994); To: Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994). |
| Comment | CPS 5926/1 was granted by the Department of Mines and Petroleum on 1 May 2014 and authorised the clearing of 220 hectares within a boundary of approximately 3,660 hectares. BHP Billiton Iron Ore has applied to increase the amount of clearing authorised to 300 hectares and increase the permit boundary to approximately 4,379 hectares. They have also requested that the permit duration is extended to the 30 November 2024 and the final reporting date is also changed to this date. |

3. Assessment of application against clearing principles

Comments

BHP Billiton Iron Ore has applied to increase the amount of clearing authorised by 80 hectares and increase the clearing permit boundary by a further 719 hectares. They have also requested the permit expiry date and final reporting date is changed to 30 November 2024.

The flora and vegetation survey of the additional area recorded a total of 17 vegetation associations (Onshore Environmental, 2014). Vegetation association 9 (*Astrelba* Closed Tussock Grassland) was identified as being closely affiliated with the 'West Angelas Cracking Clays' Priority Ecological Community (BHP Billiton Iron Ore, 2014). This vegetation association was excluded from the additional area with a 50 metre buffer and won't be impacted by the proposed clearing. Vegetation associations 4 and 10 appear to be poorly represented regionally and are considered to be of local interest (Onshore Environmental, 2014). BHP Billiton Iron Ore (2014) has indicated that disturbance within these associations will be minimised where practicable.

The flora survey of the additional area recorded a total of 199 flora taxa from 32 families and 93 genera (Onshore Environmental, 2014). No species of Threatened Flora have been recorded within the additional area (BHP Billiton Iron Ore, 2014; GIS Database). The Priority 3 flora species *Calotis latiuscula* was recorded during the survey of the additional area (Onshore Environmental, 2014). Another species of interest recorded was *Aristida* cf. *nitidula* which could not be matched to any specimens held at the Western Australian Herbarium (Onshore Environmental, 2014). Records of both of these species were excluded from the permit boundary with a ten metre buffer.

There have been a number of fauna surveys conducted in the vicinity of the additional area. The following five broad fauna habitats have been mapped within the additional area (Onshore Environmental, 2014):

- Crest / Slope;

- Drainage Line;
- Gilgai;
- Mulga; and
- Stony Plain.

The drainage line habitat can have high vegetation density and often have deeper and richer soils than other habitats (BHP Billiton Iron Ore, 2014). There is only a small amount of this habitat within the additional area (Onshore Environmental, 2014). The other fauna habitats are common and widespread in the local region. The original permit boundary excluded all Gorge / Gully habitat with a 50 metre buffer. As part of this amendment the 50 buffer around the Gorge / Gully habitat in the central area of the the permit boundary has been removed as activities are required in this area. The buffer area was ground truthed and the proposed clearing will still not impact on any of the Gorge / Gully habitat directly (BHP Billiton Iron Ore, 2014).

The conservation significant fauna species Australian Bustard (*Ardeotis australis* - Priority 4) and Rainbow Bee-eater (*Merops ornatus* - Migratory) were recorded within the additional area (Onshore Environmental, 2014). The proposed clearing is unlikely to significantly impact these species. Based on the habitats present, the additional areas are not likely to represent significant habitat for local fauna species.

There are a number of minor ephemeral drainage lines that pass through the additional area (GIS Database). Several of the vegetation associations are described as being associated with drainage lines (Onshore Environmental, 2014). The proposed clearing is spread over a large area (4,379 hectares) and is not expected to have a significant impact on watercourses in the local area. The land systems within the additional area are generally not prone to erosion (Van Vreeswyk et al., 2004).

A small part of the additional area is within the Newman Water Reserve (GIS Database). Previous advice from the Department of Water is that the clearing activities at Western Ridge are unlikely to have a significant impact on the quality or quantity of groundwater.

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing is at variance to Principle (f), is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i), and (j), and is not at variance to Principle (e).

Methodology BHP Billiton Iron Ore (2014)
Onshore Environmental (2014)
Van Vreeswyk et al. (2004)
GIS Database:
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- Threatened and Priority Flora

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

Comments

There is one Native Title Claim (WC2005/06) 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 several 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, Department of Parks and Wildlife 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 27 October 2014 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 - Determined by the Federal Court

4. References

- BHP Billiton Iron Ore (2014) Supporting information for amendment application CPS 5926/2.
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Onshore Environmental (2014) Western Ridge Biological Survey. Unpublished report for BHP Billiton Iron Ore Pty Ltd, dated September 2014.

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 – commonly known as the World Conservation Union |
| PEC | Priority Ecological Community, Western Australia |
| RIWI Act | <i>Rights in Water and Irrigation Act 1914</i> , Western Australia |
| s.17 | Section 17 of <i>the 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.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare 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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.