



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1661/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (McCameys Monster) Agreement Act 1972, Mining Lease 266SA (AM 70/266)
Local Government Area: Shire of East Pilbara
Colloquial name: Jimblebar Rail Loop

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
48		Mechanical Removal	Railway construction and maintenance, and associated works

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description The areas proposed to be cleared have been defined broadly by Beard into one vegetation type called Beard vegetation Association 216 (GIS Database). Beard vegetation association 216 is defined as: low woodland; Mulga (with spinifex on rises).

Ecologia Environment (2004a) mapped at a scale of 1:25000, the vegetation proposed to be cleared within the Jimblebar area. All of the proposed clearing area was mapped as Valley Plains defined as:

A broad unit of Acacia shrubland with sparse woodland species over mixed *Triodia* ground storey with other common bunch grasses (BHPBIO 2006).

Three quadrat flora sites (26, 27, 28) were mapped as occurring within the Valley Plains vegetation unit and are located between 1.2 and 1.5 kilometres west of the clearing permit area (Ecologia Environment 2004a). The description for those three sites is as follows:

26: *Grevillea wickhamii* sparse scrub over moderately dense *Triodia basedowii* hummock grass;

27: Scattered low trees of *Codonocarpus cotinifolius* over tall shrubs of sparse *Acacia bivenosa* and *Eucalyptus gamophylla* over sparse to open medium/ low shrubs and sparse *Triodia basedowii* hummock grassland; and

28 : *Acacia bivenosa* open shrubland over moderately dense grassland.

The vegetation within the southern portion of the clearing permit area was surveyed in December 2006 by ENV Australia (ENV Australia 2007) and mapped into two different vegetation types:

1. Plain- Scattered low *Eucalyptus xerothermica* trees over an open *Acacia pachyacra* shrubland over open *Aristida ingrata* grassland; and

2. Plain- Scattered low *Corymbia hamerslyana* trees over a high open *Acacia pachyacra* shrubland over *Triodia basedowii* grassland.

Clearing Description

The proposed clearing of 48 hectares within an area of approximately 129 hectares is for the purpose of constructing a rail loop at the BHP Billiton Iron Ore (BHPBIO) Jimblebar mine site to allow continuous shuttle train operations (BHPBIO 2006). Clearing is required for the construction of the following infrastructure: construction of rail loop, culverts, access track, borrows pits, haul roads, lay down areas, topsoil stockpiles and a sediment pond. Some of the 48 hectares proposed to be cleared will be rehabilitated following the completion of the rail loop and associated infrastructure (BHPBIO 2006b). The amount that will be rehabilitated following the completion of the project is not known at this stage. The project's environmental management procedures to minimise and monitor impacts to the receiving environment during the construction phase of the project are outlined in the BHPBIO Rail Construction Environmental Management Plan (BHPBIO 2005a). Other Environmental Management Plans that also apply to this projects are: BHPBIO Minimum Environmental Standards for Contractors (BHPBIO 2005b) and

the BHPBIO Borrow Pit Management manual (BHPBIO 2005c). The DoIR Assessor raised the possibility of using fill required for track building from waste rock resulting from the mining operation nearby, to reduce the amount of clearing required. This option has been considered by BHPBIO, however the material has been deemed not suitable and borrow pits will be necessary to source high quality material to form capping layers (BHPBIO 2007).

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

to

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

Comment A number of introduced species have been recorded in the Jimblebar area with Buffel Grass (*Cenchrus ciliaris*) and Beggars Tick (*Bidens bipinnata*) having been recorded within the proposed clearing areas (BHPBIO 2007; ENV Australia 2007) Ruby Dock (*Acetosa vesicaria*) is a serious environmental weed that has spread in the Pilbara as a result of mining activity. While this species was not recorded by Ecologia Environment (2004a) within the Jimblebar area surveyed in 2004, it has previously been recorded along the Jimblebar Rail spur (Ecologia Environment, 2004a). A recommendation was made by Ecologia Environment that monitoring and control measures should be undertaken to limit its spread. Furthermore, because Ruby Dock spreads readily from seed and fragments, Ecologia Environment (2004a) recommended that it be included in all land management plans in the Pilbara.

The Environmental Management Plan (EMP) that applies to the construction phase of the Jimblebar railway loop is the Rail Construction EMP and the Minimum Standards for Contractors (BHPBIO 2005b and 2005c respectively). Following the construction phase, the project is handed over to the Operations side of BHPBIO and the EMPs that will then apply throughout the remaining life of the project will be specific to the Wheelarra Hill operations. With respect to weed management the EMP that will apply is the Jimblebar-Wheelarra Hill Mine Weed Management Plan (BHPBIO 2006a). The management procedures to minimise the risk of introducing and spreading environmental weeds during the construction phase of the railway loop are listed in the Rail Construction EMP 006 (BHPBIO 2005b). The management measures listed include an environmental induction on weed identification, reporting requirements and weed hygiene procedures to be followed. The weed hygiene procedures require that: all earthmoving and mobile construction equipment will be washed down and cleaned of all plant, soil and rock material prior to arriving on site (BHPBIO 2005b) Following the construction of the railway loop, procedures listed in the Jimblebar-Wheelarra Hill Weed Management Plan used to manage Ruby Dock will include a herbicide spraying program from April to June. Other measures listed are the mapping of known infestations to minimise the potential for spreading weeds or soil from those areas, regular machinery clean down for machinery used within infested areas, treatment of topsoil stripped from areas that are weed infested, regular inspections of disturbed areas for the presence of weeds.

The vegetation condition is derived from photographs, comments provided by BHPBIO (2006b), individual flora quadrat vegetation condition descriptions (Ecologia 2004a) and vegetation condition descriptions from ENV Australia (2007).

Clearing Permit CPS 1661/1 was granted on 5 April 2007, authorising the clearing of up to 48 hectares of native vegetation. CPS 1661/1 is due to expire on 5 May 2009, and BHP Billiton Iron Ore Pty Ltd are yet to complete native vegetation clearing activity associated with the Jimblebar Rail Loop. Hence, a three year extension to the duration of clearing permit CPS 1661/1 is being sought.

No addition is being sought to the 48 hectares originally approved, and no changes are proposed to the boundary of the area originally approved under clearing permit CPS 1661/1. No additional assessment of the 10 Clearing Principles is warranted to undertake the proposed amendment (CPS 1661/2).

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 clearing permit application is located within the Fortescue IBRA (Interim Biogeographic Regionalisation of Australia) subregion (GIS Database). The biodiversity values of that subregion have been described by Kendrick (2001). The areas of outstanding biodiversity values within that subregion are mostly associated with the Fortescue River (Millstream wetlands, aquifer and Fortescue Marsh) which are located more than 100 kilometres from this proposal. None of the Threatened Ecological Communities (TECs), ecosystems at risk or refugia listed in Kendrick (2001) are located within, or near to the proposed clearing areas.

A number of biological surveys have been carried out over the years within the local area including those areas proposed to be cleared (Ecologia Environment 2004a; 2004b, ENV Australia 2006; 2007). There is no indication in the reports provided by the proponent that the areas proposed to be cleared represent areas with outstanding biological diversity, or areas that have a higher diversity of fauna or flora species than other areas of native vegetation within the local area.

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

Methodology Ecologia Environment (2004a)
Ecologia Environment (2004b)

ENV Australia (2006)
ENV Australia (2007)
Kendrick (2001)
GIS Database:
IBRA (subregions).
Threatened Ecological Communities.

(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

The areas encompassing the Jiblebar mine site and adjoining areas (Ore Body 18, 25, East Ophthalmia Ranges) have been the subject of numerous fauna surveys conducted as part of environmental approval processes for existing or proposed iron ore operations. Consequently a number of fauna species listed on either the Wildlife Conservation (Specially Protected Fauna) Notice 2006(2), or on the Department of Environment and Conservation's (DEC) own priority list are known to occur in the vicinity of the areas proposed to be cleared.

A number of records for the Priority 4 listed Western Pebble Mound Mouse (*Pseudomys chapmani*) are located in the Jiblebar area, with the closest record located approximately 1000 metres north of the proposed railway loop (GIS Database).

The Western Pebble Mound Mouse constructs very distinctive pebble mounds and tends to be most common on the foothills and lower slopes with gravel stone mulches. The mounds are less common on ridges. The soil types recorded at two of the three flora sites located between 1200 and 1500 metres west of the proposed clearing areas have a surface layer of coarse gravel pebbles which may be suitable for the Western Pebble Mound Mice. Ecologia Environment has indicated that where possible, access and haul roads should be constructed away from active pebble mounds (Ecologia Environment 2004a). Western Pebble Mound Mice mounds were not recorded by Ecologia Environment (2004a) or ENV Australia (2007) within the proposed clearing permit area. There are numerous records of this species throughout the Newman and the Pilbara areas (Start et al. 2000). Given the lack of records within the proposed clearing permit area and numerous other records it is unlikely that this proposal would result in a significant impact on the Western Pebble Mound Mouse.

Rock wallabies (*Petrogale sp*) were sighted twice in the Jiblebar area by Ecologia Environment in their biological survey of that area (Ecologia 2004a). Because the two species of rock wallabies that are known to occur in the area cannot be reliably identified on field characteristics alone, those sightings may be of either *P. rothschildi* (not listed as being of conservation significance), or *P. lateralis* (Schedule 1: Fauna that is rare or is likely to become extinct).

Rock wallaby species tend to be confined to areas such as gorges and steep scree slopes. The area considered to offer the most suitable habitat for rock wallabies is located approximately 1.2 kilometres to the north of the proposed haul road (Ecologia Environmental 2004a). Due to the lack of gorges or steep gullies features within the proposed clearing areas, (Ecologia Environment 2004a; GIS Database), it is unlikely that the proposal will directly impact on Rock Wallaby habitat.

While not recorded during the Ecologia Environment 2004 surveys of the Jiblebar area or East Ophthalmia ranges (Ecologia Environment 2004a; and 2004b), it is considered that the Pilbara Olive Python (*Liasis olivaceus barroni*) (Schedule 1) may occur within the project area. This species tends to be associated with riparian vegetation, permanent waterholes and associated gorges in the Pilbara. Considering the lack of such habitat within or near the areas proposed to be cleared it is unlikely that the proposed clearing will impact on habitat significant to that species. Kendrick (2001) in an assessment of the status of the Pilbara Olive Python states that it is common, widespread, not declining or threatened.

One species of conservation significance, an unnamed blind snake *Ramphotyphlops ganei* (Priority 1) was recorded by ENV Australia during the Ore Body 18 Biological Survey to the west of the Jiblebar area (BHPIO 2006a). Blind snakes are not readily caught in traps during fauna surveys because they seldom seem to come to the surface. Like other blind snake species, very little is known of the specific ecological requirements of this species which was only described in 1998 (Ecologia 2004a). *R. ganei* has also been recorded near Port Headland. Based on the records available to date, the species may be widespread and it is unlikely that the localised nature of this proposal would impact on the conservation status of that species.

The Ghost Bat (*Macroderma Gigas*) (Priority 4) may occur within the Eastern Ophthalmia Ranges approximately ten kilometres east of the proposed clearing areas (Ecologia 2004b). Based on the site description, aerial photographs and maps provided by Ecologia (2004a) and BHPBIO (2006) it is unlikely that the proposed clearing areas contains areas suitable for caves or roosts for that species or other bat species of conservation significance.

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

Methodology BHPIO (2006a)
Ecologia Environment (2004a)
Ecologia Environment (2004b)
ENV Australia (2006)
Kendrick (2001)
Start et al. (2000).
GIS Database:
Threatened Fauna.

(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**

The areas proposed to be cleared have been the subject of a number of biological surveys (Ecologia Environment 2004a; 2004b, ENV Australia 2006; 2007).

The northern portion of the purpose permit area was surveyed in February 2004 (Ecologia Environment 2004a), whilst the areas located south of the areas surveyed by Ecologia Environment were surveyed by ENV Australia in December 2006 (ENV Australia 2007).

No Declared Rare Flora (DRF) species were located within the Jimblebar area as a result of the Ecologia Environment and ENV Australia flora surveys (Ecologia Environment 2004a; ENV Australia 2007). Two flora species listed at the time on the DEC's own priority list were recorded by Ecologia Environment in 2004, with the Priority 4 taxon *Goodenia hartiana* recorded at 12 sites and the Priority 3 taxon *Sida sp Wittenoom* was recorded at one site.

Sida sp Wittenoom was recorded within a vegetation type and landform (Range Crest) which is not located within the proposed clearing permit area.

Recent Advice from DEC states that *Goodenia hartiana* is listed as a Priority 2 species (DEC 2007).

None of the locations where *Goodenia hartiana* were recorded by Ecologia Environment (2004a) are located within the proposed clearing permit area. Based on their location on the slopes of Wheelarra Hill it appears unlikely that any *Goodenia hartiana* would occur within the clearing permit area as it does not include the type of landform where *Goodenia hartiana* was located by Ecologia Environment in 2004.

While ENV Australia (2007) did not locate specimens of DRF or priority flora within the proposed clearing areas, they did note the presence of one species identified as being possibly of conservation significance. That species, *Acacia aneura* (subterete long; site 1245), was recorded in the southern most quadrat located adjacent to Copper Creek but outside of the clearing permit area. ENV Australia (2007) states that the species is not well collected and is considered uncommon although not rare as it has a wide range. It has previously been collected from West Angelas and other areas to the north of the project area. Based on its location adjacent to the creek and distance from the clearing permit areas, it is unlikely that this species will be directly affected by the proposed development.

It is not likely that the proposed clearing areas are necessary for the continued in situ existence of habitat for priority flora species.

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

Methodology Ecologia Environment (2004a)
ENV Australia (2006)
ENV Australia (2007)
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**

There are no listed Threatened Ecological Communities (TEC) located within the clearing permit application area (GIS Database). The nearest TEC is the Ethel Gorge Stygobiont community located approximately 27 kilometres west from the areas proposed to be cleared (GIS Database). None of the ecosystems at risk that are mentioned in the assessment of the biodiversity values of the Fortescue IBRA subregion by Kendrick (2001), are located within or in the vicinity of the proposed clearing areas. Similarly none of the various biological surveys carried out within the local area, including those areas proposed to be cleared, have identified areas that may contain significant ecological communities (Ecologia Environment 2004a; 2004b; ENV Australia 2006; 2007).

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

Methodology Ecologia Environment (2004a)
Ecologia Environment (2004b)
ENV Australia (2006)
ENV Australia (2007)
Kendrick (2001)
GIS Database:
IBRA (subregions).
Threatened Ecological Communities.

(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**

Approximately 100 % of the Pre European vegetation remains in the IBRA Pilbara region within which this proposal is located (Shepherd 2001a). Available satellite imagery (GIS Database) and information from various biological surveys conducted within the local area indicate that the areas surrounding this clearing permit application have not been cleared extensively (Ecologia Environment 2004a; 2004b; ENV Australia 2006; 2007; BHPBIO 2006). Due to the limited amount of clearing conducted in the area the proposed clearing area cannot be considered to be a remnant of native vegetation within an extensively cleared area.

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

Methodology BHPBIO (2006)
Ecologia Environment (2004a)
Ecologia Environment (2004b)
ENV Australia (2006)
ENV Australia (2007)
Shepherd (2001a)
GIS Database:
Satellite Imagery: Western Australia ETM25m.

(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**

The boundary of the purpose permit area is located approximately 100 metres from Copper Creek, an ephemeral creek that runs into Jimblebar Creek (GIS Database).

Copper Creek and the associated vegetation have not been identified as having significant environmental values by Ecologia Environment (2004a). ENV Australia (2007) have noted that one species of Mulga (*Acacia aneura* subterete long; site 1245) may be of possible conservation significance. ENV Australia (2007) have stated that riverine habitat and the alluvial plain immediately adjacent are not well represented in the local region, and recommended that disturbance to this fringing creekline habitat be reduced or avoided where possible.

The vegetation type mapped by Ecologia Environment (2004a) as occurring in the vicinity of the drainage lines within the Jimblebar area has been defined as Acacia shrubland with sparse woodland species over mixed Triodia ground storey with other common bunch grasses (BHPBIO 2006). The vegetation type mapped within the Jimblebar area as occurring within Copper Creek is Mulga *Acacia aneura* woodland (Ecologia Environment 2004a). Based on the aerial photography provided by BHPBIO (2006), it appears that the vegetation type present within Copper Creek is *Acacia aneura* woodland, varying from a sparse to moderately dense woodland. While Mulga on its own is not necessarily associated with creek lines, the location of dense woodlands of that species within the Pilbara region usually is an indication of a creekline. As such the assessor regards the Mulga woodland associated with Copper Creek as a type of riparian vegetation.

Whilst widespread in the Pilbara, Mulga woodlands have some environmental significance to the local fauna in the area that depend on such vegetation types. Such vegetation types are also known to be affected by interruptions to sheet flows which may occur as a result of raised earthworks such as haul roads or railway tracks, which can disturb local drainage patterns. The assessor has noted the commitment made by BHPBIO (2006) to maintaining drainage patterns, and the provision of culverts in the engineering plans submitted with the clearing permit application (BHPBIO 2006).

Based on the distance between the clearing permit boundary and the vegetation associated with the creekline, as well as the engineering drainage structures proposed for the railway loop, it is unlikely that the proposal will result in the clearing of, or have adverse impacts on the riparian vegetation associated with Copper Creek.

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

Methodology Ecologia (2004a)
ENV Australia (2006)
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 may be at variance to this Principle**

The proposed clearing areas lie across the Boolgeeda Land System (uphill areas) and the Divide Land System closer to the Copper Creek drainage line (GIS Database).

The soils within the Boolgeeda Land System for stony lower plains are described in Vreeswyk et al (2004) as Red Loamy Earths (544). Such soils are rated as having a low wind erosion hazard. Red Loamy Earths have a low to moderate (dependant on slope and the presence/absence of a stony mantle) water erosion hazard. The inundation and flooding risks are rated as moderate on some low lying plains, otherwise low or nil (Vreeswyk et al 2004).

The soils within the Divide Land System (tracts receiving run on) are described in Vreeswyk et al (2004) as Red Sandy Earths (463) with minor river bed soils (705). River bed soils are unlikely to occur within the clearing permit area as those soils are found in juvenile or recent alluvial deposits (Vreeswyk et al 2004) which are more likely to be associated with the Copper Creek drainage line south of the clearing permit application area.

Red Sandy Earths are rated as having a low wind erosion hazard and low to moderate (dependant on slope) water erosion hazard.

The inundation risks for Red Sandy Earths is considered low to moderate on stony to loamy plains. The flooding risks are rated as nil to low (on some low lying stony or loamy plains).

Based on the above soil descriptions, the risk of wind erosion occurring as a result of the planned activity is unlikely

The local topography is flat with maximum slopes in the order of a 1.25 % gradient according to the engineering drawings provided (BHPBIO 2006b). While the clearing will result in the removal of the stony mantle in some areas, the risk of water erosion increasing is not likely due to the low relief within the areas proposed to be cleared.

Based on the soil types and associated characteristics that are likely to be present on site there is a possibility that the proposed clearing will lead to an increase in local inundation and flooding.

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

Methodology BHPBIO (2005b)
BHPBIO (2006)
Vreeswyk et al (2004)
GIS Database:
Rangelands 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 nearest conservation area to this proposal is the Collier Range National Park located approximately 130 kilometres to the south of the proposed clearing (GIS Database).

Due to the distance between the National Park and the proposed clearing it is unlikely that the proposed clearing will affect the environmental values of the National Park.

Beard vegetation association 216 has a medium ranking in the reservation priorities for ecosystems listed in Kendrick (2001) for the Fortescue IBRA subregion. No areas of Beard vegetation type 216 are recorded as occurring within conservation reserves (Shepherd 2001a). However approximately 19,066 hectares of Beard vegetation association 216 remains within the Fortescue IBRA subregion alone (Shepherd 2001a), and the proposed clearing of approximately 48 hectares of that vegetation association is not likely to be significant compared to the extent of this vegetation type which remains.

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

Methodology Kendrick (2001)
Shepherd (2001a)

(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 proposed clearing areas are not located within a Public Drinking Water Source Area (GIS Database). The soil types listed as occurring within the stony slopes, upper plains and drainage floors for the McKay and Boolgeeda Land System (Red Loamy Earth 544, Red Shallow loams 522) are listed as having a low (due to stony mantle) to moderate (dependent on slope) water erosion hazard (Vreeswyk et al 2004). The main impact on water quality is likely to be a temporary increase in sedimentation resulting from clearing in the drainage lines. The development in and around the drainage lines intersected by the proposed clearing should be carefully managed to avoid erosion in the wet season.

The proponent has stated that: 'drainage will be incorporated into the design of the rail loop and the TLF (Train Load Out Facility). Drainage works include the installation of culverts spaced along the railroad and track rail loops to allow stormwater run-off to leave the loop and flow along natural drainage lines into Copper Creek. Rock protection and Reno mattresses will be used to ensure erosion and land degradation do not occur during rainfall events' (BHPBIO 2006).

The assessor has noted that eight culverts are proposed to be constructed in the section of the railway loop closest to the creekline (BHPIO 2006c). Provided that such measures are adhered to the proposed clearing is unlikely to lead to a decrease in surface or underground water quality.

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

Methodology BHPIO (2005)
BHPIO (2006a)
Vreeswyk et al (2004)
GIS Database:
Public Drinking Water Source Areas.

(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 area has an average annual rainfall of ~500mm, which falls predominantly from December to March, with rainfall events often resulting in localised flooding (BHPIO 2006a). The proposal represents a relatively small amount of clearing, within the catchment of Copper Creek, and would be unlikely to exacerbate natural flood regimes. The soil types listed as occurring within the stony slopes, upper plains and drainage floors for the Boolgeeda and Divide Land System (Red Loamy Earth 544) are listed as having a low or nil flooding risk unless present on some low lying plains where the risk is considered moderate (Vreeswyk et al 2004). The proposal is located approximately 100 metres from Copper Creek within a low lying plain with maximum gradients in the order of 1.2% (BHPBIO 2006b). While it is unlikely that the proposed clearing will lead to an incremental increase in peak flood height or duration of Copper Creek, the clearing may result in temporary waterlogging in some areas.

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

Methodology BHPIO (2006a)
Vreeswyk et al (2004)

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

Comments

A number of sites of Aboriginal Significance are located in the Jimblebar area. None of the sites are located within the clearing permit area. The closest site of Aboriginal significance is located approximately 200 metres from the boundary of the clearing permit area (GIS Database). Information provided by BHPBIO states that archaeological surveys of the rail loop area and consultations with the traditional owners of the land have been undertaken, including recent inspections in November 2006. It is the proponent's responsibility to ensure compliance with the *Aboriginal Heritage Act 1972* and to ensure that no Aboriginal sites of significance are disturbed as a result of the clearing process. It is BHPBIO responsibility to ensure that all persons employed or engaged in the project are made aware of their obligations under the Aboriginal Heritage Act 1972 (AHA). In addition, BHPBIO needs to be aware that should cultural material be discovered during its clearing program, work should cease and the site should be recorded and the Department of Indigenous Affairs (DIA) notified. If an unrecorded/recorded site cannot be avoided during the project, a section 18 notice under the *Aboriginal Heritage Act 1972* must be submitted to obtain the Minister of Indigenous Affairs prior consent to use the land on which this site is located.

There is a Native Title Claim over the area under application (GIS Database). However, the mining lease has

been granted, and the clearing is for a purpose consistent with the lease, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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 Jimblebar mine (also known as Wheelarra Hill) has been the subject of a number of projects that were referred to the Environmental Protection Authority (EPA). The latest project that was formally assessed by the EPA was the Wheelarra Hill extension project, which was assessed at the level of EPS (Environmental Protection Statement). The project was approved subject to Ministerial conditions. Part of the clearing permit application area is located within the area that was assessed by the EPA for the Wheelarra Hill extension project (BHPBIO 2005). Following discussions between the assessor and BHPBIO, it was decided that BHPBIO would seek approval for clearing under the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* rather than use the exemption that currently exists under schedule 6 of the *Environmental Protection Act 1986* for projects that have been formally assessed by the EPA.

Mining activities at Jimblebar are managed under the *Iron ore (Mc Cameys Monster) Agreement Act 1972*. This State Agreement Act is administered by the Department of Industry and Resources (DoIR). Significant proposals under that Act are approved by the Minister for Resources following submission under the appropriate clause of the Iron ore (Mc Cameys Monster) Agreement Act 1972. The Jimblebar Rail loop project was approved by the Minister for Resources in 2005 and an amendment to that proposal is currently being assessed by the Office of State Development of the Department of Industry and Resources. The amendment is expected to be signed by the Minister in mid February 2007 (DoIR 2007).

Clearing Permit CPS 1661/1 was granted on 5 April 2007, authorising the clearing of up to 48 hectares of native vegetation. CPS 1661/1 is due to expire on 5 May 2009, and BHP Billiton Iron Ore Pty Ltd are yet to complete native vegetation clearing activity associated with the Jimblebar Rail Loop. Hence, a three year extension to the duration of clearing permit CPS 1661/1 is being sought.

No addition is being sought to the 48 hectares originally approved, and no changes are proposed to the boundary of the area originally approved under clearing permit CPS 1661/1. No additional assessment of the 10 Clearing Principles is warranted to undertake the proposed amendment (CPS 1661/2).

Methodology BHPBIO (2005)
DoIR (2007)
GIS Database:
Aboriginal Sites of Significance.
Native Title Claims.

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and is not likely to be at variance to principles a,b,c,d,f,h,i or j and not at variance to principle e.

5. References

- BHPBIO (2005a) Wheelarra Hill Extension Project Environmental protection Statement. Report published by BHP Billiton dated April 2005.
- BHPBIO (2005b) BHP Billiton Iron Ore Rail Construction Environmental Management Plan 0234-EMP-001 Revision 1. Unpublished Management Plan produced by BHP Billiton dated 16/5/2005.
- BHPBIO (2005c) Minimum Environmental Standards for Contractors, November 2005 Revision 3. Unpublished Document dated 21/11/2005.
- BHPBIO (2005d) BHP Billiton Iron Ore Borrow Pit Management Manual, unpublished document prepared for BHPBIO dated 28/11/2005.
- BHPBIO (2006a) Jimblebar-Wheelarra Hill Mine Weed Management Plan, Revision 1. Report published as a result of ministerial conditions for the Wheelarra Hill extension project formally assessed at the level of EPS by the Environmental protection Authority. Dated June 2006.
- BHPBIO (2006b) Application for a clearing permit for Ore Body 18 to Jimblebar haul road construction (purpose permit), letter to the Native Vegetation Assessment Branch of the Department of Industry and Resources addressing the clearing principles dated 9 November 2006.
- BHPBIO (2006c) Application for a clearing permit for Jimblebar rail loop construction (purpose permit), supporting documentation sent to the Native Vegetation Assessment Branch of the Department of Industry and Resources addressing the clearing principles dated 6 December 2006.
- 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.
- DoIR (2007) Email advice received on the 8 February 2007 from the Department of Industry and Resources Office of State

- Development on the approval process for the Jimblebar Rail Loop Project under the Iron ore (Mc Cameys Monster) Agreement Act 1972.
- Ecologia Environment (2004a) Jimblebar-Wheelarra Hill Expansion Biological Survey, April 2004. Unpublished report by Ecologia Environment for BHP Billiton Iron Ore.
- Ecologia Environment (2004b) Eastern Ophthalmia Range Expansion Biological Survey, May 2004. Unpublished report by Ecologia Environment for BHP Billiton Iron Ore.
- ENV Australia (2006) Orebody 18 Flora and Vegetation Assessment phase II. Draft report prepared for BHP Billiton Iron Ore, dated October 2006.
- ENV Australia (2007) RGP4 Jimblebar Rail Loop Flora and Vegetation Assessment, unpublished report dated 31 January 2007, prepared for BHPBIO by ENV Australia Pty Ltd.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Kendrick P. (2001) Pilbara 2 (PIL 2 Fortescue Plains Subregion) Subregional description and biodiversity values in "A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002" published by the Department of Conservation and Land management Western Australia.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Start A.N., Anstee S.D. and Endersby M. (2000) A review of the biology and conservation status of the Ngadji, *Pseudomys chapmani* Kitchener, 1980 (Rodentia: Muridae). CALM Science3(2) 125-147 (2000).
- Van Vreeswyck A.M.E, Payne A.I., Leighton K.A. and Hennig P. (2004) Technical Bulletin No 92, An Inventory and condition survey of the Pilbara region, Western Australia. Published by the Department of Agriculture Western Australia.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), 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, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.

