



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5617/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

### 1.3. Property details

*Iron Ore (Mount Newman) Agreement Act 1964*, Mineral Lease 244SA (AML 70/244)  
*Iron Ore (Mount Newman) Agreement Act 1964*, Special Lease for Mining Operations 3116/3687 (Document I 154279 L), Lease Extension K846790, Lot 19 on Deposited Plan 48921

*Iron Ore (Mount Newman) Agreement Act 1964*, Special Lease for Mining Operations 3116/3685, (Lease K858923), Lot 17 on Deposited Plan 241430

General Purpose Leases 52/19 – 52/274, 52/276, 52/277, 52/279

Miscellaneous Licence 47/92

Miscellaneous Licence 52/99

Local Government Area: Shire of East Pilbara  
Colloquial name: Mt Whaleback Project

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2100		Mechanical Removal	Mineral Production

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 31 October 2013

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** Beard vegetation associations have been mapped for the 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 (GIS Database):

18: Low woodland; mulga (*Acacia aneura*); and

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

There have been numerous flora and vegetation surveys undertaken over the Mt Whaleback and surrounding areas since 1984. Based on those surveys the following 29 vegetation associations have been identified within the application area (Onshore Environmental, 2013):

1. Low Open Forest of *Acacia aptaneura*, *Acacia citrinoviridis* and *Corymbia hamersleyana* over Tussock Grassland of *Themeda triandra*, *Aristida inaequiglumis* and \**Cenchrus ciliaris* with High Open Shrubland of *Acacia pyrifolia*, *Petalostylis labicheoides* and *Rulingia luteiflora* in brown sandy loam on tributaries of major drainage lines and adjacent floodplains;

2. Low Open Forest of *Acacia aptaneura*, *Acacia pruinocarpa* and *Eucalyptus xerothermica* (+*Acacia ayersiana*) over Open Hummock Grassland of *Triodia pungens* with Open Shrubland of *Acacia bivenosa*, *Rhagodia eremaea* and *Psyrax latifolia* in red loamy sand on hardpan plains;

3. Low Open Forest of *Acacia catenulata* subsp. *occidentalis*, *Acacia aptaneura* and *Grevillea berryana* over Open Shrubland of *Eremophila latrobei*, *Acacia sibirica* and *Senna glutinosa* subsp. *luerssenii* over Open Hummock Grassland of *Triodia pungens* and *Triodia wiseana* in red sandy loam on valley floors and along incised drainage lines;

4. Low Woodland of *Acacia aptaneura* and *Acacia pruinocarpa* over Open Hummock Grassland of *Triodia brizoides* with Low Open Woodland of *Eucalyptus xerothermica* and *Eucalyptus leucophloia* subsp. *leucophloia* in red brown loam on hardpan plains;

5. Low Woodland of *Acacia catenulata* subsp. *occidentalis*, *Corymbia ferritcola* and *Ficus brachypoda* over Shrubland of *Eremophila tietkensisii*, *Dodonaea pachyneura* and *Acacia hamersleyensis* over Open Hummock Grassland of *Triodia pungens* in red loamy sand in rocky gullies and small gorges;

6. Hummock Grassland of *Triodia angusta* and *Triodia wiseana* with Open Mallee of *Eucalyptus gamophylla* and/or *Eucalyptus socialis* subsp. *eucentrica* and Open Shrubland of *Acacia bivenosa* in light brown loamy sand on calcrete rises and plains;
7. Hummock Grassland of *Triodia basedowii* with High Open Shrubland of *Acacia inaequilatera*, *Acacia pruinocarpa* and *Hakea chordophylla* and Open Shrubland of *Eremophila fraseri* and *Eremophila platycalyx* subsp. *pardalota* in red loamy sand on hill slopes;
8. Hummock Grassland of *Triodia pungens* with Open Mallee of *Eucalyptus trivalvis* and/or *Eucalyptus gamophylla* and Shrubland of *Acacia bivenosa* and *Petalostylis labicheoides* in red loamy sand on plains;
9. Hummock Grassland of *Triodia pungens*, *Triodia epactia* and *Triodia brizoides* with Open Shrubland of *Acacia bivenosa*, *Eremophila jucunda* subsp. *pulcherima* and *Ptilotus obovatus* and Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* in red loamy sand on flood plains adjacent to tributaries of major drainage lines;
10. Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. Van Leeuwen 3835) with Low Open Woodland of *Acacia pruinocarpa* and *Acacia aptaneura* and High Open Shrubland of *Acacia aptaneura*, *Acacia inaequilatera* and *Senna glutinosa* subsp. *glutinosa* in red loamy sand on hill crests and upper hill slopes;
11. Hummock Grassland of *Triodia wiseana* and *Triodia brizoides* with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Open Shrubland of *Acacia synchronicia*, *Acacia bivenosa* and *Acacia tenuissima* in red loamy sand on lower hill slopes and plains;
12. Hummock Grassland of *Triodia wiseana*, *Triodia brizoides* and *Triodia pungens* with Open Shrubland of *Acacia inaequilatera*, *Acacia maitlandii* and *Senna glutinosa* subsp. *luerssenii* with Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Hakea lorea* subsp. *lorea* in brown sandy loam on undulating hills;
13. Hummock Grassland of *Triodia wiseana*, *Triodia pungens* and *Triodia brizoides* with High Open Shrubland *Acacia dictyophleba*, *Acacia bivenosa* and *Acacia adsurgens* in red brown sand loam on hill crests and upper hill slopes;
14. Hummock Grassland of *Triodia wiseana*, *Triodia pungens* and *Triodia brizoides* with Open Shrubland of *Acacia bivenosa*, *Acacia inaequilatera* and *Acacia maitlandii* and Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* in red loamy sand on undulating hill slopes;
15. Open Hummock Grassland of *Triodia pungens* with Low Open Woodland of *Acacia aptaneura* and *Acacia paraneura* and Open Shrubland of *Acacia synchronicia*, *Acacia bivenosa* and *Acacia tetragonophylla* in red loamy sand on plains;
16. Open Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with High Open Shrubland of *Acacia rhodophloia* and *Hakea chordophylla* and Open Shrubland of *Acacia acradenia*;
17. Open Hummock Grassland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) with Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and Low Open Shrubland of *Acacia adoxa* var. *adoxo* and *Gompholobium oreophilum* in red loamy sand on hill slopes;
18. Tussock Grassland of *Themeda triandra* and \**Cenchrus ciliaris* with Shrubland of *Acacia bivenosa*, *Senna glutinosa* subsp. *glutinosa* and *Eremophila longifolia* and Low Open Woodland of *Acacia aptaneura* and *Corymbia hamersleyana* in brown loamy sand on levee banks of major drainage lines;
19. Tussock Grassland of *Themeda triandra*, \**Cenchrus ciliaris* and *Eriachne tenuiculmis* with Open Woodland of *Eucalyptus victrix* or *Eucalyptus camaldulensis* subsp. *refulgens*, *Corymbia hamersleyana* and *Acacia citrinoviridis* over High Open Shrubland of *Santalum lanceolatum*, *Eremophila longifolia* and *Acacia pyrifolia* var. *pyrifolia* in brown loamy sand on incised channels of major drainage lines;
20. Open Tussock Grassland of \**Cenchrus ciliaris* with High Open Shrubland of *Grevillea wickhamii*, *Acacia pruinocarpa* and *Acacia aptaneura* in red loamy sand on rehabilitated waste dump batters;
21. Scattered Low trees of *Eucalyptus leucophloia* subsp. *leucophloia* over a Low Open Shrubland of *Petalostylis labicheoides* *Acacia catenulata* subsp. *occidentalis* and *Acacia monticola* over Very Open Hummock Grassland of *Triodia pungens* and Very Open Tussock Grassland of *Themeda triandra* and *Eriachne mucronata*;
22. Scattered Low Trees of *Eucalyptus gamophylla* over Low Open Forest of *Acacia aneura* var. *tenuis*, *Acacia pruinocarpa* and *Hibiscus sturtii* var. *campylochlamys* over Open Tussock Grassland of *Enneapogon caerulescens* and *Eriachne mucronata* with Very Open Hummock Grass of *Triodia epactia* and *Triodia pungens*;
23. Low Woodland of *Acacia aneura* var. ?*pilbarana*, *Acacia catenulata* subsp. *occidentalis* and *Acacia pruinocarpa* over and Open shrubland of *Eremophila exilifolia*, *Eremophila forrestii* subsp. *forrestii*, and *Eremophila latrobei* over Open Hummock Grassland of *Triodia brizoides* and *Triodia pungens*;
24. Low Woodland of *Acacia pruinocarpa*, *Acacia aneura* var. ?*pilbarana* and *Eucalyptus gamophylla* over Low Scattered Shrubs of *Anthobolus leptomerioides* over Hummock Grassland of *Triodia brizoides* and *Triodia pungens* with Scattered Herbs of *Goodenia stobbsiana*;
25. Low Woodland of *Acacia pruinocarpa* and *Acacia aneura* var. *tenuis* over Scattered Shrubs of *Acacia inaequilatera*, *Acacia bivenosa* and *Ptilotus calostachyus* over Open Hummock Grassland of *Triodia brizoides* with Very Open Tussock Grassland of *Themeda* sp. and *Paraneurachne muelleri*.

26. Low Open Woodland of *Eucalyptus xerothermica*, *Corymbia ferritcola* and *Corymbia hamersleyana* over Shrubland of *Acacia aneura* var. *tenuis*, *Acacia tenuissima* and *Acacia tetragonophylla* over Open Hummock grassland of *Triodia pungens* and *Triodia angusta*;

27. Low Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia ferritcola* and *Corymbia hamersleyana* over High Open Shrubland of *Acacia catenulata* subsp. *occidentalis*, *Acacia rhodophloia* and *Acacia pruinocarpa* over Hummock Grassland of *Triodia brizoides* and *Triodia pungens*;

28. Scattered Low Trees of *Eucalyptus leucophloia* subsp. *leucophloia* over Open Shrubland of *Acacia ancistrocarpa*, *Acacia bivenosa* and *Acacia dictyophleba* over Hummock Grassland of *Triodia brizoides*;

29. Low Open Woodland of *Eucalyptus gamophylla*, *Eucalyptus kingsmillii* subsp. *kingsmillii* and *Eucalyptus leucophloia* subsp. *leucophloia* over Scattered Shrubs of *Acacia pruinocarpa*, *Senna glutinosa* subsp. *glutinosa* and *Ptilotus obovatus* over Hummock Grasslands of *Triodia pungens*, *Triodia epactia* and *Triodia brizoides* and Very Open Tussock Grass of *Eriachne mucronata* and *Cymbopogon ambiguus*.

<b>Clearing Description</b>	Mt Whaleback Project. BHP Billiton Iron Ore Pty Ltd (BHP Billiton) proposes to clear up to 2,100 hectares within an application area of approximately 8,800 hectares for the purposes of mineral production, mineral exploration, construction and maintenance of infrastructure and associated activities. The project is located in Newman within the Shire of East Pilbara.
<b>Vegetation Condition</b>	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).
<b>Comment</b>	The vegetation condition was derived from a summary of vegetation surveys undertaken over the application area prepared by Onshore Environmental (2013).  The proposed clearing is for a wide range of purposes including mineral production, mineral exploration, maintenance of infrastructure, borrow areas, laydown areas, stockpiles, tailings storage facilities, ore processing and beneficiation activities (BHP Billiton, 2013). The application area covers 13 clearing permits that are currently in the area. The intention is for CPS 5617/1 to replace these existing permits.

### 3. Assessment of application against clearing principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

<b>Comments</b>	<b>Proposal may be at variance to this Principle</b> Numerous flora and vegetation surveys over the application area have identified a total of 29 different vegetation associations (Onshore Environmental, 2013). Large parts of the application area have been previously cleared for the Mount Whaleback mine. Of the areas that have not been previously cleared the majority is in 'excellent' condition (Onshore Environmental, 2013). The vegetation associations within the application area are considered to be representative of other areas in the Ophthalmia Range and not restricted in nature (BHP Billiton, 2013). A small portion in the southeast of application area is within the buffer of the Threatened Ecological Community (TEC) known as the Ethel Gorge aquifer stygobiont community (GIS Database). The proposed clearing is unlikely to impact on any subterranean communities. No vegetation associations within the application area have been identified as being a Threatened or Priority Ecological Community (Onshore Environmental, 2013).  The flora surveys conducted over the application area have recorded a total of 461 flora taxa from 43 families and 104 genera (Onshore Environmental, 2013). The application area supports a significant population of the Threatened Flora species <i>Lepidium catapycnon</i> (Department of Parks and Wildlife, 2013; Onshore Environmental, 2013). There have been four Priority Flora species recorded within the application area; <i>Calotis latiuscula</i> (Priority 3), <i>Euphorbia inappendiculata</i> (Priority 3), <i>Eremophila magnifica</i> subsp. <i>magnifica</i> (Priority 4) and <i>Goodenia nuda</i> (Priority 4) (BHP Billiton, 2013). There were eight individuals of <i>Goodenia nuda</i> recorded from five locations within the application area (BHP Billiton, 2013). The remaining Priority Flora species were all recorded from a single location (BHP Billiton, 2013). The proposed clearing is not likely to have a significant impact on these Priority Flora species. There has been 26 weed species recorded within the application area (BHP Billiton, 2013). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.  Numerous fauna surveys have been previously conducted over the application area. These fauna surveys have recorded a total 323 vertebrate species comprising 43 mammal, 182 bird, 91 reptile and seven amphibian species (Onshore Environmental, 2013). The large number of recorded fauna species reflects the size of the survey area. The application area contains habitat types that are important for fauna, specifically the 'Gorge/Gully' and 'Major Drainage Line' habitats (Onshore Environmental, 2013). This may indicate that these areas could contain a relatively high diversity of fauna. Some areas of the Gorge/Gully habitat have been excluded from the application area. The remaining areas are in a degraded condition or are within areas covered by previously granted permits (Onshore Environmental, 2013). The Major Drainage Line habitat has been degraded by weeds in a number of areas (BHP Billiton, 2013). The other habitats within the application area are common within the region and are likely to support a moderate level of faunal diversity.
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Based on the above, the proposed clearing may be at variance to this Principle.

**Methodology** BHP Billiton (2013)  
Department of Parks and Wildlife (2013)  
Onshore Environmental (2013)  
GIS Database:  
- 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 may be at variance to this Principle**

There has been numerous fauna surveys previously conducted over the application area. Based on the results of these surveys the following seven broad fauna habitats have been identified within the application area (Onshore Environmental, 2013):

- Crest/Slope;
- Gorge/Gully;
- Major Drainage Line;
- Drainage Area;
- Mulga Woodlands;
- Sandy Plains; and
- Rehabilitated Areas/Artificial Wetland.

Excluding the Gorge/Gully and Major Drainage Line habitats, all these habitats are considered to be common and well represented within the region (Onshore Environmental, 2013). The Gorge/Gully habitat is significant as it contains important habitat features that provide shelter and denning sites. There are two areas of Gorge/Gully habitat within the application area. Most of this habitat is located in the southwest of the application with one other location in the centre of the application area. The habitat in the centre of the application area is located within a remnant rocky patch within the existing mine site (Onshore Environmental, 2013). This patch is now completely isolated and highly degraded, therefore it is not likely to be significant for local fauna species (Onshore Environmental, 2013). The majority of the Gorge/Gully habitat in the southwest of the application area has been excluded from the permit boundary. Some of this habitat located adjacent to Orebody 35 will be disturbed, however, this has already approved under existing clearing permit CPS 4797/1.

The Major Drainage Line habitat contains breeding and foraging sites for a number of bird species and significant tree hollows that may be used by parrots and owls for roosting and nesting (Onshore Environmental, 2013). This habitat is also important for dispersal of mammal and reptile species in the local area. The majority of this habitat appears to be associated with Whaleback Creek. Many parts of this habitat have been degraded by existing activities and invasion of weeds (BHP Billiton, 2013). The majority of the habitat lies within existing clearing permit boundaries (GIS Database). The additional impacts to this habitat are not likely to be significantly above those already authorised to clear.

Fauna surveys in the area have recorded a total of 14 species of conservation significance (Onshore Environmental, 2013). Based on habitats within the application area and surrounding records, a further 15 species of conservation significance could potentially be found within the application area (Onshore Environmental, 2013). Of these 29 species, 14 are bird species that were recorded in or are likely to utilise the acid rock drainage dam and tailings dam (Onshore Environmental, 2013). As these are artificial habitats the proposed clearing will not significantly impact these species.

The Pilbara Leaf-nosed Bat (*Rhynonictoris aurantius* - Schedule 1; Vulnerable) and Ghost Bat (*Macroderma gigas* - Priority 4) are both expected to forage over the application area (BHP Billiton, 2013). Caves recorded within the Gorge/Gully habitat have been identified as being unsuitable for roosting sites for these species (BHP Billiton, 2013). Whilst foraging habitat for this species will be lost, it is not expected to have a significant impact on these species.

There has been one record of Northern Quoll (*Dasyurus hallucatus* - Schedule 1; Endangered) at the vehicle bridge entering the Mount Whaleback mine site (Onshore Environmental, 2013). This animal was road kill and it has been speculated that it may have been a stow away on rail infrastructure (BHP Billiton, 2013). The Gorge/Gully habitat contains boulders and caves which are suitable denning sites for this species (Onshore Environmental, 2013). As the majority of this habitat has been excised from the application area the proposed clearing is not likely to significantly impact this species.

The Pilbara Olive Python (*Liasis olivaceus barroni* - Schedule 1; Vulnerable) is likely to be found within the application area (Onshore Environmental, 2013). This species is usually encountered in the vicinity of permanent waterholes in rocky ranges or riverine vegetation. The most significant habitat for this species within the application area is the Gorge/Gully and Major Drainage Line habitat.

The Western Pebble-mound Mouse (*Pseudomys chapmani* - Priority 4) has been recorded on numerous occasions within the application area (Onshore Environmental, 2013). This species most commonly utilises the Crest/Slope habitat where it constructs its characteristic mounds. Similar habitat for this species is common throughout the Pilbara bioregion and the proposed clearing is not expected to have a significant impact on

habitat for the Western Pebble-mound Mouse.

The proposed clearing of 2,100 is likely to have an impact on the local fauna population. However, this application will replace 13 existing clearing permits in the vicinity. As the proposed clearing amount is not above the total of the existing clearing permits, it is not likely to have a greater impact on fauna than what has been previously approved.

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

**Methodology** BHP Billiton (2013)  
Onshore Environmental (2013)

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

**Comments Proposal is at variance to this Principle**

The Threatened Flora species *Lepidium catapycnon* has been recorded in several locations within the application area (Onshore Environmental, 2013). There were two locations of these species within the previously granted permits CPS 3072/1 and CPS 1018/1. There were 60 individuals located within the CPS 3072/1 permit boundary and two within the permit boundary of CPS 1018/1. In the northwest of the current application area there has been 7,510 mature individuals and 2,014 seedlings recorded (Department of Parks and Wildlife, 2013). These individuals are not located in an area covered by an existing clearing permit. This species is found within the Pilbara region and the total known number of plants is approximately 35,000 individuals (Department of Parks and Wildlife, 2013). Advice from Species and Communities Branch at the Department of Parks and Wildlife (2013) is that the populations of *Lepidium catapycnon* within the application area are significant to the conservation of this species. If all records of this species within the application area are removed it will reduce the known population by approximately 21%. BHP Billiton has indicated that this species will be avoided where possible. Potential impacts on this species may be minimised by the implementation of a flora management condition.

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

**Methodology** Department of Parks and Wildlife (2013)  
Onshore Environmental (2013)

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

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

According to available databases, the south-eastern corner of the application area intersects the buffer of the 'Ethel Gorge aquifer stygobiont community' Threatened Ecological Community (TEC) (GIS Database). This TEC has not been recorded within the application area (Onshore Environmental, 2013). This TEC is associated with subterranean biota which will not be impacted by the proposed clearing.

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

**Methodology** Onshore Environmental (2013)  
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 99.6% 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 Beard vegetation associations 18 and 82 (GIS Database). These vegetation associations have not been extensively cleared as over 99% remains at both a State and bioregional level (see table) (Government of Western Australia, 2013). There has been large amounts of vegetation cleared in the Mt Whaleback area, however, the vegetation within the application area is not a remnant nor does it form part of any remnants within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Land
IBRA Bioregion – Pilbara	17,808,657	17,733,583	~99.6	Least Concern	8.37
Beard veg assoc. – State					
18	19,892,304	19,843,727	~99.7	Least Concern	6.29
82	2,565,901	2,553,217	~99.5	Least Concern	10.51
Beard veg assoc. – Bioregion					
18	676,556	672,424	~99.4	Least Concern	17.16
82	2,563,583	2,550,898	~99.5	Least Concern	10.52

\* 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)  
- Newman 1.4m Orthomosaic  
- Pre-European Vegetation

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

**Comments Proposal is at variance to this Principle**

There are numerous ephemeral watercourses within the application area (GIS Database). The majority of these are minor drainage lines similar to those that are widespread throughout the surrounding area. The most significant ephemeral watercourse that passes through the application area is Whaleback Creek (BHP Billiton, 2013). The majority of the vegetation associated with Whaleback Creek is association 19. Associations 1, 3 and 18 are also found growing in association with drainage lines (Onshore Environmental, 2013). The majority of Whaleback Creek is covered by existing clearing permits (GIS Database). The vegetation condition of vegetation within Whaleback Creek ranges from 'Excellent' to 'Completely Degraded' (BHP Billiton, 2013). This watercourse has suffered degradation from its proximity to existing mining activities and is heavily infested with weed species in many parts (BHP Billiton, 2013). Further degradation of Whaleback Creek may be minimised by the implementation of a watercourse management condition.

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

**Methodology** BHP Billiton (2013)  
Onshore Environmental (2013)  
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 application area is mapped as occurring on the Boolgeeda, Elimunna, McKay, Newman, River and Rockea land systems (GIS Database). The Boolgeeda, McKay, Newman and Rocklea land systems are generally not susceptible to degradation and erosion (Van Vreeswyk et al., 2004). Some drainage floors of the Elimunna land system are slightly susceptible to erosion but the majority of the land system is susceptible to erosion (Van Vreeswyk et al., 2004). The River land system has high to very high risk of erosion if vegetation cover is removed (Van Vreeswyk et al., 2004). Within the application area this land system is associated with Whaleback Creek (GIS Database). The proposed clearing is up to 2,100 hectares, however, this amount has already been approved under existing permits. Leaving large areas of land open increases the risk of wind and water erosion. Potential impacts from erosion may be minimised by the implantation of a staged clearing condition and a watercourse management condition for Whaleback Creek.

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

**Methodology** Van Vreeswyk et al. (2004)  
GIS Database:

- Hydrography, linear
- Rangeland Land System Mapping

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

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

The application area does not lie within any conservation areas or Department of Parks and Wildlife managed lands (GIS Database). The nearest conservation area is Karijini National Park located approximately 107 kilometres west, northwest of the application area (GIS Database). At this distance the proposed clearing is not likely to have any impacts on the environmental values of the National Park.

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

**Methodology** GIS Database:  
- DEC 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 Water Reserve Public Drinking Water Source Area (PDWSA) (GIS Database). This PDWSA has been assigned a Priority 1 rating under the Water Source Protection Classification system. Advice from the Department of Water (DoW) (2013) noted that BHP Billiton is the water service provider for this water source and that for the benefit of the community, planning decisions on proposed land uses in the reserve need to be carefully considered. It was noted that that clearing activities associated with mineral production are compatible with conditions within a P1 PDWSA (DoW, 2013).

The groundwater within the application area is between 500 - 1,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. It would not be expected that the proposed clearing of 2,100 within a permit boundary of 8,000 hectares would cause salinity levels within the application or surrounding area to alter. Advice from DoW (2013) is that provided activities are carried out in accordance with DoW advice and guidelines, the proposed clearing is not likely to have a significant impact on the quality of groundwater.

There are no permanent watercourses within the application area (GIS Database). There are numerous ephemeral drainage lines within the application area, the most significant being Whaleback Creek (GIS Database). The majority of Whaleback Creek is covered by a number of existing clearing permits. Clearing within drainage lines may lead to a short term increase in turbidity, however, it is not expected to result in the deterioration of surface water quality. Impacts to surface water within Whaleback Creek 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** DoW (2013)  
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**

With an average annual rainfall of 317.7 millimetres and an average annual evaporation rate of 3,400-3,600 millimetres there is likely to be little surface flow during normal seasonal rains (BoM, 2013: GIS Database). Whilst large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

**Methodology** GIS Database:  
- Evaporation Isopleths  
- Mean Average Rainfall

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

**Comments**

There is one native title claim (WC2005/006) over the application area (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant groups (GIS Database). However, the

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*.

According to available databases, there are numerous registered 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 (formerly the Department of Environment and Conservation) and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

It is noted that the proposed clearing may impact on a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of the Environment for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

The clearing permit application was advertised on 10 June 2013 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

**Methodology** GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

#### 4. References

- BHP Billiton (2013) Mount Whaleback Strategic NVCP - Application to Clear Native Vegetation (Purpose) Permit Under the Environmental Protection Act 1986. Supporting documentation for clearing permit application CPS 5617/1, dated May 2013.
- BoM (2012) Bureau of Meteorology Website - Climate statistics for Australian locations, Newman Aero. Available online at: [http://www.bom.gov.au/climate/averages/tables/cw\\_007176.shtml](http://www.bom.gov.au/climate/averages/tables/cw_007176.shtml) Accessed on 7 August 2013.
- 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.
- Department of Parks and Wildlife (2013) Advice from Species and Communities Branch, Department of Parks and Wildlife, 7 August 2013.
- DoW (2013) Advice regarding clearing permit application CPS 5617/1, Department of Water, 27 June 2013.
- 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.
- Onshore Environmental (2013) Flora and Vegetation and Vertebrate Fauna Review - Mt Whaleback AML 7/244. Unpublished report for BHP Billiton Iron Ore Pty Ltd, dated April 2013.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

#### 5. Glossary

**Acronyms:**

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>CALM</b>	Department of Conservation and Land Management (now DEC), Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DEC), Western Australia
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DoE</b>	Department of Environment (now DEC), Western Australia
<b>DoIR</b>	Department of Industry and Resources (now DMP), Western Australia
<b>DOLA</b>	Department of Land Administration, Western Australia
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environmental Protection Act 1986, Western Australia
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)



<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI Act</b>	Rights in Water and Irrigation Act 1914, Western Australia
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia
<b>TEC</b>	Threatened Ecological Community

### Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

**Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)**

- EX**            **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)**       **Extinct in the wild:** A native species which:  
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or  
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR**            **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN**            **Endangered:** A native species which:  
(a) is not critically endangered; and  
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU**            **Vulnerable:** A native species which:  
(a) is not critically endangered or endangered; and  
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD**            **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.