



1. Application details

1.1. Permit application details

Permit application No.: 2469/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Pilbara Manganese Pty Ltd

1.3. Property details

Property: Mining Leases 45/430 and 45/431
Local Government Area: Shire of East Pilbara
Colloquial name: Big Mack Pit Expansion

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>The vegetation of the application area is broadly mapped as Beard Vegetation Association 173: Hummock Grasslands, shrub steppe, Kanji over soft spinnifex and <i>Triodia wiseana</i> on basalt (GIS Database; Shepherd et al. 2001).</p> <p>Mattiske Consulting conducted a flora survey of the application area, in May 2007 (MBS Environmental, 2008). The survey included 29 sites within tenement M45/430 and 14 sites within tenement M45/431, to represent all vegetation types within the tenements (Mattiske Consulting, 2007a; Mattiske Consulting, 2007b).</p> <p>The following seven vegetation types were identified within the application area, broadly associated with topographic features:</p> <ol style="list-style-type: none"> 1) Scrub or thicket of <i>Carissa lanceolata</i>, <i>Petalostylis labicheoides</i>, <i>Acacia bivenosa</i> and <i>Acacia ancistrocarpa</i> over <i>Triodia pungens</i>, <i>Triodia basedowii</i>, <i>Cenchrus ciliaris</i> and <i>Chrysopogon fallax</i> along minor watercourses 2) Tall Shrubland of <i>Acacia arida</i>, <i>Acacia bivenosa</i>, <i>Acacia synchronica</i> over patches of <i>Triodia basedowii</i> and <i>Triodia pungens</i> with <i>Grevillea wickhamii</i> subsp. <i>hispidula</i> and emergent <i>Corymbia hamersleyana</i> on flats and lower slopes. 3) Shrub or Low Shrubland of <i>Acacia ancistrocarpa</i>, <i>Acacia arida</i>, <i>Acacia acradenia</i>, <i>Petalostylis labicheoides</i>, <i>Gossypium australe</i>, <i>Acacia synchronica</i> and <i>Acacia inaequilatera</i> over <i>Triodia longiceps</i> and <i>Triodia wiseana</i> with patches of <i>Cenchrus ciliaris</i> on flats, often associated with major watercourses. 4) Low Shrubland of <i>Acacia arida</i> and <i>Acacia hilliiana</i> over <i>Triodia wiseana</i> and <i>Dampiera candidans</i> on slopes and hilltops. 5) Hummock Grassland of <i>Triodia longiceps</i> with scattered <i>Acacia bivenosa</i>, <i>Acacia synchronica</i> and <i>Acacia ptychophylla</i> on flats and lower slopes. 6) Hummock Grassland of <i>Triodia longiceps</i> and <i>Triodia wiseana</i> with occasional <i>Grevillea wickhamii</i> subsp. <i>hispidula</i> on flats and lower slopes. 7) Hummock Grasslands of <i>Triodia basedowii</i>, <i>Triodia pungens</i> and <i>Triodia wiseana</i> with <i>Acacia bivenosa</i>, <i>Acacia pyrifolia</i> var. <i>morrisonii</i>, <i>Acacia synchronica</i>, <i>Hakea lorea</i> subsp. <i>lorea</i> and emergent <i>Corymbia hamersleyana</i> and <i>Corymbia aspera</i> on undulating plains and slopes. (MBS Environmental, 2008). 	<p>Pilbara Manganese Pty Ltd have applied to clear up to 44 hectares of native vegetation within a permit area of 150 hectares at the Woodie Woodie Minesite. This mine is located approximately 100 kilometres east of Nullagine and 400 kilometres south-east of Port Hedland. The activities proposed will involve the expansion of the existing Big Mack pit and the construction of associated infrastructure. The areas cleared will include waste rock stockpiles, pit, ROM pad, dewatering ponds and drains, access roads and topsoil stockpiles (MBS Environmental, 2008).</p> <p>The application area is to the south and west of the existing Big Mack Pit. Cleared land will be rehabilitated once mining activities in the area cease.</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p> <p>To</p> <p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)</p>	<p>The vegetation condition was derived from vegetation surveys conducted by Mattiske Consulting (2007a; 2007b).</p> <p>Previous vegetation surveys have been performed by MBS Environmental in 2005.</p>

Four weed species were recorded within the application area:
Kapok Bush (*Aerva javanica*); Buffel Grass (*Cenchrus ciliaris*); Purslane (*Portulaca oleracea*) and Thornapple (*Datura leichhardtii*) (MBS Environmental, 2008).

3. Assessment of application against clearing principles

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

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

The application area is located within the Chichester sub-region of the Pilbara Bioregion of the Interim Biogeographical Region of Australia (IBRA) (GIS Database).

The application area is adjacent to the existing Big Mack Pit, and the vegetation within the application area has suffered varying degrees of disturbance from previous mineral exploration and mining activities (MBS Environmental, 2008).

Flora and fauna surveys of the application area and adjacent areas were commissioned by MBS Environmental in 2007. The flora survey of M45/430 recorded 123 plant taxa from 31 families and 66 genera and the flora survey of M45/431 recorded 127 plant taxa from 33 families and 71 genera (Mattiske Consulting 2007a; 2007b). The fauna surveys recorded a total of 155 fauna species, including five amphibian, 59 reptile, 76 bird and 15 mammal species (Davis and Wilcox, 2006; 2007).

One plant taxon listed as a Priority 3 species by Department of Environment and Conservation (DEC), *Acacia glaucocaesia* was recorded on tenement M45/430 approximately 30 metres north-east of the application area. To ensure the *Acacia glaucocaesia* population is not impacted the area will be marked with flagging tape and all personnel working in the area informed that the area is not to be entered or disturbed (MBS Environmental, 2008). All vegetation types found within the application area are well represented in the Pilbara Region (MBS Environmental, 2005; Mattiske Consulting, 2007a; 2007b; GIS Database).

The application area is surrounded by the Warrawagine pastoral lease (GIS Database) and some parts of the application area have suffered from weed invasion and grazing impacts (Mattiske Consulting 2007a; 2007b). The condition of vegetation on M45/430 has been described as being generally good apart from localised disturbances around road drill sites and previously mined areas (Mattiske Consulting, 2007a). The condition of vegetation on M45/431 vegetation is described as having been impacted by weeds and fire in addition to localised disturbances around roads and drill sites (Mattiske Consulting, 2007b). Both tenements have been recorded as containing Buffel Grass which has the potential to become invasive (Mattiske Consulting, 2007a). Buffel Grass was recorded at seven sites and often dominated the understorey in vegetation communities 1, 2, 3, 5 and 6 (Mattiske Consulting, 2007a). Buffel Grass is widespread across northern Australia. It favours low-lying ground and does not require ground disturbance to enable it to establish and spread (Mattiske Consulting, 2007a).

Four weed species were recorded during the survey, including Kapok Bush, Buffel Grass, Purslane, and Thornapple (Mattiske Consulting 2007a; 2007b). The presence of introduced flora species is likely to reduce the biological diversity of the proposed clearing area. Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

A fauna survey of the application area concluded that the habitat types occurring within the application area were well represented in the Pilbara Region, and were not of specific conservation significance (MBS Environmental, 2008). None of the fauna species recorded during the surveys were expected to be restricted to the application area (Davis and Wilcox, 2007).

The landforms, vegetation types and fauna habitats in the application area are well represented in the Pilbara Region (MBS Environmental, 2008; Mattiske Consulting, 2007a; Mattiske Consulting, 2007b; Davis and Wilcox, 2007; GIS Database). Some fauna species of conservation significance are known to occur within the application area, however these species are not expected to be significantly impacted as a consequence of the proposed clearing (Davis and Wilcox, 2007). The proposed clearing is unlikely to have any significant impact on the biological diversity of the region.

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

Methodology Davis and Wilcox (2006)
Davis and Wilcox (2007)
Mattiske Consulting (2007a)
Mattiske Consulting (2007b)
MBS Environmental (2005)
MBS Environmental (2008)

- GIS Database
- CALM Threatened Fauna
 - IBRA Subregions
 - Pre-European Vegetation
 - Threatened Ecological Communities (TECs)

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

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

A fauna habitat assessment of the project area was carried out in conjunction with a vegetation survey conducted by MBS Environmental in 2005. Mattiske Consulting (2007a; 2007b) identified five primary fauna habitats at a landscape level within the Woodie Woodie region, four of which will be impacted by the Big Mack project:

- *Cenchrus ciliaris* dominated plains and minor creek lines with emergent *Acacia*;
- *Eucalyptus* and *Melaleuca* fringed creek lines;
- *Triodia* hummock grassland dominated plains; Scrub / *Triodia* hummock grassland on low rocky hills and mesas and;
- Tall shrubland of *Acacia*.

Two fauna surveys were conducted by Western Wildlife over different parts of the application area. A Level 1 survey was conducted during May 2006 followed by a Level 2 survey conducted in spring 2006 and completed in autumn 2007 (Davis and Wilcox, 2006; 2007). The 2006/2007 surveys recorded a total of 155 fauna species within the application area including five amphibian, 59 reptile, 76 bird and 20 mammal species (Davis and Wilcox, 2006).

No fauna species of conservation significance were recorded within the application area however two species; Australian Bustard (*Ardeotis australis*) and the Rainbow Bee-eater (*Merops ornatus*), have been recorded in surrounding areas (MBS Environmental, 2008). Several species, listed below, have the potential to occur within the project area, based on known ranges, habitat preferences and previous sightings in surrounding areas; Night Parrot (*Pezoporus occidentalis*); Great Desert Skink (*Egernia kintorei*); Pilbara Leaf-nosed Bat (*Rhinonictis aurantius*); Mulgara (*Dasyercus cristicauda*); Northern Marsupial Mole (*Notoryctes caurinus*); Peregrine Falcon (*Falco peregrinus*); Olive Python (*Liasis olivaceus barroni*); Greater Bilby (*Macrotis lagotis*); Western Pebble-mound Mouse (*Pseudomys chapmani*); Ghost Bat (*Macroderma gigas*); Bush Stone-curlew (*Burhinus gallarius*) and the Princess Parrot (*Polytelis alexandrae*).

The White-bellied Sea-Eagle (*Haliaeetus leucogaster*); Oriental Plover (*Charadrius veredus*); Great Egret (*Ardea alba*); Cattle Egret (*Ardea ibis*); Oriental Pratincole (*Glareola maldivarum*) and Fork-tailed Swift (*Apus pacificus*) are migratory birds listed under the JAMBA and CAMBA international migratory agreements. These species are likely to be overfly and occasional visitors, rather than using the habitats of the project area regularly (MBS Environmental, 2008). The proposed clearing is unlikely to impact critical feeding or breeding habitat for any migratory species.

Based on their known range, records and habitat requirements, MBS Environmental (2008) considered the likelihood of the Bilby, Northern Marsupial Mole, Ghost Bat, Night Parrot, Mulgara, and the Pilbara Leaf-nosed Bat, occurring in the proposed clearing areas to be low.

Species that have a high chance of occurring within the application site and surrounding areas are the Australian Bustard (DEC – Priority 4) and the Rainbow Bee-eater (MBS Environmental, 2008). The Rainbow Bee-eater is a common species that migrates southwards in summer to breed and has been recorded at several sites within the Woodie Woodie tenements (Davis and Wilcox, 2007). The Rainbow Bee-eater breeds in sandy habitats and there is a high chance that this species breeds in the project area (Davis and Wilcox, 2007). The Australian Bustard inhabits grasslands and savannah grasslands has been recorded at numerous sites throughout the Woodie Woodie tenements (Davis and Wilcox, 2007). The Bustard moves nomadically in response to the presence of food and is slow to take flight, making it vulnerable to being killed by trucks and other vehicles (Davis and Wilcox, 2006; 2007). The vegetation of the application area is well represented in surrounding areas and throughout the region, and therefore the clearing of 44ha of native vegetation is unlikely to impact on significant habitat for these species.

The Princess Parrot (DEC – Priority 4) may occur in the area based on its known distribution (MBS Environmental, 2008). Swales between sand dunes are the preferred habitat of the Princess Parrot and nests have been recorded in hollows of River Red Gum (*Eucalyptus camaldulensis*) and Desert Oak (*Allocasuarina decasneana*) (Higgins, 1999). It is possible that the Princess Parrot may sporadically inhabit the Woodie Woodie area in particular the creek line habitat with the River Red Gum. Sand dune and River Red Gum habitats are absent from the area applied to clear however a creekline fringed with River Red Gum is located approximately 500 metres to the west of the application site.

Extensive areas of *Triodia* hummock grassland occur across the project area and may provide habitat for the Western Pebble-mound Mouse (DEC – Priority 4). Numerous mounds of this species were found at the nearby Greensnake prospect area and suitable habitat is potentially present at all prospects in the Woodie Woodie

area with rocky hills, although this species is considered more likely to occur in areas with larger hills (Davis and Wilcox, 2007a; 2007b). All the mounds found during the site inspection represented old or very old mounds and there was no evidence of recently active mounds (Davis and Wilcox, 2007a; 2007b).

MBS Environmental (2008) state that during the dewatering of the proposed pit, water will flow into the Oakover River. The presence of water in these usually ephemeral creeks may potentially provide additional habitat and food source for some species (MBS Environmental, 2008).

The vegetation and habitats within the application area are well represented on a regional scale. While the proposal is likely to have local impacts from loss and fragmentation of habitat, it is unlikely that the loss would impact on the conservation status of fauna species of conservation significance given that large areas of similar vegetation types remain locally. The application area has sites of previous disturbance from mineral exploration and mining activities, and has suffered impacts from weed invasion and pastoral grazing. It is therefore unlikely to represent an area of significant fauna habitat in comparison to other undisturbed areas in the region.

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

Methodology Davis and Wilcox (2006)
Davis and Wilcox (2007)
Higgins (1999)
MBS Environmental (2008)
GIS Database:
- Threatened Fauna
- Threatened Ecological Communities (TECs)

(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

Department of Environment and Conservation (DEC) databases have no records of any populations of Declared Rare or Priority flora within a 50km radius of the areas applied to clear (GIS Database).

Based on known distributions and habitat preferences, MBS Environmental (2008) considered that 17 Priority Flora had the potential to occur within the application area.

Mattiske Consulting conducted a flora survey of the application area in May 2007. No species of Declared Rare Flora were recorded within the area applied to clear, however, three species listed as Priority Flora were recorded in close proximity to the application site (MBS Environmental, 2008).

One Priority 3 species *Acacia glaucocaesia* was recorded on tenement M45/430, approximately 30 metres north-east of the clearing permit area (Mattiske Consulting, 2007a). The *Acacia glaucocaesia* population is a community of twelve plants (Mattiske Consulting, 2007a). Although located 30 metres from the proposed clearing site the proponent has agreed to mark out the area and inform all personnel working in the vicinity that the area is not to be entered or disturbed (MBS Environmental, 2008).

Two Priority species were recorded on tenement M45/431, approximately 1.8 kilometres south-west of the project area, *Goodenia sp.* East Pilbara (P1) and *Tephrosia sp.* Cathedral Gorge (P3) (Mattiske Consulting, 2007b). These two Priority species are not expected to be impacted by the proposed clearing (MBS Environmental, 2008).

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

Methodology Mattiske Consulting (2007a)
Mattiske Consulting (2007b)
MBS Environmental (2008)
GIS Database:
- Declared Rare and Priority 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 known Threatened Ecological Communities (TEC's) within the area applied to clear (GIS Database). There are no known TEC's within 100 km of the application area (GIS Database).

Mattiske Consulting (2007a; 2007b) reported that no threatened ecological communities were identified during the flora survey of the application area.

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

Methodology Matiske Consulting (2007a)
Matiske Consulting (2007b)
GIS Database:
- 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

The application area falls within the IBRA Pilbara Bioregion (GIS Database). Shepherd et al. (2001) report that approximately 99.9% of the Pre-European vegetation still exists in this Bioregion. The vegetation in the application area is recorded as Beard Vegetation Association 173: Hummock grasslands, shrubb steppe, Kanji over soft spinifex and *Triodia wiseana* on basalt (GIS Database; Shepherd et al, 2001). According to Shepherd et al., (2001) approximately 100% of this vegetation type remains (see table below).

Therefore the vegetation within the application area is not a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Pilbara	17,804,164	17,794,651	~99.9	Least Concern	6.3
Beard veg assoc. – State					
173	1,753,116	1,753,116	~100	Least Concern	7.5
Beard veg assoc. – Bioregion					
173	1,752,533	1,752,533	~100	Least Concern	7.5

* Shepherd et al. (2001) updated 2005

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd et al. (2001) updated 2005
GIS Database:
- IBRA Subregions
- Pre-European Vegetation

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

Comments Proposal is at variance to this Principle

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). A few minor ephemeral drainage lines run through this area. The drainage system flows through a series of major tributaries to the Oakover River (MBS Environmental, 2008). These drainage lines are dry for most of the year, only flowing briefly immediately following significant rainfall (MBS Environmental, 2008).

Approximately 2.5 hectares of the vegetation community 1 (along ephemeral drainage lines) will potentially be affected by the proposal. This equates to less than 0.01% of the mapped extent of this community (MBS Environmental, 2008). The vegetation along these drainage lines is reported as being typically sparse and well represented in similar situations throughout the tenements (MBS Environmental, 2008).

Dewatering of the proposed expanded open pit is required, with water discharged to the local creek system (MBS Environmental, 2008). There is an extensive history of dewatering to local creeks at Woodie Woodie and monitoring of these activities has not identified any long-term impacts (MBS Environmental, 2008).

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.

Based on the above, the proposed clearing is at variance to this Principle. However, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland due to the small scale of clearing of

vegetation types associated with watercourses.

Methodology MBS Environmental (2008)
GIS Database:
- Linear Hydrography
- ANCA, Wetlands
- Clearing Regulations - Environmentally Sensitive Areas
- Geodata, Lakes
- Rivers

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

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

The application area is broadly mapped as falling within the Coonigmah Land System (GIS Database).

The Coonigmah Land System consists of plateau surfaces, low hills with steep slopes and undulating uplands supporting hard spinifex grasslands. This land system has a low risk of erosion, and the vegetation on this land system is generally not prone to degradation (Van Vreeswyk et al., 2004).

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

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

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

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

The nearest DEC managed land is the Rudall River National Park, located approximately 90km south-east of the application area (GIS Database). The nearest area of conservation significance is Carawine Gorge approximately 15 kilometres north-west of the application area (GIS Database).

The proposed clearing is unlikely to have any direct impacts on Carawine Gorge, however, the planned increase in dewatering flows as a result of the pit expansions, may impact the environmental values of the site (Kendrick and McKenzie, 2001). Impacts resulting from mining activities are monitored under provisions of an EP licence granted to Pilbara Manganese.

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

Methodology Kendrick and McKenzie (2001)
GIS Database:
- Natmap 250

(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 is for the extension of the existing Big Mack Pit and construction of associated infrastructure (MBS Environmental, 2008). The application area is adjacent to the existing Big Mack pit and has suffered previous disturbance from exploration and mining activities (MBS Environmental, 2008).

The Oakover River is located approximately 7km west from the boundary of the application area at the nearest point (GIS Database). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database; MBS Environmental, 2008). A few minor ephemeral drainage lines run through the application area (GIS Database). These drainage lines only flow briefly immediately following significant rainfall (MBS Environmental, 2008). The application area is located in an arid region, with an average annual rainfall of approximately 327mm falling mainly during the summer months, and an average annual evaporation rate of approximately 3,800mm (MBS Environmental, 2008), hence the presence of surface water resulting from significant rain events is relatively short-lived.

The groundwater and surface water quality of the Woodie Woodie region is well documented, with over ten years of monitoring data (MBS Environmental, 2008). The natural water table is more than 20 metres below ground level. Groundwater recharge is by rainwater infiltration through the overlying unsaturated rocks and sediments (MBS Environmental, 2008). Recharge has been estimated using a combination of methods to be about 15% of annual rainfall (MBS Environmental, 2008). The quality of groundwater (fresh to brackish) is indicative of the basin receiving rapid recharge from infiltrating rainwater (MBS Environmental, 2008). The proposed clearing of the native vegetation is unlikely to have any significant impact on surface water flows or ground water level or quality.

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

Methodology MBS Environmental (2008)
GIS Databases:
- Groundwater provinces
- Hydrography, linear
- Hydrographic Catchments - Catchments

(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

There are no permanent watercourses within the application area. A few minor ephemeral drainage lines run through the application area. These drainage lines are dry for most of the year, only flowing briefly immediately following significant rainfall (MBS Environmental, 2008).

The application area drains into the Oakover River catchment area (GIS Database). Surface runoff occurs only during the wet season (November to March) following significant rainfall (MBS Environmental, 2008). However, the relatively small area to be cleared (44 hectares) in relation to the size of the catchment area (approximately 2,001,756 ha) (GIS Database) is unlikely to cause or exacerbate the incidence or intensity of flooding.

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

Methodology MBS Environmental (2008)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There is one native title claim (WC99-088) over the area under application. This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However the mining tenements M45/430 and M45/431 have 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 the clearing permit is not a future act under the *Native Title Act 1993*.

There is one Aboriginal Site of Significance (Site ID: 6329) within the application area (GIS Database). An ethnographic survey was commissioned by Pilbara Manganese Pty Ltd in 2001 through the Pilbara Native Title Service and the proponent agrees to the recommendation of a 250 metre buffer zone around the site (MBS Environmental, 2008). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks permit, or any other licences or approvals are required for the proposed works.

Methodology MBS Environmental (2008)
GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

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

Should the permit be granted, it is recommended that conditions be imposed on the permit for the purposes of progressive rehabilitation, record keeping, weed management and permit reporting.

5. References

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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.
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.