



1. Application details

1.1. Permit application details

Permit application No.: 717/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Hamersley Iron Pty Ltd

1.3. Property details

Property: ML274SA (AML 70/274)
Local Government Area: Shire Of East Pilbara
Colloquial name: Yandicoogina Iron Ore Mine

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
87.3		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
Beard Vegetation Association 82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i> , of which there is approximately 100% remaining and 9.1% in reserves (Shepherd et al., 2001).	The vegetation to be cleared is hummock grasslands with scattered shrubs, on stony undulating plains and low hills. The vegetation type is widespread in the region. No Rare or Priority flora were found within the application area (Hamersley Iron, 2005). The application area is within the Marillana Pastoral Lease, and the vegetation has been substantially disturbed by grazing.	Very Good: Vegetation structure altered; obvious signs of disturbance (Kelghery 1994)	The proposed clearing is for two subsoil/topsoil stockpiles at the Yandicoogina Iron Ore mine. The areas proposed to clear are immediately adjacent to existing mine roads.

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 Marillana Pastoral Lease, and immediately adjacent to an operational minesite, and mine roads (GIS Database; Hamersley Iron, 2005).

The vegetation type within the application area is widespread in the region (GIS Database). The area has a long history of disturbance from grazing (GIS Database; Hamersley Iron, 2005), and the area proposed to clear is unlikely to be of higher biodiversity than surrounding areas.

The proposed clearing is unlikely to have a significant impact on the level of biological diversity in the region.

Methodology GIS Databases:
- Pre-European Vegetation - DA 01/01.
- Pastoral Leases - DOLA 10/01.
Hamersley Iron (2005).

(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

Due to the extensive existing disturbance in the local area, the proposed clearing is unlikely to have a significant impact on fauna habitat in the region. Two access tracks pass through the western application area and both application areas are immediately adjacent to existing mine roads (GIS Database; Hamersley Iron, 2005).

Two mounds of the Western Pebble-Mound Mouse *Pseudomys chapmani* (P4) were found within the application area (Hamersley Iron, 2005). However no specific information on the occupancy of these mounds was provided to determine the presence of active Pebble Mound Mouse populations within the application area and thus the likely impact of this proposal on the conservation of this species (CALM, 2006).

Biota (2004) report that the Western Pebble-Mound Mouse is relatively widespread in the Pilbara and is well represented in areas outside the minesite. However, the proponent is advised to continue ongoing monitoring of the Western Pebble-Mound Mouse in consultation with CALM to determine appropriate procedures for the adequate protection of this significant species (CALM, 2006).

Four other fauna species of conservation significance are considered likely to occur in the area (Biota, 2004). These are the Australian Bustard, *Ardeotis australis* (P4); Bush Stonecurlew, *Burhinus grallarius* (P4); Peregrine Falcon, *Falco peregrinus*; and the Pilbara Olive Python, *Morelia olivacea barroni* (VU). The Pilbara Olive Python is most likely to occur along Marillana Creek and associated areas (Biota, 2004). Marillana Creek is approximately 1.2km to the south/southwest of the western application area (at its nearest point) (GIS Database). The three bird species are all highly mobile and as such are unlikely to be affected by the proposed clearing.

Methodology Biota (2004).
CALM Advice (2006).
GIS Databases:
- Rivers 250K - GA.
- Pre-European Vegetation - DA 01/01.
Hamersley Iron (2005).

(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

CALM databases show no records of any populations of Declared Rare Flora (DRF) or Priority flora within the vicinity of the area applied to clear (GIS Database). The nearest known population of DRF is *Lepidium catapycnon* (R), approximately 3.8km southwest of the application area (GIS Database).

Hamersley Iron conducted a flora survey over the application area in May 2005. The survey recorded a total of 80 plant species, however no Rare or Priority Flora were found (Hamersley Iron, 2005). Three populations of the perennial grass formerly known as *Eriachne sp Hamersley Range hilltops* (formerly Priority 3) were located in the eastern application area. However according to the CALM Florabase database (WA Herbarium, 2005) this taxon has now been incorporated into species *Eriachne lanata*, which is listed as 'not threatened'.

The proposed clearing is not likely to impact on any rare or priority flora.

Methodology GIS Database - Declared Rare and Priority Flora List - CALM 01/07/05.
Hamersley Iron (2005).
WA Herbarium (2005).

(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 within a 10km radius of the areas proposed to clear (GIS Database).

Methodology GIS Database - Threatened Ecological Communities - CALM 12/04/05.

(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 and the Shire of East Pilbara. Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion, although no specific information is available for the Shire of East Pilbara. The vegetation in the application area is recorded

as Beard Vegetation Association 82: hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database), of which there is approximately 100% remaining, and 9.1% in reserves (Shepherd et al., 2001).

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion - Pilbara Shire of East Pilbara	17,944,694*	17,944,694*	100%	Least concern	
	No information available				
Beard vegetation association - 82	2,920,910	2,920,910	~100%	Least concern	9.1%

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

The area proposed to clear does not represent a significant remnant of native vegetation.

Methodology Dept of Natural Resources and Environment (2002).
GIS Database - Pre-European Vegetation - DA 01/01.
Shepherd et al. (2001).

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

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

There are no permanent watercourses or wetlands within the areas applied to clear. One minor seasonal creekline passes through the northern edge of the western application area. Two minor seasonal creeklines pass through the eastern application area: one passing through the middle of the area, and the other one running along the eastern boundary (GIS Database).

The proposed clearing to establish two subsoil/topsoil stockpiles is unlikely to have any significant impact on any watercourse or wetland.

Methodology GIS Databases:
- Hydrography, Linear - DOE 01/02/04.
- Lakes, 1M - GA 01/06/00.
- Rivers 250K - GA.

(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**

There are no recorded acid sulphate soils in the area and the clearing is unlikely to result in an increased risk of salinity (GIS Database).

The application area is located on the stony lower slopes and plains of the Boolgeeda Land System, and the majority of the area is relatively flat (DAWA, 2005; GIS Database). The soils of this land unit are predominantly stony red loams and earth soils, and are not particularly prone to erosion (DAWA, 2005). The proposed clearing is unlikely to cause appreciable land degradation (DAWA, 2005).

Methodology DAWA Advice (2005).
GIS Databases:
- Acid Sulphate soil risk map, SCP - DOE 4/1/04.
- Salinity Risk LM 25m - DOLA 00.
- Topographic Contours, Statewide - DOLA 12/9/02.

(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 at variance to this Principle**

There are no CALM reserves in the vicinity of the area applied to clear. The nearest CALM managed land is the Karijini National Park which is located approximately 56km to the northwest of the application area (GIS Database).

Methodology GIS Database - CALM Managed Lands and Waters - CALM 1/07/05.

(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

There are no permanent watercourses or waterbodies within the vicinity of the application area (GIS Database), and the proposed clearing is not expected to impact on groundwater levels.

The proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.

Methodology GIS Databases:

- Lakes, 1M - GA 01/06/00.
- Rivers 250K - GA.

(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 application areas are not associated with any permanent watercourse (GIS Database). The clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases:

- Hydrography, Linear - DOE 1/02/04.

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

Comments

There are two Native Title Claims (WC96/061, WC98/062) over the area under application (GIS Database). These claims have been registered with the National Native Title Tribunal on behalf of the Innawonga Bunjima & Niapaili, and the Martu Idja Banyjima claimant groups. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no Aboriginal sites of significance within the areas applied to clear, however there are several sites located within close proximity of the application areas (GIS Database). The nearest of these is the Yandi 41 site (ID 15193), which is immediately adjacent to the southern edge of the western application area. 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.

Hammersley Iron's Yandicoogina Iron Ore Mine has a current operating licence L292/97 granted in accordance with the *Environmental Protection Act 1986*. The proposed clearing is not at variance to this licence, and no amendment to the licence will be required for the proposed subsoil/topsoil stockpiles.

Hammersley Iron's Yandicoogina Iron Ore Mine has a current groundwater licence GWL107422 for the purpose of dewatering, dust suppression, earthwork and construction and mineral ore processing, granted in accordance with the *Rights in Water and Irrigation Act 1914*. The proponent has advised that any water required for dust suppression at the proposed subsoil/topsoil stockpiles will be drawn from existing licensed water sources, and therefore a water licence under the *Rights in Water and Irrigation Act 1914* will not be required for the proposed subsoil/topsoil stockpiles (DoE, 2005).

Methodology DoE Water Allocation/Licence Advice (2005).

GIS Databases:

- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	87.3	Grant	Recommend that the application be granted as it is not at variance to any of the Clearing Principles.

5 References

- Biota (2004) Yandi Expansion Desktop Fauna Assessment and Targeted Invertebrate Survey. Biota Environmental Sciences, Western Australia.
- CALM (2006) Land clearing proposal advice. Advice to Program Manager, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Conservation and Land Management, Western Australia.

- DAWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia.
- 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.
- DoE (2005) Water Allocation/Licence Advice. Department of Environment, Western Australia.
- Hamersley Iron (2005) Application for a Clearing Area Permit: Yandicoogina Iron Ore Mine, Subsoil/Topsoil Stockpiles. Hamersley Iron Pty Ltd, Western Australia.
- Keighery, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, 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.
- Western Australian Herbarium (1998-2005) FloraBase - The Western Australian Flora. Department of Conservation and Land Management, Western Australia.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAWA	Department of Agriculture, Western Australia.
DA	Department of Agriculture, Western Australia.
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.
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity 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.