



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3557/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Hamersley Iron Pty Ltd

1.3. Property details

Property: Iron Ore (Hamersley Range) Agreement Act 1963, Mineral Lease 246SA (AML 70/246)
Local Government Area: Shire of Ashburton
Colloquial name: Paraburdoo Mine Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 22 December 2011

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 at a scale of 1:250,000 for the whole of Western Australia. Three Beard Vegetation Associations are located within the application area (Shepherd, 2009):

- **Beard Vegetation Association 82:** hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*;
- **Beard Vegetation Association 181:** shrublands; mulga and snakewood scrub; and
- **Beard Vegetation Association 567:** hummock grasslands, shrub steppe; mulga and kanji over soft spinifex and *Triodia basedowii*.

Rio Tinto conducted a flora and vegetation survey of the application area in March and May 2009. The survey was conducted by traversing the area on foot (Rio Tinto, 2009). The survey identified the following 21 vegetation associations within the application area:

Hilltops

Vegetation Unit 1

Grevillea berryana, *Acacia pruinocarpa* high shrubland over *Senna glutinosa* subsp. *chatelainiana*, *Senna artemisioides* subsp. *olygophylla*, *Grevillea berryana* shrubland over *Eremophila cuneifolia*, *Eremophila jucunda* low open shrubland over *Triodia wiseana* open hummock grassland.

Hillslopes

Vegetation Unit 2

Acacia pruinocarpa, *Acacia aneura* var. *pilbarana*, *Grevillea berryana* scattered tall shrubs over *Eremophila cuneifolia*, *Eremophila jucunda*, *Eremophila cryptothrix*, mixed *Acacia* low open shrubland over *Sclerolaena costata* scattered herbs over *Triodia epactia* open hummock grassland.

Vegetation Unit 3

Acacia pruinocarpa, *Corymbia ferritcola*, *Grevillea berryana* low open trees over *Eremophila latrobei* subsp. *filiformis*, *Grevillea berryana*, *Senna glutinosa* subsp. *glutinosa* open shrubs over *Eremophila jucunda* low shrubs over *Triodia epactia* open hummock grassland.

Vegetation Unit 4:

Acacia aneura var. *pilbarana*, *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia pruinocarpa*, *Senna glutinosa* subsp. *glutinosa*, *Dodonaea pachyneura* open shrubland over *Eremophila cuneifolia*, *Eremophila jucunda*, *Ptilotus incanus* low shrubland.

Vegetation Unit 5:

Acacia aneura var. *pilbarana*, *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia pruinocarpa*, *Senna glutinosa* subsp. *glutinosa*, *Dodonaea pachyneura* open shrubland over *Eremophila cuneifolia*, *Eremophila jucunda*, *Ptilotus incanus* low shrubland over *Triodia epactia* hummock grassland.

Vegetation Unit 6:

Acacia pruinocarpa, *Acacia pyrifolia* (tall wispy form) open scrub over mixed *Acacia* spp. shrubland over *Ptilotus obovatus*, *Eremophila cuneifolia*, *Indigofera monophylla*, *Maireana georgei* scattered low shrubs over *Triodia epactia* hummock grassland.

Vegetation Unit 7:

Acacia pruinocarpa scattered tall shrubs over mixed *Acacia* and *Senna* open shrubland over *Eremophila cuneifolia*, *Senna artemisioides* subsp. *olygophylla* low open shrubland over *Triodia epactia* hummock grassland.

Vegetation Unit 8:

Acacia hamersleyensis, *Acacia citrinoviridis* very open tall shrubs over *Senna glutinosa* subsp. *glutinosa*, *Dodonaea coriacea*, *Scaevola acacioides* scattered shrubs over *Ptilotus incanus* scattered low shrubs over *Triodia wiseana* scattered hummock grassland over *Aerva javanica* very open herbland.

Vegetation Unit 9:

Acacia hamersleyensis, *Acacia aneura* var. *pilbarana* open low trees over *Eremophila latrobei*, *Eremophila jucunda* shrubs over *Tribulus suberosus*, *Ptilotus clementii*, *Eremophila jucunda* low shrubs over *Triodia epactia* hummock grassland.

Vegetation Unit 10:

Acacia aneura var. *pilbarana* low woodland over *Acacia rhodophloia*, *Acacia tetragonophylla*, *Senna glutinosa* subsp. *glutinosa* shrubland over *Eremophila cuneifolia*, *Senna artemisioides* subsp. *artemisioides*, *Ptilotus incanus* low shrubland over *Triodia epactia* hummock grassland.

Vegetation Unit 11:

Eucalyptus leucophloia, *Acacia aneura* var. *pilbarana* open low trees over *Grevillea berryana*, *Acacia hamersleyensis* open tall shrubs over *Senna glutinosa* subsp. *glutinosa*, *Eremophila jucunda*, *Dodonaea pachyneura* shrubs over *Triodia epactia* open hummock grassland.

Vegetation Unit 12:

Acacia hamersleyensis, *Acacia aneura* var. *pilbarana*, *Grevillea berryana* scattered low trees over *Acacia tetragonophylla*, *Senna artemisioides* subsp. *olygophylla*, *Eremophila cuneifolia* scattered shrubland over *Ptilotus incanus* low open shrubland over *Triodia longiceps* open hummock grassland.

Plains**Vegetation Unit 13:**

Acacia aneura var. *pilbarana* low open woodland over *Acacia tetragonophylla*, *Senna artemisioides* subsp. *artemisioides*, *Senna glutinosa* subsp. *leurssenii* shrubland over *Triodia epactia* scattered hummock grassland over *Eriachne pulchella* scattered tussock grassland.

Creepline**Vegetation Unit 14:**

Eucalyptus camaldulensis open woodland over *Acacia citrinoviridis*, *Melaleuca lasiandra*, *Acacia ampliceps* scattered tall shrubs over *Cenchrus ciliaris* tussock grassland over *Aerva javanica* open herbs.

Vegetation Unit 15:

Eucalyptus camaldulensis woodland over *Melaleuca gomerata*, *Acacia coriacea*, *Acacia citrinoviridis* low open forest over *Acacia ampliceps* high open shrubland over *Cenchrus ciliaris*, *Chloris pectinata*, *Cynodon dactylon* tussock grassland over *Cyperus vaginatus* very open sedges over *Sisymbrium orientale*, *Argemone ochroleuca* very open herbs.

Vegetation Unit 16:

Eucalyptus camaldulensis open forest over *Melaleuca glomerata*, *Acacia coriacea* low woodland over *Acacia ampliceps* high shrubland over *Cynodon dactylon*, *Cenchrus ciliaris* very open tussock grassland over *Typha domingensis*, *Cyperus vaginatus* open sedges. This vegetation unit occurred within northern section of the creek, in the main channel habitat.

Vegetation Unit 17:

Petalostylis labicheoides open scrub over *Aerva javanica*, *Salsola tragus* low open shrubland over *Cenchrus ciliaris* open tussock grassland.

Vegetation Unit 18:

Eucalyptus camaldulensis open woodland over *Acacia citrinoviridis*, *Acacia coriacea* low woodland over *Acacia sclerosperma*, *Acacia ampliceps*, *Petalostylis labicheoides* open scrub over *Aerva javanica*, *Corchorus crozophorifolius* low shrubland over *Cenchrus ciliaris* open tussock grassland.

Vegetation Unit 19:

Eucalyptus camaldulensis open forest over *Petalostylis labicheoides*, *Acacia ampliceps*, *Acacia citrinoviridis* open

scrub over *Cenchrus ciliaris*, *Cynodon dactylon* open tussock grassland.

Vegetation Unit 20:

Eucalyptus camaldulensis open woodland over *Melaleuca glomerata* low open woodland over *Petalostylis labicheoides*, *Acacia citrinoviridis*, *Acacia coriacea* high open shrubland over *Tephrosia rosea* low open shrubland over *Cenchrus ciliaris* very open tussock grassland over *Argemone ochroleuca* very open herbs.

Vegetation Unit 21:

Eucalyptus camaldulensis open woodland over *Melaleuca linophylla*, *Acacia ampliceps*, *Petalostylis labicheoides* open scrub over *Cenchrus ciliaris* very open tussock grassland over *Cyperus vaginatus* very open sedges.

Clearing Description

Hammersley Iron (2010) proposes to clear up to 155 hectares of native vegetation, within an area totalling approximately 279.6 hectares. The application area is located approximately 10 kilometres west of Paraburdoo (GIS Database).

The purpose of the proposed clearing is for waste dumps, extension of existing pits, access road and for a drilling program (Hammersley Iron, 2010). Vegetation will be cleared by bulldozer with the blade down and vegetation will be stockpiled for rehabilitation purposes (Hammersley Iron, 2010).

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);

To:

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

Comment

The vegetation condition rating is derived from information provided by Rio Tinto (2010).

Clearing permit CPS 3557/1 was granted on 15 April 2010, and is valid from 15 May 2010 to 31 July 2015. The clearing permit authorised the clearing of 70.5 hectares of native vegetation. An application for an amendment to clearing permit CPS 3557/1 was submitted by Hammersley Iron Pty Ltd on 18 October 2011. The proponent has requested to amend the boundary of the existing clearing permit and to increase the amount of clearing authorised from 70.5 hectares to 155 hectares. There were no additional environmental impacts as a result of this amendment.

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 may be at variance to this Principle

The application area is located within the Hammersley subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Hammersley subregion is described by CALM (2002) as being rich in *Acacia*, *Triodia*, *Ptilotus* and *Sida* species.

A flora and vegetation survey of the application area was conducted by Rio Tinto across seven days from 11 to 16 March and on 21 May 2009. Rio Tinto (2009) identified a total of 136 native and introduced flora species from 74 genera representing 38 families. Rio Tinto (2009) reports that this represents fairly low species richness for the Pilbara region and attributes this to the high proportion of disturbed land within the survey area. Furthermore, the rocky slopes and hilltop habitats are typically dry for most of the year and hence do not exhibit high flora species richness (Rio Tinto, 2009). The creekline is reported by Rio Tinto (2009) as being heavily disturbed from historical clearing activities towards the southern end, however, the northern section remains intact and demonstrates relatively high flora species richness. Rio Tinto (2009) states that the low diversity of habitat types, and on a broader scale land systems, represented within the survey area is also considered to contribute to low species richness.

Numerous weed species were identified within the application area (Rio Tinto, 2009). The presence of introduced weed species lowers the biodiversity value of the proposed clearing area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. The risk of spreading weed species can be mitigated by imposing a condition for the purpose of weed management.

A fauna survey of the application area was not conducted, however, the application area contains habitat types that may be important for fauna. These habitats include rocky breakaways and overhangs, creeklines supporting forest and woodland habitat and semi-permanent freshwater pools. This may indicate that the area could contain a relatively high diversity of fauna, however, the area also lies adjacent to active mining areas and open pits and has been disturbed from these activities.

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

Methodology

CALM (2002)
Rio Tinto (2009)
GIS Database
- IBRA WA (Regions - Subregions)

(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

Rio Tinto (2009) conducted a flora and vegetation survey of the application area that documented fauna habitats, in addition to a desktop search for conservation significant fauna that could occur within a 50 kilometre radius of the application area. Rio Tinto (2009) reported that the fauna habitats within the application area are dominated by rocky breakaways and overhangs, stony plains supporting mulga and eucalypt and *Acacia* forest and woodland within the creekline.

Rio Tinto (2009) states that the rocky breakaway and overhang habitat provides potential temporary shelter for macropod species and some reptiles. Some birds such as kites and falcons may also use the elevated position, however, Rio Tinto (2009) consider that the proximity to an active mine pit with large areas of ground devoid of vegetation would make it less ideal for permanent fauna populations.

Rio Tinto (2009) report that stony plain habitats, which form a very small proportion of the overall study area, may provide potential foraging and shelter opportunities for a variety of species moving through the landscape.

The creekline habitat supporting forest and woodland type habitat is restricted to the northern section of the application area (Rio Tinto, 2009). This habitat would provide opportunities for roosting and nesting with resources such as leaf litter cover, tree hollows and semi-permanent freshwater pools, and may provide foraging habitat for a variety of fauna species (Rio Tinto, 2009). This habitat may also provide refuge from fire due to the semi-permanency of the freshwater pools and provision of cover for movement through the landscape (Rio Tinto, 2009).

Based on habitat types and distribution the following fauna species of conservation significance have the greatest chance of occurring within the application area (Rio Tinto, 2009):

- Cattle Egret (*Ardea ibis*) – Marine and Migratory, *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* and Japan – Australia Migratory Bird Agreement (JAMBA);
- Great Egret (*Ardea alba*) – Marine and Migratory, *EPBC Act 1999* and JAMBA;
- Northern Quoll (*Dasyurus hallucatus*) – Schedule 1 (Fauna that is rare or likely to become extinct), *Wildlife Conservation (Specially Protected Fauna) Notice 2010* and Endangered, *EPBC Act 1999*;
- Peregrine Falcon (*Falco peregrinus*) – Schedule 4, *Wildlife Conservation (Specially Protected Fauna) Notice 2010*;
- Pilbara Olive Python (*Liasis olivaceus barroni*) – Schedule 1 (Fauna that is rare or likely to become extinct) *Wildlife Conservation (Specially Protected Fauna) Notice 2010* and Vulnerable *EPBC Act 1999*; and
- Rainbow Bee-eater (*Merops ornatus*) – Marine and Migratory, *EPBC Act 1999* and JAMBA.

The Cattle Egret, Great Egret and Rainbow Bee-eater are all mobile, migratory and dispersive species. Therefore, the proposed clearing is unlikely to have a significant impact upon these species.

The Northern Quoll is known to occur in a range of habitats including open forest, savannah woodlands and is most abundant in rocky environments (IUCN, 2008 as cited in Rio Tinto, 2009). This species may seek temporary shelter within the application area as it contains rock crevices, log and tree hollows favoured as shelter habitat (Van Dyck and Strahan, 2008 as cited in Rio Tinto, 2009).

The Peregrine Falcon is described as being a widespread but uncommon bird of prey that prefers to inhabit areas containing rocky ledges, cliffs, watercourses, open woodland and margins with cleared land (DEC, 2008 as cited by Rio Tinto, 2009). The application area contains suitable roosting and nesting habitat for this species (Rio Tinto, 2009).

The Pilbara Olive Python is known to typically shelter in logs, flood debris, caves, tree hollows and thick vegetation close to water and rock outcrops (Burbidge, 2004 as cited in Rio Tinto, 2009). Rio Tinto (2009) report that a small area of suitable habitat occurs within the application area within creekline habitat.

The vegetation units within the application area are reported by Rio Tinto (2009) as being widespread throughout the region and therefore, the above conservation significant fauna would not be restricted to the application area. The assessing officer conducted a site visit on 25 March 2010 and noted that the breakaway habitat, ridges and stony plains were quite well represented in the area and in areas outside of the application area. It was noted that part of the creekline habitat may be important habitat for fauna due to permanent waterholes and eucalypt trees. Impacts to creekline habitat can be managed by imposing a condition excluding the northern section of the creekline from clearing.

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

Methodology Rio Tinto (2009)

(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

A flora and vegetation survey of the application area was conducted by Rio Tinto across seven days from 11 to 16 March and on 21 May 2009. This survey was conducted by traversing the application area on foot mapping vegetation communities and recording the locations of conservation significant flora, weeds and other flora of interest (Rio Tinto, 2009).

No Declared Rare Flora species were recorded within the application area during the flora and vegetation survey (Rio Tinto, 2009). One individual of a Priority three flora species was recorded from within the application area; *Goodenia* sp. East Pilbara (Rio Tinto, 2009).

The Western Australian Herbarium (2010) describes *Goodenia* sp. East Pilbara as an open, erect annual or biennial herb that prefers red-brown clay soil, calcrete pebbles, low undulating plain and swampy plains. The Western Australian Herbarium (2010) has numerous records of this species with some records showing populations of up to 5000 individual plants. Given this, the removal of one individual of *Goodenia* sp. East Pilbara is unlikely to impact on the conservation status of this species.

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

Methodology Rio Tinto (2009)
Western Australian Herbarium (2010)

(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 (TECs) or Priority Ecological Communities (PECs) within the area applied to clear (GIS Database). The nearest known TEC is located approximately 70 kilometres north of the application area (GIS Database).

Rio Tinto (2009) report that no TECs or PECs were identified within the application area during the flora and vegetation survey.

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

Methodology Rio Tinto (2009)
GIS Database
- Threatened Ecological Sites

(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 (GIS Database). Shepherd (2009) reports that approximately 100% of the pre-European vegetation still exists within this bioregion (see table below). The vegetation within the application area is recorded as the following Beard Vegetation Associations (Shepherd, 2009):

- **Beard Vegetation Association 82:** hummock grasslands, low tree steppe, snappy gum over *Triodia wiseana*;
- **Beard Vegetation Association 181:** shrublands; mulga and snakewood scrub;
- **Beard Vegetation Association 567:** hummock grasslands, shrub steppe; mulga and kanji over soft spinifex and *Triodia basedowii*.

According to Shepherd (2009) approximately 100% of these vegetation associations remain within the bioregion (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**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,193	17,785,001	~99.89	Least Concern	6.32
Beard vegetation associations - State					
82	2,565,901	2,565,901	~100	Least Concern	10.24
181	1,697,291	1,697,291	~100	Least Concern	2.39
567	777,507	777,507	~100	Least Concern	22.33
Beard vegetation associations - Bioregion					
82	2,563,583	2,563,583	~100	Least Concern	10.25
181	65,090	65,090	~100	Least Concern	4.87
567	776,824	776,824	~100	Least Concern	22.35

* Shepherd (2009)

** 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 (2009)
GIS Database
- IBRA WA (Regions - Subregions)

(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

According to available databases there are no permanent watercourses within the application area, however, there are several minor ephemeral watercourses (GIS Database).

One of the watercourses within the application area is reported by Rio Tinto (2009) as having semi-permanent pools and eucalypt forest. Rio Tinto (2009) reports that the vegetation within the section of creek included in the proposal is in a good to poor condition with the northern section being in a good condition and the southern section being in generally poor condition due to the impacts of clearing of topsoil, grading and drilling activities. This was confirmed during a site visit conducted by an assessing officer on 25 March 2010. Impacts to creekline habitat can be managed by imposing a condition excluding the northern section of the creekline from clearing.

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

Methodology Rio Tinto (2009)
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 is not likely to be at variance to this Principle

The application area has been mapped as occurring within the Newman and River land systems (GIS Database).

Van Vreeswyk et al. (2004) reports that the Newman land system is not susceptible to erosion. Therefore, the clearing of native vegetation is unlikely to cause appreciable land degradation within this land system.

The River land system is described by Van Vreeswyk et al. (2004) as consisting of active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands. This system is largely stabilised by buffel grass and spinifex and accelerated erosion is uncommon, however, susceptibility to

erosion is high or very high if vegetative cover is removed (Van Vreeswyk et al., 2004).

The River land system is primarily located around the main watercourse that runs through the application area (GIS Database). Aerial imagery indicates that the southern section of this watercourse has been highly modified and the vegetation quite sparse which was confirmed during a site visit by an assessing officer on 25 March 2010. The northern section of this watercourse is quite heavily vegetated with semi-permanent pools, however, Rio Tinto (2009) have agreed to exclude this area from clearing. Given this, the removal of vegetation is unlikely to significantly increase soil erosion in the River land system.

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

Methodology Rio Tinto (2009)
Van Vreeswyk et al. (2004)
GIS Database
- Hydrography, linear
- Paraburdoo 50cm Orthomosaic – Landgate 2004
- 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 proposed clearing is not located within any conservation areas (GIS Database). The nearest Department of Environment and Conservation managed land is Karijini National Park located approximately 40 kilometres east of the application area (GIS Database).

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

There is a creek within the application area that contains semi permanent pools and eucalypt forest vegetation (Rio Tinto, 2009; GIS Database). Rio Tinto (2009) reports that the vegetation within the section of creek included in the proposal is in a good to poor condition with the northern section being in a good condition and the southern section being in generally poor condition due to the impacts of clearing of topsoil, grading and drilling activities. Rio Tinto (2009) state that the proposed works will occur within the disturbed section of creek and no loss of vegetation is expected. Given this it is unlikely that the proposed clearing will cause the further deterioration of surface water quality.

The application area is highly degraded and incorporates part of an active minesite. Furthermore, the vegetation is very sparse in some areas. Given this, the clearing of 155 hectares of native vegetation within an already degraded area, is unlikely to have a further impact on groundwater levels or quality.

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

Methodology Rio Tinto (2009)
GIS Database
- Hydrography, linear

(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 area is located in a semi-arid region where the average annual evaporation rate greatly exceeds the average annual rainfall (Hamersley Iron, 2010). Natural local flooding occurs seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity (Rio Tinto, 2009).

Rio Tinto (2009) states that the proposed drilling program will not alter the morphology of the riparian zone and the surface hydrology of the creek during flood events would not be expected to change. Therefore, the proposed clearing of 155 hectares of native vegetation is unlikely to increase the incidence or intensity of flooding in the region.

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

Methodology Hamersley Iron (2010)
Rio Tinto (2009)

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

Comments

There are three Native Title claims (WC96/061, WC97/043 and WC98/069) over the area under application (GIS Database). These claims have been registered with the Native Title Tribunal on behalf of the claimant groups, however, the tenement 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 two Aboriginal Sites of Significance (site ID's: 11215 and 17435) 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 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 Sustainability, Environment, Water, Population and Communities (SEWPAC) for environmental impact assessment under the EPBC Act. The proponent is advised to contact the SEWPAC for further information regarding notification and referral responsibilities under the EPBC Act.

Clearing permit CPS 3557/1 was granted on 15 April 2010, and is valid from 15 May 2010 to 31 July 2015. The clearing permit authorised the clearing of 70.5 hectares of native vegetation. An application for an amendment to clearing permit CPS 3557/1 was submitted by Hamersley Iron Pty Ltd on 18 October 2011. The proponent has requested to amend the boundary of the existing clearing permit and to increase the amount of clearing authorised from 70.5 hectares to 155 hectares. There were no additional environmental impacts as a result of this amendment.

Methodology GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, 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.
- Hamersley Iron (2010) Clearing Permit Application Supporting Documentation, January 2010.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Rio Tinto (2009) Flora and Vegetation Survey of the Paraburdoo Mine Development and Supporting Documentation for a Native Vegetation Clearing Permit Application. Unpublished report. Rio Tinto Iron Ore, Western Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P. and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.
- Western Australian Herbarium (2010) Florabase - The Western Australian Flora. Department of Environment and Conservation. Available online from: <http://florabase.dec.wa.gov.au>. Accessed 26 February 2010.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia

DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	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.