



1. Application details

1.1. Permit application details

Permit application No.: 2869/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Robe River Pty Ltd

1.3. Property details

Property: Iron Ore (Cleveland-Cliffs) Agreement Act 1964, Special Lease for Mining Operations 3116/4622, Document I 123390 L, Lots 52, 61, 63, 106 on Deposited Plans 54397; Iron Ore (Cleveland-Cliffs) Agreement Act 1964, Special Lease for Mining Operations 3116/4621, Document I 123393 L, Lot 53 on Deposited Plan 56850, Lot 62 on Deposited Plan 57725, Lot 64 on Deposited Plan 57724

Local Government Area: Shire of Ashburton
Colloquial name: Deepdale Gap Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4		Mechanical Removal	Geotechnical investigations and borrow pit construction

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 1:250,000 scale for the whole of Western Australia. Two Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd et al., 2001).

173: Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia wiseana* on basalt;

587: Mosaic: Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana*
Hummock grasslands, shrub-steppe; kanji over *Triodia pungens*

The application area and surrounding vegetation was flora surveyed by Pilbara Flora staff between the 1 and 4 April 2008, 4 and 5 May 2008 and 22 and 25 July 2008 (Pilbara Flora, 2008). The following vegetation types were identified within the application area.

BGDG - Buffel Grass grassland on disturbed ground: Open *Cenchrus ciliaris* grassland over *Aerva javanica*, *Leptopus decaisnei* var. *decaisnei* and *Triodia wiseana* with occasional *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis* and *Acacia pyrifolia*.

LOWSHG - Low open woodland over Spinifex hummock grasslands: Low open woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over *Acacia bivenosa* and *Acacia inaequilatera* over *Triodia wiseana*.

LOWSHG(d) - Low open woodland over Spinifex hummock grasslands (disturbed): Low open woodland of *Eucalyptus leucophloia* subsp. *leucophloia* and *Corymbia hamersleyana* over *Acacia bivenosa* and *Acacia inaequilatera* over *Triodia wiseana*.

MASDL - Mixed Acacia shrubland in drainage lines: Mixed *Acacia bivenosa*, *A. coleii* var. *coleii*, *A. inaequilatera* and *A. ancistrocarpa* shrubland over *Cenchrus ciliaris*, *Chrysopogon fallax* and *Triodia wiseana*.

MASDL(d) - Mixed Acacia shrubland in drainage lines (disturbed): Mixed *Acacia bivenosa*, *A. coleii* var. *coleii*, *A. inaequilatera* and *A. ancistrocarpa* shrubland over *Cenchrus ciliaris*, *Chrysopogon fallax* and *Triodia wiseana*.

SHGDG - Spinifex hummock grassland on disturbed ground: Open grassland of *Triodia wiseana* with emergent *Acacia bivenosa* and *Acacia ancistrocarpa* over *Ptilotus exaltatus* var. *exaltatus*, *Eriachne pulchella* subsp. *dominii*, *Senna notabilis* and *Sporobolus australasicus*.

SHGSH - Spinifex hummock grasslands on stony hillsides: Grassland of *Triodia wiseana* with occasional dense patches of *Cenchrus ciliaris* and emergent *Acacia bivenosa*, *A. inaequilatera*, *A. pyrifolia* var. *pyrifolia* and *A. pyrifolia* var. *morrisonii* over *Cleome viscosa*, *Crotalaria medicaginea* var. *neglecta*, *Phyllanthus maderaspatensis*, *Ptilotus auriculifolius* and *Trichodesma zeylanicum*.

Clearing Description	Robe River Pty Ltd has applied to clear up to 4 hectares of native vegetation for the purposes of geotech investigations and borrow pits (Pilbara Flora, 2008). Robe River Pty Ltd intends to clear using bulldozers with blade down and the topsoil and vegetation is to be stockpiled for use in rehabilitation.
Vegetation Condition	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994) To Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).
Comment	The vegetation condition was derived from a vegetation survey conducted by Pilbara Flora (Pilbara Flora, 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	<p>Proposal is not likely to be at variance to this Principle</p> <p>The application area occurs within the Chichester (PIL1) sub-region of the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This sub-region is characterised by plains supporting shrub steppe of <i>Acacia inaequilatera</i> over <i>Triodia wiseana</i> hummock grasslands, while <i>Eucalyptus leucophloia</i> tree steppes occur on ranges (CALM, 2002). The vegetation described within the application area is typical of the bioregion (Pilbara Flora, 2008).</p> <p>A vegetation survey of the application area and surrounding vegetation identified 200 native flora species belonging to 101 genera from 37 families (Pilbara Flora, 2008). The dominant family recorded during the vegetation survey was Poaceae, with 38 taxa from 25 genera recorded. This was expected as the major land system found within the application area is characterised by grasslands. Other dominant families included Papilionaceae, Mimosaceae, Amaranthaceae, Malvaceae and Euphorbiaceae (Pilbara Flora, 2008). The floristic diversity recorded is consistent with other similar sized vegetation surveys undertaken in the Pilbara region and is considered to be representative of typical central Pilbara biodiversity (Pilbara Flora, 2008).</p> <p>Eight alien weed species were recorded within the vegetation survey area (Pilbara Flora, 2008). These were; Kapok Bush (<i>Aerva javanica</i>), Mexican Poppy (<i>Argemone ochroleuca</i>), Buffel Grass (<i>Cenchrus ciliaris</i>), Birdwood Grass (<i>Cenchrus setigera</i>), Colocynthis (<i>Citrullus colocynthis</i>), Couch (<i>Cynodon dactylon</i>), Pyramid Flower (<i>Melochia pyramidata</i>), Yellow Wood Sorrel (<i>Oxalis corniculata</i>) and Spiked Malvastrum (<i>Malvastrum americanum</i>) (Pilbara Flora, 2008). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This in turn can lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. These species are not listed as 'Declared Plant' species under the <i>Agriculture and Related Resources Protection Act 1976</i> by the Department of Agriculture and Food (DAFWA).</p> <p>Should the permit be granted, it is recommended that appropriate conditions be imposed on the permit for the purpose of weed management.</p> <p>An area search of the Western Australian Museum's Faunabase conducted by the assessing officer suggests that the application area is diverse in reptile species, particularly Skinks (28) (Western Australian Museum, 2009). The database search found 88 reptile species from 9 families as potentially occurring within the application area, or within a 50 kilometre radius of the application area.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
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Methodology	CALM (2002) Pilbara Flora (2008) Western Australian Museum (2009) GIS Database - Interim Biogeographic Regionalisation of Australia
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(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	<p>Proposal may be at variance to this Principle</p> <p>The assessing officer has conducted a search of the Western Australian Museum's online fauna database between the co-ordinates 116.14°E, 22.15°S and 117.43°E, 20.83°S, representing a 50 kilometre radius around the application area.</p> <p>This search identified 7 Amphibian, 26 Fish, 35 Mammalian, 80 Avian and 88 Reptilian species that may occur within the application area (Western Australian Museum, 2009). Of these, the following species of conservation significance have previously been recorded within the search area: Fortescue Grunter (<i>Leiopotherapon aheneus</i>), Northern Quoll (<i>Dasyurus hallucatus</i>), Dugong (<i>Dugong dugon</i>), Orange Leaf-nosed Bat (<i>Rhinonicteris aurantius</i>), Ghost Bat (<i>Macroderma gigas</i>), Lakeland Downs Mouse (<i>Leggadina lakedownensis</i>), Western Pebble-mound Mouse (<i>Pseudomys chapmani</i>), Pilbara Olive Python (<i>Liasis olivaceus barroni</i>), <i>Lerista</i></p>
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quadrivincula, Lined Soil-crevice Skink (*Notoscincus butleri*), *Ramphotyphlops ganei*, Flock Bronzewing (*Phaps histrionica*), Australian Bustard (*Ardeotis australis*), Rainbow Bee-eater (*Merops ornatus*) and the Star Finch (*Neochmia ruficauda clarescens*).

Pilbara Flora (2008) conducted a desktop search of the Department of Environment and Conservation (DEC) threatened fauna database to identify species of conservation significance that had been recorded within the search co-ordinates 20°31'S to 21°45'S and 116°14'E to 117°19'E. In addition to those species listed above, the following fauna species of conservation significance were identified through this database search: *Draculoides* Middle Robe, *Paradraculoides* Mesa K, Peregrine Falcon (*Falco peregrinus*), *Antipodogomphus hodgkini* dragonfly, *Nososticta pilbara* dragonfly, Bush Stonecurlew (*Burhinus grallarius*) and the Eastern Curlew (*Numenius madagascariensis*).

Based on habitat requirements, the following species are most likely to occur within the application area:

Middle Robe *Draculoides* and Mesa K *Paradraculoides* (Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) are short range endemic arachnid species. However, there is little information regarding the habitat requirements of these species. The assessing officer is unable to determine with any certainty whether the vegetation within the application area is significant habitat for these species. The vegetation types found within the application area may provide significant habitat for these species.

The Peregrine Falcon (Schedule 4 - Other specially protected fauna, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*) is a wide ranging species that has little habitat specificity apart from an affinity with cliffs, tall trees for nesting and water (Pizzey and Knight, 1997). The vegetation within the application area provides suitable habitat for this species, however given that the vegetation types are well represented throughout the bioregion, its preference for riverine and breakaway habitats within the Pilbara and the small area proposed to clear (4 hectares) in relation to the size of the sub-region (9,044, 560 hectares) it is unlikely that the application area contains significant habitat for this species.

Ramphotyphlops ganei, a species of blind snake (P1 - DEC Priority Fauna List) has been collected at opposite ends of the Pilbara uplands, hence the species may occur over a substantial geographic range (Aplin, 1998). The fact that it has not previously been collected from within the application area implies either a general scarcity or a very discontinuous distribution. Aplin (1998) suggests that the species is associated with the moist microhabitats which exist in many of the deeper, better shaded gorges throughout the region. Suitable habitat for this species occurs within the application area. Given the lack of information regarding the habitat preference and range of this species, it is possible that the vegetation within the application area may be significant habitat for this species.

Lerista quadrivincula (P1 - DEC Priority Fauna List) is known from a single specimen at the Maitland River on the arid coastal plain near Karratha (Wilson and Swan, 2003). This species has not been recorded again since its first sighting and as such its status and distribution remain uncertain. The assessing officer is unable to determine with any certainty whether the vegetation within the application area is significant habitat for this species. The vegetation types within the application area are well represented throughout the Pilbara region and no specimens were recorded during the fauna survey.

The Western Pebble-mound Mouse (P4 - DEC Priority Fauna List) occurs on skeletal soils containing an abundance of small pebbles, predominantly around foot-slopes as well as in calcrete habitats (Bamford Consulting Ecologists, 2004). The species builds its mounds on foothills and rocky slopes where the surface of the ground is carpeted with small rocks (Bamford Consulting Ecologists, 2004). They are described as constructing pebble mounds on slopes composed of stony soils, near sharply incised drainage lines (Start et al., 2000). Mounds are built in vegetation dominated by hard spinifex (*Triodia basedownii*) or *T. wiseana*. The undulating spinifex covered slopes that occur within the application area have a pebble mantle that appears to be suitable for pebble-mound construction, however no active mounds were recorded during the vegetation survey (Pilbara Flora, 2008).

The Australian Bustard (P4 - DEC Priority Fauna List) prefers tussock grassland, *Triodia* hummock grassland, grassy woodland and low shrub lands (Garnett and Crowley, 2000). This species has previously been recorded within the bioregion and so it is likely that the application area contains suitable habitat for this species. Given that the vegetation types are well represented throughout the bioregion and the small area proposed to clear (4 hectares) in relation to the size of the sub-region (9,044,560 hectares) it is unlikely that the application area contains significant habitat for this species.

The Flock Bronzewing (P4 - DEC Priority Fauna List) has suffered a significant contraction in its range and a decrease in reporting rate. Flock Bronzewings are mainly found in open Mitchell Grass (*Astrelba pectinata*) grasslands on black soil plains, but also frequent saltbush Atriplex, bluebush Maireana and *Triodia* hummock grasslands, grassy woodlands, recently burnt areas, roadsides and agricultural land, particularly favouring run-on areas. They nest on bare ground, in the shelter of low vegetation and are often associated with permanent water (DEWHA, 2008). The vegetation within the application area may be suitable habitat for this species. However given the large amounts of suitable habitat within the Pilbara region and the lack of riparian vegetation within the application area, it is not likely that the vegetation within the application area would be significant habitat for this species.

Based on the above the proposed clearing may be at variance to this Principle due to the possible presence of significant habitat for the Middle Robe *Draculoides* and Mesa K *Paradraculoides*.

Methodology Aplin (1998)
Bamford Consulting Ecologists (2004)
DEWHA (2008)
Garnett and Crowley (2000)
Pilbara Flora (2008)
Pizzey and Knight (1997)
Start et al. (2000)
Western Australian Museum (2009)
Wilson and Swan (2003)

(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

According to available databases, no Declared Rare Flora (DRF) species have been recorded within the application area. A total of 26 Priority flora species may occur within the application area (Pilbara Flora, 2008). Of the 26 Priority Flora species, four have been recorded by previous Rio Tinto surveys along the Deepdale to Cape Lambert Railway. These are;

P2 - *Ischaemum albobillosum*;

P3 - *Hibiscus brachysiphonius*;

P3 - *Rostellularia adscendens* var. *latifolia*; and

P4 - *Livistonia alfredii* (Pilbara Flora, 2008).

A flora survey was conducted over the application area by Pilbara Flora staff between the 1 and 4 April 2008, 4 and 5 May 2008 and 22 and 25 July 2008 (Pilbara Flora, 2008). The vegetation surveys followed a 12 month period with higher than average rainfall and were conducted during wet ground conditions while vegetation was green and in a growth stage (Pilbara Flora, 2008).

These surveys involved on foot traverses. Where linear communities existed (i.e. drainage lines) the creekbed was traversed for at least 50 metres in each direction, while for small communities the entire community was assessed (Pilbara Flora, 2008). Different vegetation groups encountered during the survey were described and the vegetation associations were examined for the presence or absence of any Declared Rare Flora and Priority Flora species (Pilbara Flora, 2008). As a result of this survey no DRF or Priority flora species were identified (Pilbara Flora, 2008).

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

Methodology Pilbara Flora (2008)
GIS Database
- Declared Rare and Priority Flora List

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

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

According to available databases, no Threatened Ecological Communities (TEC's) occur within the application area (GIS Database). The nearest TEC occurs approximately 34 kilometres south-east of the application area (Millstream Stygofauna Community). It is not expected that the proposed clearing will impact the conservation of this TEC.

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

Methodology 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 (see table below). The vegetation in the application area is recorded as Beard Vegetation Association 173: Hummock grasslands, shrub steppe; kanji over soft spinifex & *Triodia wiseana* on basalt; and 587: Mosaic: Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana* / Hummock

grasslands, shrub-steppe; kanji over *Triodia pungens* (GIS Database; Shepherd et al., 2001). According to Shepherd et al. (2001) approximately 100% of Beard Vegetation Association 173 and 587 remains within the Pilbara Bioregion.

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	17,804,164	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
587	585,724	585,724	~100%	Least Concern	~21.0
Beard veg assoc. – Bioregion					
173	1,753,533	1,753,533	~100%	Least Concern	~7.5
587	585,724	585,724	~100%	Least Concern	~21.0

* Shepherd et al. (2001)

** 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)
GIS Database
- Pre-European Vegetation
- Interim Biogeographic Regionalisation for Australia

(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

According to available GIS datasets, there are no known permanent watercourses or water bodies within the application area (GIS Database). There are various minor, non-perennial watercourses within the vicinity of the application area, however these small watercourses flow under the existing railway through culverts and will be undisturbed by the proposed clearing (Pilbara Flora, 2008; GIS Database). One major regional watercourse resides within the vicinity of the application area; Munni Munni Creek (approximately 8.8 kilometres west of the application area).

The Millstream Pools which are classed as an Australian Nature Conservation Agency (ANCA) wetland are located approximately 27 kilometres south-east of the application area (GIS Database). At this distance it is not likely that the vegetation within the application area provides a buffer to the wetlands, or is important as an ecological linkage to them. The vegetation types within the application area are not riparian vegetation.

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

Methodology Pilbara Flora (2008)
GIS Database
- ANCA Wetlands
- 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 surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 2004). The application area is composed of the following land system (GIS Database); Rocklea Land System

The Rocklea Land System is described as basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). The Rocklea land system is comprised of six land units (Van Vreeswyk et al., 2004). These are:

- Hills, ridges, plateaux and upper slopes;
- Lower slopes;
- Stony plains and interfluvies;
- Gilgai plains;
- Upper drainage lines; and
- Drainage floors and channels (Van Vreeswyk et al, 2004).

An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'hill, ridge, plateaux and upper slope', 'lower slope' and 'gilgai plains' land units of the Rocklea Land System. These land units are not susceptible to erosion due to a surface mantle of cobbles and pebbles. The vegetation described by Van Vreeswyk et al (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Pilbara Flora, 2008).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit with regard to stockpiling of all cleared topsoil and vegetation to be used in future rehabilitation to reduce the potential for land degradation as a result of the proposed clearing.

Methodology Pilbara Flora (2008)
 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 application area is located approximately 5 kilometres to the west of Millstream-Chichester National Park (GIS Database). At this distance it is not likely that the vegetation within the application area provides a buffer to a conservation area, or is important as an ecological linkage to a conservation area. The vegetation types within the application area are well replicated in other land systems within the Pilbara region. Consequently, their conservation status is under no threat.

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

Methodology GIS Database
 - CALM Managed Lands and Waters

(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**
 According to available databases, the application area is located within a Public Drinking Water Source Area (PDWSA) (GIS Database). It is the proponent's responsibility to liaise with the Department of Water (DoW) to acquire the appropriate licences and approvals required (DoW, 2009).

The application area is located within a *Rights in Water Irrigation Act, 1914* (RIWI Act) Surface Water Management Area (DoW, 2009; GIS Database). The proponent is required to obtain a Bed and Banks Permit in order to disturb any water course. The area is located in a RIWI Act Groundwater Area (DoW, 2009; GIS Database). The proponent is required to obtain permits to abstract groundwater in this area.

There are no permanent water bodies or watercourses within the application area (GIS Database). The application area is located in a semi-desert-tropical region, with an average annual rainfall of approximately 311.6 millimetres falling mainly during the summer months (CALM, 2002; BoM, 2009). Rainfall can be either intense falls associated with cyclonic events or scattered falls associated with thunderstorm events. The application area experiences an average annual evaporation rate of approximately 3,400 millimetres (CALM, 2002). Therefore, during normal rainfall events, surface water within the application area is likely to evaporate or be utilised by vegetation quickly.

The application area is located within the Pilbara Groundwater Area (DoW, 2009). Any extraction of groundwater in this area will require a groundwater licence. The groundwater salinity within the application area is approximately 500 - 1,000 milligrams/Litre Total Dissolved solids (TDS) (GIS Database). This is considered to be potable water. The application area is located within the Hamersley Groundwater Province (GIS Database). Given the size of the area to be cleared (4 hectares) compared to the size of the Hamersley Groundwater Province (101,668 square kilometres) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

There are no known groundwater dependent ecosystems within the application area (GIS Database).

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

- Methodology**
- BoM (2009)
 - CALM (2002)
 - DoW (2009)
 - Groundwater - Provinces
 - Groundwater Salinity
 - Hydrography - Linear
 - Potential Groundwater Dependent Ecosystems
 - Public Drinking Water Source Area
 - RIWI Act Areas
 - RIWI Act, Groundwater Areas
 - RIWI Act, Surface Water Areas

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

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

The application area is located within the Harding River, Maitland River and Robe River catchment areas (GIS Database). The size of the area to be cleared (4 hectares) in relation to the size of the Harding River, Maitland River and Robe River catchment areas (155,807; 199,381 and 757,138 hectares respectively) is not likely to lead to an increase in flood height or duration (GIS Database).

Low annual rainfall (approximately 311.6 millimetres) (BoM, 2009), high evaporation rates (3,400 millimetres/year) (Luke et al., 1987) and the absence of permanent water bodies and watercourses in the application area (GIS Database) would suggest that this area is not prone to flooding under normal rainfall conditions.

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

- Methodology**
- BoM (2009)
 - Luke et al. (1987)
 - GIS Database
 - Hydrographic Catchments - Catchments

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

Comments

There are two native title claims (WC99/012 and WC99/014) over the area under application. These claims have been registered with the National Native Title Tribunal on behalf of the claimant group. However, the tenements 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 a clearing permit is not a future act under the *Native Title Act 1993*.

There are several registered Aboriginal Sites of Significance located within the vicinity of the application area (GIS Database). 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.

The application area is located within a *Rights in Water and Irrigation Act 1914* (RIWI Act) Surface Water Management Area (GIS Database). The proponent is required to obtain a Bed and Banks Permit in order to disturb any water course (DoW, 2009). The application area is located in a RIWI Act Groundwater area. The proponent is required to obtain permits to abstract groundwater in this area (DoW, 2009).

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.

No public submissions were received in regard to this Permit application.

- Methodology**
- DoW (2009)
 - GIS Database
 - Aboriginal Sites of Significance
 - Native Title Claims
 - RIWI Act - Groundwater Areas
 - RIWI Act - Areas

4. Assessor's comments

Comment

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

It is recommended that should a permit be granted, conditions be imposed on the permit with regards to weed management, stockpiling of all cleared topsoil and vegetation, recording the areas cleared and reporting.

5. References

- Aplin, K., (1998) Three new blindsnakes (Squamata: Typhlopidae) from north western Australia. *Records of the Western Australian Museum* 19(1): 1/12
- Bamford Consulting Ecologists (2004) Indee Gold Project Desktop Assessment of Fauna Values. Prepared for Range River Gold Pty Ltd. Unpublished Report dated April 2004
- BoM (2009) Bureau of Meteorology Website - Climate Averages by Number, Averages for ROEBOURNE. http://www.bom.gov.au/climate/averages/tables/cw_004035.shtml (Accessed 23 February 2009)
- 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.
- DEWHA (Department of the Environment, Water, Heritage and the Arts) (2008) Australian Heritage Database. <http://www.environment.wa.gov.au> (accessed 23 February 2009)
- DoW (2009) Water Quality Advice. Advice to assessing officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP), received (19 February). Department of Water, Western Australia.
- Garnett, S.T. and Crowley, G.M. (2000) Action Plan for Australian Birds 2000. Environment Australia, Canberra
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Luke, G.J., Burke, K.L. and O'Brien, T.M. (1987) Evaporation Data for Western Australia. Resource Management Technical Report No. 65. Department of Agriculture, Western Australia
- Pilbara Flora (2008) Flora and Vegetation Survey Supporting Documentation for a Native Vegetation Clearing Permit Application: Deepdale Railway Borrow Pits and Deepdale Railway Stage 3 Development, Rio Tinto Iron Ore. Pilbara Flora, Western Australia
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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
DMP	Department of Mines and Petroleum
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

RIWI	Conservation Union
s.17	Rights in Water and Irrigation Act 1914, Western Australia.
TECs	Section 17 of the Environment Protection Act 1986, Western Australia. 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.