



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5169/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Richard Read & Associates Pty Ltd and Highscore Pty Ltd**

1.3. Property details

Property: Mining Lease 77/581
Mining Lease 77/1246
Mining Lease 77/1250
Miscellaneous Licence 77/226
Local Government Area: Shire of Yilgarn
Colloquial name: Dulcie Operations

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 4 October 2012

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database):

1068: Medium woodland; salmon gum, morrel, gimlet & *Eucalyptus sheathiana*.

A flora survey of the application area was conducted by Botanica Consulting (2012) in July 2009, November 2011 and January 2012. This survey identified the following eight vegetation communities within the application area (MBS Environmental, 2012):

- Thicket of *Allocasuarina campestris/Allocasuarina helmsii* over heath of *Baeckea elderiana*;
- Very open mallee of *Eucalyptus capillosa* subsp. *polyclada* over open dwarf scrub of *Grevillea paradoxa/Melaleuca cordata/Phebalium filifolium* within historically cleared gravel pit;
- Low woodland of *Eucalyptus salubris* and *Eucalyptus salmonophloia* over dwarf scrub of *Acacia merrallii*;
- Forrest of *Eucalyptus salubris* and *Eucalyptus salmonophloia* over heath of *Melaleuca pauperiflora* subsp. *pauperiflora/Melaleuca pauperiflora* subsp. *fastigiata*;
- Low woodland of *Eucalyptus melanoxyton* over scrub of *Melaleuca pauperiflora* subsp. *fastigiata* over low scrub of *Eremophila ionantha*;
- Open mallee of *Eucalyptus loxophleba* subsp. *lissophloia* over scrub of *Melaleuca acuminata* and *Melaleuca hamata*;
- Open mallee of *Eucalyptus salubris* and *Eucalyptus calycogona* over open low scrub of *Acacia merrallii*;
- Open tree mallee of *Eucalyptus horistes* and *Eucalyptus oleosa* over heath of *Daviesia benthamii*.

Clearing Description Richard Read & Associates Pty Ltd and Highscore Pty Ltd have applied to clear up to 61 hectares of native vegetation within a boundary of approximately 207 hectares for the purpose of mineral production. Activities to be conducted include open pits, topsoil stockpiles, heap leach pads, carbon absorption facility, haul roads and other associated activities.

Vegetation Condition Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

Comment The application area is located in the Avon Wheatbelt region of Western Australia and is situated approximately 31 kilometres south of Marvel Loch.

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 occurs within the Avon Wheatbelt P1 subregion of the Avon Wheatbelt Interim Biogeographical Regionalisation for Australia (IBRA) bioregion (GIS Database). At a broad scale the vegetation of this region can be described as proteaceous scrub-heaths, rich in endemics on residual lateritic uplands and derived sandplains; mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands on quaternary alluvials and eluvials (CALM, 2002).

A flora and vegetation survey of the application area and surrounds was conducted by Botanica Consulting (2012) in July 2009, November 2011 and January 2012. This survey identified 112 plant taxa from 51 genera and 27 families within and adjacent to the application area (Botanica Consulting, 2012). The vegetation communities described within the application area are well represented in the Yilgarn region and therefore not thought to be locally or regionally significant (MBS Environmental, 2012).

The flora survey conducted by Botanica Consulting (2012) did not identify any Threatened Flora species within the application area, however one Priority 3 species, *Hakea pendens*, was recorded within the application area and one Priority 1 species, *Grevillea lissopleura*, was recorded in the areas adjacent the application area however it was not recorded within the application area (Botanica Consulting, 2012; MBS Environmental, 2012). A total of 15 *Hakea pendens* individuals from six locations were recorded within the application area, while 38 individuals from five locations were recorded outside of the application area (MBS Environmental, 2012). The Department of Environment and Conservation (DEC) has records of a further 40 individuals of this species within a 20 kilometre radius of the application area and Botanica Environmental have recorded approximately 3,840 individuals during a survey of the Parker Range (DEC, 2012; MBS Environmental, 2012). It is therefore considered unlikely that the proposed clearing will impact on the conservation of this species.

The application area lies within two buffer zones for the Priority 3 Parker Range vegetation complexes Ecological Community (GIS Database). The DEC defines this community as:

Hakea pendula tall shrubland of particular significance. *Eucalyptus sheathiana* with *Eucalyptus transcantonalis* and/or *Eucalyptus eremophila* woodland on sandy soils at the base of ridges and low rises; *Eucalyptus longicornis* with *Eucalyptus corrugata* and *Eucalyptus salubris* or *Eucalyptus myriadena* woodland on broad flats; *Eucalyptus salmonophloia* and *Eucalyptus salubris* woodland on broad flats; *Allocasuarina acutivalvis* and *Allocasuarina corniculata* on deeper sandy soils of lateritic ridges; *Eucalyptus capillosa* subsp. *polyclada* and/or *Eucalyptus loxophleba* over *Hakea pendens* thicket on skeletal soils on ridges (laterites, breakaways and massive gossanous caps); and *Callitris glaucophylla* low open woodland on massive greenstone ridges.

A flora and vegetation survey conducted over the application area by Botanica Consulting (2012) identified *Hakea pendens* within the application area. MBS Environmental (2012) advise that this species was found as isolated individuals rather than as a tall shrubland as described by DEC. It is therefore considered unlikely that the proposed clearing will impact upon the Parker Range vegetation complexes.

Two introduced flora species, *Centaurea melitensis* and *Dittrichia graveolens*, were recorded within the application area during the flora survey conducted by Botanica Consulting (2012). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. Neither of these species are listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna survey of the application area was conducted by Terrestrial Ecosystems (2009) in November 2009. This survey identified five fauna habitats within the application area (Terrestrial Ecosystems, 2009). These habitats vary from good condition to completely degraded (Terrestrial Ecosystems, 2009).

Terrestrial Ecosystems (2009) has identified the possibility for nine conservation significant fauna species to occur within the application area, however of these only four, Rainbow Bee-eater (Migratory), Peregrine Falcon (Schedule 1), Rufous Fieldwren (P4) and White-browed Babbler (P4) are considered likely to occur. Due to the high mobility of these species and the abundance of similar suitable habitat in nearby areas, the proposed clearing is considered unlikely to impact on the conservation of any of these species.

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

Methodology Botanica Consulting (2012)
CALM (2002)
DEC (2012)
MBS Environmental (2012)
Terrestrial Ecosystems (2009)
GIS Database:
- IBRA WA (regions – subregions)
- Threatened Ecological Sirtes Buffered

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

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

A fauna survey of the application area was conducted by Terrestrial Ecosystems (2009) in November 2009. This survey identified the following five fauna habitats within the application area (Terrestrial Ecosystems, 2009):

- *Allocasuarina* shrubland, often dense, to approximately 2.5 metres (Degraded Habitat);
- Open Eucalypt woodland with little understory (Good fauna habitat);
- Eucalypt woodland over *Melaleuca* woodland that can be quite dense, with little vegetation at ground level (Good fauna habitat);
- *Acacia* shrubland to approximately 2.5 metres (Good fauna habitat); and
- Disturbed areas that have been previously mined or subject to exploration activity (highly degraded fauna habitat).

Based on database searches and the habitats present, Terrestrial Ecosystems (2009) has identified the possibility for the following nine conservation significant fauna species to occur within the application area:

- Chuditch (*Dasyurus geoffroi*) – Vulnerable, *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*; Schedule 1, *Wildlife Conservation (WC) Act 1950* – predominantly occurs in Jarrah forest with occasional records from the wheatbelt and goldfields where it persists in very low numbers (Department of Sustainability, Environment, Water, Population and Communities, 2012). Terrestrial Ecosystems (2009) note that this species has been recorded to the south of the application area, however the population density is likely to be low and therefore the proposed clearing is not likely to impact on the conservation of this species;
- Rainbow Bee-eater (*Merops ornatus*) – Migratory, *EPBC Act 1999* – This species is widespread in the southern section of Western Australia during late spring and summer (Terrestrial Ecosystems, 2009). The proposed clearing of 61 hectares of native vegetation represents a very small portion of suitable habitat present for this species and is therefore not likely to impact on the conservation of this species;
- Western Rosella (*Platycercus icterotis xanthogenys (Mallee)*) – Schedule 1, *WC Act 1950* – This species occurs predominantly in eucalypt and casuarina woodlands and shrublands, particularly Wandoo, Flooded Gums and Salmon Gums (Terrestrial Ecosystems, 2009). The proposed clearing of 61 hectares of native vegetation represents a very small portion of suitable habitat present for this species and is therefore not likely to impact on the conservation of this species;
- Peregrine Falcon (*Falco peregrinus*) – Schedule 4, *WC Act 1950* – This species has a wide and patchy distribution throughout much of Australia and is considered to potentially be an occasional visitor to the application area (Terrestrial Ecosystems, 2009). Suitable nesting sites of ledges along cliffs, granite outcrops and quarries, hollow trees and old nests of larger bird species near wetlands are not present within the application area (Terrestrial Ecosystems, 2009). It is therefore considered unlikely that the proposed clearing will impact on the conservation of this species;
- Central Long-eared Bat (*Nyctophilus timorensis* sp.1) – Priority 4, DEC Priority Fauna – the known distribution for this species is across the southern and central wheatbelt, Great Victorian Desert and the Nullabor coast (Terrestrial Ecosystems, 2009). The application area represents a small amount of the suitable habitat for this species and it is therefore considered unlikely that the proposed clearing will impact upon the conservation of this species;
- Crested Bellbird (*Oreoica gutturalis gutturalis*) – Priority 4, DEC Priority Fauna – This species has been recorded within the general area and prefers scrub and thicket habitats (Terrestrial Ecosystems, 2009). It is likely that this species occurs in or around the application area, however it is highly mobile and likely to move in to adjacent undisturbed areas. Therefore the proposed clearing is considered unlikely to impact upon the conservation of this species;
- Rufous Fieldwren (*Calamanthus campestris montanellus*) – Priority 4, DEC Priority Fauna – the application area occurs within the known distribution for this species and there are known records nearby to the application area (Terrestrial Ecosystems, 2009). The preferred habitat for this species is heaths and other low shrubland on sandplains and lateritic ridges, shrubby steppes (*Maireana*, *Atriplex* and *Halosarcia* samphires) on limestone plains and around saltlakes, none of which are present within the application area (Terrestrial Ecosystems, 2009). The proposed clearing is therefore considered unlikely to impact on the conservation of this species;

- Shy Heathwren (*Hylacola cauta whilocki*) – Priority 4, DEC Priority Fauna – this species has been recorded during surveys of the areas surrounding the application area (Terrestrial Ecosystems, 2009). It is possible that this species occurs within the application area, however it is highly mobile and likely to move into adjacent, undisturbed areas once clearing commences (Terrestrial Ecosystems, 2009). It is therefore considered unlikely that the proposed clearing will impact on the conservation of this species; and

- White Browed Babbler (*Pomatostomus superciliosus ashbyi*) – Priority 4, DEC Priority Fauna – This species occurs throughout Western Australia south of the Tropic of Capricorn (Terrestrial Ecosystems, 2009). It has been recorded during fauna surveys within the local area, therefore indicating potential for this species to occur within the application area (Terrestrial Ecosystems, 2009). This species is highly mobile and likely to move into adjacent, undisturbed areas once clearing commences (Terrestrial Ecosystems, 2009). It is therefore considered unlikely that the proposed clearing will impact on the conservation of this species.

Terrestrial Ecosystems (2009) also advise that three inactive Malleefowl mounds have been recorded within the application area that had not been used for some time. The Malleefowl range has recently contracted and their abundance within the eastern Goldfields is low with preference to areas that are more densely vegetated. Terrestrial Ecosystems (2009) advise that the potential for Malleefowl or active Malleefowl mounds within the application area is very low and therefore the conservation of this species is unlikely to be impacted as a result of the proposed clearing.

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

Methodology Department of Sustainability, Environment, Water, Population and Communities (2012)
Terrestrial Ecosystems (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

According to available GIS Databases there are no known records of Threatened Flora within the application area (GIS Database).

A flora and vegetation survey of the application area conducted by Botanica Consulting (2012) in July 2009, November 2011 and January 2012 did not identify any Threatened Flora species within the application area.

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

Methodology Botanica Consulting (2012)
GIS Database:
- Threatened and Priority Flora

(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 records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is located approximately 200 kilometres south west of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

Methodology GIS Database:
- Threatened Ecological Sites Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

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

The application area is located within the Avon Wheatbelt P1 Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Government of Western Australia (2011) reports that approximately 18.2% of the pre-European vegetation remains in the Avon Wheatbelt bioregion.

The vegetation in the application area has been broadly mapped as Beard vegetation association:

1068: Medium woodland; salmon gum, morrel, gimlet & *Eucalyptus sheathiana*.

According to the Government of Western Australia (2011) approximately 44.77% of this Beard vegetation association remains within the Avon Wheatbelt bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Avon Wheatbelt	9,517,110	1,732,026	~18.2	Vulnerable	~1.8 (~7.23)
IBRA Subregion - Avon Wheatbelt P1	6,524,180	1,322,408	~20.27	Vulnerable	~1.87 (~6.74)
Local Government - Yilgarn	3,042,765	2,472,337	~81.25	Least Concern	~15.56 (~19.09)
Beard vegetation associations - State					
1068	268,900	134,950	~50.19	Least Concern	~6.24 (~12.38)
Beard vegetation associations - Bioregion					
1068	78,875	33,522	~44.77	Depleted	~3.49 (~7.75)
Beard vegetation associations - subregion					
1068	74,875	33,522	~44.77	Depleted	~3.49 (~7.75)

* Government of Western Australia (2011)

** Department of Natural Resources and Environment (2002)

While Beard vegetation association 1068 is considered to be depleted within the Avon Wheatbelt bioregion, the proposed clearing of 61 hectares of native vegetation will not bring this association into the vulnerable category. Additionally, aerial imagery shows that the local area has not been extensively cleared with intensive clearing beginning approximately 12 kilometres west of the application area and extending further west across the remainder of the Avon Wheatbelt bioregion (GIS Database). The areas immediately surrounding the application area remain generally intact and therefore the proposed clearing is not likely to cause significant fragmentation (GIS Database). It is therefore considered that the application area is not significant as a remnant of vegetation within this area.

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2011)
GIS Database:
- Cheritos Find 1.4M Orthomosaic – Landgate 2003 (Image)
- IBRA WA (regions – subregions)
- Pre-European Vegetation

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

Comments Proposal is not at variance to this Principle

According to available databases there are no perennial or non-perennial wetlands or watercourses within the application area (GIS Database). A flora and vegetation survey conducted by Botanica Consulting (2012) did not identify any vegetation growing in association with watercourses within the application area. Additionally, MBS Environmental (2012) advise that there are no visually distinct watercourses and no wetland environments within the application area.

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

Methodology Botanica Consulting (2012)
MBS Environmental (2012)
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 soils of the application area have been broadly mapped as AC1 and DD15 (GIS Database).

AC1: Gently sloping to gently undulating plateau areas, or uplands, on granites, gneisses, and allied rocks, with

long gentle slopes and, in places, abrupt erosional scarps, some granitic bosses, and tors; and irregularly traversed by narrow shallow valleys and flats: chief soils are yellow earthy sands and sandy yellow earths on depositional sites, and ironstone gravels. Soil dominance varies locally; and

DD15: Undulating plains with some low dunes, seasonal lakes, and clay pans: chief soils seem to be brown and grey-brown calcareous earths.

MBS Environmental (2012) advise that the lateritic soils, low relief and climatic conditions in the project area are indicative of low erosion potential. Additionally, there will be rehabilitation requirements under any approvals obtained under the *Mining Act 1978*. These rehabilitation conditions will ensure the time the land is open is minimised, therefore reducing the impacts of erosion.

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

Methodology MBS Environmental (2012)
GIS Database:
- Soils, Statewide

(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 not located within a conservation area (GIS Database). The nearest known conservation area is Jilbadji Nature Reserve located approximately 2.5 kilometres east of the application area (GIS Database). At this distance there is little likelihood of any impact to the Jilbadji Nature Reserve as a result of the proposed clearing, however, increased traffic may increase the spread of weeds through the local area. Potential impacts to the Jilbadji Nature Reserve may be minimised by the implementation of a weed management condition.

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

Methodology GIS Database:
- DEC Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Ravensthorpe Catchment Area located approximately 205 kilometres south of the application area. At this distance the proposed clearing is considered unlikely to impact on the quality of water within the Ravensthorpe Catchment Area.

There are no permanent water bodies or watercourses within the application area (GIS Database). The application area experiences an average annual rainfall of approximately 334.9 millimetres and an average annual evaporation rate of approximately 2,400 millimetres (BoM, 2012; GIS Database). Surface water flow is likely to be low during normal seasonal rains. Therefore, during normal rainfall events, surface water within the application area is likely to evaporate or be utilised by vegetation quickly.

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

Methodology BoM (2012)
GIS Database:
- Evaporation Isopleths
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSA's)

(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 experiences an average annual rainfall of approximately 334.9 millimetres and an average annual evaporation rate of approximately 2,400 millimetres (BoM, 2012; GIS Database). Surface water flow is likely to be low and relatively short lived during normal seasonal rains.

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

Methodology BoM (2012)
GIS Database:
- Evaporation Isopleths

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

Comments

There are no Native Title Claims over the area under application (GIS Database). The tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment 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.

The clearing permit application was advertised on 30 July 2012 by the Department of Mines and Petroleum inviting submissions from the public. Two submissions were received in relation to the proposed clearing. One submission requested the proponent consult with the Traditional Owners of the area. This request was passed on to the proponent. A second submission requested the values of the Jilbadji Nature Reserve be considered along with any natural waterflow and to reduce disturbance around local tourism sites and the Forrestania – Southern Cross Road Reserve. The proximity of the Nature Reserve and watercourses within the application area were taken in to consideration during the assessment of this application under Principles (f) and (h). The proponent was consulted and advised local tourism sites will remain in-tact and the only clearing within 50 metres of the Forrestania – Southern Cross Road Reserve will be for widening an access track and no clearing will be conducted within the Road Reserve. The road reserve has been excluded from the application area and a condition excluding clearing within 50 metres of the road reserve, except for the purpose of widening an access track, is recommended for the permit.

Methodology GIS Database:

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

4. References

- BoM (2012) BOM Website - Climate statistics for Australian locations, Averages for Mulgara Weather Station. Available online at: <http://www.bom.gov.au/climate/data/> Accessed on 28 August 2012.
- Botanica Consulting (2012) Level 2 Flora & Vegetation Survey of the Dulcie Project (Tenements M77/1246, M77/1250, M77/581, L77/266 and P77/4016). Unpublished report prepared for Richard Read and Associates Pty Ltd dated June 2012.
- DEC (2012) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Department of Sustainability, Environment, Water, Population and Communities (2012). *Dasyurus geoffroii* in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: <http://www.environment.gov.au/sprat>. Accessed Thursday, 27 September 2012.
- Government of Western Australia (2011) 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- MBS Environmental (2012) Dulcie Operations - M 77/581, M 77/1246, M77/1250 and L 77/226 Clearing Permit (Purpose Permit) Application Native Vegetation Management Plan and Assessment of Clearing Principles. Unpublished report prepared for Richard Read and Associates Pty Ltd dated July 2012.
- Terrestrial Ecosystems (2009) Level 1 Fauna Risk Assessment for Southern Cross Goldfields Dulcie Project Area. Unpublished report prepared for Southern Cross Goldfields Ltd dated November 2009.

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.