Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5117/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Robe River Mining Co Pty Ltd**

1.3. Property details

Property: *Iron Ore (Hamersley Range) Agreement Act 1963*, Special Lease for Mining Operations 3116/4984 (Document I 195323 L), J761009 EL, Lots 9, 13, 32 on Deposited Plan 47815
Miscellaneous Licence 47/47
Miscellaneous Licence 47/67
Local Government Area: Shire of Ashburton
Colloquial name: Autohaul Works Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
15		Mechanical Removal	Rail Activities and Associated Works

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 6 September 2012

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard vegetation associations have been mapped for the whole of Western Australia. Three Beard vegetation associations have been mapped within the application area: 175: Short bunch grassland - savanna/grass plain (Pilbara) 587: Mosaic: Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana* / Hummock grasslands, shrub-steppe; kanji over *Triodia pungens*; and 603: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* over hard spinifex (GIS Database). Several large flora and vegetation surveys have been undertaken in the vicinity of the application area by botanists from Biota and Rio Tinto as part of the Rio Tinto rail duplication project. The results of the vegetation mapping were compiled and the survey reports that cover the seven polygons of the application area are Biota (2008a) and RTIO (2012a, 2012b). The vegetation communities identified for each of the seven polygons of the application area are listed below. <u>94.0 km Mark</u> P9 AbTwCa - *Acacia bivenosa* low open shrubland over *Triodia wiseana* hummock grassland with *Cymbopogon ambiguus* scattered tussock grasses. CD - Heavily disturbed. <u>97.7 - 98.3 km</u> P10 AcTw*Cc - *Acacia pyrifolia* var. *pyrifolia*,	Robe River Mining Co Pty Ltd has applied to clear up to 15 hectares of native vegetation for the purpose of rail activities and associated works. The clearing is to carry out various rail activities along the rail network including upgrading of level crossings, installation of communication and signalling equipment, upgrade of radio base stations and upgrade of access tracks. The application area comprises of seven polygons along the rail network in Millstream Chichester National Park, with each polygon named by the closest chainage marker along the rail line. The seven polygons are 94.0 km, 97.7-98.3 km, 101 km, 106.7 km, 108.5 km, 114.8 km and 116 km. Clearing will be undertaken with a dozer. Vegetation will be stockpiled and used in rehabilitation where possible.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994); To: Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The vegetation condition was assessed by botanists from Biota and Rio Tinto.

Acacia colei var. *colei* and *Hakea lorea* subsp. *lorea* open shrubland over *Triodia wiseana* open hummock grassland with **Cenchrus ciliaris* and *Eneapogon cylindricus* tussock grassland.
CD - Heavily disturbed.

101 km
AiTw - *Acacia inaequilatera* tall open shrubland over *Triodia wiseana* hummock grassland.
CD - Heavily disturbed.

106.7 km
D4 *Cc - **Cenchrus ciliaris* open to very open tussock grassland.
P11 AtRe*Cc - *Acacia tumida* var. *pilbarensis* scattered tall shrubs over *Rhagodia eremaea* scattered shrubs over **Cenchrus ciliaris* and *Bothriochloa ewartiana* closed tussock grassland.
CD - Heavily disturbed.

108.5 km
Aerva javanica low open shrubland over *Dichanthium fecundum*, *Panicum decompositum*, *Chrysopogon fallax*, *Astrebla pectinata* and *Themeda triandra* open tussock grassland.
Disturbed.

114.8 km
CD - Heavily disturbed.

116 km
AxTe - *Acacia xiphophylla* tall shrubland over *Triodia epactia* very open hummock grassland.
ElAbTbr - *Eucalyptus leucophloia* scattered low trees over *Acacia bivenosa* open shrubland over *Triodia brizoides* hummock grassland.
ChAtuTeCE - *Corymbia hamersleyana* low open woodland over *Acacia tumida* var. *pilbarensis* tall shrubland over *Triodia epactia* very open hummock grassland and **Cenchrus* species tussock grassland.
Disturbed.

* indicates introduced species

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 Chichester subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by plains supporting a shrub steppe of *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation associations 175, 587 and 603, all of which have over 98% of their pre-European extent remaining (Government of Western Australia, 2011; GIS Database). Botanists from Biota conducted a large scale flora and vegetation survey of the proposed Rio Tinto rail duplication corridor in April 2008 and supplementary vegetation surveys were conducted by Biota and Rio Tinto in additional development areas between 2008 and 2012. The vegetation types mapped within the application area are considered to be relatively well represented and widely distributed in the Chichester and Hamersley subregions (Biota, 2008a; Rio Tinto, 2012b).

No Threatened Flora, Priority Flora or Threatened Ecological Communities were recorded within the application area (Biota, 2008a; Rio Tinto, 2012a, 2012b; GIS Database). All seven polygons of the application area are within the buffer of the Priority Ecological Community (PEC) 'Plant assemblages of the Wona Land System' (GIS Database). However, vegetation surveys have shown that the vegetation types mapped within the application area do not correspond with the PEC and the PEC is not present in the application area (Biota, 2008a; Rio Tinto, 2012a, 2012b).

Four introduced flora species have been recorded within the application area. These weed species were Birdwood Grass (*Cenchrus setiger*), Buffel Grass (*Cenchrus ciliaris*), Couch Grass (*Cynodon dactylon*) and Mimosa Bush (*Vachellia farnesiana*) (Biota, 2008a; Rio Tinto, 2012b). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The fauna habitats within the application area are considered to be common and widespread within the subregion (Rio Tinto, 2012b). The vegetation within the application area may be utilised by a variety of fauna but the extent of similar habitat outside the application area means it is unlikely to provide core habitat for any fauna species (Rio Tinto, 2012b).

The application area is adjacent to existing railway infrastructure and part of it has already been cleared or disturbed (Rio Tinto, 2012b; GIS Database). Considering the amount of disturbance already present, and the wide availability of the vegetation associations and fauna habitat types, the application area is not likely to comprise a greater diversity than similar areas either locally or at a bioregional scale.

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

Methodology

Biota (2008a)
CALM (2002)
Government of Western Australia (2011)
Rio Tinto (2012a)
Rio Tinto (2012b)
GIS Database:
- Cooya Pooya 1.4 m Orthomosaic - Landgate 1998
- IBRA WA (Regions - Subregions)
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened Ecological Sites 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 large fauna survey was undertaken by Biota Environmental Services in April 2008 over the proposed rail duplication area from Cape Lambert to Emu Siding. The study area was approximately 80 kilometres in length and the application area is in the vicinity of the southern end of the study area (Biota, 2008b). Broad fauna habitats were also described during flora and vegetation surveys that covered the application area (Biota, 2008a; Rio Tinto, 2012b).

The broad fauna habitats present within the application area are:

- Plains - including Spinfex with Acacia and hummock grasslands;
- Hills - including hill slopes with Eucalyptus and Corymbia low trees over Acacia shrubs over Spinifex hummock grasslands; and
- Flowlines - minor flowlines with Corymbia low trees over Acacia tall shrubs over *Themeda triandra* and *Cenchrus ciliaris* tussock grassland (Rio Tinto, 2012b).

The fauna habitats within the application area are considered to be common and widespread within the subregion (Rio Tinto, 2012b). The vegetation within the application area may be utilised by a variety of fauna but the extent of similar habitat outside the application area means it is unlikely to provide core habitat for any fauna species (Rio Tinto, 2012b).

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

Methodology

Biota (2008a)
Biota (2008b)
Rio Tinto (2012b)

(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 there are no known records of Threatened Flora within the application area (GIS Database). The nearest record of Threatened Flora is located approximately 115 kilometres south of the application area (GIS Database).

Flora and vegetation surveys conducted by Biota and Rio Tinto botanists between 2008 and 2012 did not record any Threatened Flora within the application area or in the larger rail duplication survey areas (Biota, 2008a; Rio Tinto, 2012a, 2012b).

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

Methodology

Biota (2008a)
Rio Tinto (2012a)
Rio Tinto (2012b)
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

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC, Themeda grasslands on cracking clays, is located approximately 75 kilometres south-east of the application area (GIS Database).

No TECs were identified within the application area during the flora and vegetation surveys conducted by Biota and Rio Tinto botanists (Biota, 2008a; Rio Tinto, 2012b).

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

Methodology

Biota (2008a)
Rio Tinto (2012b)
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 at variance to this Principle

The clearing application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 99.6% of the pre-European vegetation remains (see table) (Government of Western Australia, 2011; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been broadly mapped as the following Beard vegetation associations:

175: Short bunch grassland - savanna/grass plain (Pilbara)
587: Mosaic: Hummock grasslands, open low tree-steppe; snappy gum over *Triodia wiseana* / Hummock grasslands, shrub-steppe; kanji over *Triodia pungens*; and
603: Hummock grasslands, sparse shrub steppe; *Acacia bivenosa* over hard spinifex (Government of WA, 2011; GIS Database).

According to Government of Western Australia (2011), over 98% of all of these Beard vegetation associations remain at the state and bioregional levels. These vegetation associations would be given a conservation status of 'Least Concern' at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in 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	17,804,427	17,729,352	~99.6	Least Concern	6.3
Beard Veg Assoc. – State					
175	526,202	523,800	~99.5	Least Concern	4.2
587	585,716	585,684	~100	Least Concern	21.0
603	56,727	55,764	~98.3	Least Concern	-
Beard Veg Assoc. – Bioregion					
175	507,033	506,626	~99.9	Least Concern	4.4
587	585,716	585,684	~100	Least Concern	21.0
603	56,727	55,764	~98.3	Least Concern	-

* Government of Western Australia (2011)
** 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)
Government of Western Australia (2011)
GIS Database:
- 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 at variance to this Principle

There are no permanent watercourses or wetlands within the application area, however, there are several minor non-perennial watercourses in several of the application area polygons (Rio Tinto, 2012b; GIS Database). Several minor watercourses crossed through polygons 97.7-98.3 km, 101 km, 108.5 km and 116 km (GIS Database) and vegetation type ChAtuTeCE in the 116 km polygon was described as occurring on floodplains fringing major creeklines (Biota, 2008a).

Based on the above, the proposed clearing is at variance to this Principle. However, seasonal drainage features are common on the ranges and plains of the Pilbara region (Rio Tinto, 2012b) and the small amount of riparian vegetation proposed to be cleared is unlikely to have a significant impact on any watercourse or wetland.

Methodology
Biota (2008a)
Rio Tinto (2012b)
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

According to available datasets the application area intersects the Capricorn, Robe, Rocklea and Wona Land System (GIS Database).

The Capricorn Land System is characterised by hills and ridges of sandstone and dolomite supporting shrubby hard and soft spinifex grasslands (Van Vreeswyk et al., 2004). The stony surfaces of the landforms in this land system provide resistance to erosion (Van Vreeswyk et al., 2004).

The Robe Land System is characterised by low limonite mesas and buttes supporting soft spinifex (and occasionally hard spinifex) grasslands (Van Vreeswyk et al., 2004). The system is not generally susceptible to vegetation degradation or erosion (Van Vreeswyk et al., 2004).

The Rocklea Land System is characterised by basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). Van Vreeswyk et al. (2004) report that this system has a very low erosion risk.

Robe River Mining Co Pty Ltd has applied to clear up to 15 hectares for rail activities. The proposed clearing activities are not likely to result in large areas of disturbed or open land and the proposed clearing is not expected to cause any appreciable land degradation beyond the clearing envelope (Rio Tinto, 2012b). Given the moderate size of the proposed activities and the stability of the land systems, the clearing is not likely to result in appreciable land degradation.

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

Methodology
Rio Tinto (2012b)
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 may be at variance to this Principle

Part of the application area is within the Department of Conservation and Environment (DEC) managed conservation estate Millstream Chichester National Park (GIS Database). Approximately half of the application area lies within the existing infrastructure exclusion corridor from the National Park, while the rest of the application area is within the National Park boundary (GIS Database). The application area is also within the Register of National Estate site 'Chichester Range National Park (1977 Boundary)' (GIS Database) which

directly relates to the currently named Millstream Chichester National Park.

A small amount of clearing will take place within Millstream Chichester National Park, however, the proposed works are located either along the previously disturbed rail corridor or at previously disturbed radio tower locations (Rio Tinto, 2012b). The historical disturbance and close proximity to existing infrastructure has reduced the environmental values of the application area when compared to other areas within Millstream Chichester National Park.

Advice from DEC's Environmental Management Branch on nearby clearing for rail activities in Millstream Chichester National Park has stated that rehabilitation and weeds were the main issues (DEC, 2011). All clearing will occur under the Rio Tinto Iron Ore Environmental Management System standards which includes weed hygiene during clearing and stockpiling of clearing vegetation and topsoil for use in rehabilitation (Robe River Mining Co Pty Ltd, 2012). Robe River Mining Co Pty Ltd have an agreed to communications protocol with DEC for work within Millstream Chichester National Park (Robe River Mining Co Pty Ltd, 2012).

Given that part of the application area is located within the Millstream Chichester National Park there is potential for the proposed activities to negatively impact upon the conservation area. However, while a small amount of clearing will take place within the national park, the proposed activities are occurring on or adjacent to previously disturbed areas and would not be expected to substantially impact upon the values of the national park. Potential impacts to the national park as a result of the proposed clearing may be minimised by the implementation of rehabilitation and weed management conditions.

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

Methodology

DEC (2011)
Rio Tinto (2012b)
Robe River Mining Co Pty Ltd (2012)
GIS Database:
- DEC Tenure
- Register of National Estate

(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

Three of the seven polygons of the application area are located within the Harding Dam Catchment Area, a Public Drinking Water Source Area (PDWSA) (GIS Database). The Harding Dam Catchment Area has been assigned a 'Priority 1' classification and roads pose a water contamination risk. The Department of Water (DoW) has advised that the all activities associated with the clearing should be compatible with DoW's Land Use Compatibility Tables and managed using best practice (DoW, 2012). The proposed clearing is unlikely to have an impact on the quantity or quality of groundwater, provided clearing activities are conducted in accordance with DoW guidelines and advice (DoW, 2012).

There are no permanent watercourses or wetlands within the application area, however, there are several minor non-perennial watercourses in several of the application area polygons (Rio Tinto, 2012b; GIS Database). Several minor watercourses crossed through polygons 97.7-98.3 km, 101 km, 108.5 km and 116 km (GIS Database) but these drainage lines would only hold surface water for short durations following significant rainfall events (Rio Tinto, 2012b).

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

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

Methodology

DoW (2012)
Rio Tinto (2012b)
GIS Database:
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSAs)

(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 intersects the Harding River and Fortescue River catchment areas (GIS Database). Given the size of the area to be cleared (15 hectares) in relation to the sizes of the catchment areas (155,807 and 1,860,784 hectares, respectively) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a local or catchment scale.

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

Methodology

GIS Database:

- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC99/14) over the area under application (GIS Database). This claim has been determined by the Federal Court. However, the mining 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 several registered Aboriginal Sites of Significance in 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 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 9 July 2012 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court

4. References

Biota (2008a) Rio Tinto Rail Duplication Emu to Rosella Phase 3: Native Vegetation Clearing Permit Report. Report Prepared by Biota Environmental Sciences for Rio Tinto Iron Ore, December 2008.

Biota (2008b) Rio Tinto Rail Duplication Fauna Survey Cape Lambert to Emu Siding. Report Prepared by Biota Environmental Sciences for Rio Tinto Iron Ore, July 2008.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.

DEC (2011) DEC Advice for Clearing Permit Application CPS 4491/1. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP). Department of Environment and Conservation Environmental Management Branch, 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.

DoW (2012) Application to Clear Native Vegetation Autohaul CPS 5117/1. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP). Department of Water, Western Australia.

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.

Rio Tinto (2012a) Addendum to the Statement Addressing the 10 Clearing Principles for Autohaul. Report Prepared by Rio Tinto, April 2012.

Rio Tinto (2012b) Statement Addressing the 10 Clearing Principles AutoHaul Emu to Rosella. Report Prepared by Rio Tinto, June 2012.

Robe River Mining Co Pty Ltd (2012) Supporting Information for Clearing Permit Application CPS 5117/1. June 2012.

Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

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.