



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4830/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Robe River Limited

1.3. Property details

Property: Iron Ore (Robe River) Agreement Act 1964, Mineral Lease 248 SA (AML 70/248)
Local Government Area: Shire of Ashburton
Colloquial name: West Angelas Deposit F Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
15.5		Mechanical Removal	Mineral exploration and access tracks

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 23 February 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 and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area:

Beard vegetation association 18: Low woodland; mulga (*Acacia aneura*) (Shepherd, 2009; GIS Database).

Biota Environmental Sciences (2006) conducted a flora survey of the application area and surrounding areas from 5 to 11 May 2004 and described five broad vegetation communities of the application area:

- Hard Spinifex *Triodia wiseana* and Soft Spinifex *Triodia pungens* or *Triodia* sp. Mt. Ella hummock grasslands with a scattered to moderately dense shrub overstorey dominated by varying proportions of *Acacia maitlandii*, *A. bivenosa* and *A. hamersleyensis* on stony hills in the northern section of the study area;
- Low woodlands to tall shrublands of *Acacia catenulate* in gorges;
- Hummock grasslands of *Triodia* aff. *basedowii*, with some *T. pungens*, on stony baseslopes;
- Woodlands to tall shrublands of various forms of Mulga *Acacia aneura* over open hummock grasslands, usually of *Triodia pungens*, on clayey soils of the broad valleys in the southern section of the study area;
- Creeklines supporting tall shrublands dominated by various combinations of *Acacia maitlandii*, *Gossypium robinsonii*, *Petalostylis labicheoides* and *Rulingia luteiflora* over open hummock grassland of *Triodia pungens* (Biota Environmental Sciences, 2006).

Clearing Description Robe River Ltd is proposing to clear up to 15.5 hectares of native vegetation within a 700 hectare application area for the West Angelas Deposit F Drilling Program. The clearing of native vegetation is required for exploration drilling and access tracks.

The vegetation will be cleared using the raised blade technique where practicable or scrub rake in level terrain. Where already cleared tracks require maintenance the track may be graded using blade down machinery. The vegetation and topsoil will be stockpiled separately for use in rehabilitation.

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

To:

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment

The application area is located in the Hamersley subregion of Western Australia and is situated approximately 90 kilometres west of the Newman town site (GIS Database).

The vegetation condition was derived from a vegetation survey conducted by Biota Environmental Sciences (2006).

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 Hamersley (PIL3) Interim Biogeographic Regionalisation of Australia (IBRA) subregion (GIS Database). This subregion is generally described as Mulga low woodland over bunch grasses on fine textured soils in valley floors, and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002). The vegetation within the application area is broadly mapped as Beard vegetation association 18, which is common and widespread throughout the Pilbara bioregion with approximately 99% of the pre-European vegetation extent remaining (Shepherd, 2009; GIS Database).

A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases revealed six Priority Flora species which may potentially occur within a 20 kilometre radius of the application area (DEC, 2012). No Declared Rare Flora (DRF) species were identified (DEC, 2012). Biota Environmental Sciences (2006) identified no DRF and five Priority Flora species within the application area. A flora and vegetation survey of the application area was undertaken by Biota Environmental Sciences (2006) during 5 to 11 May 2004. A total of 429 vascular plant taxa from 143 genera belonging to 53 families were recorded within the study area (Biota Environmental Sciences, 2006). This is typical of the floristics of the Hamersley subregion (Biota Environmental Sciences, 2006). Biota Environmental Sciences (2006) identified five broad vegetation communities within the application area. The condition of the vegetation types were classified from 'excellent' to 'degraded' (Keighery, 1994; GIS Database).

No Threatened Ecological Communities or Priority Ecological Communities were recorded or identified within the application area (GIS Database).

Seven species of weed were identified during the survey: Buffel Grass (*Cenchrus ciliaris*), Whorled Pigeon Grass (*Setaria verticillata*), Spiked Malvastrum (*Malvastrum americanum*), Beggars Ticks (*Bidens bipinnata*), Flaxleaf Fleabane (*Conyza bonariensis*), Prickly Lettuce (*Lactuca serriola*), Indian Weed (*Sigesbeckia orientalis*) and the Common Sowthistle (*Sonchus oleraceus*) (Biota Environmental Sciences, 2006). None of these species are listed by the Western Australian Department of Agriculture and Food as Declared Plants. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The broad-scale vegetation types and fauna habitat types are common and widespread both locally and regionally (Biota Environmental Sciences 2005; 2006; GIS Database). Aerial imagery also suggests that there is a widespread availability of similar vegetation communities and landforms (GIS Database). Aside from the non-perennial drainage lines that were in a 'good' to 'degraded' condition and were not considered of significance, there were no unique or significant faunal assemblages found within the application area (Biota Environmental Sciences, 2005; 2006; GIS Database). The clearing of 15.5 hectares of native vegetation within an application area of 700 hectares is unlikely to have a significant impact in a regional and local context.

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

Methodology Biota Environmental Sciences (2005)
Biota Environmental Sciences (2006)
CALM (2002)
DEC (2012)
Keighery (1994)
Shepherd (2009)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation
- Threatened Ecological Sites Buffered
- Governor 50cm Orthomosaic - Landgate 2004

(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**

No targeted fauna surveys have been conducted over the application area. A vegetation survey conducted by Biota Environmental Sciences (2005) during 5 to 11 May 2004 identified four broad fauna habitat types within the application area;

1. Broad colluvial valleys dominated by *Acacia aneura*;
2. Lower stony footslopes at the interface between *Acacia* dominated and eucalypt dominated communities;
3. Stony hilltops and upper slopes dominated by eucalypts over *Triodia*; and
4. Incised gullies and creeks.

Biota Environmental Sciences (2005) identified the vegetation condition to be from 'degraded' to 'excellent' (Keighery, 1994). The application area contains several non perennial drainage lines; however these are not considered habitat assemblages of high significance (Biota Environmental Sciences, 2005; GIS Database). The application area does not contain other habitats or faunal assemblages that are ecologically significant and it is unlikely that any species of conservation significance will be significantly impacted by the clearing of native vegetation in the application area. The fauna habitats within the application area are considered to be common and widespread within the subregion and faunal assemblages are unlikely to be different to that found in similar habitat located elsewhere in the region (GIS Database). There is approximately 99% of the pre-European vegetation remaining within the Pilbara bioregion (Shepherd, 2009; GIS Database). Given the extent of the native vegetation remaining in the local area and bioregion, the vegetation to be cleared does not represent a significant ecological link.

There are two species of conservation significance listed as either a threatened species under the *Environment Protection and Biodiversity Conservation Act (EPBC) 1999* or protected under Western Australian legislation (*Wildlife Conservation Act 1950*), that may potentially occur within a 20 kilometre radius of the application area (DEC, 2012); the Western Pebble-mound Mouse (*Pseudomys chapmani*) and the Australian Bustard (*Ardeotis australis*). The Western Pebble-mound Mouse and the Australian Bustard were recorded during a fauna survey conducted by Biota Environmental Sciences (2005). These species are highly mobile and may use the application area for foraging as part of a larger territory area (Biota Environmental Sciences, 2005). The habitats present within the application area are considered common and widespread throughout the local and regional area (Biota Environmental Sciences, 2005; GIS Database). The proposed clearing of 15.5 hectares of native vegetation within a larger application area of 700 hectares is unlikely to have a significant impact on the conservation status of potentially occurring threatened fauna (Biota Environmental Sciences, 2005).

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

Methodology Biota Environmental Sciences (2005)
 DEC (2012)
 Keighery (1994)
 Shepherd (2009)
 GIS Database:
 - IBRA WA (regions - subregions)
 - Pre-European Vegetation
 - Governor 50cm Orthomosaic - Landgate 2004

(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 records of Declared Rare Flora (DRF) within the application area (GIS Database). A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases identified no DRF species as occurring within a 20 kilometre radius of the application area (DEC, 2012).

Biota Environmental Sciences (2006) conducted a vegetation and flora survey of the application area during 5 to 11 May 2006. No DRF were recorded within the survey area.

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

Methodology Biota Environmental Sciences (2006)
 DEC (2012)
 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**
 A search of the available databases shows that there are no Threatened Ecological Communities situated within 100 kilometres of the application area (GIS Database).

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

Methodology GIS Database:
 - 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 application area falls within the Pilbara IBRA bioregion (GIS Database). The vegetation within the application area is recorded as:

Beard vegetation association 18: Low woodland; mulga (*Acacia aneura*) (Shepherd, 2009; GIS Database).

According to Shepherd (2009), Beard vegetation association 18 retains approximately 99% of its pre-European extent. Therefore, the area proposed to be cleared is not a significant remnant of native 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	17,804,193	17,785,001	~99.89	Least Concern	6.32
Beard vegetation associations - State					
18	19,892,305	19,890,275	~99.99	Least Concern	2.13
Beard vegetation associations - Bioregion					
18	676,557	676,557	~100	Least Concern	16.80

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (regions - subregions)
- 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

According to available GIS Databases, there are no permanent wetlands or watercourses within the application area, however there are numerous minor non-perennial drainage lines within the application area (GIS Database). Based on vegetation mapping conducted by Biota Environmental Sciences (2006) and Trudgen & Casson (1998) one broad vegetation type containing two vegetation sub-associations were found within the application area are associated with drainage areas.

- Creeklines supporting tall shrublands dominated by various combinations of *Acacia maitlandii*, *Gossypium robinsonii*, *Petalostylis labicheoides* and *Rulingia luteiflora* over open hummock grassland of *Triodia pungens*:
 - C1: Eucalyptus spp. scattered low trees over *Acacia maitlandii*, *Gossypium robinsonii*, *Petalostylis labicheoides* shrubland over *Triodia pungens* open hummock grassland and *Eriachne mucronata*, *Themeda triandra* open tussock grassland; and
 - C2: *Eucalyptus xerothermica* low open woodland over *Acacia maitlandii*, *Petalostylis labicheoides*, *Rulingia luteiflora* shrubland to tall shrubland over *Triodia pungens* open hummock grassland (Biota Environmental Sciences, 2006).

The riparian vegetation of the application area may be disturbed due to the construction of mining infrastructure which may alter the watercourses natural regime. However, the drainage lines within the application area are likely to have suffered previous disturbance from the mineral exploration activities which have been undertaken over the area (GIS Database). To minimise the impact and ensure the natural water flow is maintained it is recommended that culverts and floodways be installed where access tracks intersect the drainage line.

Based on the above, the proposed clearing is at variance to this Principle. However, the proposed clearing is not likely to significantly impact on the conservation of vegetation growing in association with permanent watercourses or wetlands due to the absence of these within the application area. Should any watercourses be

disturbed the proponent should liaise with the Department of Water to determine whether a Bed and Banks permit is necessary for the proposed works.

Methodology Biota Environmental Sciences (2006)
Trudgen & Casson (1998)
GIS Database:
- Geodata, Lakes
- Hydrography, Linear
- Governor 50cm Orthomosaic - Landgate 2004

(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 databases, the application area is comprised of the Boolgeeda land system and Newman land system (GIS Database).

The Boolgeeda land system is characterised by stony lower slopes and plains below hill systems supporting hard and soft Spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). This vegetation is generally not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Newman land system is characterised by undulating stony plains and hills supporting hard Spinifex grasslands and mulga shrublands with soft Spinifex (Van Vreeswyk et al., 2004). Much of the system supports Spinifex vegetation which is not highly preferred by livestock. Generally the system has a low susceptibility to erosion.

Given that the land systems are not prone to erosion, the proposed clearing is not likely to cause appreciable land degradation.

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

Methodology 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 not located within any conservation area (GIS Database). The nearest conservation area is Karijini National Park, located approximately 25 kilometres west of the application area (GIS Database).

Given the distance of the application area from the Karijini National Park, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the environmental values of the conservation area.

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**
According to available databases, the application area is not located within a Public Drinking Water Source Area (GIS Database). The application area is located within the proclaimed Pilbara groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

There are several ephemeral watercourses passing through the application area which only support surface water for short periods following significant rainfall events (GIS Database). The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application area.

Groundwater salinities within the application area have been measured in the range of 500 -1,000 milligrams/Litre Total Dissolved Solids (GIS Database). Groundwater occurs in a discontinuous fractured rock aquifer system and the zone of permanent saturation is 50 to 60 metres below the ground surface (Biota Environmental Sciences, 2006). Given the depth of groundwater and the lack of phreatophytic species in the application area, the removal of 15.5 hectares of native vegetation is unlikely to impact on groundwater levels or

quality.

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

Methodology Biota Environmental Sciences (2006)
GIS Database:
- Geodata, Lakes
- RIWI Act, Groundwater Areas
- Hydrography, Linear
- Public Drinking Water Source 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 areas experience a semi-desert tropical climate where the annual evaporation rate (3,600 - 4,000 millimetres) substantially exceeds the annual rainfall (318.3 millimetres) (BoM, 2012; CALM, 2002). There are no permanent watercourses within the application areas; however there are drainage tracts within the proposed clearing area (GIS Database). Due to the high evaporation rate and low rainfall, it is unlikely that the drainage lines would carry water under normal rainfall events. Any surface water resulting from the summer rainfall is expected to be short lived and evaporate, or be quickly utilised by the existing vegetation.

The proposed clearing of 15.5 hectares of native vegetation represents only a very small proportion of the size of the Ashburton River catchment (7,877,743 hectares) and Fortescue catchment area (2,975,192 hectares) within which the application area lies (GIS Database). It is not likely that the proposed clearing will lead to an appreciable increase in run off, and subsequently cause or exacerbate the incidence or intensity of flooding.

Natural flood events do occur within the Pilbara region following cyclonic activity however the proposed clearing of 15.5 hectares is not expected to increase the incidence or intensity of such events.

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

Methodology BoM (2012)
CALM (2002)
GIS Database:
- Hydrographic Catchments - Catchments
- Hydrography, Linear

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

Comments

There are two Native Title claim over the area under application (WC05/3 and WC10/11). 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 12 registered Aboriginal Site of Significance within the application area (Site IDs: 20461, 20463, 20454, 20455, 20456, 17610, 20472, 20453, 20813, 20452, 20443 and 20465) (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 23 January 2012 by the Department of Mines and Petroleum (DMP) inviting submissions from the public. One submission was received from the Shire of East Pilbara in relation to the accumulating amount of clearing permit applications received in the East Pilbara. The DMP has previously sent a letter addressing the issues raised by the Shire.

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

4. References

- Biota Environmental Sciences (2005) Fauna Habitats and Fauna Assemblage of Deposits E and F at West Angelas. Prepared for Robe River Iron Associates, June 2005.
- Biota Environmental Sciences (2006) Vegetation and Flora Survey of West Angelas Deposits E and F. Prepared for Robe River Iron Associates, March 2006.
- BoM (2012) Climate Statistics for Australian Locations. A Search for Climate Statistics for Newman Aero, Australian Government Bureau of Meteorology, viewed 8 February 2012, <http://reg.bom.gov.au/climate/averages/tables/cw_007176.shtml>.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 3 (PIL3 - Hamersley subregion) Department of Conservation and Land Management, Western Australia.
- DEC (2012) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, viewed 9 February 2012, <<http://naturemap.dec.wa.gov.au>>.
- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Trudgen, M.E., & Casson, N (1998) Flora and vegetation surveys of Orebody A and Orebody B in the West Angela Hill area, an area surrounding them, and of rail route options considered to link them to the existing Robe River Iron Associates rail line. Unpublished report prepared for Robe River Iron Associates.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia, Department of Agriculture, Western Australia.

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.

