



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5707/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Yarri Mining Pty Ltd

1.3. Property details

Property: General Purpose Lease 08/80
Local Government Area: Shire of Ashburton
Colloquial name: Onslow Camp Dune Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
58		Mechanical Removal	Supporting Infrastructure for Mining Operations

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 September 2013

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. The following Beard vegetation association is located within the application area (GIS Database):

670: Hummock grasslands, shrub steppe; scattered shrubs over *Triodia basedowii*.

Newland Environmental Pty Ltd (Newland) conducted a flora and vegetation survey over the application area (General Purpose Lease 08/80) and adjacent Mining Lease 08/488, on 8 and 9 December 2011 (Newland, 2012). Newland (2012) identified the following four vegetation associations within the application area:

1. *Triodia* Open Hummock Grassland on Sand Dunes

Scattered Tall Shrubs to High Open Shrubland of *Grevillea stenobotrya* sometimes with *Owenia reticulata* (3 metres by 1-8%) occasionally over Open Shrubland of *Acacia stellaticeps* (1.5 metres by 0-5%) over Very Open Herbs of *Euphorbia myrtilloides* (0.4 – 0.5 metres by 2 – 5%) over Scattered Tussock Grass of *Aristida holathera* var. *holathera* (0.3 – 0.4 metres by 0 – 2%) with Open Hummock Grassland of *Triodia wiseana* (0.4 – 0.5 metres by 15 – 30%) on Low Sand Dunes.

2. *Triodia* Hummock Grassland on Plains

Scattered Shrubs to Open Shrubland of *Acacia tetragonophylla* (1 – 2 metres by 1 – 3%) over Scattered Tussock Grass to Open Tussock Grassland of **Cenchrus ciliaris* (0.3 – 0.4 metres by <1 – 15%) with Open Hummock Grassland to Hummock Grassland of *Triodia epactia* (0.3 – 0.5 metres by 20 – 60%) on Sand Plains.

3. *Tecticornia* sp. Flood plains

Scattered Shrubs of *Acacia tetragonophylla* (1.5 metres by <1%) over Low Open Shrubland to Low Shrubland of *Tecticornia indica* subsp. *leiostachya* and *Tecticornia auriculata* (0.4 – 0.7 metres by 5 – 20%) over Very Open Tussock Grassland to Open Tussock Grassland of *Eragrostis falcata* and **Cenchrus ciliaris* (0.3 – 0.4 metres by 5 to 20%) with Scattered Hummock Grass to Very Open Hummock Grassland of *Triodia epactia* (0.4 – 0.5 metres by <1 to 5%) on Clay Flood Plains.

4. Scalded Claypan

Open Tussock Grassland of *Eriachne benthamii* (0.4 metres by 15%) on Scalded Clay Pans.

Clearing Description Onslow Camp Dune Project. Yarri Mining Pty Ltd (Yarri Mining) proposes to clear 58 hectares of native vegetation within a boundary of approximately 64 hectares (GIS Database) for the purpose of supporting infrastructure for adjacent mining operations. The project area is located within the Shire of Ashburton approximately 16 kilometres south, south east of Onslow (GIS Database).

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 purpose of the application is to develop support facilities for a proposed dune sand quarrying operation. The application area covers General Purpose Lease 08/80 which is located adjacent to Mining Lease 08/488 where the mining will occur. The support facilities include processing plant, stockpiles, laydown area, camp, access roads, concrete batching plant, workshop and office units. The proposed clearing involves 19.39 hectares for processing and workshop, 13.33 hectares for laydown and truck turning bay, 2.31 hectares for mine roads, 9.92 hectares for a camp and 12.86 hectares for a concrete batching plant (Yarri Mining, 2013). The proposed clearing also allows for any future expansions to be carried out. The majority of the application area will be subject to clearing and will occur in areas with relatively negligible vegetation (Yarri Mining, 2013).

The vegetation condition of each vegetation association was determined by Newland (2012) using a scale based on Trudgen (1988). These condition ratings were converted to the Keighery (1994) scale.

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 Cape Range (CAR1) subregion of the Carnarvon Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion can comprise Acacia shrublands over *Triodia* on limestone (*Acacia stuartii* or *A. bivenosa*) and red dunefields, *Triodia* hummock grasslands with sparse *Eucalyptus* trees and shrubs on the Cape Range (CALM, 2002). Also extensive hummock grasslands (*Triodia*) on the Cape Range and eastern dune-fields (CALM, 2002).

The vegetation survey identified four vegetation associations within the application area. These were associated with sand dunes, plains, flood plains or clay pans. None of the vegetation types were identified as being rare, restricted or unique (Newland, 2012). The predominant vegetation condition rating for the survey area was 'very good'. The 'degraded' vegetation condition was applied to vegetation association 3 (flood plains) for weed infestation and to vegetation association 4 (clay pans) for erosion and scouring (Newland, 2012). Based on these impacts the survey area was considered to have significant land degradation (Yarri Mining, 2013).

A total of 59 vascular taxa from 42 genera and 19 families were recorded from the survey area (approximately 88.04 hectares) (Newland, 2012). Newland (2012) considered this as reasonably representative or slightly higher than the typical floristic diversity expected for the Onslow Region, in a small survey area with few vegetation types. Three introduced species were recorded in the survey area including Buffel Grass (*Cenchrus ciliaris*), Birdwood Grass (*Cenchrus setiger*) and Mimosa Bush (*Vachellia farnesiana*). Dense infestations of Buffel Grass were observed in vegetation associations 2 (plains) and 3 (flood plains) (Newland, 2012). Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

According to available databases (GIS Database) and Newland (2012), no Threatened Flora, Priority Flora or Threatened or Priority Ecological Communities are located within the application area.

According to Rapallo (2011), regional data indicates a total of 273 taxa of vertebrate fauna have been recorded from the vicinity of the survey area comprising 28 mammals, 168 birds, 73 reptiles, and four frogs. A Level 1 vertebrate fauna survey of the application area (General Purpose Lease 08/80) and adjacent Mining Lease 08/488 recorded 11 reptile and 24 bird species and evidence of three native mammal species (Rapallo, 2011). The low level of fauna activity recorded is likely to be a result of high temperatures (Rapallo, 2011). Fauna habitats were considered widespread at the local and regional level and no unique or specialised fauna habitat was recorded within the application area (Yarri Mining, 2013).

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

Methodology

CALM (2002)
Newland (2012)
Rapallo (2011)
Yarri Mining (2013)
GIS Database:
- IBRA WA (Regions – Sub Regions)
- 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 Level 1 vertebrate fauna survey was undertaken over the application area (General Purpose Lease 08/80) and adjacent Mining Lease 08/488 by Rapallo. This included a desktop study and a site reconnaissance survey on 10 December 2011 (Rapallo, 2011).

The fauna survey recorded the following five fauna habitat types (Rapallo, 2011):

- Dune Crest: Sparsely vegetated crest of dune systems with areas of exposed sand. Occasionally supports large mallee form Eucalypts.
- Dune Side: Sandy and heavily vegetated slope with occasional mallee form Eucalypts.
- Dune Swale: Low point between parallel dune systems. Heavily vegetated with shrubs and spinifex and occasional Eucalypts.
- Flood Plain: Alluvial sand/loam plains adjacent to ephemeral creek lines.
- Clay Pan: Drainage feature with hard clays and little vegetation.

Sand dunes are capable of supporting highly diverse mammal and reptile assemblages (Dickman et al., 2001) (cited in Rapallo, 2011). The sand provides an easy medium into which animals can burrow and also supports a wide variety of seeding and fruiting plant species (Rapallo, 2011). The sand dunes in the application area lie in the centre of a sand dune field that extends north and south for over 50 kilometres (Rapallo, 2011). Rapallo (2011) notes there is also similar sand dune habitats in the proposed extension of the Cane River Conservation Park. The flood plains and clay pan habitats were observed to be degraded and weedy due to heavy grazing by cattle. None of these habitats were considered conducive to supporting short range endemics (SRE) and no potential SRE taxa were observed or collected during the survey (Rapallo, 2011). The habitats listed above were considered widespread at the local and regional level (Rapallo, 2011).

The fauna survey recorded 11 reptile and 24 bird species and evidence of three native mammal species (Rapallo, 2011). There was limited fauna activity during the survey which is the result of the extreme heat experienced and recent dry conditions (Rapallo, 2011). One conservation significant species, the Rainbow Bee-eater (*Merops ornatus*) (Marine; Migratory under *EPBC Act*, Schedule 3), was recorded three times (a total of eight individual birds) during the survey (Rapallo, 2011). This species is unlikely to be significantly impacted by the proposed clearing as it is highly mobile and able to use a range of habitat types.

Evidence of Mulgara (either *Dasyercus cristicauda* (Vulnerable; Schedule 1) or *Dasyercus blythi* (Priority 4)) in the form of tracks and burrows was also recorded during the survey (Rapallo, 2011). It was not possible to determine the species of Mulgara. Following this Newland conducted a targeted Mulgara survey. This was undertaken between 7 and 15 April 2013 and involved five trapping days (Yarri Mining, 2013). According to Yarri Mining (2013), the Mulgara burrows that were located in the survey area previously (Rapallo 2011) were excavated and assessed as being abandoned. No Mulgara were captured and no further tracks or burrows were located in searches across the application area. No other conservation significant fauna were recorded (Yarri Mining, 2013). The application area is, therefore, unlikely to comprise significant habitat for this species.

There is the potential for other fauna species of conservation significance to occur within the application area (Rapallo, 2011). However, given that the habitat present is well represented throughout the region and the application area has suffered degradation from grazing and weed infestation, the application area is not likely to represent significant habitat for native fauna species.

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

Methodology Rapallo (2011)
Yarri Mining (2013)

(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 Threatened Flora species within the application area (GIS Database).

The flora and vegetation survey undertaken by Newland (2012) on 8 and 9 December 2011 did not identify any Threatened Flora species within the survey area.

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

Methodology Newland (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

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 100 kilometres west, south west of the application area (GIS Database).

No TECs were recorded during the flora and vegetation survey undertaken by Newland (2012) on 8 and 9 December 2011.

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

Methodology Newland (2012)
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 is located within the Carnarvon Interim Biogeographical Regionalisation for Australia (IBRA) bioregion (GIS Database). Approximately 99.74% of the pre-European vegetation remains within the Carnarvon bioregion (Government of Western Australia, 2013).

The vegetation of the application area has been mapped as Beard vegetation association 670 (GIS Database). Over 99% of this Beard vegetation association remains at both a state and bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared. A review of aerial imagery also shows that vegetation within the application area is not a remnant within the local area (GIS Database).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Extent in DEC Managed Lands %*
IBRA Bioregion - Carnarvon	8,382,890	8,360,803	~99.74	Least Concern	~11.61
Beard vegetation associations - State					
670	147,897	147,795	~99.93	Least Concern	~11.77
Beard vegetation associations - Bioregion					
670	147,809	147,792	~99.99	Least Concern	~11.77

* Government of Western Australia (2013)

** 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 (2013)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Onslow 1.4m Orthomosaic - Landgate 2001
- 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 likely to be at variance to this Principle

There are no watercourses or waterbodies within the application area (GIS Database). Available databases show there are numerous non-perennial lakes surrounding the application area (GIS Database). According to Rapallo (2011), no drainage channels were evident and drainage is likely to be in the form of sheet flow towards naturally low lying areas of the surrounding plain. Flood plains and clay plains are located in the western portion of the application area and it is likely that water pools here during periods of high rainfall (Rapallo, 2011). No vegetation associations were identified as growing in association with a watercourse or wetland during the flora and vegetation survey (Newland, 2012).

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

Methodology Newland (2012)
Rapallo (2011)
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 may be at variance to this Principle

The application area has been mapped as occurring on the Onslow and Dune land systems (GIS Database). The Dune land system comprises dune fields supporting soft spinifex grasslands (Van Vreeswyk et al, 2004).

This system has some susceptibility to wind erosion immediately following burning but stabilisation occurs rapidly after rain (Van Vreeswyk et al, 2004). The Onslow land system comprises sandplains, dunes and clay plains supporting soft spinifex grasslands and minor tussock grasslands (Van Vreeswyk et al, 2004). The clay plains with tussock grasses are susceptible to erosion and the sandy units of this system are susceptible to wind erosion when bared by overgrazing or fire, but revegetate rapidly after rain (Van Vreeswyk et al, 2004). Based on the above there is potential for erosion to occur particularly following removal of vegetative cover from sand dunes. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a soil erosion management condition.

Based on the above, the proposed clearing may 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 does not lie within any conservation areas or Department of Parks and Wildlife (DPaW) (formerly the Department of Environment and Conservation) managed lands (GIS Database). The application area is located just south of Red Book area 9.8; Coastal Region Exmouth Gulf to Mary Anne Islands (approximately one kilometre from the application area at its closest point) (GIS Database). This Red Book area was originally demarcated as it may provide a supply of nutrients to the adjacent marine ecosystem as well as being a nursery area for fisheries (EPA, 1975). It is considered unlikely that the proposed clearing activities would adversely impact the supply of nutrients to marine ecosystems or adversely impact nursery areas for fisheries. The nearest DPaW managed land is the former Mount Minnie pastoral lease located approximately 6 kilometres south east of the application area (GIS Database). Based on the above, the proposed clearing is not likely to impact the environmental values of any conservation area.

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

Methodology EPA (1975)
GIS Database:
- DEC Tenure
- EPA Red Book 1976-91

(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). There are no waterbodies or watercourses within the application area, however, there are several non-perennial lakes and areas subject to inundation surrounding the application area (GIS Database). According to Yarri Mining (2013), the region is subject to regular widespread flooding which is often associated with cyclonic or massive rainfall events that can result in broad flood plains.

Yarri Mining (2013) notes the project has the potential to impact on surface hydrology through the excavation of sand dune material for laydown and infrastructure areas with proposed excavations resulting in some areas of the dune being up to 12 metres lower in profile. According to Yarri Mining (2013), this will impact on surface water runoff from large rainfall events, but is unlikely to have a significant effect on surface water flow. Although the proposed clearing may increase localised erosion and sedimentation during surface flows it is unlikely to cause significant deterioration in surface water quality given massive rainfall events are a regular occurrence. Potential impacts to the surface water quality as a result of the proposed clearing may be minimised by the implementation of a soil erosion management condition.

According to available databases, groundwater salinity within the application area is between 7,000 and 14,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be saline. Given the high TDS, the proposed clearing is not likely to cause salinity levels within the application area to alter.

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

Methodology Yarri Mining (2013)
GIS Database:
- Groundwater Salinity, Statewide
- 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 experiences an arid, semi-desert to subtropical climate with an average annual rainfall of approximately 323 millimetres recorded at Onslow Airport weather station approximately 16 kilometres north, north west of the application area (BoM, 2013; CALM, 2002). Rainfall is variable with summer and winter rain (CALM, 2002). Cyclonic activity can be significant, and cyclonic systems may affect the coast and hinterland annually (CALM, 2002). Large runoff as well as localised and regional flooding can occur following intense rainfall events. However, whilst large rainfall events may result in the flooding of the area, the proposed clearing is not likely to lead to an increase in incidence or intensity of flooding.

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

Methodology BoM (2013)
CALM (2002)

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

Comments

There is one native title claim over the area under application: WC2010/004 (GIS Database). This claim has been filed at the federal court on behalf of the claimant group. 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*.

According to available databases, 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 Regulation (formerly 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 5 August 2013 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 – Filed at the Federal Court

4. References

- BoM (2013) Climate Statistics for Australian Locations. A Search for Climate Statistics for Onslow Airport, Australian Government Bureau of Meteorology, viewed 29 August 2013, <http://www.bom.gov.au/climate/averages/tables/cw_005017.shtml>.
- 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.
- EPA (1975) Conservation reserves for Western Australia, as recommended by the Environmental Protection Authority 1975. Systems 4, 8, 9, 10, 11, 12.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. 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.
- Newland (2012) Flora and Vegetation Survey for the Onslow Camp Dune Project on M08/488 and G08/80. Unpublished report prepared by Newland Environmental Pty Ltd for Onslow Resources Ltd dated September 2012.
- Rapallo (2011) Level 1 Fauna Survey of the Onslow Camp Dunes Project Area for Onslow Resources Ltd. Unpublished report for Onslow Resources Ltd dated December 2011.
- Trudgen, M.E. (1988) A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished Report Prepared for Bowman Bishaw and Associates, West Perth.
- Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.
- Yarri Mining (2013) July 2013 Onslow Camp Dunes Project Supporting Information for a Native Vegetation Clearing Permit Application Purpose Permit. Unpublished report prepared by Newland Environmental Pty Ltd for Yarri Mining Pty Ltd dated 5 July 2013.

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.