Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5098/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: David Hugh Macpherson

1.3. Property details

Property: Mining Lease 45/1210
Local Government Area: Town of Port Hedland
Colloquial name: Pindan Sands Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 2 August 2012

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

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

589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex soft spinifex; and

647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex.

A flora and vegetation survey of the application area was conducted by Coffey Environments (2011) in September 2011. This survey identified one vegetation community within the application area (Coffey Environments, 2011):

- Scattered Shrubs to Open Shrubland of *Acacia colei* var. *colei* and *Acacia tumida* var. *pilbarensis* to 2 metres over Low Open Shrubland to Low Shrubland of *Acacia stellaticeps* to 1 metre over Mid-dense Hummock Grassland of *Triodia epactia* to 1 metre on red/brown medium-grained sandy loam (Pindan Soils).

Clearing Description

David Hugh Macpherson is proposing to clear 78.43 hectares of native vegetation for the purpose of sand mining. Topsoil will be stripped back and windrowed for use in rehabilitation.

Vegetation Condition

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);

To

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

Comment

The application area is located within the Pilbara region of Western Australia and is situated approximately 15 kilometres south east of Port Hedland.

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 may be at variance to this Principle

The application area occurs within the Roebourne (PIL4) subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This subregion is characterised by quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *Acacia pyrifolia* and *Acacia inaequilatera*. Uplands are dominated by *Triodia* hummock grasslands (CALM, 2002). Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands (CALM, 2002). Samphire, *Sporobolus* and mangal occur on

marine alluvial flats and river deltas (CALM, 2002).

A flora and vegetation survey of the application area was conducted by Coffey Environments (2011) in September 2011. A total of 38 flora species were recorded within the application area (Coffey Environments, 2011). The application area was subject to a wild fire a week prior to the flora survey being conducted, therefore this is likely to explain the low species diversity recorded by Coffey Environments (2011).

According to available databases there are no Threatened or Priority Ecological Communities within the application area (GIS Database).

No Threatened Flora and one Priority 1 Flora species, *Heliotropium muticum*, have been recorded within the application area (GIS Database; Coffey Environments, 2011). A desktop survey of the application area, conducted by the assessing officer, identified the potential for an additional four Priority Flora species to occur within the application area (DEC, 2012a):

- *Heliotropium muticum* (Priority 1): approximately 245 individuals from 23 point locations were recorded within the application area (Coffey Environments, 2011). This species is known as a disturbance opportunist, most commonly recorded after fire or other disturbance (DEC, 2012b). Advice provided by DEC (2012b) recommends further flora surveys be conducted prior to clearing in order to ascertain the extent of this species within the application area. As the application area has been recently burnt, it is highly likely that *Heliotropium muticum* will become common throughout the application area. This species is known from 3 locations restricted to the Port Hedland area, however there are unconfirmed locations approximately 130 kilometres south of the confirmed locations. David Hugh Macpherson has committed to rehabilitating the area post mining with the topsoil, which will be part of the requirements under any *Mining Act 1978* approvals obtained. As *Heliotropium muticum* is known to flourish after disturbance, it is considered likely this species will grow back with the rehabilitation.

- *Tephrosia rosea* var. *venulose* (Priority 1): known from 30 records on Florabase ranging from Karratha to east of Marble Bar (Western Australian Herbarium, 2012). Florabase states that this species is known to occur near creeks (Western Australian Herbarium, 2012). As no creeks occur within the application area it is considered unlikely that this species will occur within the application area (GIS Database).

- *Gomphrena pusilla* (Priority 2): known from 13 records in two locations on Florabase (Western Australian Herbarium, 2012). One known location of this species occurs north of Broome while the other is known from north of Port Hedland, growing on limestone (Western Australian Herbarium, 2012). The proposed clearing is considered unlikely to impact on the conservation of this species.

- *Gymnanthera cunninghamii* (Priority 3): occurs on sandy soils and frequently in drainage lines in the Carnarvon, Great Sandy Desert and Pilbara IBRA bioregions (Coffey Environments, 2011). Given the broad distribution of this species and the lack of drainage lines within the application area, the proposed clearing is considered unlikely to impact on the conservation of this species (Western Australian Herbarium, 2012; GIS Database).

- *Goodenia nuda* (Priority 4): known from numerous records throughout the Pilbara (Western Australian Herbarium, 2012). There is some confusion at present regarding the presence of this species in the Port Hedland region with the species present potentially being *Goodenia triodiophila*, which is not a conservation significant species. The proposed clearing is therefore not likely to impact on the conservation of this species.

Four introduced flora species, *Cenchrus ciliaris, Parkinsonia aculeate, Prosopis* sp. and *Salvinia molesta*, were identified as potentially occurring within vicinity of the application area during a flora and vegetation survey conducted by Coffey Environments (2011) in September 2011. Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Three of these species, *Parkinsonia aculeata, Prosopis* sp. and *Salvinia molesta*, are listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna survey of the application area was conducted by Coffey Environments (2011). This survey identified one fauna habitat, Spinifex on Sandy Plains, within the application area. A total of 12 conservation significant fauna species have been identified as potentially occurring within the application area, however, no core habitat for any of these species is present (Coffey Environments, 2011).

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

Methodology

CALM (2002)
Coffey Environments (2011)
DEC (2012a)
DEC (2012b)
Western Australian Herbarium (2012)
GIS Database:
- Hydrography, linear
- IBRA WA (regions – subregions)
- Threatened Ecological Sites Buffered
- Threatened and Priority Flora

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

Comments

Proposal is not likely to be at variance to this Principle

A fauna survey of the application area was conducted by Coffey Environments (2011). This survey identified one fauna habitat, Spinifex on Sandy Plains, within the application area. A desktop survey of the application area and the surrounding areas identified the following 12 conservation significant fauna species as potentially occurring (Coffey Environments, 2011):

- Crest-tailed Mulgara (*Dasycercus cristicauda*) Vulnerable – Mulgara inhabits the arid regions of Australia and is most commonly found on sandy soils vegetated with spinifex. Three Mulgara mounds were recorded outside of the application area, however none were recorded within the application area. While it is possible the application area supports Mulgara, the proposed clearing is considered unlikely to impact on the conservation of this species;

- Pilbara Orange Leaf-nosed Bat (*Rhinonicteris aurantius*) Vulnerable – forages low in open habitats such as grasslands, however this species requires humid caves and mines for roost. No caves were located within the application area, therefore the proposed clearing is not likely to impact on the conservation of this species;

- Woma (*Aspidites ramsayi*) Schedule 4 – has been recorded within the Port Hedland area and inhabits woodlands, heather and shrublands, often with Spinifex. While there is potential for this species to utilise the habitat within the application, it is known from a broad range, pre-dominantly through the arid regions of Australia (DEC, 2012c). It is therefore considered unlikely that the proposed clearing will impact on the conservation of this species;

- Brush-tailed Mulgara (*Dasycerus blythi*) Priority 4 - Mulgara inhabits the arid regions of Australia and is most commonly found on sandy soils vegetated with spinifex. Three Mulgara mounds were recorded outside of the application area, however none were recorded within the application area. While it is possible the application area supports Mulgara, the proposed clearing is considered unlikely to impact on the conservation of this species;

- Ghost Bat (*Macroderma gigas*) Priority 4 – may fly through the area for foraging, however this species requires caves or mineshafts for roosting, which are not present within the application area. Therefore the proposed clearing is not likely to impact on the conservation of this species;

- Australian Bustard (*Ardeotis australis*) Priority 4 – lives on open grassy plains and low shrubby areas in northern Australia. It is likely that the application area contains habitat suitable for supporting this species, however it is extremely mobile and therefore capable of egressing away from any disturbance. It is considered unlikely that the proposed clearing will impact on the conservation of this species;

- Bush Stone-curlew (*Burhinus grallarius*) Priority 4 – inhabits open woodlands and has been recorded within the Port Hedland area. There is potential for this species to occur within the application area, however given the habitat within the application area is common, the proposed clearing is not likely to impact on the conservation of this species;

- Barn Swallow (*Hirundo rustica*) Migratory – forages in open country, however has not been recorded within the Port Hedland area. While there is potential foraging habitat for this species, it would not be dependent on this habitat and therefore the proposed clearing is not likely to impact on the conservation of this species;

- Rainbow Bee-eater (*Merops ornatus*) Migratory – occurs in the better-watered parts of Western Australia and has been recorded in areas adjacent to the application area. It prefers lightly wooded habitats on sandy soils near water. There are no water bodies present within the application and while the habitat within the application area may be suitable for this species, it would not be dependent on this habitat. It is therefore considered unlikely that the proposed clearing will impact on the conservation of this species;

- Oriental Plover (*Charadrius veredus*) Migratory – primarily inhabits inland plains, however is occasionally found in coastal areas. This species is therefore unlikely to be dependent on the habitat within the application area and the proposed clearing is not likely to impact on the conservation of this species;

- Oriental Pratincole (*Glareola maldivarum*) Migratory – forages on open plains, bare ground around swamps and claypans. There are no swamps or claypans within the application area, therefore this species is not likely

to be dependent on this habitat and the proposed clearing is not likely to impact on the conservation of this species; and

- Fork-tailed Swift (*Apus pacificus*) Migratory – visitor to most parts of Western Australia during the winter months. It is almost exclusively an aerial species and therefore the conservation of this species is not likely to be impacted by the proposed clearing.

While there is the potential for the application area to support conservation significant fauna species, none were recorded during the fauna survey conducted by Coffey Environments (2011). Additionally, no core habitat for any of the above mentioned species was recorded within the application area. Therefore it is considered unlikely that the proposed clearing will impact on the conservation of any of these species.

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

Methodology Coffey Environments (2011)
DEC (2012c)

(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**
No Threatened Flora species are known to occur within the application area (GIS Database).

A flora survey of the application area was conducted by Coffey Environments (2011) in September 2011. No Threatened Flora species were recorded during the survey (Coffey Environments, 2011).

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

Methodology Coffey Environments (2011)
GIS Database:
- Threatened and Priority Flora List

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

Comments **Proposal is not likely to be at variance to this Principle**
According to available databases there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest TEC is located approximately 206 kilometres south west of the application area. At this distance it is considered unlikely that the proposed clearing will impact on any TEC's.

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 is located within the Pilbara Interim Biogeographical Regionalisation for Australia (IBRA) bioregions (GIS Database). The Government of Western Australia (2011) reports that approximately 99.58% of the pre-European vegetation remains within the Pilbara bioregion.

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

589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex soft spinifex; and

647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex.

According to the Government of Western Australia (2011) approximately 99.37% and 97.88% of Beard vegetation associations 589 and 647, respectively, remain within the Pilbara bioregion (see table on next page).

	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	~99.58	Least Concern	~6.32
Beard vegetation associations - State					
589	809,603	804,022	~99.31	Least Concern	~1.60
647	195,861	191,711	~97.88	Least Concern	~0.00
Beard vegetation associations - Bioregion					
589	730,567	725,994	~99.37	Least Concern	~1.77
647	195,860	191,711	~97.88	Least Concern	~0.00

* Government of Western Australia (2011)
** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of native vegetation in an area that has been extensively cleared.

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 not at variance to this Principle**
According to available databases there are no permanent or perennial wetlands or watercourses within the application area (GIS Database).

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

Methodology GIS Databsae:
- Hydrography, linear

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposal is not likely to be at variance to this Principle**
The application area intersects the Uaroo land system (GIS Database). This land system is characterised by broad sandy plains supporting shrubby hard and soft spinifex grasslands. This land system occasionally has some erosion evident in drainage tracts, however this land system is generally not susceptible to erosion (Van Vreeswyk et al., 2004). According to available databases there are no drainage tracts within the application area, therefore it is considered unlikely that the proposed clearing will cause appreciable land degradation (GIS Database).

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

Methodology Van Vreesywk et al. (2004)
GIS Database:
- Hydrography, linear
- 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 at variance to this Principle**
The proposed clearing is not located within a conservation area (GIS Database). The nearest conservation area is Mungaroona Range Nature Reserve, located approximately 115 kilometres south west of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the

environmental values of any conservation areas.

Based on the above, the proposed clearing is not 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 (PDWSA) (GIS Database). The nearest PDWSA is the De Grey River Water Reserve which is located approximately 38 kilometres east of the application area (GIS Database).

The groundwater salinity within the application area is between 1,000 – 3,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the proposed clearing is for 78.43 hectares within the Pilbara Groundwater Province (5,557,665 hectares), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

There are no permanent wetlands or watercourses within the application area (GIS Database). It is therefore considered unlikely that the proposed clearing will impact on the quality of any surface water.

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

Methodology GIS Database:
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSA)

(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 a semi-desert-tropical climate with an average annual rainfall of approximately 313.3 millimetres recorded at nearby Port Hedland weather station (CALM, 2002; BoM, 2012). Much of this precipitation comes from local thunderstorms and cyclonic activity (Van Vreeswyk, et.al. 2004). Based on an average annual evaporation rate of 3,400 millimetres (GIS Database), any surface water resulting from normal rainfall events is likely to be relatively short lived.

The application area is within the Port Hedland Coast catchment area which covers approximately 744,301 hectares (GIS Database). Given the size of the area to be cleared (78.43 hectares) in relation to the size of the catchment area, the proposed clearing is not likely to increase the incidence or intensity of flooding.

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

Methodology BoM (2012)
CALM (2002)
Van Vreeswyk et al. (2004)
GIS Database:
- Evaporation Isopleths
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC09/3) over the area under application (GIS Database). 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 is one 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 proponents' 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 18 June 2012 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

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

4. References

BoM (2012) BoM Website - Climate Averages by Number, Averages for PORT HEDLAND AIRPORT. www.bom.gov.au/climate/averages/tables.shtml (Accessed 23 July 2012)

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

Coffey Environments (2011) Level 1 Flora and Level 1 Fauna Assessment 70 Hectare Portion of M45/1210 Great Northern Highway, Port Hedland. Unpublished report prepared for Pilbara Earthmoving, dated October 2011.

DEC (2012a) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: http://naturemap.dec.wa.gov.au/

DEC (2012b) Advice received from Department of Environment and Conservation Species and Communities Branch - Priority 1 Flora species *Heliotropium muticum*. Advice received 20 July 2012.

DEC (2012c) Woma Python (*Aspidites ramsayi*) fact sheet. Accessed on 25 July 2012 from www.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.

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.

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.

Western Australian Herbarium (2012) FloraBase the Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/

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.