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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4743/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Louis William Rinaldi**

1.3. Property details

Property: Mining Lease 47/559
Miscellaneous Licence 47/514
Local Government Area: Shire of Roebourne
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
11.2		Mechanical Removal	Sand Mining

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 29 November 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. Two Beard vegetation associations have been mapped within the application area:

Beard vegetation association 127: Bare areas; mud flats; and

Beard vegetation association 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex soft spinifex (GIS Database; Government of Western Australia, 2011).

Astron Environmental Services (2011; 2012) conducted a vegetation and flora survey of the application area and surrounding areas on 22 August 2011 and during September 2012, and described five broad vegetation communities within the application area:

LSi1 – *Triodia epactia* hummock and *Cenchrus ciliaris* tussock closed grassland on sandy island. There is some *Triodia angusta* around fringes of island;

LSi2 – *Cenchrus ciliaris* tussock closed grassland on sandy island (previously burned);

LSi3 – *Sarcostemma viminale* subsp. *australe* open shrubland over *Triodia angusta* and *Cenchrus ciliaris* mixed grassland;

CSp1 – *Trianthema turgidifolia* open or scattered low shrubland over *Cenchrus ciliaris* tussock grassland with patchy *Triodia angusta;*

CSs2 – Mixed *Scleroleana* species (*S. hostiles, S. bicornis, S. glabra, S. uniflora*) with *Atriplex bunburyana* low shrubland over *Eragrostis xerophila* open tussock grassland with scattered *Acacia ampliceps*; and

LSf1 – *Tecticornia halocnemoides* var ?sp1, *Tecticornia halocnemoides* var ?sp2 and *Tecticornia indica* var *leiostachya* with occasional *Frankenia pauciflora* over scattered to closed *Sporobolus virginicus* grassland.

Clearing Description

L W Rinaldi is proposing to clear up to 11.2 hectares of native vegetation within a 31.5 hectare application area, for the purpose of sand mining.

The vegetation will be cleared using a front end loader.

Vegetation Condition

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

To:

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

Comment

The application area is located in the Roebourne subregion of Western Australia and is situated approximately seven kilometres east of the Karratha town site (GIS Database).

The vegetation condition was derived from a vegetation survey conducted by Astron Environmental Services (2011; 2012).

Clearing permit CPS 4743/1 was granted on 12 April 2012, and is valid from 5 May 2012 to 5 May 2017. The clearing permit authorised the clearing of 7.2 hectares of native vegetation. An application for an amendment to clearing permit CPS 4743/1 was submitted by L W Rinaldi on 5 July 2012. The proponent has requested to amend the size of the area permitted to be cleared from 7.2 hectares to 11.2 hectares, as well as increasing the clearing permit area boundary. There were no significant additional environmental impacts identified as a result of this amendment.

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 Roebourne sub-region of the Pilbara Interim Biogeographic Regionalisation of Australia bioregion (GIS Database). This sub-region is characterised as 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 *A. pyrifolia* and *A. inaequilatera*. Uplands are dominated by *Triodia hummock* grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands. Samphire, Sporobolus and mangal occur on marine alluvial flats and river deltas (CALM, 2002).

Astron Environmental Services (2011; 2012) conducted a flora and vegetation survey over the application area on 22 August 2011 and during September 2012. A total of 76 vascular plant taxa from 51 genera belonging to 18 families were recorded within the application area and the surrounding areas (Astron Environmental Services, 2011). The flora and vegetation represented within the survey area was considered to be characteristic of the Roebourne subregion flora. The condition of the vegetation was determined to be 'very good' with some areas affected by introduced species and tracks used by off-road bikes and vehicles in a 'degraded' condition (Astron Environmental Services, 2011; 2012; Keighery, 1994).

A search of the Department of Environment and Conservation Threatened and Priority Flora databases revealed that no Threatened Flora species and four Priority species may potentially occur within a 20 kilometre radius of the application area (DEC, 2012). Astron Environmental Services (2011; 2012) identified no Threatened flora and no Priority flora species within the application area.

The Priority Ecological Community (PEC), 'Stony Chenopod association of the Roebourne Plains', intercepts the application area. This PEC is dominated by *Eragrostis xerophila* and chenopods growing in the saline clay soils with dense surface strew of pebbles and cobbles. The association appears to be uncommon and is likely to be linked with the Cheerawarra land system. Only one occurrence has been linked to date (Roebourne Airport). The vegetation described as CSs2 is associated with the Cheerawarra land system. It is located on spongy pinkish brown fine silty loams with variable and patchy stone and pebble mantle. Because the stone and pebble mantle is variable, it does not accurately conform to the Stony Chenopod PEC description; however it may be a remnant of this PEC (Astron Environmental Services, 2012). L W Rinaldi states that only two hectares of native vegetation is required to be cleared from this potential PEC (Astron Environmental Services, 2012). Based on the small amount of proposed clearing and that the vegetation description does not accurately describe the PEC, the proposed clearing is not likely to have a significant impact on the conservation of the Stony Chenopod association of the Roebourne Plains PEC. No Threatened Ecological Communities were recorded within the application area (GIS Database).

Two introduced flora species, Buffel grass (*Cenchrus ciliaris*) and Birdwood grass (*Cenchrus setiger*) were recorded from the application area (Astron Environmental Services, 2011). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

One fauna habitat type was identified through aerial photography and by Astron Environmental Services (2011) within the application area (GIS Database). This habitat is 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 (Astron Environmental Services, 2011; GIS Database). There were no unique or significant faunal assemblages found within the application area (GIS Database). The clearing of 11.2 hectares of native vegetation within an application area of 31.5 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 Astron Environmental Services (2011)
Astron Environmental Services (2012)
DEC (2012)
CALM (2002)
Keighery (1994)
GIS Database:
- Dampier & Extensions 50cm Orthomosaic - Landgate 2008
- IBRA WA (Regions - Subregions)
- Pre-European vegetation
- 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**
No targeted fauna surveys have been conducted over the application area. A flora survey conducted by Astron Environmental Services (2011) and aerial imagery identified one broad fauna habitat type (GIS Database); Bare saline mudflat.

Astron Environmental Services (2011) identified no significant faunal assemblages within the application area, and aerial imagery (GIS Database) suggests that the habitat present within the application area appears to be abundant within the local area (GIS Database). The proposed clearing of 11.2 hectares of native vegetation is not likely to impact critical feeding or breeding habitat for any conservation significant fauna species as the application area does not contain significant faunal habitats.

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

Methodology Astron Environmental Services (2011)
GIS Database:
- Dampier & Extensions 50cm Orthomosaic - Landgate 2008

(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 Threatened Flora within the application area (GIS Database). A search of the Department of Environment and Conservation's Threatened and Priority Flora databases identified no Threatened flora species as occurring within a 20 kilometre radius of the application area (DEC, 2012).

Astron Environmental Services (2011; 2012) conducted a vegetation and flora survey of the application area on 22 August 2011 and during September 2012. No Threatened flora species were recorded within the survey area.

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

Methodology Astron Environmental Services (2011)
Astron Environmental Services (2012)
DEC (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**
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 127: Bare areas; mud flats; and

Beard vegetation association 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex soft spinifex (GIS Database; Government of Western Australia, 2011).

Beard vegetation associations 127 and 589 retain approximately 90% and 99**%** of its pre-European extent respectively, within the bioregion (Government of Western Australia, 2011). 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	17,804,427	17,729,352	~99.58	Least Concern	6.32
Beard vegetation associations - State					
127	736,894	696,581	~94.53	Least Concern	8.04
589	809,603	804,022	~99.31	Least Concern	1.60
Beard vegetation associations - Bioregion					
127	176,403	158,269	~89.72	Least Concern	0.01
589	730,567	725,993	~99.37	Least Concern	1.77

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

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

Methodology

Department of Natural Resources and Environment (2002)
Government of Western Australia (2011)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation

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

Comments

Proposal is not at variance to this Principle

According to available databases the application area sits within a broad expanse of a saline mud flat (GIS Database). Based on vegetation mapping by Astron Environmental Services (2011; 2012) there were no riparian vegetation associations found within the application area associated with saline mudflat.

As the saline mud flat located within the application area is only likely to inundate following significant rainfall or cyclonic events, the proposed clearing of 11.2 hectares of native vegetation within a 31.5 hectare application area is unlikely to result in any significant impact to any watercourse or wetland provided natural surface water flow patterns are not disturbed.

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

Methodology

Astron Environmental Services (2011)
Astron Environmental Services (2012)
GIS Database:
- Geodata, Lakes
- 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 Littoral, Horseflat and Cheerawarra land systems (GIS Database).

The Littoral Land System is described as extensive bare coastal mudflats flanked by mangroves and samphire flats with quaternary coastal mud and silty loams, minor sandy islands, narrow sandy plains, coastal dunes and beaches with Aeolian sands (Van Vreeswyk et al., 2004). This land system is not susceptible to soil erosion however is highly susceptible to wind erosion if vegetative cover is depleted (Van Vreeswyk et al., 2004).

The Horseflat Land System is described as gilgaied clay plains supporting tussock grasslands and minor grassy snakewood shrublands. Parts of the land system are moderately to highly susceptible to erosion (Van Vreeswyk et al., 2004).

The Cheerawarra land system is described as sandy coastal plains and saline clay plains supporting soft and hard spinifex grasslands and minor tussock grasslands. This land system is susceptible to wind erosion (Van Vreeswyk et al., 2004). The potential land degradation impacts as a result of the proposed clearing of may be minimised by the implementation of a staged clearing condition.

The application area intercepts areas categorised as 'low' to 'moderate' and ‘moderate’ to ‘high’ Acid Sulphate Soil (ASS) risk (GIS Database). Astron Environmental Services (2011) has sent sand samples to be analysed at SGS Australia Pty Ltd, and the results have identified that the resource is not likely to form acid on exposure to air, so that acid mine drainage risks are considered to be low. On this basis, the proposed clearing activities are not likely to pose a significant ASS risk (Astron Environmental Services, 2011).

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

Methodology

Astron Environmental Services (2011)
Van Vreeswyk et al. (2004)
GIS Database:
- Rangeland Land System Mapping
- Acid Sulfate Soil Risk Map, Pilbara Coastline

(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 located approximately four kilometres from the coastline (GIS Database). The application area is not located within any conservation area (GIS Database). The nearest conservation area is the Great Sandy Island Nature Reserve, located approximately 46 kilometres west of the application area (GIS Database).

Given the distance of the application area from the Great Sandy Island Nature Reserve, 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

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.

The application area is situated partly on saline coastal flats which are subject to inundation (GIS Database). High sediment loads may enter the tidal areas from overland flow events which result following significant rainfall events. The proposed clearing is not likely to significantly increase sediment entering the tidal areas or Indian Ocean.

With an average annual rainfall of approximately 287.6 millimetres (BoM, 2012) and an annual evaporation rate of 3,200 - 3,600 millimetres (GIS Database) there is little surface flow during normal seasonal rains. The sand dunes are highly permeable with sparsely distributed vegetation, so the proposed clearing is not likely to

increase surface water run-off.

With high annual evaporation rates and low annual rainfall there is little recharge into regional groundwater, that at this site is considered brackish (between 1,000 milligrams/litre and 3,000 milligrams/litre Total Dissolved Solids) (GIS database).

The proposed clearing of up to 11.2 hectares of mud flat vegetation within an application area of 31.5 hectares is unlikely to have any impact on groundwater or surface water quality.

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

Methodology BoM (2012)
GIS Database:
- Evaporation Isopleths
- Hydrography, linear
- Groundwater Salinity, Statewide
- Public Drinking Water Source Areas
- RIWI Act, Groundwater 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

Given the size of the area to be cleared (11.2 hectares) compared to the size of the Coastal catchment area (744,302 hectares) (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. The application area is located on coastal sand dunes and saline flats. Clearing of vegetation on the highly permeable sand dunes is unlikely to cause or exacerbate flooding.

The application area may periodically become inundated on a very high tide (king tide or cyclonic event) or after sufficient rainfall (Astron Environmental Services, 2011). L W Rinaldi states that a five to 10 meter wide buffer around the edge of the application area will be left to mitigate any potential inundating issues (Astron Environmental Services, 2011).

Given the mitigation methods proposed to minimise changes in tidal flows across the mudflats the proposed clearing is not likely to exacerbate the incidence or intensity of flooding.

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

Methodology Astron Environmental Services (2011)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title claim over the area under application (WC99/14). The claim WC97/72 was determined by the Federal Court on 11 May 2005. 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 no registered Aboriginal Site of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal sites of significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit was advertised on 16 July 2012 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Clearing permit CPS 4743/1 was granted on 12 April 2012, and is valid from 5 May 2012 to 5 May 2017. The clearing permit authorised the clearing of 7.2 hectares of native vegetation. An application for an amendment to clearing permit CPS 4743/1 was submitted by L W Rinaldi on 5 July 2012. The proponent has requested to amend the size of the area permitted to be cleared from 7.2 hectares to 11.2 hectares, as well as increasing the clearing permit area boundary. There were no significant additional environmental impacts identified as a result of this amendment.

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

4. References

Astron Environmental Services (2011) Nickol River Tenement M47/559 Vegetation and Flora Survey. Prepared for Louis Rinaldi, August 2011.

Astron Environmental Services (2012) Vegetation and Flora Survey L47/514 – Access Track to M47/559. Prepared for Louis Rinaldi, September 2012.

BoM (2012) Climate Statistics for Australian Locations. A Search for Climate Statistics for Karratha Aero, Australian Government Bureau of Meteorology, viewed 20 January 2012, <http://reg.bom.gov.au/climate/averages/tables/cw_004083.shtml>.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 4 (PIL4 - Roebourne synopsis), Department of Conservation and Land Management, Western Australia.

DEC (2012) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, viewed 16 January 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.

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., Leighton, K.A & Hennig, P. (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.