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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3410/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Shark Bay Resources Pty Ltd**

1.3. Property details

Property: *Shark Bay Salt Industry Agreement Act 1983*, Mining Lease 260SA (AM 70/260)
Local Government Area: Shire of Shark Bay
Colloquial name: Useless Inlet South Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description
Vegetation within the application area has been mapped at a 1:250,000 scale as the following Beard Vegetation Association (Shepherd, 2007):

Beard Vegetation Association 1100: hummock grassland; dwarf shrub steppe; mixed ericoid shrubs and spinifex.

Mattiske Consulting Pty Ltd (Mattiske Consulting) conducted a flora and vegetation survey of the *Shark Bay Salt Industry Agreement Act 1983,* Mining Lease 260SA from 29 July to 2 August 1996. The flora and vegetation survey included the area under application. Mattiske Consulting (1996) identified the following two vegetation associations within the application area:

Vegetation Association 5:
Closed to Low Shrubland of *Melaleuca huegelii* subsp. *pristicensis* thickets fringing inlets and birridas. The soil was calcareous sand with shells, 20% bare ground and 20% litter cover of twigs and logs.

This association is very common fringing the inlet and several birridas both on and off the lease area.

Vegetation Association 7:
Closed to Open Low Shrubland of *Thryptomene baeckeacea*, *Salsola kali*, *Rhagodia preissii* subsp. *obovata*, *Atriplex bunburyana* and *Acacia tetragonophylla* with occasional emergent *Acacia ligulata*, *Acacia rostellifera* and / or *Acacia sclerosperma* on mid to upper slopes of sand dunes of Useless Inlet. The soil was sand with none or very few angular pebbles less than 1 centimetre in diameter and about 5-40% bare ground.

Clearing Description
Shark Bay Resources (2009) proposes to clear up to 3.1 hectares of native vegetation, within a larger area equalling approximately 12 hectares. The proposed clearing is located approximately 50 kilometres south of Denham (GIS Database).

The vegetation will be cleared for borrow pits using heavy machinery. The vegetation and topsoil will be stockpiled for the use in future rehabilitation of other areas where similar vegetation communities are likely to occur on the mining lease area (Shark Bay Resources, 2009).

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

Comment
The vegetation condition rating was derived from information supplied by Shark Bay Resources and from a flora and vegetation survey conducted by Mattiske Consulting in 1996.

Shark Bay Resources (2009) reports that the application area is highly disturbed from its previous use as borrow pits.

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 lies within the Edel land system (GIS Database). This land system is described by DEWHA (2009) as being biogeographically significant as it is found within the intermediate zone between the *Eucalyptus* rich south-west botanical province and the *Acacia* rich Eremaean botanical province (DEWHA, 2009). DEWHA (2009) reports that because of its location in the transitional zone between two botanical provinces the area supports a rich and diverse flora, especially in the southern section which has not been affected by grazing.

The application area is located within the Shark Bay Register of National Estate Environmentally Sensitive Area (DEWHA, 2009). This area represents a meeting point of three major climatic regions and has many species of plants and animals at the limits of their geographical distribution including 145 plant species at their northern limit and 39 plant species at their southern limit (DEWHA, 2009). DEWHA (2009) reports that the Shark Bay region exhibits a highly diverse landscape and has exceptionally diverse flora (over 620 plant species in the region) and terrestrial and marine fauna. The Shark Bay region is known to have up to 18 mammal species, 236 bird species, 108 amphibian and reptile species in addition to a high diversity in fauna species that burrow (DEWHA, 2009).

A vegetation and flora survey was conducted by Mattiske Consulting over the mining lease in winter 1996. Mattiske Consulting (1996) identified up to 186 vascular plants from 124 genera and 54 families. The most common genera were *Acacia* (6 species), *Ptilotus* (5 species) and *Halosarcia* (5 species) (Mattiske Consulting, 1996). The floristic diversity identified across the mining lease would be considered to be high, however, the application area is degraded and therefore, would be expected to have a lower floristic diversity than other, undisturbed areas nearby.

The flora and vegetation survey conducted over the lease area by Mattiske Consulting in 1996 identified a large number of weed species within the survey area. The presence of introduced weed species lowers the biodiversity value of the proposed clearing area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Should a permit be granted, it is recommended that a condition be imposed for the purpose of weed management.

The application area lies within a region of high diversity, however the application area is highly disturbed from its previous use as a borrow pit (Shark Bay Resources, 2009). Therefore, the biodiversity of the application area is expected to be much lower than other undisturbed areas within the mining lease and Shark Bay region.

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

Methodology

DEWHA (2009)
Mattiske Consulting(1996)
Shark Bay Resources (2009)
GIS Database
- Rangeland land system mapping

(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

The application area lies within the Shark Bay Register of National Estate (GIS Database). This region is an area of major zoological importance, primarily due to habitats on peninsulas and islands being isolated from the disturbance that has occurred elsewhere (DEWHA, 2009). Shark Bay has a rich avifauna with over 35% of Australia's bird species having been recorded here (DEWHA, 2009). The region is also noted for the diversity of its amphibians and reptiles, supporting nearly 100 species, as well as its variety of burrowing species (DEWHA, 2009).

The application area is reported by Shark Bay Resources (2009) as being highly degraded from its past use as a borrow pit. Photos of the application area provided by Shark Bay Resources (2009) support this and furthermore, the photos indicate that the diversity of landforms within the application area is low in terms of breakaways, ranges, ridges or caves suitable to provide habitat for fauna. The historical use of the application area as a borrow pit is likely to have significantly reduced the habitat value for the area.

The vegetation of the application area is made up of Vegetation Association 5 and Vegetation Association 7, as described by Mattiske Consulting (1996). Vegetation Association 5 is reported by Mattiske Consulting (1996) as being very common fringing the inlet and several birridas both on and off the lease area whilst Vegetation Association 7 is reported as occurring on higher slopes surrounding the inlet and birridas and is expected to be common both on and off the lease area. As the vegetation and landforms within the application area are common throughout the surrounding lease area and adjoining areas, it would be considered likely that most fauna would be able to relocate into these surrounding areas if present within the application area upon the commencement of clearing.

Given that the application area has been disturbed by past and present mining activities and that larger areas

of higher quality vegetation exist throughout and adjacent to the Shark Bay Resources mining lease area, it is unlikely that the vegetation within the application area would be considered as significant habitat for fauna.

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

Methodology DEWHA (2009)
Mattiske Consulting (1996)
Shark Bay Resources (2009)
GIS Database
- Register of National Estate

(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

Mattiske Consulting Pty Ltd conducted a flora and vegetation survey of the Shark Bay Resources mining lease area in winter 1996 (Mattiske Consulting, 1996). The flora and vegetation survey included a search of the Department of Conservation and Land Management's (now the Department of Environment and Conservation) Threatened (Declared Rare) Flora databases for Declared Rare Flora (DRF) and Priority flora species, a field survey to define and map the vegetation communities within the survey area and a search for the existence of conservation significant species (Mattiske Consulting, 1996).

Mattiske Consulting (1996) identified the vegetation within the application area as consisting of Vegetation Association 5 and Vegetation Association 7. Mattiske Consulting (1996) reported that Vegetation Association 5 comprised the Priority 2 species *Melaleuca huegelii* subsp. *pristicensis*. Mattiske Consulting (1996) reports that Vegetation Association 5 is very common fringing the inlet and several birridas both on and off the lease. Furthermore, based on records held by the Western Australia Herbarium this species often occurs in the area in populations with over 100 plants (Western Australian Herbarium, 1998-2009). Given that this species would be found in large numbers both on and off the lease, the proposed clearing is unlikely to significantly impact on the conservation of this species.

The following Priority flora species have also been identified by Mattiske Consulting (1996) within the Shark Bay Resources Pty Ltd mining lease area:

- *Abutilon* sp. Hamelin (Priority 2);
- *Olearia occidentissima* (Priority 2)
- *Pityrodia cuneata* (Priority 2);
- *Rhodanthe oppositifolia* subsp. *ornata* (Priority 2);
- *Stenanthemum divaricatum* (Priority 3); and
- *Triodia bromoides* (Priority 4).

All of these Priority species were identified within different vegetation associations to that of the application area (Mattiske Consulting, 1996). Therefore, it would be considered unlikely that these species would occur within the application area.

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

Methodology Mattiske Consulting (1996)
Western Australian Herbarium (1998-2009)

(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

There are no known Threatened Ecological Communities (TECs) within the area applied to clear (GIS Database). The closest known TEC is located approximately 75 kilometres east of the application area (GIS Database).

Shark Bay Resources (2009) report that no TECs were identified during the flora and vegetation survey of the mining lease.

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

Methodology Shark Bay Resources (2009)
GIS Database
- Threatened Ecological Communities

(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 likely to be at variance to this Principle

The application area falls within the Geraldton Sandplains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2007), reports that approximately 42.2% of the pre-European vegetation still exists in this bioregion (see table below).

According to the Bioregional Conservation Status of Ecological Vegetation classes the conservation status of the Geraldton Sandplains IBRA region is classed as "depleted". With approximately 42.2% of the pre-European vegetation remaining (Department of Natural Resources and Environment, 2002). In addition, there is a fair representation of the pre-European vegetation of the Geraldton Sandplains IBRA region within conservation reserves (see table below).

The vegetation within the application area is recorded as the following Beard Vegetation Association (Shepherd, 2007):

- Beard Vegetation Association 1100: hummock grassland; dwarf shrub steppe, mixed ericoid shrubs and spinifex.

According to Shepherd (2007) approximately 98.3% of this vegetation association remains within the bioregion (see table below). Therefore this vegetation association is not a significant remnant of native vegetation within 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 – Geraldton Sandplains	3,136,277	1,324,440	~42.2	Depleted	~15.3
Beard veg assoc. – State					
1100	37,474	35,870	~98.3	Least Concern	~3.8
Beard veg assoc. – Bioregion					
No information available					

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

Options to select from:	Bioregional Conservation Status of Ecological Vegetation Classes **(Department of Natural Resources and Environment 2002)**
Presumed extinct	Probably no longer present in the bioregion
Endangered*	<10% of pre-European extent remains
Vulnerable*	10-30% of pre-European extent exists
Depleted*	>30% and up to 50% of pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little or no degradation over a majority of this area
*** or a combination of depletion, loss of quality, current threats and rarity gives a comparable status**	

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

Methodology

Department of Natural Resources and Environment (2002)
Shepherd (2007)
GIS Database
- Interim Biogeographic Regionalisation of Australia

(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

According to available databases there are no permanent or ephemeral watercourses within the application area (GIS Database). The vegetation descriptions provided by Mattiske Consulting (1996) and photos of the application area provided by Shark Bay Resources (2009) indicate that none of the vegetation communities located within the application area are growing in association with a wetland or watercourse (Mattiske Consulting, 1996; Shark Bay Resources, 2009).

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

Methodology Mattiske Consulting (1996)
Shark Bay Resources (2009)
GIS Database
- Hydrography, linear

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

Comments **Proposal is not likely to be at variance to this Principle**
The application area is mapped as occurring within the Edel land system (GIS Database).

Payne et al. (1987) describe the Edel land system as generally consisting of undulating sandy plains with occasional dunes, limestone rises and saline flats; low acacia shrublands with some saltbush and heath communities.

Payne et al. (1987) reports that the saline plains landform within the Edel land system is susceptible to wind erosion when locally over-used. Payne et al. (1987) describe the saline plains landform as consisting of the following:

- low-lying saline plains, lightly to moderately strewn with limestone cobbles or pebbles. Soils are very shallow grey loamy sands with calcareous inclusions. The vegetation of this landform consists of scattered low shrublands, dominated by halophytes: *Atriplex vesicaria*, *Halosarcia indica*, *Frankenia* spp., *Maireana platycarpa*, *Carpobrotus* spp. and *Halosarcia* spp.

Based on the vegetation descriptions provided by Mattiske Consulting (1996), this landform does not appear to occur within the application area. Furthermore, the degradation of the application area caused by its past use as a borrow pit area, has resulted in many areas within the application area already being sparsely vegetated. Therefore, the proposed clearing activities are unlikely to result in a significant increase in land degradation.

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

Methodology Mattiske Consulting (1996)
Payne et al. (1987)
GIS Database
- Rangeland land system mapping

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments **Proposal is not likely to be at variance to this Principle**
The application area is located within the Shark Bay Register of National Estate (RNE) Environmentally Sensitive Area (GIS Database). The region has immense conservation value and is inscribed on the World Heritage List for the following four outstanding natural values (DEWHA, 2009):

- It is an outstanding example representing the major stages in the earth's evolutionary history;
- It is an outstanding example representing significant ongoing ecological and biological processes;
- It is an example of superlative natural phenomena; and
- It contains important and significant habitats for in situ conservation of biological diversity.

The application area has previously been used as a borrow pit and is therefore degraded (Shark Bay Resources, 2009). Given the disturbance that has occurred, it is likely that the conservation value of the area has been reduced. The relatively small scale of the proposed clearing (3.1 hectares) is unlikely to impact the conservation value of the Shark Bay RNE area or any other conservation areas.

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

Methodology DEWHA (2009)
Shark Bay Resources (2009)
GIS Database
- Register of National Estate

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments **Proposal is not likely to be at variance to this Principle**
According to available databases there are no permanent or ephemeral watercourses or wetlands within the application area (GIS Database). The application area is situated adjacent to several salt evaporation ponds which are used by Shark Bay Resources for the production of salt. The quality of surface water within the salt evaporation ponds is likely to be considered hyper-saline. The application area is characterised by low rainfall,

high evaporation and sandy porous soils (BoM, 2009; Mattiske Consulting, 1996). Given the small scale of the proposed clearing and the porosity of the soils, the proposal is unlikely to cause water erosion or subsequent sedimentation and turbidity in nearby water bodies.

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Carnarvon Water Reserve which is located approximately 170 kilometres north, north-east from the application area (GIS Database). Given the distance separating the application area and the nearest water supply area, the proposed clearing is unlikely to impact on the quality of the Carnarvon Water Reserve.

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

Methodology

BoM (2009)
Mattiske Consulting (1996)
GIS Database
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments

Proposal is not likely to be at variance to this Principle

The application area is located in an area of high evaporation, low rainfall and predominantly sandy soils (BoM, 2009; Mattiske Consulting, 1996), therefore, it would be expected that there would be little surface flows during normal seasonal rains.

The application area is located adjacent to the salt pond crystallization system, however, there are no permanent or ephemeral water bodies located within the application area (GIS Database). Due to the sandy nature of the soils within the application area, it would be expected that the majority of the volume from normal seasonal rainfall would infiltrate the soil. Therefore, the proposed clearing is unlikely to exacerbate the incidence or intensity of flooding in the area.

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

Methodology

BoM (2009)
Mattiske Consulting (1996)
GIS Database
- Hydrography, linear

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

Comments

There is one Native Title claim (WC 98/017) over the area under application (GIS Database). This claim has been registered with the Native Title Tribunal on behalf of the claimant group. However, the tenement 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 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 and Conservation and the DoW to determine whether a Works Approval, Water Licence, Bed and Banks permit or any other licences or approvals are required for the proposed works.

There were no submissions received during the public comments period.

Methodology

GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles and the proposed clearing is not likely to be at variance to Principles (a), (b), (c), (d), (e), (f), (g), (h), (i) and (j).

Should the permit be granted it is recommended that conditions be imposed for the purposes of weed management, rehabilitation, record keeping and permit reporting.

5. References

BoM (2009) Climate statistics for Australian locations. Bureau of Meteorology. http://reg.bom.gov.au. Accessed 27 November 2009.

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DEWHA (2009) Australian Heritage Database. Department of Environment, Water, Heritage and the Arts. http://www.environment.gov.au. Accessed 27 November 2009.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting (1996) Flora and Vegetation - Useless Loop Shark Bay. Unpublished Report. Mattiske Consulting Pty Ltd, Western Australia.

Payne A. L., Curry, P. J., Spencer, G. F. (1987) Technical Bulletin - An inventory and condition survey of rangelands in the Carnarvon Basin, Western Australia. No 73. Department of Agriculture, Government of Western Australia, Perth, Western Australia.

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Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Western Australian Herbarium (1998 - 2009) Florabase - The Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au. Accessed 27 November 2009.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), 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, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

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.