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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5445/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Iluka Resources Limited**

1.3. Property details

Property: *Mineral Sand (Eneabba) Agreement Act 1975*, Mining Lease 267SA (AM 70/267)
Local Government Area: Shire of Three Springs
Colloquial name: Eneabba Operations

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 13 June 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
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): Beard vegetation association 379: Shrublands; scrub-heath on lateritic sandplain in the central Geraldton Sandplain Region. Woodman Environmental Consulting (WEC) has carried out flora and vegetation assessments and surveys over Iluka's Eneabba operations since 2001. The surveys occurred in 2001, 2005, 2006, 2007 and 2009. The spring 2009 survey resurveyed 161 existing quadrats and surveyed 65 new quadrats (WEC, 2010). One floristic community type (FCT) has been mapped over the application area: FCT 1b: Open Woodland to Scrub of *Eucalyptus* spp. and/or *Banksia* spp., with occasional *Xylomelum angustifolium*, over mixed shrubs dominated by myrtaceous spp., *Banksia* spp., and *Jacksonia* spp. on grey sand on mid to upper slopes (WEC, 2010).	Iluka Resources Limited (Iluka) has applied to clear up to 6 hectares of native vegetation for the purpose of mineral production. The proposed clearing is to extend Twin Hills Pit 2 as part of Iluka's mineral sands mining. The application area is located in the Geraldton Sandplains region, approximately 9 kilometres west of Eneabba (GIS Database). Clearing will be conducted mechanically with a lowered blade, in accordance with methods already in practice at the mine site (Iluka, 2012). Topsoil from native vegetation will be removed and placed directly onto rehabilitation areas or stockpiled according to Iluka's Rehabilitation Management Plan (Iluka Resources, 2012).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The vegetation condition is based on descriptions and photographs of the application area by Iluka (2012).

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 at variance to this Principle

The application area occurs within the Lesueur Sandplains subregion of the Geraldton Sandplains bioregion (GIS Database). This subregion contains shrubheaths rich in endemics occurring on a mosaic of lateritic mesas, sandplains, coastal sands and limestones (CALM, 2002). The subregion exhibits extremely high floristic endemism and is also regarded as having particularly high floristic diversity (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation association 379, which has 23.8% of its pre-European vegetation extent remaining (Government of Western Australia, 2013; GIS Database). Iluka's Eneabba project areas, including the application area, were surveyed by Woodman Environmental Consulting (WEC) biologists in spring 2009. The vegetation of the application area has been mapped as Floristic Community Type (FCT) 1b (WEC, 2010). FCT 1b was the dominant community type within the Brandy Flats/Depot Hill area, with extensive areas also mapped within the Iluka plains north area (WEC, 2010).

Iluka (2012) has proposed an offset for the proposed clearing of the application area. This would involve reinstating habitat that would link isolated farm trees, the Twin Hills ephemeral creek and the road-side vegetation strip. This process will result in an eventual return of biodiversity values with an interim period of habitat loss. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a revegetation condition.

In October 2007 botanists from WEC carried out a targeted search for Threatened and Priority Flora species within the Adamson West and Depot Hill/Brandy Flats areas, including the application area. Nineteen Priority Flora species were identified by WEC within the survey area (WEC, 2007). Currently, nine of these species are listed as Priority Flora (Western Australian Herbarium, 2013). Four species that were listed as Priority in 2007 were identified as occurring within the application area: *Georgeantha hexandra*, *Hemiandra* sp. Eneabba, *Isopogon tridens* and *Stylidium diuroides* subsp. *paucifoliatun* (WEC, 2007). Of these species only *Hemiandra* sp. Eneabba is currently listed as being a Priority Flora species (P3) (Western Australian Herbarium, 2013). It appears that *Banksia chamaephyton*, a Priority Flora species is also found in the application area. While this species was not identified in the Declared Rare Flora and Priority Flora search (WEC, 2007), it was identified in the *Native Vegetation Clearing Proposal - Twin Hills Pit 2 Extension* document (Iluka, 2012). The Priority Flora species recorded during the survey are known from the Eneabba area and have been recorded at many locations within the Iluka lease areas during previous surveys (WEC, 2007). Clearing of these areas will have an adverse impact on the local populations of these restricted species but will not significantly reduce the total populations from the Eneabba area (WEC, 2007).

The blocks of vegetation in the Depot Hill/Brandy Flat areas, including the application area, were relatively small and fragmented and as a result have experienced more weed invasion than other parts of the Eneabba tenements (WEC, 2010). 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 in turn can lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Results of database reviews and previous studies have identified 264 vertebrate fauna species that may be present in the Eneabba region. Of these species, approximately 212 potentially occur in the Iluka project areas (Iluka, 2012). The application area is expected to have less species as it is isolated and fragmented from larger regional native vegetation areas.

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

Methodology

CALM (2002)
Iluka (2012)
WEC (2007)
WEC (2010)
Western Australian Herbarium (2013)
GIS Database:
- IBRA WA (Regions - Subregions)
- Pre-European Vegetation

(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 may be at variance to this Principle

The vegetation of the application area has been mapped as Floristic Community Type (FCT) 1b, which is described as open woodland to scrub of *Eucalyptus* spp. and/or *Banksia* spp., with occasional *Xylomelum angustifolium*, over mixed shrubs dominated by myrtaceous spp., *Banksia* spp., and *Jacksonia* spp. on grey sand on mid to upper slopes (WEC, 2010). This vegetation type is relatively widespread within the area, with the application area accounting for approximately 0.42% of the total identified within the survey area (WEC,

2010). The application area is completely surrounded by land that was previously cleared. Although the area is considered to be a small percentage of the total area FCT 1b within the surveyed area, it is important due to its remnant nature (Iluka, 2012).

Iluka (2012) has proposed an offset for the proposed clearing of the application area. This would involve reinstating habitat that would link isolated farm trees, the Twin Hills ephemeral creek and the road-side vegetation strip. This process will result in an eventual return of biodiversity values with an interim period of habitat loss. Potential impacts to fauna habitat as a result of the proposed clearing may be minimised by the implementation of a revegetation condition.

Several fauna surveys have been carried out in the Eneabba region over the course of Iluka's mining operations. These surveys have identified 26 species of fauna which have been highlighted as being of conservation significance (Iluka, 2012). Of these species, nine are waterbirds, which are unlikely to be found within the application area. According to available GIS databases, there are no watercourses or wetlands within the application area (GIS Database). The closest permanent water feature is Eneabba Creek, 6.5 kilometres south of the application area. The following species of conservation significance may be found within, or visit the application area (Iluka, 2012):

Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation Act 1950*: Carnaby's Black Cockatoo (*Calypotorhynchus latirostris*);
P3 - DEC Priority Fauna List: Black-striped snake (*Neelaps calonotos*); and
P4 - DEC Priority Fauna List: Crested Bellbird (*Oreoica gutturalis*), Rufus Fieldwren (*Calamanthus campestris*), Shy Heatherwren (*Hylacola cauta whitlocki*) and White-browed Babbler (*Pomatostomus superciliosus*).

A further eight species are either unlikely to be found within the area due to its isolation, or are locally extinct. Bush Stone Curlew (*Burhinus grallarius*) and Ramsays Python (*Aspidites ramsayi*) are locally extinct, while Australian Bustard (*Ardeotis australis*), Brush Wallaby (*Macropus irma*), Carpet Python (*Morelia spilota*), Malleefowl (*Leipoa occellatus*), Peregrine Falcon (*Falco peregrinus*) and Western Ground Parrot (*Pezoporus flaviventris*) are found within the Eneabba region, but are not expected to be found within the application area (Iluka, 2012).

It is unlikely that Malleefowl are found within the application area. No mounds associated with this species were found during surveys of the area (Iluka, 2012).

The application area may be used by Carnaby's Black Cockatoo for foraging as the species is known to forage on heathland vegetation, open farm pasture, and some pasture weed species in the area. It is believed that birds recorded in Eneabba are non-breeding autumn to winter visitors, as there is no suitable breeding habitat found in the area (Iluka, 2012).

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

Methodology Iluka (2012)
WEC (2010)
GIS Database:
- Hydrography - Linear

(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 GIS databases there are no known records of Threatened Flora within the application area (GIS Database). Four species of Threatened Flora have been recorded within a 10 kilometre radius of the application area. These species are *Acacia wilsonii*, *Eucalyptus crispata*, *Leucopogon* sp. ciliate Eneabba and *Paracaleana dixonii* (DEC, 2013).

The Adamson West and Depot Hill/Brandy Flats areas, including the application area, were subject to a targeted Threatened and Priority Flora search by Woodman Environmental Consulting biologists in October 2007. No Threatened Flora were identified within the application area (WEC, 2007).

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

Methodology DEC (2013)
WEC (2007)
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**
A search of available databases reveals that there are no Threatened Ecological Communities (TECs) within the application area (GIS Database).

The nearest TEC is located approximately 7 kilometres south-east of the application area (GIS Database). At this distance there is little likelihood of any impact to the TEC from the proposed clearing.

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 at variance to this Principle

The application area falls within the Geraldton Sandplains IBRA bioregion (GIS Database). Approximately 44.9% of the pre-European vegetation in this bioregion remains (Government of Western Australia, 2013) which gives it a conservation status of 'Depleted' according to Department of Natural Resources and Environment (2002).

The vegetation in the application area is recorded as Beard vegetation association 379: Shrublands; scrub-heath on lateritic sandplain in the central Geraldton Sandplain Region (GIS Database).

Approximately 23.8% of the pre-European vegetation extent of Beard vegetation association 379 remains within the state and bioregion, this would be classified as 'Vulnerable' (Department of Natural Resources and Environment, 2002; Government of Western Australia, 2013).

The bioregion and Beard vegetation association 379 have been significantly cleared. However, the proposed clearing of up to 6 hectares is unlikely to significantly reduce the extent of Beard vegetation association 379 below current levels. Beard vegetation association 379 is also protected within conservation reserves in the bioregion (Iluka, 2012; Government of Western Australia, 2013).

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Geraldton Sandplain	3,136,037	1,408,729	~44.9	Depleted	15.3 (34.1)
IBRA Subregion - Lesueur Sandplains	1,171,775	504,202	~43.0	Depleted	17.8 (41.3)
Local Government – Shire of Three Springs	265,741	59,191	~22.3	Vulnerable	1.9 (8.3)
Beard Vegetation Associations - State					
379	547,737	130,482	~23.8	Vulnerable	5.2 (21.5)
Beard Vegetation Associations - Bioregion					
379	546,507	130,245	~23.8	Vulnerable	5.1 (21.5)
Beard Vegetation Associations - Subregion					
379	370,030	112,061	~30.3	Depleted	5.7 (18.4)

* Government of Western Australia (2013)
** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2013)
Iluka (2012)
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 GIS Databases, there are no watercourses or wetlands within the application area (GIS Database). The closest permanent water feature is Eneabba Creek, 6.5 kilometres south of the application area (GIS Database). The vegetation is situated on a rising sandy hill and the mapped floristic community type (FCT1b) is not described as growing in association with a watercourse or wetland (WEC, 2010; Iluka, 2012).

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

Methodology

Iluka (2012)
WEC (2010)
GIS Database:
- Geomorphic Wetlands Cervantes Eneabba
- 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

According to available databases, there is one soil type (Wd9) within the application area (GIS Database):

- Broad valleys and undulating interfluvial areas with some discontinuous breakaways and occasional mesas; lateritic materials mantle the area: chief soils are sandy acidic yellow mottled soils, containing much ironstone gravel in the A horizons, and, both forming a complex pattern with each other and with lateritic sandy gravels. Associated are leached sands underlain by lateritic gravels and mottled clays that occur at a progressively greater depth down slope.

Sandy earths have a moderate to high risk of wind erosion while ironstone gravels have a low to moderate risk of wind erosion (Schoknecht, 2002). However, the linear nature of the clearing suggests that the potential for wind erosion is low.

Rainfall in the Eneabba area is low (495 millimetres/year) and run-off is expected to be low due to a high pan evaporation rate (2,400 millimetres/year) and the moderate permeability of soils present (BoM, 2013; GIS Database). Therefore, the risk of water erosion is likely to be minimal.

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

Methodology

BoM (2013)
Schoknecht (2002)
GIS Database:
- Evaporation Isopleths
- Soils, Statewide

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

Comments

Proposal is not likely to be at variance to this Principle

The application area is not within conservation estate (GIS Database). The closest conversation estate area to the application is Depot Hill Nature Reserve, which is approximately 4.5 kilometres to the south-east (GIS Database). It is not expected that the proposed clearing will have any impact on this 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

There are no watercourses or wetlands within the application area (GIS Database) and there are no adjacent surface water bodies that will be impacted by the proposed clearing (Iluka, 2012). The Eneabba groundwater table is typically 40-60 metres below ground level in the vicinity of the application area, and will not be impacted by mining operations (Iluka, 2012). Iluka (2012) propose to re-contour cleared areas to improve quality of surface water runoff into the ephemeral Twin Hills creek, with suitable drainage mechanisms in place during operations and rehabilitation to control surface water flows. Clearing of vegetation for this proposal is not expected to cause deterioration in the quality of surface or underground water.

The application area is not located within a Public Drinking Water Source Area (PDWSA). The nearest

PDWSA is Eneabba Water Reserve, located approximately 10 kilometres south of the application area (GIS Database).

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

Methodology Iluka (2012)
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 proposed clearing area of 6 hectares is located in the Moore-Hill Rivers catchment, an area of approximately 137,421 hectares (GIS Database). The scale and nature of the proposed clearing (6 hectares) render the proposal unlikely to exacerbate the incidence or intensity of natural flood events.

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

Methodology 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 (GIS Database). This claim (WC04/2) has been registered with the National Native Title Tribunal on behalf of the claimant group (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*.

According to available databases, there are no registered Aboriginal Sites of Significance within the proposed clearing area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal 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.

This clearing application was advertised by the Department of Mines and Petroleum on 11 February 2013 inviting submissions from the public. No public submissions were received. A submission was received from the Three Springs Shire Council. No objection was raised and information regarding roads was passed onto Iluka.

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

4. References

BoM (2013) Bureau of Meteorology Website - Climate Averages by Number, Averages for ENEABBA. http://www.bom.gov.au/climate/averages/tables/cw_008225.shtml (Accessed 18 March 2013).

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Geraldton Sandplain 3 (GS3 - Lesueur Sandplain Subregion). Department of Conservation and Land Management, Western Australia.

DEC (2013) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. http://naturemap.dec.wa.gov.au/default.aspx (Accessed 4 March 2013).

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 (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.

Iluka (2012) Eneabba Mineral Sands Mine Native Vegetation Clearing Proposal Twin Hills Pit 2 Extension. Unpublished Report Dated November 2012.

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

Schoknecht N. (2002) Soil Groups of Western Australia. A Simple Guide to the Main Soils of Western Australia. Resource Management Technical Report 246. Edition 3.

WEC (2007) Declared Rare Flora and Priority Flora Search - Adamson West and Depot Hill/Brandy Flats. Unpublished Report by Woodman Environmental Consulting Dated November 2007.

WEC (2010) Eneabba Spring 2009 Re-Assessment of FCT Quadrats Established at Eneabba Between 2001 and 2007.

Addendum 1 to Environmental Review and Management Programme Flora and Vegetation Studies, WEC, 2009. Unpublished Report by Woodman Environmental Consulting Dated October 2010.
Western Australian Herbarium (2013) FloraBase - The Western Australian Flora. Department of Environment and Conservation. http://florabase.dec.wa.gov.au/ (Accessed 4 March 2013).

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	**Priority One - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	**Priority Two - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3	**Priority Three - Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
P4	**Priority Four – Rare taxa**: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
R	**Declared Rare Flora – Extant taxa** *(= Threatened Flora = Endangered + Vulnerable)*: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
X	**Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

Schedule 1	**Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
Schedule 2	**Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are

declared to be fauna that is need of special protection.

Schedule 3 **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

Schedule 4 **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

P1 **Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P2 **Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P3 **Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P4 **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

P5 **Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999)*

EX **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.

EX(W) **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

CR **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

EN **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

VU **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.