Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2502/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Robe River Iron Ltd**

1.3. Property details

Property: *Iron Ore (Cleveland-Cliffs) Agreement Act 1964*, Lease 3116/4623, Special Lease for Mining Operations I123396.

Local Government Area: Shire of Roebourne

Colloquial name: Cape Lambert Quarry Expansion

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
16		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	Clearing Description	Vegetation Condition	Comment
The vegetation of the application area is broadly mapped as Beard Vegetation Association 157: Hummock grasslands, grass steppe; hard spinifex *Triodia wiseana* (GIS Database, Shepherd et al., 2001). Biota Environmental Sciences (Biota) conducted a flora survey in October 2007 and March 2008, representing all the main vegetation associations within the application area (Biota, 2008). The following five vegetation types were identified within the application area, broadly associated with topographic features; 1) Flat Coastal Plain: Open *Acacia* spp. shrubland over scattered low *Scaevola spinescens, Rhagodia eremaea* shrubs over *Triodia epactia* hummock grassland and *Cenchrus ciliaris* tussock grassland. 2) Secondary Dunes: Tall *Acacia* spp. shrubland over open *Crotalaria cunninghamii, Rhagodia eremaea* and *Scaevola* spp. low shrubland, over *Triodia epactia* hummock grassland and *Cenchrus ciliaris* tussock to open tussock grassland. 3) Low-Lying Saline Drainage Areas: *Halosarcia* spp. low samphire shrubland and open heath with open *Frankenia ambita, Muellerolimon salicorniaceum* low shrubland. 4) Saline Interzone Areas: *Acacia ampliceps* tall shrubland with *Sesbania cannabina* tall open herbland over *Sporobolus virginicus* tussock to closed tussock grassland. 5) Rocky Hills and Outcrops: Rocky hillcrests and upper slope habitats inland from the coast with *Triodia wiseana* and/or *Triodia epactia* hummock grassland. (Biota, 2008). One species of introduced flora was recorded within the application area: Buffel grass, *Cenchrus ciliaris* (Biota, 2008).	Robe River Iron Ltd (Robe River Iron) have applied to clear 16 hectares (ha) within a 27.3 ha area of native vegetation for the purposes of expanding an existing quarry in the Cape Lambert Operation Area. The areas cleared will include construction sites and access tracks (Robe River Iron, 2008). The application area is immediately adjacent to the existing quarry, roads, tracks and power lines. The expansion of the quarry will occur in a 27.3 ha area immediately adjacent to the existing quarry (Robe River Iron, 2008).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994) To Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994).	The vegetation condition was derived from a vegetation survey conducted by Biota Environmental Sciences (2008).

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 Chichester (PIL1) sub-region of the Pilbara Bioregion of the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). This sub-region is characterised by plains supporting a shrub steppe of *Acacia inaequilatera* over *Triodia wiseana* hummock grasslands, while *Eucalyptus leucophloia* tree steppes occur on ranges (CALM, 2002). The vegetation described within the application area is typical of the bioregion (Robe River Iron, 2008).

A vegetation survey of the application area and surrounding vegetation identified 159 taxa of native vascular flora from 89 genera and 40 families (Biota, 2008). The total number of vascular flora species present was considered to be relatively low for the study area. Poaceae (23), Papilionaceae (20), Mimosaceae (16), Malvaceae (10), Chenopodiaceae (9), Amaranthaceae (8), Asteraceae (8), Euphorbiaceae (7) and Goodeniaceae (6) families are particularly species rich and diverse within the application area (Biota, 2008).

Six introduced flora species were recorded during the survey, however it is inferred that only one of these species, *Cenchrus ciliaris*, would be present within the application area (Biota, 2008). This species is not listed as a 'Declared Plant' species under the Agriculture and Related Resources Protection Act 1976 by the Department of Agriculture and Food (DAFWA), however it is considered to be a serious environmental weed (Biota, 2008). The presence of introduced flora species is likely to reduce the biological diversity of the application area. Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

An area search of the Western Australian Museum's Faunabase conducted by the assessing officer suggests the application area is diverse in reptile species, particularly Skinks (25) and Geckos (16) (Western Australian Museum, 2008). The database search found a total of 87 reptile species from 10 families as potentially occurring within the application area, or within a 50 km radius of the application area. The application area is also diverse in avian species, with a total of 52 species from 33 families found as potentially occurring within the application area, or within a 50 km radius of the application area.

Although the application area is high in faunal diversity, it is not likely to have a greater diversity than similar areas within the region, particularly as parts of the application area have been degraded by previous disturbance from the existing quarry. The landforms and vegetation types in the application area are well represented in the Pilbara Region (Biota, 2008; GIS Database). Given the high level of disturbance and vegetation degradation due to infestation with introduced (weed) species and previous clearing activities, the application area is not likely to comprise a higher level of biological diversity than other undisturbed areas (Biota, 2008).

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

Methodology

Biota (2008)
CALM (2002)
Robe River Iron (2008)
Western Australian Museum (2008)
GIS Database
- Pre-European Vegetation
- Interim Biogeographic Regionalisation of Australia
- Road Centrelines
- Dampier Archipelago 80cm Orthomosaic - SLI01
- Cape Lambert 85cm Orthomosaic - DOLA 01

(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

Biota conducted a systematic fauna survey over the application area and the wider Cape Lambert study area. The survey took place during two phases; Phase I occurred between October 1-12, 2007 and Phase II occurred between March 5-12, 2008 (Biota, 2008). A search of Western Australian Museum and Department of Environment and Conservation (DEC) databases conducted by Biota on behalf of the proponent revealed several fauna species of conservation significance which have the potential to occur within the application area, based on known ranges, habitat preferences and previous sightings in surrounding areas (Biota, 2008).

This search identified 2 Amphibian, 63 Avian, 17 Mammalian and 38 Reptilian species which may occur within the search area (Biota, 2008). The following fauna species of conservation significance have the potential to occur within the application area: Rainbow Bee-eater (*Merops ornatus*) and the Star Finch (*Neochmia ruficauda subclarescens*). Biota (2008) also recorded 20 specimens of the skink (*Lerista nevinae*) from the primary and secondary dune habitats occurring within the search area.

The Star Finch (P4 - DEC Priority Fauna List) occurs in reedbeds and adjacent vegetation communities along

permanent waterways. The habitat types found within the application area may support populations of the Western Star Finch. However, it is unlikely that the vegetation to be cleared represents significant habitat for this species, given the lack of permanent waterways within the application area and the vegetation being well represented within the Pilbara region (Biota, 2008).

The Rainbow Bee-eater (migratory - JAMBA international agreement) occurs mainly in open forests, woodlands and shrublands but also occurs in inland and coastal sand dune systems and mangroves in Northern Australia (Western Australian Museum, 2008). This species may occur within the application area, however given the widespread representation of this habitat type throughout the Pilbara region and the degradation and disturbance found within the application area it is unlikely that the application area contains significant habitat for this species.

The skink, *Lerista nevinae*, although not being listed as having any special conservation status either at a State or Federal level, currently has only been recorded from the coastal dune habitats of the Cape Lambert area (Biota, 2008). As there are no dune systems located within the application area it is unlikely that vegetation within the application area would provide significant habitat for this species.

The vegetation communities present in a large part of the application area have a significant level of degradation due to infestation with Buffel grass (Cenchrus ciliaris) and compared to intact native vegetation communities, this introduced grass species does not provide a significant habitat to local fauna species (Biota, 2008).

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

Methodology
Biota (2008)
DEC (2008)
DEWHA (2008)
Western Australian Museum (2008)
GIS Database
- Threatened Fauna

(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, no Declared Rare or Priority flora species have been recorded within the application area. Six populations of *Terminalia supranitifolia* (P1) occur approximately 36 - 41 km west of the application area on the Burrup Peninsula (GIS Database).

Biota conducted a flora and vegetation field survey of the application area between October 2007 and March 2008 (Biota, 2008). No species of Declared Rare or Priority flora were recorded within the application area during the flora survey.

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

Methodology
Biota (2008)
GIS Database
- Declared Rare 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

There are no known Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known endorsed TEC's are the Themeda Grassland communities located approximately 184 km south of the application area (GIS Database). The nearest known ecosystem of conservation significance is the Millstream stygofauna community (a non-endorsed TEC), located approximately 105 km to the south of the application area. Due to the distance from the application area, these ecosystems are unlikely to be affected by the proposed clearing.

Biota (2008) reported that no Threatened Ecological Communities were identified during the flora survey of the application area.

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

Methodology
Biota (2008)
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 at variance to this Principle

The application area falls within the IBRA Pilbara Bioregion. Shepherd et al. (2001) report that approximately 99.9% of the pre-European vegetation still exists in this Bioregion. The vegetation in the application area is recorded as Beard Vegetation Association 157: Hummock grasslands, grass steppe; hard spinifex *Triodia wiseana* (GIS Database; Shepherd et al., 2001). According to Shepherd et al., (2001) there is approximately 99.9% of this vegetation type remaining (see table below).

Therefore the vegetation within the application area 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**	% of Pre-European area in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,164	17,794,651	~99.9	Least Concern	6.3
Beard veg assoc. – State					
157	502,737	501,522	~99.8	Least Concern	17.2
Beard veg assoc. – Bioregion					
157	198,636	198,522	~99.9	Least Concern	5.7

* Shepherd et al. (2001) updated 2005

** 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)
Shepherd et al. (2001)
GIS Database
- 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 at variance to this Principle

There is one minor non-perennial watercourse running through the north-eastern section of the application area (GIS Database). Another minor non-perennial watercourse is also in close proximity (GIS Database). The native vegetation recorded within the application area is not riparian vegetation (Biota, 2008).

Mangroves occur approximately 0.2 km west and 1.5 km east/north-east of the application area (GIS Database).

There is an un-named inland water body approximately 8 km south/south-east of the application area (GIS Database). The Little Sherlock River is located approximately 37 km south-east of the application area (GIS Database).

Based on the above, the proposed clearing is at variance to this Principle. However, as the minor watercourse located within the application area is only likely to flow following significant rainfall, the proposed clearing is unlikely to result in any significant impact to any watercourse or wetland.

Methodology

Biota (2008)
GIS Database
- Hydrography - Linear
- Geodata - Lakes
- Hydrography - Lakes (Course scale, 1M GA)

(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 has been surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 2004), and is comprised of the following land systems (GIS Database);

- Rocklea Land System
- Ruth Land System
- Littoral Land System

The Rocklea Land System is described as basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'Hill, ridge, plateau and upper slope', 'lower slope' and 'stony plains' land units. These land units are not susceptible to erosion due to a surface mantle of cobbles and pebbles. The vegetation described by Van Vreeswyk et al (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota, 2008).

The Ruth Land System is described as hills and ridges of volcanic and other rocks supporting hard spinifex (and occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'Hill, ridge and upper slope' and 'lower slope and sandy plains' land units. This land system is not susceptible to erosion due to a surface mantle of cobbles and pebbles. The vegetation described by Van Vreeswyk et al. (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota, 2008).

The Littoral Land System is described as bare coastal mudflats with mangroves on the seaward fringes, samphire flats, sandy islands, coastal dunes and beaches (Van Vreeswyk et al., 2004). An analysis of aerial photography for the application area reveals the application area is most likely to fall within the 'Alluvial plains' land unit. The soils of this land system (Red, deep sandy duplex soils) are not susceptible to erosion (Van Vreeswyk et al., 2004). The vegetation described by Van Vreeswyk et al. (2004) accurately reflects the vegetation types described in vegetation surveys conducted over the area (Biota, 2008).

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

Methodology
Biota (2008)
Van Vreeswyk et al. (2004)
GIS Database
- Rangeland Land System Mapping

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

Comments

Proposal is not likely to be at variance to this Principle

The nearest terrestrial DEC managed land is the Millstream Chichester National Park located approximately 58 km south of the application area (GIS Database).

There are several nearby islands listed as Environmentally Sensitive Areas (ESA's). The nearest of these are:

Dixon Island - located approximately 6 km west/north-west of the application area
Bezout Island - located approximately 9 km north/north-east of the application area
Picard Island - located approximately 13 km south-east of the application area (GIS Database).

These islands comprise part of the Dampier Archipelago and are a Registered National Estate (DEWHA, 2008).

The Archipelago is comprised of 42 islands, islets and rocks ranging from less than 2 hectares to 3,290 hectares in size covering an area of approximately 4,000 square kilometres (DEWHA, 2008). The terrestrial areas of the Dampier Archipelago support a high diversity of flora, bird and reptile species. More than 288 plant species from 60 families have been recorded from the Dampier Archipelago. Over one hundered species of bird have been recorded, including terrestrial, sea and shore birds. Thirty two species of reptiles have been recorded from the Burrup Peninsula, and forty one species recorded from the islands of the Dampier Archipelago (DEWHA, 2008). The diversity of fauna occurring within the marine environment is high, with the north-west shelf containing significant conservation value (DEWHA, 2008).

At this distance it is not likely that the vegetation within the application area provides a buffer to a conservation area, or is an important ecological link to a conservation area.

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

Methodology
DEWHA (2008)
GIS Database
- CALM Managed Lands and Waters
- Pastoral Leases
- Clearing Regulations - Environmentally Sensitive Areas

(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 has suffered previous disturbance, and the small area of clearing is unlikely to have any significant impact on the quality or quantity of groundwater (DoW, 2008).

The application area is relatively flat and the proposed clearing area is unlikely to result in significant changes to surface water flows (GIS Database).

The application area is located in a semi-desert-tropical region, with an average annual rainfall of approximately 300 mm falling mainly during the summer months, and an average annual evaporation rate of approximately 2,500 mm (CALM, 2002). The seasonally damp areas represented by the Saline Drainage and Saline Interzone vegetation types only contain water after seasonal rainfall and remain dry for most of the year (Biota, 2008).

The proposed clearing of disturbed and degraded vegetation is unlikely to have a significant impact on the quality or quantity of groundwater (DoW, 2008).

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

Methodology

Biota, 2008
CALM, 2002
DoW, 2008
GIS Database
- Hydrography - Linear
- Topographic Contours - Statewide

(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 drains into the Coastal catchment area (GIS Database). The relatively small area to be cleared (16 hecatres) in relation to the size of the catchment area (744, 301 hectares) (GIS Database) is unlikely to cause or 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

GIS Database
- Hydrographic Catchments - Catchments

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

Comments

This clearing permit was referred to the EPA on 23 July 2008 by Robe River Iron Ltd in accordance with Section 38 of the *Environmental Protection Act 1986* (WA). The EPA determined that the proposed vegetation clearing could be adequately managed by the Clearing Regulations under Part V of the *Environmental Protection Act 1986* (EPA, 2008).

There is one Native Title Claim (WC33-014) over the area under application. This claim has been registered with the National 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*.

There are several known Aboriginal sites of significance within the vicinity of the application 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 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.

No public submissions were received regarding this application.

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 proposal is at variance to Principle (f), is not at variance to Principle (e), and is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) .

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

5. References

Biota (2008) Cape Lambert Quarry Expansion: Native Vegetation Clearing Permit Report. Biota Environmental Sciences Pty Ltd, Western Australia.

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

DEC (2008). Plants and Animals of Western Australia: Fauna Species Profiles. http://www.naturebase.net/content/view/840/1288 (accessed June 18 2008).

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.

DEWHA (Department of the Environment, Water, Heritage and the Arts). 2008. Australian Heritage Database. http://www.environment.gov.au (accessed June 17, 2008).

DoW (2008). Water Quality Advice. Advice to assessing officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR), received (12 June). Department of Water, Western Australia. Trim Ref: AH000009

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

Robe River Iron (2008) Cape Lambert Operation. Existing Quarry Expansion. Application to Clear Native Vegetation (Purpose Permit). Supporting Documentation. Robe River Iron Ore Pty Ltd, Western Australia.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, Western Australia.

Western Australian Museum (2008). Faunabase - Western Australian Museum, Queensland Museum and Museum and Art Gallery of NT Collections Databases. http://www.museum.wa.gov.au/faunabase/prod/index.htm (accessed June 18 2008). Western Australian Museum.

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.
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.