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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3098/1
Permit type: Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property: Mineral Sands (Eneabba) Agreement Act 1975, Mining Lease 267SA (AM 70/267)
Local Government Area: Shire Of Carnamah
Colloquial name: South Tails

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
12.08		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
The vegetation of the application area is broadly mapped as Beard Vegetation Association 379; shrublands; scrub-heath on lateritic sandplain in the central Geraldton Sandplain Region (GIS Database).

Woodman Environmental Consulting (2008) conducted a flora survey over the application area in spring 2006 and summer 2007. The flora survey identified one floristic community type (FCT) which totalled approximately 1.03 hectares of the application area (Iluka Resources, 2009; Woodman Environmental Consulting, 2008):

FCT 2c; Open Woodland to scrub of *Eucalyptus pleurocarpa* and *E. todtiana* over mixed shrubs dominated by *Banksia spp*. on yellow and grey sandy loam on lower to mid slopes.

All other vegetation in the application area (approximately 23.97 hectares) comprises previously cleared and rehabilitated vegetation (Iluka Resources, 2009).

Clearing Description
Iluka Resources Ltd (Iluka Resources) have applied to clear 12.08 hectares of native vegetation, within a purpose permit boundary totalling approximately 25 hectares within the *Mineral Sands* (Eneabba) *Agreement Act 1975,* Mining Lease 267SA (Iluka Resources, 2009).

The proposed clearing is for mineral sands mining as a continuation of the existing mining activities at Iluka Resources Eneabba mineral sands operation (Iluka Resources, 2009). Clearing is proposed to be conducted mechanically with a lowered blade, in accordance with methods already in practice at the mine site (Iluka Resources, 2009).

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

To

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

Comment
The vegetation condition of the application area has been derived from the vegetation description provided by Woodman Environmental Consulting (2008), Iluka Resources (2009) and aerial photography viewed by the assessing officer.

On 9 June 2007 Iluka Resources was approved to clear up to 149 hectares under clearing permit CPS 1704/1. That permit was amended on 9 October 2008, to increase the duration of the permit as much of the proposed clearing had not been undertaken. That Permit expired on 15 March 2009. Since the cessation of that permit Iluka Resources (2009) have since realised that there was 12.08 hectares of vegetation in the previous permit area (CPS 1704/2) that was required to be cleared to continue mining operations. Iluka Resources originally inquired into amending clearing permit CPS 1704/2, to extend the duration of the permit a second time, however, as the permit had already expired this was not possible. Therefore Iluka Resources have applied to clear 12.08 hectares of vegetation within the area that was granted under clearing permit CPS 1704/2.

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 is situated seven kilometres south of the town-site of Eneabba, within the Lesueur Sandplains subregion of the Geraldton Sandplains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database).

Desmond and Chant (2001) summarised the biodiversity values of the Lesueuer Sandplains subregion as; shrub-heaths rich in endemics which occur on a mosaic of lateritic mesas, sandplains, coastal sands and limestone. The area exhibits extremely high floristic endemism, with over 250 species of sandplain flora endemic to the subregion (Desmond and Chant, 2001).

Historic and current mining activities surround the current application area with clearing approvals granted for CPS 389/1, CPS 1549/1, CPS 1662/1, CPS 1704/2, CPS 1851/1 and 2680/1 (GIS Database). This has left the landscape in a mosaic of mining activities, rehabilitation and undisturbed vegetation. Approximately 23.93 hectares of the application area consists of rehabilitation following mining and 1.03 hectares of previously undisturbed vegetation (Iluka Resources, 2009).

There are four species of dieback (*Phytophthora cinnamomi, Phytophthora citricola Phytophthora megasperma* and *Phytophthora drechsleri*) which have been recorded in the Geraldton Sandplains bioregion (Iluka Resources, 2007). *Phytophthora cinnamomi* has been shown to cause widespread disease in natural ecosystems with the capacity to affect 40% of the native plants in the Geraldton Sandplains bioregion (Iluka Resources, 2007). *Phytophthora citricola* and *Phytophthora megasperma* are thought to have the potential to cause localised disease outbreaks at the Eneabba mine site as the warmer conditions at Eneabba favour the establishment and proliferation of these species in sites under rehabilitation (Iluka Resources, 2007). Should the permit be granted it is recommended that conditions be placed on the permit for the purposes of dieback management.

Supporting documentation for this Iluka Resources clearing permit application did not indicate the occurrences of weeds in the application area. Given the sites proximity to agricultural land there is a reasonable probability weeds would be present. Following the Precautionary Principle, should the permit be granted it is recommended that a Condition be placed on the permit for the purpose of weed management.

Although the application area occurs within an area noted for its high floristic diversity, information provided by Woodman Environmental Consulting (2008) indicates that the application area itself does not appear to support higher floristic diversity than surrounding areas. Given that most of the application area comprises rehabilitated vegetation it is likely that these areas would represent lower biodiversity than areas of remnant vegetation. In relation to the 1.03 hectares of previously uncleared vegetation within the application area similar numbers of vascular flora species and similar floristic community structures have been recorded in surveys conducted in other areas of the Iluka Resources Eneabba mining leases (Woodman Environmental Consulting, 2008).

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

Methodology

Desmond & Chant (2001)
Iluka Resources (2007)
Iluka Resources (2009)
Woodman Environmental Consulting (2005)
Woodman Environmental Consulting (2008)
GIS Database:
-Clearing Instruments (PMV_Status)
-Interim Biographic Regionalisation for Australia

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

Comments

Proposal is not likely to be at variance to this Principle

A review of the fauna information that has been gained from previous studies at Iluka Resources operations at Eneabba was undertaken in 2005 (Bancroft and Bamford, 2006). This review included a one day site inspection which occurred in October 2005 (Bancroft and Bamford, 2006). Trapping and surveys for vertebrate species have occurred at Eneabba since 1981, as have studies focusing on invertebrates as an indicator of rehabilitation success since 1980 (Bancroft and Bamford, 2006).

From previous studies and known records, 26 species of vertebrates fauna that are of conservation significance may occur in the Eneabba area. This includes 2 reptiles, 23 birds and 1 mammal species (Iluka Resources, 2009). Based on habitat preferences it is unlikely all of the 26 recorded conservation significant fauna species would be present within the application area (Iluka Resources, 2009).

The vegetation within the application area is unlikely to constitute significant habitat for fauna indigenous to Western Australia (Iluka Resources, 2009). Similar habitat to that of the application area occurs in several

conservation reserves surrounding the mining operations and within the Iluka Resources lease areas in Eneabba (GIS Database). Several conservation significant species may utilise the application area periodically for feeding, however, clearing associated with this proposal is not expected to have a regional impact on any of the abovementioned conservation significance fauna species which may occur in the Eneabba area. In order to ensure similar fauna habitats to the existing ones are replaced post mining, should the permit be granted it is recommended that a condition be placed on the permit for the purpose of rehabilitation.

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

Methodology Bancroft and Bamford (2006)
Iluka Resources (2009)
GIS Database
- CALM Managed Lands and Waters

(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**

Woodman Environmental Consulting (2008) conducted flora and vegetation surveys over the application area in spring 2006 and summer 2007. Further surveys have also been conducted in 2001 and 2005 in the local area (Iluka Resources, 2009).

One individual of the Priority Four Flora taxon (listed on the Department of Environment and Conservation's (DEC) Declared Rare and Priority flora list), *Verticordia aunea,* was recorded in the application area during the Woodman Environmental Consulting (2008) flora and vegetation survey. This plant was recorded growing in previously mined and rehabilitated land in the south-east of the application area (Woodman Environmental Consulting, 2008). There are 20 records of this flora taxon listed in the state (Western Australian Herbarium, 2009). One of these records listed the taxon as growing in 10 year old rehabilitation (Western Australian Herbarium, 2009). Therefore, if the area is adequately rehabilitated post mining it is expected this taxon will recolonise the rehabilitated areas and is not expected to be specifically dependent on the native vegetation of the application area. Should a clearing permit be granted it is recommended that conditions be placed on the permit for the purpose of rehabilitation. No other Priority Flora or Declared Rare Flora were recorded within the application area (Iluka Resources 2009).

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

Methodology Iluka Resources (2009)
Western Australian Herbarium (2009)
Woodman Environmental Consulting (2008)

(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 registered TEC's occur approximately five kilometres to the south-west of the application area (GIS Database). It is unlikely these communities will be impacted by this proposal.

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

Methodology 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 is within the Interim Biogeographic Regionalisation of Australia (IBRA) Geraldton Sandplains bioregion (GIS Database). According to Shepherd et al. (2001) there is approximately 42.2% of the pre-European vegetation remaining in the Geraldton Sandplains bioregion which places it as 'depleted' according to the 'Biological Conservation Status of Ecological Vegetation Classes' (Department of Natural Resources and Environment, 2002).

The application area falls within the Shire of Carnamah. The Shire Carnamah is within the Intensive Land Use Zone of the south-west of Western Australia which has been extensively cleared for agriculture. Consiquently, 39.4% of its pre-European vegetation extent remains within the shire. This places the Shire at 'Depleted' according to the Bioregional Conservation Status of Ecological Vegetation Classes' (Department of Natural Resources and Environment, 2002).

One Beard vegetation associations was located within the application area; 379 (GIS Database). Shepherd et al. (2001) report that approximately 26.7% of this pre-European vegetation association still exists in this subregion. This vegetation types is represented in IUCN Class I-IV Reserves within both the bioregion and the State (refer to table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Geraldton Sandplains	3,136,277	1,324,440	~42.2	Depleted	15.3
IBRA Subregion – Lesueur Sandplains	1,171,805	478,987	~40.9	Depleted	17.7
Local Government – Carnamah	287,493	113,136	~39.4	Depleted	N/A
Beard veg assoc. – State					
379	547,767	113,427	~20.7	Vulnerable	22.4 (5)
Beard veg assoc. – Bioregion					
379	546,586	113,268	~20.7	Vulnerable	5 (22.4)
Beard veg assoc. – Subregion					
379	370,097	98,744	~26.7	Vulnerable	5.5 (18.7)

* Shepherd et al. (2001) updated 2005

Whilst the sub-region has been significantly cleared, most of the application area (23.97 hectares) comprises previously cleared and rehabilitated vegetation (Iluka Resources, 2009; Woodman Environmental Consulting, 2008). Only 1.03 hectares of vegetation within the application area could be classified as Beard Vegetation Association 379 in its remnant form.

This parcel of 1.03 hectares of remnant vegetation consists of small isolated remnant areas surrounded by degraded or cleared areas (Iluka Resources, 2009; Woodman Environmental Consulting, 2008). Roads flank the vegetation on the western, southern and eastern edges, with the northern edge abutting cleared bare ground (Iluka Resources, 2009; Woodman Environmental Consulting, 2008). Given that this vegetation is isolated and not acting as a buffer or adjoining other vegetation, it is unlikely this area would be considered as significant.

Woodman Environmental Consulting (2008) conducted flora and vegetation surveys over the application area and surrounding Iluka Resources lease areas in 2001, 2005, 2006 and 2007 and identified the 1.03 hectares of remnant vegetation as FCT 2c. A total of 1,526 hectares of this vegetation type has been mapped as FCT 2c within the Eneabba region, with the proposed clearing representing 0.07% of this vegetation type (Iluka Resources, 2009).

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)
Iluka Resources (2009)
Shepherd et al. (2001)
Woodman Environmental Consulting (2008)
GIS Database:
- Imagery, Base Maps and Earth Cover
- Interim Biogeographic Regionalisation of Australia
- Interim Biogeographic Regionalisation of Australia (subregion)
- 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

There are no watercourses, wetlands or ephemeral drainage lines within the application area (GIS Database). None of the vegetation associations identified from the application area are associated with watercourses or wetlands (Iluka Resources, 2009).

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

Methodology

Iluka Resources (2009)
GIS Database:
- Hydrography, Linear
- Lakes, 1M
- Rivers 250K

(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

At a regional scale, the Iluka Resources Eneabba mine site occurs in the inland Eneabba Plain (part of the Swan Coastal Plain) and the Arrowsmith Region (Iluka Resources, 2007). The Eneabba Plain is generally flat with elevations of approximately 80-100 metres above sea level (Iluka Resources, 2007).

At a local scale, soils of the Eneabba mine site are predominantly pale grey or yellow sands, although shallow gravels and deep sandy clay are present (Iluka Resources, 2007).

Due to the low relief of the surrounding area and the sandy soils with a high infiltration rate, water erosion is not common in rehabilitated areas. However, as a result of the strong prevailing winds and high wind speeds throughout most of the year, it is important that soils are stabilised against wind erosion (Iluka Resources, 2007).

Since 2007, to mitigate the potential for wind erosion, cereal crops have been sown in native vegetation rehabilitation blocks and sprayed out before seed sets to stabilise soils (Iluka Resources, 2007).

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

Methodology

Iluka Resources (2007)

(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 Department of Environment and Conservation managed area is the Class "C" South Eneabba Nature Reserve, located approximately 1.6 kilometres south of the application area (GIS Database).

The distance between the reserve and the application area is considered adequate for separation of these activities and it is unlikely that the proposed clearing will impact on the environmental values of the conservation reserve.

Furthermore, extensive clearing has taken place for the development of the Iluka Resources mine and as a consequence, the vegetation is not continuous and is unlikely to have a linkage or buffering effect.

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

Methodology

GIS Database:
- CALM Managed Lands and Waters

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

Comments

Proposal is not likely to be at variance to this Principle

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

There are no adjacent permanent surface water bodies that will be impacted by the proposed clearing. The Eneabba ground water table is below the pit basement levels mined for ore (pits are typically 15-20 metres deep in this locality) (Iluka Resources, 2009). Groundwater in the vicinity of the proposed clearing area is typically 30-40 metres below ground level, and will not be impacted by mining operations (Iluka Resources, 2009). The proposed clearing area will have suitable drainage mechanisms (such as collection sumps and

diversion drains) in place during operations, and when rehabilitated (contour banks), to control surface water flows (Iluka Resources, 2009).

Groundwater salinity within the application area contains between 500 - 1000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the size of the application area (12.08 hectares), comparative to the size of the Indoon Logue Catchment area (approximately 137,421 hectares) (GIS Database), the quality of the groundwater is unlikely to be impacted by the proposed clearing activity.

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

Methodology Iluka Resources (2009)
GIS Database:
- Ground Water Salinity Statewide
- Hydrographic Catchments
- Public Drinking Water Source Area

(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

Due to the relatively small size of the proposed clearing (12.08 hectares), it 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

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 11 May 2009 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There are two native title claims over the application area (GIS Database). These claims (WC98-057 and WC04-002) have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenement has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. 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 no known 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 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.

On 9 June 2007 Iluka Resources was approved to clear up to 149 hectares under clearing permit CPS 1704/1. This permit was amended on 9 October 2008 to increase the duration of the permit as much of the proposed clearing had not been undertaken. That Permit expired on 15 March 2009. Since the cessation of that permit Iluka Resources have since realised that there was 12.08 hectares of vegetation in the previous permit area (CPS 1704/2) that was required to be cleared to continue mining operations. Iluka Resources originally inquired into amending clearing permit CPS 1704/2, to extend the duration of the permit a second time, however, as the permit had already expired this was not possible. Therefore Iluka Resources have applied to clear 12.08 hectares of vegetation within the area that was granted under clearing permit CPS 1704/2.

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

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

5. References

Bancroft, W. J. and Bamford, M.J. (2006) Fauna Review Eneabba, unpublished report prepared for Iluka Resources Ltd, Kingsley, Western Australia.

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.

Desmond, A. and Chant, A. (2001) Geraldton Sandplains 3 (GS3 - Lesueur Sandplain Subregion) in A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002. Report published by CALM, Perth, Western Australia.

Iluka Resources (2007) Midwest Operations Eneabba Rehabilitation Management Plan, Unpublished Report, Perth, Western Australia.

Iluka Resources (2009) Eneabba Mineral Sands Mine Adamson West Proposal, supporting documentation, Perth, Western Australia.

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

Western Australian Herbarium (2009) FloraBase - The Western Australian Flora. Department of Environment and Conservation. http://florabase.calm.wa.gov.au/ (Accessed 3/06/2008).

Woodman Environmental Consulting (2005) Flora and Vegetation Assessment, Adamson vegetation survey area, May 2005, Unpublished report prepared for Iluka Resources Eneabba Operation.

Woodman Environmental Consulting (2008) P1 and Hopkins Survey Areas - Flora and Vegetation Studies, unpublished report prepared for Iluka Resources Ltd, Western Australia.

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.