Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2720/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Metals Exploration Limited**

1.3. Property details

Property: Exploration Licence 69/535
Local Government Area: Shire Of Ngaanyatjarraku
Colloquial name: Wingellina Nickel Project

1.4. Application

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

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 area applied to clear has been broadly mapped at a scale of 1:250,000 as: Beard Vegetation Association 19: Low woodland; mulga between sandridges; and Beard Vegetation Association 92: Hummock grasslands; sparse tree steppe; bloodwood over hard spinifex *Triodia basedowii* (GIS Database). HGM (2002) undertook a biological survey of the Wingellina project area, for an area that included the application area and totalled approximately 10,000ha. The survey was carried out in April 2002 and involved a desktop review of available databases and literature, analysis of aerial photography and topography and a field survey (HGM, 2002). HGM (2002) have identified seven vegetation units within the entire survey area: A: Plains vegetation A1: Open shrubland of *Hakea lorea* and *Senna artemisioides* subsp. X *artemisioides* over mixed grasses and herbs in clay on low plains. A2: Grassland of *Poaceae* spp. With occasional *Senna glutinosa* subsp. *glutinosa* and *Sida fibulifera* in patches of cracking clay. A3: Dense low woodland of *Eucalyptus mannensis* subsp. *mannensis* over *Acacia pachyacra*, *A. prainii* and *Dodonaea viscosa* subsp. *angustissima* over *Triodia rigidissima* and *Triodia helmsii* in sand over clay on low plains. B: Mid slopes and small hills B1: Dense low woodland of *Eucalyptus socialis* subsp. *eucentrica* and *Acacia aneura* var. *major* over mixed shrubs over *Triodia scariosa* in clay on low ferricrete ridges. B2: Very open shrubland of *Acacia pruinocarpa* and *A.*	Metals Exploration Ltd (Metals Ex) has applied to clear up to 0.66ha of native vegetation within an application area of approximately 53ha (GIS Database). The proposed clearing is located on Exploration Licence 69/535, approximately 620km north of Eucla, close to the WA/SA/NT border (GIS Database). The purpose of the proposed clearing is mineral exploration. Metals Ex (2008) propose to clear 40 test pits and associated sumps to contain groundwater flow from drill holes. The proposed work will be carried out in areas of primarily spinifex grassland with no trees (Metals Ex, 2008). Vegetation clearing will be undertaken by mechanical means. Pits and sumps will be dug by a small back-hoe and tracks will be cleared using a small rubber-tyred front-end loader (Metals Ex, 2008).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition rating is based on photographic and vegetation description information provided by Outback Ecology (2008). Outback Ecology (2008) report that frequent fires and camel grazing has adversely affected the condition of vegetation within the application area, in particular the structure and condition of the middle and upper strata.

aneura var. *major* over *Senna pleurocarpa* var. *pleurocarpa* over *Triodia scariosa* in clay on midslopes or low rocky hills.

B3: Low scrub over *Triodia spp*. in sand on sand dune.

C: Hills, ridges and breakaways

C1: Low open woodland of *Eucalyptus gamophylla* and *Eucalyptus socialis* subsp. *eucentrica* over *Acacia validinervia* over mixed shrubs over *Triodia scariosa* in clay loam on upper slopes of mafic ridges.

It is considered that the primary vegetation type within the application area is vegetation type C1 (Halpern et al., 2000, as cited in Outback Ecology, 2008). However, there is the potential for other vegetation types to be present within the application area based on topography and slope (Outback Ecology, 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 is located within the Mann-Musgrave Block subregion of the Central Ranges Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This region is characterised by Proterozoic ranges and derived soil plains, interspersed with red Quartenary sandplains (CALM, 2002). At a broad scale, vegetation can be described as low open woodlands of either Desert Oak or Mulga over *Triodia basedowii* hummock grasslands on sandplains. Vegetation fringing ranges can be described as low open woodlands of Ironwood (*Acacia estrophiolata*) and Corkwoods (*Hakea* spp.) over tussock and hummock grasslands, and on ranges the vegetation consists of mixed wattle scrub or *Callitris glaucophylla* woodlands over hummock and tussock grasslands (CALM, 2002).

The application area is located on an undulating valley floor and occupies a low rise in the floodplain, rising 3-4 metres above the floodplain (Metals Ex, 2008). The rise is dominated by rubble and sub-outcrop of gabbros, the most common rock in the area (Metals Ex, 2008). The application area is degraded due to disturbance by camel grazing and frequent fires (Outback Ecology, 2008). Consequently the biodiversity value of the proposed clearing area is likely to have been impacted by these disturbances.

HGM (2002) described seven vegetation units from three broad landform types during a flora and vegetation survey that complies with the Environmental Protection Authority (EPA) Position Statement No.3 requirements for terrestrial biological surveys (EPA, 2002). A total of 188 vascular flora taxa were recorded from 87 genera and 37 families (HGM, 2002). HGM (2002) have noted that 75 taxa recorded during the survey had not previously been recorded in the area which underlines the relative paucity of information that exists for this region. No Declared Rare Flora (DRF), Threatened Ecological Communities (TEC's) or Priority Ecological Communities (PEC's) were recorded during the survey (Outback Ecology, 2008). Four Priority flora species have been identified as potentially occurring within the Wingellina project area (Outback Ecology, 2008).

According to Outback Ecology (2008) six introduced flora species have the potential to occur within the application area: Ruby Dock (*Acetosa vesicaria*), Buffel Grass (*Cenchrus ciliaris*), Windmill Grass (*Chloris virgata*), Elastic Grass (*Eragrostis tenuifolia*), Spiked Malvastrum (*Malvastrum americanum*) and Afghan Thistle (*Solanum hystrix*). The presence of introduced flora species lowers the biodiversity value of the application area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

HGM performed a field and desktop fauna survey of the Wingellina area in April 2002. Table 1 below shows the number of vertebrate fauna species recorded during the 2002 fauna survey in comparison to the number of species with the potential to occur. Information regarding the number of species that could occur in the area has been gathered from available databases such as the Western Australian Museum Faunabase as well as from literature and local indigenous knowledge (HGM, 2002):

Table 1: Vertebrate fauna species in the Wingellina study area: species recorded/expected to occur

	Amphibians	Reptiles	Birds	Mammals	Total
Potential to occur	0	40	85	6	131
Recorded during survey	0	9	54	3	66

(HGM, 2002)

This table indicates that the application area is potentially high in bird and possibly reptile species. However, the application area has been affected by high frequency fires and camel grazing and therefore, it would be expected that this would have lowered the faunal diversity of the application area.

Vegetation communities within the Wingellina survey area have been subject to repetitive and extensive burning (HGM, 2002). This high frequency of fire has affected the distribution and diversity of flora in the survey area (HGM, 2002). Consequently, fauna may be affected directly during a fire or indirectly through the loss of vegetation and resulting change in community structure (HGM, 2002). Therefore, due to the frequency and intensity of fire as well as other disturbances such as grazing and exploration activities in areas adjacent to the application area, it is unlikely that the application area supports a high level of biological diversity.

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

Methodology

CALM (2002)
EPA (2002)
HGM (2002)
Metals Ex (2008)
Outback Ecology (2008)
GIS Database
- Interim Biogeographic Regionalisation for Australia (Subregions).

(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 fauna survey of the application area was carried out by Outback Ecology in April 2008 and a survey of the entire Wingellina area, including the application area, was undertaken by HGM Maunsell in April 2002. The techniques used were similar with both surveys, and consisted of searches of available databases and literature as well as analysis of aerial photography and topography. A field survey was also undertaken in the 2002 survey using techniques such as opportunistic sightings and limited trapping (HGM, 2002). The HGM (2002) fauna survey identified three broad habitat types within the Wingellina survey area:

1. Upland rocky ridges, hill slopes and boulders:
   This habitat type includes the upper stony portions of hills and outcrops of rocks. These areas are sparsely vegetated with spinifex clumps, scattered shrubs, and occasional *Ficus platypoda* and show minimal soil development. Rock piles potentially support saxicoline (rock inhabiting) reptiles and small mammals. In the past these inaccessible areas were important for Rock-wallabies (HGM, 2002).

2. Lower and mid slope scree and low stony rises:
   This habitat consists of open Eucalypt woodlands, with an understorey of spinifex and scattered shrubs. Variants of this habitat type include minor drainage lines and low rises. These areas are important for Honeyeaters and other passerine birds, with small mammals utilising spinifex clumps, and retiles inhabiting spinifex and leaf litter. This habitat also supports the Euro (*Macropus robustus*) (HGM, 2002).

3. Lowland grasses and herbaceous plants in valleys and on flats:
   These areas occur around the base of the hills and lowland areas. This habitat type has characteristically loamy soils. Vegetation is dominated by a dense ground layer of grasses and herbaceous plants with occasional patches of Mulga regrowth. These areas, particularly where Mulga occur, are important for passerine birds, but also support small mammals such as the Spinifex Hopping Mouse (HGM, 2002).

The vegetation and hence fauna habitats of the survey area have been influenced by fire history, which has formed a mosaic of post fire succession stages (HGM, 2002). Habitats that are similar but with different fire histories may support different communities of animals, and differ in the relative abundance of fauna species (HGM, 2002). Much of the area has been influenced by fire which has caused a general decline in Mulga communities (HGM, 2002).

Given the application areas previous disturbance as well as the scale and nature of the proposed clearing (0.66ha within a total application area of approximately 53ha), it is unlikely that impacts to fauna would be significant. The following minor impacts to fauna would be expected as a result of the proposed clearing:

- Mortality of vertebrate and invertebrate fauna in the clearing footprint area. Sedentary species and young animals are particularly susceptible;
- Displacement of mobile species in the proposed clearing area into surrounding habitats;
- Temporary loss of habitat for foraging and shelter; and
- Localised disturbance from noise and dust pollution.

Within the application area there is the potential for a number of fauna species of conservation significance to occur. Basedon habitat preference, known distributions and local knowledge, the species with the highest

chance of occurring within the area are as follows:

- Australian Bustard (*Ardeotis Australis*) – Priority 4 on the DEC's Threatened and Priority Fauna list;
- Black-footed Rock-wallaby (*Petrogale lateralis* ssp.) – Vulnerable (*EPBC Act 1999*); and
- Long-tailed Dunnart (*Sminthopsis longicaudata*) – Priority 4 on the DEC's Threatened and Priority Fauna list.

The Australian Bustard is a dispersive species with widespread movements over long distances (Department of Environment and Climate Change, 2005). The species is known to inhabit grasslands, low shrublands, grassy woodlands as well as altered environments such as croplands and airfields (Department of Environment and Climate Change, 2005). The Australian Bustard usually breeds on bare ground, on low sandy ridges or stony rises (Department of Environment and Climate Change, 2005). Local people have reported the species as occurring within the Wingellina area, however, due to the widespread distribution of the Australian Bustard, it is unlikely that the vegetation within the application area represents significant habitat for this species.

The vegetation and fauna habitats of the Wingellina project area are degraded due to the frequency of fire, camel grazing and mining activities (Outback Ecology, 2008). Therefore, the vegetation within the application area is unlikely to represent significant habitat for any fauna species. Outback Ecology (2008) and HGM (2002) did not locate any fauna species of conservation significance during a biological survey of the proposed clearing area. Furthermore, due to the level of disturbance within this area it is unlikely that fauna species of conservation significance would be found within the application area (Outback Ecology, 2008).

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

Methodology Department of Environment and Climate Change (2005)
HGM (2002)
Outback Ecology (2008)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments **Proposal is not likely to be at variance to this Principle**
Outback Ecology (2008) undertook a flora and vegetation survey of the proposed clearing area in accordance with Environmental Protection Authority (EPA) Guidance Statement 51: 'Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia' (EPA, 2004). The survey included a literature review of other flora surveys performed in the area and a search of available databases and literature to compile a potential Declared Rare Flora and Priority Flora species list for the proposed clearing area.

According to available databases, there are no known records of DRF or Priority Flora species within the proposed clearing area (GIS Database). Four Priority flora species have been identified as having the greatest potential of occurring within the application area based on known distributions: *Calotis latiuscula* (P3), *Menkea lutea* (P1), *Teucrium grandiusculum* subsp. *grandiusculum* (P2), *Lythrum paradoxum* (P3) (Outback Ecology, 2008).

Outback Ecology (2008) did not locate any Priority Flora species during a biological survey of the proposed clearing area.

The vegetation communities present within the proposed clearing area are typical of those found within the Central Ranges subregion (Outback Ecology, 2008). The vegetation communities of the application area are degraded due to camel grazing and frequent fires and therefore, it is not expected that the proposed clearing will result in the loss of habitat necessary for the continued existence of any DRF or Priority Flora species.

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

Methodology EPA (2004)
Outback Ecology (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 area applied to clear or within 200km of the application area (GIS Database).

Outback Ecology (2008) report 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 Outback Ecology (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 Central Ranges Bioregion (GIS Database). Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in this Bioregion (see table below). The vegetation in the application area is recorded as Beard Vegetation Association 19: low woodland; mulga between sandridges and Beard Vegetation Association 92: hummock grasslands; sparse tree steppe; bloodwood over hard spinifex *Triodia basedowii* (GIS Database). According to Shepherd et al., (2001) these vegetation types are not represented in reserves, however, approximately 100% of these vegetation associations remain within the Bioregion (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 – Central Ranges	4,701,518	4,700,202	~100	Least Concern	0.0
Beard veg assoc. – State					
19	4,385,296	4,384,255	~100	Least Concern	0.0
92	152,002	151,093	~99.4	Least Concern	0.0
Beard veg assoc. – Bioregion					
19	902,251	902,170	~100	Least Concern	0.0
92	123,656	123,187	~99.6	Least Concern	0.0

* 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
- Interim Biogeographic Regionalisation of Australia
- 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 likely to be at variance to this Principle

According to available GIS databases, there are no permanent or ephemeral watercourses in the proposed clearing area (GIS Database). A non-perennial watercourse is located approximately 1km south-east of the application area (GIS Database).

The Wingellina project area lies in central Australia, just within W.A., close to the SA/NT border and has an arid climate with variable rainfall (BOM, 2008 as cited in Outback Ecology, 2008). Much of the rainfall predominantly occurs between November to March and is derived from summer storms (Outback Ecology, 2008). It is only during and after such heavy rainfall events that the ephemeral watercourse near the application area is likely to flow.

Based on the small size of clearing to be conducted (0.66ha) and the distance of any waterways from the application area, it is unlikely that the proposed clearing will have an impact on any watercourse or wetland.

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

Methodology Outback Ecology (2008)

GIS Database
- hygrography - linear

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

Comments

Proposal is not likely to be at variance to this Principle

The area applied to clear is located within the Wingellina Hills, which lie to the north of the Musgrave Ranges (Outback Ecology, 2008). The Wingellina Hills consist of a series of predominantly low, north-west to south-east trending ridges with occasional high steep hills and rocky outcrops (HGM, 2002). These hills are formed by the Wingellina Intrusion, a layered gabbro and ultramafic igneous body (HGM, 2002). In places the gabbro forms rocky outcrops with boulders and scree slopes on steeper slopes (HGM, 2002).

The soils of the application area have been reported by Outback Ecology (2008) as being primarily clay based with outcrops of gabbro rock. The area applied to clear is located on an undulating valley floor and occupies a low rise in the floodplain (Outback Ecology, 2008). Given the dominant geology and soil types of the application area, the small amount of clearing associated with this proposal is unlikely to increase the incidence of soil erosion and other land degradation.

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

Methodology

Outback Ecology (2008)
HGM (2002)

(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 proposed clearing area is located within the Ranges of the Western Desert Register of National Estate and the Ranges of the Western Desert Redbook Area, (GIS Database). The Ranges of the Western Desert are a series of mountain ranges that are the western extension of the central Australian range complex (EPA, 1974). The ranges have varied topography and geology and are therefore high in flora diversity (EPA, 1974).

The application area is degraded due to camel grazing, fire and mineral exploration activities, lowering the conservation value of the application area. Furthermore, the proposed clearing of 0.66ha, in comparison to the size of the reserves (8,016,568ha; GIS Database), is unlikely to have any significant impact on the environmental values of these conservation areas.

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

Methodology

EPA (1974)
GIS Database
- CALM Managed Land and Waters
- Register of National Estate
- System 1 to 5 and 7 to 12

(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 permanent or ephemeral surface water features in the proposed clearing area (GIS Database). The proposal will consist of small areas of clearing scattered over a much larger area and it is therefore considered unlikely that the proposed clearing would impact upon surface water quality.

The groundwater of the application area has a salinity level of between 1000 - 3000tds (GIS Database). This salinity level is considered to represent fair to poor groundwater quality, however, is suitable for livestock, some domestic and limited industrial uses (Department of Land and Water Conservation, 1999). It is unlikely that the 0.66ha of proposed clearing, scattered over an area of approximately 53ha, would have any significant impacts to groundwater levels or quality.

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

Methodology

Department of Land and Water Conservation (1999)
GIS Database
- hydrography - linear

(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

There are no permanent or ephemeral surface water features within the proposed clearing area (GIS Database). The application area is located within a region that has an arid climate with variable rainfall (CALM, 2002). The average annual rainfall of 250 mm predominantly occurs between November to March and is derived from summer storms (Outback Ecology, 2008). It is only during and after such heavy rainfall events that the area is prone to inundation.

In consideration of the above, the clearing of 0.66ha in comparison to the size of the Warburton catchment area (17,195,990ha; GIS Database), is not likely to lead to an increase in the incidence or intensity of flooding.

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

Methodology

CALM (2002)
Outback Ecology (2008)
GIS Database
- Hydrographic Catchments - catchments
- Hydrography - linear

Hydrographic Catchments - catchments

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

Comments

There is a native title claim (WC04/003) over the area under application (GIS Database). 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 Aboriginal Sites of Significance that overlap with the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

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

There were no public submissions received during the public comments period.

Methodology

GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

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

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

5. References

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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.