Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 385/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Crescent Gold Ltd**

1.3. Property details

Property: M38/376
M38/377
M38/318
Local Government Area: Shire Of Laverton
Colloquial name: Admiral Hill Deposit

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
68.6		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
Beard vegetation association 18: Low woodland; Mulga (*Acacia aneura*) (Hopkins et al 2001; Shepherd et al 2001).	The proposed clearing consists of 68.6 ha for the development of the Admiral Hill gold deposit which is situated approximately 11 kms from Laverton. The purpose of the clearing is to establish an open pit, waste rock dump and associated mine site infrastructure (i.e. haul roads, laydown areas). It is proposed the topsoil be stripped and stored separately and vegetation stockpiled for later respreading on rehabilitated areas. A vegetation and fauna assessment was undertaken within the Admiral Hill project area by MBS Environmental between 1 and 3 September 2004 (MBS Environmental 2004). The following three dominant vegetation units were found to exist within the proposed area for clearing; 1) Small greenstone hills with vegetation characterised by Mulga shrubland patches over an assorted mid-storey scrub of mixed species including *Eremophila latrobei* subsp. *latrobei*, *Acacia quadrimarginea*, *Sida*	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	Photographs of the area show the vegetation structure to be excellent to very good. Understorey is sparse on areas of outcropping banded iron and small (<10m) bare patches exist on the top of the rise where quartz outcrops (MBS Environmental 2004). The vegetation assessment was conducted at the level of reconnaissance survey as specified in EPA Guideline 51, targeting the areas of remnant vegetation on the Admiral Hill project area (MBS Environmental 2004). The site was traversed by foot and samples were collected of unknown flora for identification. Vegetation assessment of the area was sufficient to ascertain the condition and vegetation association. Assessment points were selected at random across the project landscape. The three vegetation units described for the project area are common and widespread throughout the North Eastern Goldfields (MBS Environmental 2004).

excedentifolia, *Senna artemisioides* subsp. *filifolia* and *Ptilotus obovatus*, and a sparse understorey consisting of common herbaceous species such as *Maireana georgei*, *Goodenia mimuloides*, *Erymophyllum ramosum*, *Enneapogon caerulescens*, *Haloragis gossei* and *Zygophyllum* species.

2) Chenopod shrubland with patches of *Maireana pyramidata* and *Sclerolaena obliqicuspus*, consisting of an irregular band of *Eucalyptus salubris* over a shrubland of *Atriplex bunburyana*, *Maireana pyramidata*, *Grevillea acuaria* and *Senna artemisioides* subsp. *filifolia*.

3) A drainage system characterised by red alluvial sand and a closed shrubland of *Acacia aneura* var. *aneura*, *Acacia sibina*, with emergent *Eucalyptus ravida*, and a mid-storey dominated by patches of *Senna cardiosperma* subsp. *cardiosperma* and *Acacia stowartii*.

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 Admiral Hill gold mine project area is located within the Eastern Murchison Interim Biogeographical Regionalisation for Australia subregion (GIS database). Almost 100 % of the pre-European vegetation remains within this subregion (Shepherd et al. 2001).

Vegetation condition at the Admiral Hill project area has been described as very good to excellent (Keighery 1994) with vegetation structure intact. The area under application is located within in the Mt Weld pastoral lease and the three vegetation units described for the project area are common and widespread throughout the North Eastern Goldfields (GIS database). Furthermore, the area showed low diversity in terms of landforms and vegetation types for fauna habitat.

No Threatened Ecological Communities, Threatened Fauna or Declared Rare Flora were identified across the application area (GIS database; MBS Environmental 2004).

The Admiral Hill site is unlikely to show higher diversity than the surrounding bioregion or local area, therefore, the proposed clearing is unlikely to be at variance to this principle.

Methodology

Shepherd et al. (2001)
Keighery (1994)
MBS Environmental (2004)
GIS Databases:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Pre-European Vegetation - DA 01/01
- Threatened Ecological Communities - CALM 12/4/05
- Declared Rare and Priority Flora List - CALM 01/07/05

(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 habitat and fauna survey was conducted between 1 and 3 September 2004, with the habitat assessment conducted at the level of reconnaissance survey (MBS Environmental 2004). Landforms such as ranges, ridges or caves, which provide significant habitat for fauna, were not recorded within the proposed area (MBS Environmental 2004). The primary fauna habitats observed in the area are indicative of the surrounding region and include a greenstone hill dominated by Mulga shrubland, chenopod shrublands with emergent Eucalypt woodlands, and drainage systems dominated by *Acacia* species with emergent *Eucalyptus ravida* (MBS Environmental 2004). These three vegetation units are common and widespread throughout the North Eastern Goldfields (MBS Environmental 2004). CALM (2005) have advised that disturbances proposed for the Admiral Hill project area are unlikely to have adverse impacts on fauna of conservation significance.

Several species of fauna of varying conservation significance may occur within the project area. The Vulnerable listed Great Desert Skink (*Egernia kintorei*) was trapped in 1967 and may persist in the region (MBS Environmental 2004b). However, the vegetation of the Admiral Hill site is characterised by Mulga habitat and not the sand plain vegetated by spinifex that characterise the habitat for the Great Desert Skink (McAlpin 2001), therefore, it is unlikely to be present.

Two bird species of conservation significance are considered to potentially utilise the habitat of the project area. The Schedule 2 listed Peregrine Falcon (*Falco peregrinus*) and the Australian Bustard (*Ardeotis australias*), listed as a Priority 4 species, have been observed in the project area (MBS Environmental 2004). Given that the vegetation units of the project area are well represented in the North Eastern Goldfields, it is unlikely that the localised clearing will affect the habitat and distribution of these species, and that of other bird species which may utilise the area.

Migratory birds which may utilise the area include three threatened species listed under the *Environmental Protection and Biodiversity Conservation Act* 1999. These species are the Oriental Dotterel (*Charadrius veredus*), Rainbow Bee-eater (*Merops ornatus*) and the Great Egret (*Ardea alba*). The proposed area is not the birds primary habitat and they may disperse throughout the project area at different times of the year. Due to the localised area applied to be cleared, the development is unlikely to impact on key breeding and feeding habitat for any migratory species (MBS Environmental 2004).

Five amphibian species; *Cyclorana maini, Cyforana platycephala, Limnodynastes spenceri, Neobatrachus kunapalari* and *Neobatrachus suto*, which are of no conservation significance, are expected to occur in the area. These species are generally arid-adapted species that are opportunistic after rains. Climatic conditions were not favourable for their presence during the site visit and they were not observed (MBS Environmental 2004). There are a number of minor, non-perennial watercourses situated around the Admiral Hill site including several which cross the proposed haul road and mine site area. It is likely these species would be observed in these watercourses and areas of ponding water after substantial rainfalls. However, given the vegetation units of the project area are well represented in the North Eastern Goldfields, it is unlikely that the localised clearing will impact on significant habitat for these amphibians.

One mammal species, the Mulgara (*Dasycercus cristicaudata*), is listed as Vulnerable under the *Environmental Protection and Biodiversity Conservation Act* 1999 and WA *Wildlife Conservation Act* 1950 and may potentially occur across the project area. The habitat requirements of the Mulgara are clayey sand and sandy loam soils with spinifex cover between 10 - 60%. Spinifex habitat was not present over the project area, thus the likelihood of Mulgara occurring in the area is low (MBS Environmental 2004).

The nearest known threatened fauna habitat is located approximately 5 km north of the proposed area and should not be impacted by this proposal (GIS database).

It is unlikely that an isolated clearing at this site for the proposed purposes will impact on native fauna habitat, therefore, the proposal is not likely to be at variance to this principle.

Methodology

MBS Environmental (2004)
CALM (2005)
McAlpin (2001)
GIS Database:
- Threatened Fauna - CALM 30/9/05

(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 CALM datasets, there are no known records of Declared Rare or Priority Flora within the proposed area of clearing (GIS database).

MBS Environmental (2004) conducted a search of CALM's Threatened Flora database and the Western Australian Herbarium Specimen (WAHERB) database between the coordinates 28° 22'-28° 55'S and 122° 14'-122° 41'E to identify rare and priority species which included the Admiral Hill project area. Subsequently, MBS Environmental conducted a vegetation assessment in the form of a reconnaissance survey between 1 and 3 September 2004 and found no Declared Rare or Priority Flora species within the Admiral Hill project area. The Priority 1 species, *Phyllanthus baeckeoides* was recorded during the survey near the Sickle Deposit. This site is approximately 5km south-east from the proposed area and will not be impacted on by the proposed clearing.

CALM (2005) have advised that disturbances proposed for the Admiral Hill project area are unlikely to have adverse impacts on flora of conservation significance. This proposal is unlikely to be at variance to this principal.

Methodology MBS Environmental (2004)
CALM (2005)
GIS Databases:
- Threatened Flora Data Management System - CALM
- Declared Rare and Priority Flora List - CALM 13/08/03

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments **Proposal is not likely to be at variance to this Principle**
There are no known Threatened Ecological Communities (TECs) identified within the area subject to be cleared. The nearest known TEC is approximately 240 km north-west of the proposed area (GIS database). The clearing proposal is not likely to be at variance to this principle.

Methodology GIS Databases:
- Threatened Ecological Community Database - CALM 15/07/03

(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 State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002; EPA, 2000).

While the benchmark of 15% representation in conservation reserves (JANIS Forests Criteria, 1997) has not been met for Beard vegetation association 18, approximately 99.9% of the pre-European extent remains for this association and it is therefore of 'least concern' for biodiversity conservation (Hopkins et al. 2001; Department of Natural Resources and Environment, 2002).

	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation Status**	% in IUCN Class I-IV reserves
IBRA Bioregion - Murchison	28,206,195*	28,206,195*	~100%	Least concern	
Shire of Laverton	No information available				
Beard vegetation associations - 18	24,675,970	24,659,110	~99.9%	Least concern	2.0%

* Shepherd et al. (2001)
** Department of Natural Resources and Environment (2002)

Methodology Shepherd et al. (2001)
Hopkins et al. (2001)
Department of Natural Resources and Environment (2002)
JANIS Forests Criteria (1997)
EPA (2000)

(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 may be at variance to this Principle**
There are no permanent watercourses or wetlands within the proposed clearing area for the mine site development at Admiral Hill (GIS database). The nearest permanent watercourse is located approximately 2 km south-east from the proposed area.

Several minor, non-perennial watercourses exist around the site, with one found approximately 20 m inside the eastern boundary of the proposed stockpile and laydown area and a second located approximately 200 m west of the proposed open pit. DAWA (2005) advise that the Mulga lowland unit and the drainage system are prone to erosion if cleared. The proposed development will see the vegetation cleared for the development of an open pit and associated infrastructure, so the erosion risk will be minimised. The clearing for the stockpile and laydown area may increase soil erosion and surface water runoff into the watercourse, especially during significant rainfall events, and this will be managed through a condition on the clearing permit. Erosion and sediment export from the stockpile and lay down areas are mining associated impacts and not clearing impacts, and will be managed under the appropriate Mining Proposal process in accordance with the *Mining Act* 1978.

Several watercourses, including Skull Creek, cross the proposed haul road which links the mine site to White Cliffs Road in the south. There are also seven minor, non-perennial watercourses which cross the proposed haul road, which will act as drainage channels during periods of significant rainfall (GIS database). Clearing of native vegetation to construct the proposed haul road may disrupt natural drainage patterns and cause soil erosion in areas around the watercourses, especially during periods of significant rainfall (DAWA 2005). This issue will be managed through a condition on the clearing permit.

DAWA (2005) advise that land degradation in the form of loss of native vegetation is likely to occur through water starvation where the proposed haul road crosses the stoney hard pan plains at the southern end. However, this is a land use issue associated with the haul road and it will be managed under the Mining Proposal.

In summary, a majority of the erosional impacts will be associated with the mining activities proposed at the site subsequent to clearing. These impacts will be managed under the Mining Proposal application in accordance with the *Mining Act* 1978. There is a risk of erosion occurring at the time of clearing, if a significant rainfall event were to occur, and this issue will be managed through a condition on the permit which will prevent clearing prior to, or during heavy rainfall events.

In consideration of the above issues, the proposed clearing may be at variance to this principle, due to the potential for soil erosion occurring at the time of clearing.

Methodology DAWA (2005)
GIS Databases:
- Hydrography, linear - DOE 01/02/04
- Hydrographic Catchments - Catchments DOE 3/4/03
- Rivers, 1M - GA 01/06/00
- Lakes, 1M - GA 01/06/00

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

Comments

Proposal may be at variance to this Principle

The topography of the Laverton region is characterised by gently undulating terrain of low relief, with prominent hills consisting of greenstone outcrops. The soils are typically red loams that are loose and friable, with a few small ironstone quartz pebbles overlying a siliceous hardpan (Beard 1974 cited in MBS Environmental 2004b). MBS Environmental (2004) identified three vegetation units that occur on the Admiral Hill mine development site. These include; a greenstone hill dominated by Mulga shrubland, chenopod shrubland with patches of eucalypt, and drainage systems with *Acacia* and *Eucalyptus ravida* (MBS Environmental 2004). In their undisturbed form, the soils of these units are quite stable as they are protected by the stoney mantle. The soils associated with the Mulga lowland and drainage areas are particularly prone to erosion if cleared (DAWA 2005). There is a risk of localised erosion at the time of clearing vegetation for the pit, waste dump and laydown area, especially if the site were to be exposed to a rainfall event or high winds, and this will be managed through a condition on the clearing permit. Erosion risk during operation of the minesite will be managed through the Mining Proposal process in accordance with the *Mining Act* 1978.

For the construction of the haul road, which will link the mine site to White Cliffs Road in the south, DAWA advise that land units at risk of land degradation include; duplex soils on footslopes of hills, drainage tracts and the stoney sandy plain (DAWA 2005). For these areas, soil erosion is likely at the time of vegetation clearing for the construction of the haul road, as clearing will remove the protective stoney mantle of the soils. Erosion may be exacerbated if clearing were to occur during a heavy rainfall event, and this will be managed through a condition on the permit. Loss of native vegetation through water starvation is also likely to occur where the proposed haul road crosses the stoney plain. However, suitable management for this is a land use issue which will be managed under the Mining Proposal process in accordance with the *Mining Act* 1978.

MBS Environmental conducted a vegetation assessment and no weeds were recorded within the area surveyed at the Admiral Hill deposit (MBS Environmental 2004).

Considering the above factors, the proposal may be at variance to this principle with respect to soil erosion at the time of clearing. This issue will be managed through a condition on the clearing permit which will prevent clearing prior to, or during heavy rainfall events to reduce the likelihood of erosion occurring.

Methodology MBS Environmental (2004)
MBS Environmental (2004b)
DAWA (2005)

(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**

There are no CALM managed conservation areas within the area proposed to be cleared, with the nearest being the De La Poer Range Nature Reserve situated approximately 115 km north north-east of the proposed clearing (GIS Database).

The vegetation within the proposal does not serve as a significant ecological linkage, or buffer to regional conservation areas.

Considering the extensive distance between this proposal and the nearest CALM managed reserves, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Databases:
- CALM Managed Lands and Water - CALM 01/08/04

(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 may be at variance to this Principle**

The proposed area of clearing is within the Laverton Public Drinking Water Source Area (GIS database). The groundwater is typically slightly acidic and fresh brackish, with salinity ranging from 830 - 1900 mg/L Total Dissolved Solids, and pH ranging between 6.3 - 6.7 (Rockwater Pty Ltd 2004 cited in MBS Environmental 2004b). Depth to groundwater at the Admiral Hill site is typically 47 m deep and the area experiences low average rainfall (250-300 mm/yr) and high evaporation (3200-3400 mm/yr) (GIS database). However, the Laverton area is subject to sporadic heavy rainfall events, and therefore, a reasonable amount of rainfall may infiltrate to groundwater, although, given the size of the clearing (68.6 ha) compared to the size of the Laverton Public Drinking Water Source Area (264 000 ha), it is unlikely that the clearing will have any significant effect on groundwater recharge quality.

The proposed area of clearing for the haul road intercepts three watercourses including Skull Creek, and also intercepts seven minor, non-perennial watercourses. Given that Lake Carey is located approximately 32kms south-west of the proposal, clearing of native vegetation is unlikely to affect drainage into, or water quality of the Lake. However, heavy rainfall at the time of clearing could result in erosion and increased turbidity in these watercourses, which may cause deterioration in the quality of surface water. This will be managed through a condition on the clearing permit which prevents clearing prior to, or during heavy rainfall events.

The relatively small size of the proposed clearing for this proposal is unlikely to impact on regional groundwater considering the magnitude of the Yilgarn-Goldfields Groundwater Province (~300,000 sq km) and the extent of native vegetation remaining in the Eastern Murchison IBRA subregion (~100%) (Shepherd et al., 2001).

The proposal may be at variance to this principle with respect to soil erosion at the time of clearing and this will be managed through a condition on the clearing permit.

Methodology Shepherd et al., 2001
MBS Environmental (2004b)
GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Groundwater Salinity, Statewide - 22/02/00
- Hydrography, linear - DOE 01/02/04
- Hydrographic Catchments, Basins - DOE 23/03/05
- Rivers, 1M - GA 01/06/00
- Lakes, 1M - GA 01/06/00

(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**

Although the Admiral Hill area experiences low average annual rainfall (250-300 mm/yr) and high evaporation (3200-3400 mm/yr), the area is subject to sporadic heavy rainfall events. During significant rainfall events, the North Eastern Goldfields is often subject to flooding, and non-perennial watercourses which are widespread throughout the region, are responsible for dispersing floodwaters (GIS database). Clearing for the proposed haul road for the Admiral Hill development, will intercept three watercourses including Skull Creek, and also intercept seven minor, non-perennial watercourses (GIS database). The area to be cleared is small relative to the extent of the surrounding vegetation, and given clearing around these watercourses will only be the width of

the haul road, clearing of native vegetation is unlikely to form a catchment area sufficiently large enough to increase the incidence of flooding. Consequently, it is unlikely that the proposal is at variance to this principal

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98
- Hydrography, linear - DOE 01/02/04
- Lakes, 1M - GA 01/06/00
- Rivers, 1M - GA 01/06/00

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

Comments

There is a native title claim over the area under application; WC99/001. This claim has been registered with the National Native Title Tribunal on behalf of Wongatha claimant group. 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 (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.

The proposed clearing occurs in an area that is covered by the following Registered Indigenous Heritage Sites - Laverton 1, ID: W00086. 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.

The proponent does not have a current EP Licence or works approval for this project (DoE 2005).

The proponent does not have a current ground or surface water licence for this project (DoE 2005).

The Shire of Laverton has no objection to the proposal (Shire of Laverton 2005).

Methodology DoE (2005)
Shire of Laverton (2005)
GIS databases:-
Native Title Claims - DLI 7/11/05
Aboriginal Sites of Significance - DIA 28/02/03

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	68.6	Grant	All the Principles have been addressed and the proposed clearing is either not or not likely to be at variance with clearing principles a, b, c, d, e, h and j. The clearing may be at variance with principle (f) and (i) since the proposed haul road crosses Skull Creek and several non-perennial watercourses, which may be prone to erosion if the site is exposed to a heavy rainfall event. The clearing may also be at variance with principle (g), as DAWA has provided advice that the disturbance of the drainage lines and stoney mantle, for the proposed land uses, may cause land degradation due to the susceptibility of the land system to erosion. The assessing officer advises that the permit be granted. The following conditions apply to the permit. 1) The Permit Holder shall not clear native vegetation within the area cross-hatched yellow on 385/1 whilst it is raining. 2) The Permit Holder shall construct and maintain a culvert or floodway where the haul road crosses a drainage line. 3) The Permit Holder shall inspect each culvert or floodway constructed in accordance with condition 2 following rainfall events causing surface water runoff or monthly, if rainfall events do not occur. If erosion is observed, the permit holder shall construct flow controlling devices at outflow points from

the culverts or floodways, and silt fences and/ or sediment traps downstream of the erosion.

5. References

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6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAWA	Department of Agriculture, Western Australia.
DA	Department of Agriculture, Western Australia.
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.
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.