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

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 3335/1
**Permit type:** Purpose Permit

### 1.2. Proponent details

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

### 1.3. Property details

**Property:** Mining Lease 38/376
**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: |
|---|---|---|---|
| 97 | | 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**

Beard Vegetation Associations have been mapped at a scale of 1:250,000 for the whole of Western Australia. One Beard Vegetation Association is located within the application area (Shepherd, 2007):

Beard Vegetation Association 18: Low woodland; mulga (*Acacia aneura*).

MBS Environmental conducted a vegetation and habitat assessment of the application area in September 2004. Five vegetation units were identified within the application area (MBS Environmental, 2004):

1. **Calciphtic Pearl Bluebush Shrublands (CPBS)**
   This vegetation unit has been described as being dominated by *Acacia aneura*, *Hakea preissii*, *Eremophila oldfieldii* subsp. *angustifolia* scattered tall shrubs (<2% Percentage Foliage Cover (PFC), three metres tall) over *Maireana sedifolia*, *Maireana pyramidata* low chenopod shrub land (15% PFC, 0.8 metres tall) over scattered grasses. The open areas are dominated by sparse groundcover mainly comprising *Maireana* spp, principally *Maireana triptera*, *Solanum lasiophyllum*, *Frankenia*, *Ptilotus* spp and occasional shrubs and small trees of *Hakea preissii*, *Acacia aneura*, *Alectryon oleifolius* and *Pittosporum angustifolium* and can be characterised as the CPBS unit.

2. **Drainage Tract Mulga Shrublands (DRMS)**
   The copses and creek lines have a well developed structure of upper, mid and lower storeys. The upper storey is dominated by *Acacia aneura* (various forms); the mid-storey predominantly contains other *Acacias* and *Eremophilas,* while the lower storey contains *Maireana*, *Ptilotus*, *Dianella*, *Scaevola* and *Sida* species. Bush and tree species present in the copses and creek lines include *Hakea preissii*, *Acacia aneura*, *Alectryon oleifolius* and *Pittosporum angustifolium* plus *Acacia oswaldii*, *Acacia acuminata* subsp. *burkittii*, *Eremophila species*, *Dodonaea* species, *Exocarpus aphyllus*, *Santalum spicatum* and, in the south, *Eucalyptus* species. The copses and creek lines can be characterised as DRMS vegetation unit. This unit has been described as having a highly variable composition largely composed of species common to surrounding vegetation units. It is mainly dominated by *Acacia aneura* low forest (35% PFC, five metres tall) over highly variable understorey, reflecting species present in adjacent habitats consisting of shrubs, grasses and herbs.

3. **Stony Ironstone Mulga Shrublands (SIMS)**
   This vegetation complex is described as being dominated by *Acacia aneura, A. ramulosa, A.* sp. aff. *quadrimarginea* scrub (15% PFC, up to 4 metres tall) over *Eremophila forrestii* subsp. *forrestii*, *Scaevola spinescens* (narrow leaf form), *Senna artemisioides* subsp. *helmsii*, *S. artemisioides* subsp. *filifolia* low scrub (20% PFC, up to one metre tall).

4. ***Eucalyptus striaticalyx* on low rise.**
   This vegetation complex comprised *Eucalyptus striaticalyx* with no understorey. The vegetation unit was situated along a cleared track.

5. **Open Quartz Plain.**

**Clearing Description**

Crescent Gold (2009) proposes to clear up to 97 hectares of native vegetation, within a larger area equalling approximately 116 hectares. The proposed clearing is located approximately 10 kilometres north-east of Laverton (GIS Database).

The purpose of the proposed clearing is for the construction of an open pit, waste rock landform, haul roads,

laydown and miscellaneous infrastructure (Crescent Gold, 2009). Vegetation will be cleared by bulldozer and vegetation and topsoil will be stockpiled for rehabilitation purposes (Crescent Gold, 2009).

**Vegetation Condition**

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

To

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

**Comment**

The vegetation condition rating is derived from information provided by MBS Environmental (2004).

## 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 East Murchison subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The East Murchison subregion is generally dominated by Mulga woodlands, often rich in ephemerals; hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (CALM, 2002).

A vegetation and habitat assessment of the application area was conducted by MBS Environmental in September 2004. MBS Environmental (2004) recorded a total of 95 native flora species from 29 families. The most common families were the Daisy family (*Asteraceae*), Goosefoot family (*Chenopodiaceae*), Wattle family (*Mimosaceae*) and Myoporum family (*Myoporaceae*) (MBS Environmental, 2004). In comparison to other flora and vegetation surveys conducted in the area, this species diversity is common for the region (MBS Environmental, 2004).

MBS Environmental (2004) identified the weed species Ruby Dock (*Acetosa vesicaria*) within the application area. The presence of introduced weed species lowers the biodiversity value of the proposed clearing 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 permit be granted, it is recommended that a condition be imposed for the purpose of weed management.

Fauna database searches were conducted using the Department of Conservation and Land Management (CALM) database and the *Environment Protection and Biodiversity Conservation* (*EPBC*) *Act, 1999* database (MBS Environmental, 2004). These searches identified up to 160 fauna species that could potentially occur within the application area consisting of 19 mammal species, 61 bird species, 75 reptile species and 5 amphibian species (MBS Environmental, 2004). MBS Environmental (2004) reports that the Murchison IBRA bioregion commonly has high reptile fauna diversity. Most habitats within the survey area are likely to be equally diverse in reptiles, with species diversity being closely associated with microhabitat type (MBS Environmental, 2004).

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

**Methodology**

CALM (2002)
MBS Environmental (2004)
GIS Database
- Interim Biological 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**

MBS Environmental conducted a vegetation and habitat assessment of the application area and surrounding areas in September 2004. MBS Environmental (2004) considers the survey area to have a low diversity of habitats and landforms with no ranges, ridges or caves located directly in the survey area. MBS Environmental (2004) identified the following four fauna habitats within the survey area:

1) Mulga dominated lowlands;
2) Chenopod shrubland with emergent patches of *Eucalyptus* woodland;
3) Small greenstone hills with outcropping banded iron formation dominated by Mulga shrubland over assorted mid storey scrub;
4) Drainage systems dominated by closed shrubland of *Acacia* species with emergent *Eucalyptus ravida*.

The expected fauna of the survey area are widespread eremaean species commonly found in the mulga zone (MBS Environmental, 2004). The area applied to clear would support numerous reptile species (MBS Environmental, 2004). Primary habitat for reptiles in this region comprise of drainage areas and loamy flats for

burrowing species such as dragons and goannas, tree hollows and bark for geckos and skinks, and rocky areas for the Barking Gecko (MBS Environmental, 2004). Areas of high litter and fallen timber amongst mulga patches and *Eucalyptus* patches provide habitat for elapid and blind snakes (MBS Environmental, 2004). Based on the vegetation units present within the application area any of these species has the potential to occur within the area applied to be cleared, however, according to available databases no drainage areas are present within the application area.

MBS Environmental reports that an Australian Bustard (*Ardeotis australis*), a Priority 4 fauna species on the Department of Environment and Conservation (DEC) Threatened and Priority fauna list, has previously been recorded in this area. This species is dispersive with widespread movements over long distances (DECC, 2005) and therefore, it is unlikely that the vegetation within the application area would represent significant habitat for this species.

The land systems of the application area are widespread on a regional scale (Pringle et al., 1994). Given this, it is unlikely that the localised disturbance created by the clearing of native vegetation would have significant impacts on the fauna habitat of any fauna species.

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

**Methodology** DECC (2005)
MBS Environmental (2004)
Pringle et al. (1994)

**(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**
MBS Environmental (2004) conducted a field based vegetation and habitat assessment of the application area and surrounding areas in addition to a desktop survey of the Department of Conservation and Land Management (CALM) Florabase database for plant species of conservation significance that could potentially occur within the application area. The desktop survey identified the following conservation significant flora species that have a high potential of occurring within the application area based on known range (MBS Environmental, 2004):

- *Calytrix praecipua* (Priority 3);
- *Frankenia georgei* (Priority 3);
- *Gunniopsis propinqua* (Priority 3);
- *Philotheca tubiflora* (Priority 1);
- *Phyllanthus baeckeoides* (Priority 3).

None of these species were identified within the application area during the field vegetation and habitat survey (MBS Environmental, 2004).

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

**Methodology** MBS Environmental (2004)

**(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) within the area applied to clear (GIS Database). The closest known TEC is located approximately 240 kilometres west of the application area (GIS Database).

MBS Environmental (2009) reports that no TECs were identified during the flora and vegetation survey of the application area.

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

**Methodology** MBS Environmental (2009)
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 Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2007) report that approximately 100% of the pre-European vegetation still exists in this Bioregion (see table below). The vegetation within the application area is recorded as the following Beard Vegetation Association (Shepherd, 2007):

- Beard Vegetation Association 18: low woodland; mulga (*Acacia aneura*).

According to Shepherd (2007) approximately 100% of this vegetation association remains 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** | Pre-European % in IUCN Class I-IV Reserves |
|---|---|---|---|---|---|
| IBRA Bioregion - Murchison | 28,120,590 | 28,120,590 | ~100 | Least Concern | ~1.1 |
| Beard vegetation associations - State | | | | | |
| 18 | 19,892,305 | 19,890,195 | ~100 | Least Concern | ~2.1 |
| Beard vegetation associations - Bioregion | | | | | |
| 18 | 12,403,172 | 12,403,172 | ~100 | Least Concern | ~0.4 |

* Shepherd (2007)
** 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 (2007)
GIS Database
- Interim Biogeographic Regionalisation of Australia

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

**Comments**

**Proposal is at variance to this Principle**

Based on aerial imagery of the application area there are several minor, ephemeral watercourses within and adjacent to the application area (GIS Database). Furthermore, MBS Environmental (2009) reports that the proposed clearing is located at the headwaters of minor drainage lines.

The application area is located in an arid region where the average annual evaporation rate greatly exceeds the average annual rainfall of approximately 288 millimetres (BoM, 2009). Based on this, the watercourses within and adjacent to the application area are expected to be dry except following significant rain events typically associated with cyclonic activity.

Based on the above, the proposed clearing is at variance to this Principle. However, the vegetation units within the application area are well represented locally and within the Laverton region generally. Consequently, the proposed clearing is unlikely to have a significant impact at a regional scale given the widespread distribution of the vegetation units.

**Methodology** MBS Environmental (2009)
GIS Database
- Hydrography, linear

**(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 application area has been mapped as occurring within the Bevon, Gundockerta and Violet land systems (GIS Database).

The Bevon land system is described by Pringle et al. (1994) as consisting of irregular low ironstone hills with stony lower slopes supporting mulga shrublands. The majority of the land system is not susceptible to soil erosion, however, minor areas with texture contrast soils on breakaway footslopes and narrow drainage tracts are susceptible to erosion, particularly if perennial shrub cover is substantially reduced (Pringle et al., 1994).

The Gundockerta land system consists of extensive, gently undulating, calcareous, stony plains, supporting bluebush shrublands (Pringle et al., 1994). Pringle et al. (1994) report that where not protected by a stony

mantle, saline plains and adjacent lower alluvial tracts are susceptible to water erosion, particularly in areas where perennial shrub cover is substantially reduced and / or the soil surface is disturbed.

The Violet land system is described as consisting of undulating stony and gravelly plains and low rises, supporting mulga shrublands (Pringle et al., 1994). Pringle et al. (1994) report that abundant mantles provide effective protection against soil erosion over most of this land system, except where the soil surface has been disturbed as in these circumstances the soil becomes moderately susceptible to water erosion. The narrow drainage tracts of this landform are reported by Pringle et al. (1994) to be mildly susceptible to water erosion.

The soils of the proposed clearing area are reported by MBS Environmental (2009) as being dispersive and therefore likely to be susceptible to water erosion.

Based on the above, the proposed clearing may be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit requiring the Permit Holder not to clear native vegetation unless the purpose for which the clearing is authorised is enacted within 3 months of the clearing taking place, in addition to a condition requiring the proponent to stockpile topsoil and vegetation for rehabilitation purposes.

**Methodology** MBS Environmental (2009)
Pringle et al. (1994)
GIS Database
- Rangeland Land System Mapping

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

**Comments** **Proposal is not likely to be at variance to this Principle**
The proposed clearing is not located within any conservation areas (GIS Database). The nearest Department of Environment and Conservation (DEC) managed land is the De La Poer Range Nature Reserve located approximately 115 kilometres north of the application area (GIS Database).

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

**Methodology** GIS Database
- CALM Managed Land 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 may be at variance to this Principle**
The application area is located within the Laverton Water Reserve; a Priority 1 Public Drinking Water Source Area (PDWSA) (DoW, 2009). P1 source protection areas are defined to ensure that there is no degradation of the water resource (DoW, 2009). Extractive industry, with the exclusion of tailings storage facilities and mineral processing, is considered to be compatible within P1 areas (MBS Environmental, 2009). Key guidelines which all extractive industries in PDWSA's are subject to as part of licensing conditions include:

- A minimum of 3 metres of undisturbed soil/rock profile as a buffer between the base level of the excavated area and the maximum anticipated water table; and
- The site is rehabilitated to an environmental condition that ensures the maintenance of background water resource quality and is compatible with the intended end land use (Water and Rivers Commission, 2000).

MBS Environmental (2009) report that the groundwater table is typically 47 metres below the surface. The clearing of native vegetation would not require excavation within three metres of the water table and is not likely to impact the quality or quantity of groundwater resources in the Laverton Water Reserve.

According to aerial photography there are several ephemeral watercourses within and adjacent to the application area (GIS Database). Furthermore, MBS Environmental (2009) reports that the application area is located at the headwaters of minor drainage lines. With an average annual rainfall of approximately 232.6 millimetres (BoM, 2009) and an annual average evaporation rate of 3,200 millimetres (Luke et al., 1987), there is little surface flow during normal seasonal rains, however the proposed clearing may exacerbate surface water runoff during heavy seasonal rainfall events.

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

**Methodology** BoM (2009)
DoW (2009)
Luke et al. (1987)
MBS Environmental (2009)
Water and Rivers Commission (2000)
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**

The application area is located in an arid region where the average annual evaporation rate greatly exceeds the average annual rainfall (BoM, 2009). There are no permanent watercourses within the application area however there are nearby ephemeral drainage lines (GIS Database). These drainage lines are expected to be dry for most of the year, and would likely only flow immediately following significant rainfall. MBS Environmental (2009) reports that flooding will not be an issue due to the location of the application area in the headwaters of minor drainage lines.

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

**Methodology**

BoM (2009)
MBS Environmental (2009)
GIS Database
- Hydrography, linear

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

**Comments**

There is one Native Title claim (WC99/001) over the area under application (GIS Database). This claim has been registered with the 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*.

According to available databases 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 Aboriginal Sites of Significance are damaged through the clearing process.

One submission was received regarding this clearing permit application, objecting to the proposal on the following grounds:

- The proponent has not undertaken adequate consultation. This concern does not relate to any of the Clearing Principles listed in Schedule 5 of the *Environment Protection Act 1986*;
- The application area is an important heritage area. This concern has been addressed within this section of the report.
- The proposed clearing may cause deterioration of waterways downstream from the application area. This concern has been addressed within this report under Principles (f) and (i);
- The submission raises concerns about the effects of clearing on ecosystem integrity and processes. This concern has been addressed within this report under Principles (a), (b), (e), (f), (g) and (i).

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.

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

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

## 5. References


BoM (2009) BoM Website - Climate Averages by Number, Averages for LAVERTON. Bureau of Meteorology. www.bom.gov.au/climate/averages/tables/cw_012045.shtml (Accessed 15 October 2009).

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

Crescent Gold (2009) Clearing Permit Application Supporting Documentation, September 2009.

DECC (2005) Australian Bustard - profile. Department of Environment and Climate Change. Available online from:

http://www.threatenedspecies.environment.nsw.gov.au/tsprofile/profile.aspx?id=10063. Accessed 22 September, 2009.
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.
DoW (2009) Water Quality Advice. Advice to assessing officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum (DMP), received (15 October). Department of Water, 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.
Luke, G.J., Burke, K.L. and O'Brien, T.M. (1987) Evaporation Data for Western Australia. Resource Management Technical Report No. 65. Department of Agriculture, Western Australia
MBS Environmental (2004) Vegetation and Habitat Assessment of the Euro, Sickle and Admiral Hill Project Areas, Laverton. Martinick Bosch Sell, Western Australia.
MBS Environmental (2009) Mining Proposal: Development of the Admiral Hill – Castaway Project M38/0376, M38/0377, L38/0075 and M38/0318. Martinick Bosch Sell, Western Australia.
Pringle, H., Van Vreeswyk, A. and Gilligan, S. (1994) An Inventory and condition survey of the north-eastern Goldfields, Western Australia. Technical Bulletin 87. Department of Agriculture, Western Australia.
Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
Water and Rivers Commission (2000) Water Quality Protection Note: Extractive Industries within Public Drinking Water Source Areas. Water and Rivers Commission, 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. |
| **DMP** | Department of Mines and Petroleum, 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.