



1. Application details

1.1. Permit application details

Permit application No.: 1983/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Barmenco Investments Pty Ltd

1.3. Property details

Property: M27/413
M27/311
Local Government Area: City Of Kalgoorlie-Boulder
Colloquial name: Gordon-Sirdar Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.639		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
<p>Beard vegetation associations have been mapped at a 1:250 000 scale for the whole of Western Australia, and are a useful tool to examine the vegetation extent in a regional context. One Beard vegetation association is located within the area proposed to be cleared:</p> <p>540: Succulent steppe with open low woodland; sheoak over saltbush (GIS Database; Shepherd <i>et al.</i>, 2001).</p> <p>A vegetation survey was carried out by Ecotec in May 2007, which mapped the vegetation associations in the area at a finer scale. The survey identified the vegetation in the area proposed to be cleared as <i>Atriplex</i> Shrubland (Ecotec, 2007).</p> <p>The area is extensively disturbed by a historic leaching operation and existing vegetation appears to be predominately regrowth (Ecotec, 2007). Dominant species are <i>Atriplex vesicaria</i> and <i>A. bunburyana</i> with scattered <i>Eremophila scoparia</i> and a few <i>E. miniata</i> (Ecotec, 2007). A variety of annual species are also likely to be present in Spring and early Summer. These will most likely include common species such as <i>Ptilotus obovatus</i>, <i>Rhodanthe floribunda</i> and <i>Cephalopterum drummondii</i> (Ecotec, 2007).</p> <p>All species found in the area to be impacted by the proposed clearing are common and widespread in the Goldfields (Ecotec, 2007).</p>	<p>Barmenco Investments Pty Ltd (from this point on referred to as Barmenco) is seeking permission to clear up to 4.639 hectares of native vegetation, for the purpose of mineral production. The area which is proposed to be cleared is a part of the Mining Proposal (Gordon-Sirdar Project) currently being assessed by the Department of Industry and Resources (DoIR), and is being cleared for a waste dump.</p> <p>Recent photographs of the area indicate the site has been historically disturbed by mining activities, including previous clearing and leach vats.</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994)</p> <p>To</p> <p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994)</p>	<p>The flora of the application area has been surveyed by Ecotec (2007).</p> <p>The vegetation condition is based on the photographs provided by Barmenco (2007) and vegetation description in Ecotec (2007). The Ecotec (2007) survey was conducted during May, which is not the ideal time for a flora survey in the Goldfields. DoIR did not require another survey due to the composition of native flora within the area proposed to be cleared, which is mostly degraded. This degradation is due to historical mining activities and practices.</p> <p>Mining leases M27/413 and M27/311 are located within the Mt Veters Pastoral Lease (GIS Database). Historically, vegetation has been disturbed by pastoral activities.</p>

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 clearing permit application area is located within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion (GIS Database). The proposed clearing is located within the Eastern Murchison IBRA subregion (GIS Database). Cowan (2001) suggests that Eastern Murchison IBRA subregion is rich and diverse in both its flora and fauna species. However, most species are wide ranging and usually occur in at least one, and often several, adjoining subregions (Cowan, 2001).

A survey conducted by Ecotec (2007) within and surrounding this clearing permit application area, identified 55 flora species from 23 families, which does not represent high speciation. Ecotec (2007) has also stated that as a result of a targeted flora survey conducted in May 2007, no Declared Rare or Priority flora were located within the survey area.

The proposed clearing area has been disturbed by historic mining and pastoral activities, and it is likely that these factors have had a negative impact on the biodiversity of the application area, such that the areas surrounding the application area are likely to have higher biodiversity values.

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

Methodology

Cowan (2001).
Ecotec (2007).
Shepherd *et al.* (2001).
GIS Database:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.
- Interim Biogeographic Regionalisation of Australia (subregions) - EA 18/10/00.
- Pre-European Vegetation - DA 01/01.

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

Comments **Proposal may be at variance to this Principle**

A search of available databases reveals no threatened fauna species within a 10 kilometre radius of the application area (GIS Database). The nearest recorded occurrence of a threatened fauna (Priority 4 - Bird) is approximately 21 kilometres west of the proposed clearing (GIS Database).

A search of the Department of Environment and Conservation's (DEC's) fauna databases was conducted by the DEC on behalf of the applicant, covering the application area, as well as a 50 kilometre radius (Barmingo, 2007). The search returned seven species of threatened vertebrate fauna. The species included:

- *Leipoa ocellata* (Malleefowl) - Schedule 1;
- *Ardeotis australis* (Australian Bustard) - Priority 4;
- *Charadrius rubricollis* (Hooded Plover) - Priority 4;
- *Amytornis textilis textilis* (Thick-billed Grasswren (western sub-species)) - Priority 4;
- *Hylacola cauta whitlocki* (Shy Heathwren (western sub-species)) - Priority 4;
- *Oreoica gutturalis gutturalis* (Crested Bellbird (southern)) - Priority 4; and
- *Pomatostomus superciliosus* (White-browed Babbler (western Wheatbelt)) - Priority 4 (Barmingo, 2007).

Active Malleefowl nesting sites are known throughout the Goldfields Region and sightings are relatively common. The DEC database search lists sightings near Mt Burgess in 2000 (Barmingo, 2007). No active mounds are known to exist in the vicinity of the clearing application area (Barmingo, 2007). Preferred habitat of the Malleefowl is tall mallee, low woodland and acacia scrub on sandy or lateritic soils (Barmingo, 2007). Areas with abundant leaf litter and dense understorey vegetation area also usually preferred (Barmingo, 2007). There are no habitats considered suitable in the vicinity of the proposed clearing permit (Barmingo, 2007), due to vegetation types and lack of leaf litter.

The last recorded sighting of the Australian Bustard or Bush Turkey in the area was in 1974 at Kanowna (Barmingo, 2007). These birds are now uncommon in the Goldfields but are occasionally sighted, particularly further to the west and in the far east of the region where human disturbance is less (Barmingo, 2007). Preferred habitat is predominantly grasslands and open woodlands away from human activity (Barmingo, 2007). It is unlikely this species would inhabit the proposed clearing areas.

The Hooded Plover birds are generally coastal but are occasionally found around inland salt lakes (Barmingo, 2007). The species has declined as a result of disturbance of natural coastal breeding grounds (Barmingo, 2007). There might be some potential for the Hooded Plover and other coastal birds to be found on the salt lakes in the area (Barmingo, 2007), however it is unlikely that the proposed clearing permit would comprise a significant habitat for these birds.

Thick-Billed Grasswren was last recorded from Kalgoorlie in 1908 (Barminco, 2007). This species also inhabits open shrubland or scrub (Barminco, 2007). This vegetation type is in a degraded condition within the proposed clearing permit area, and it is unlikely that the species occurs there.

Shy Heathwren is usually found in mallee woodlands with a dense understorey of shrubs and heath plants (Barminco, 2007). No suitable habitat is found for these birds within the proposed clearing area.

The Crested Bellbird is relatively widespread over most of inland Australia (Barminco, 2007), however, it is unlikely that the proposed clearing would significantly impact on habitats of this species.

The White-browed Babbler is found in open forests and dry woodlands, mallee shrubland and inland water courses (Barminco, 2007), none of which are found within the proposed clearing areas.

Other threatened species which could potentially be found in the area include the *Tringa glareola* (Wood Sandpiper), *Tringa nebularia* (Common Sandpiper), *Calidris acuminata* (Sharp-tailed Sandpiper) and the *Calidris ruficollis* (Red-necked Stint) (Barminco, 2007). Due to the existing level of disturbance, and the small area of proposed clearing, it is unlikely that any impacts on fauna and their habitats would be significant.

Three species of invertebrates were included in the results of the threatened species database search (Barminco, 2007). These were *Branchinella denticulata* (a crustacean) and two butterfly species (*Jalmenus aridus* and *Ogyris subterrestris*) (Barminco, 2007). It is possible that these species may occur within the areas proposed to be cleared, however, due to the lack of information known about these species, an assessment cannot be made of the impact to their habitats.

The habitat types located within the application area are broad and not restricted within the application area. Fauna species within the application area are not likely to depend on the vegetation for their continued existence.

Barminco (2007) has also committed to:

- Education of site personnel through environmental induction and training;
- Minimising destruction of vegetation; and
- Practising progressive rehabilitation of disturbed areas where practical.

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

Methodology Barminco (2007).
GIS Database:
- Pre-European Vegetation - DA 01/01.
- 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

A search of available databases reveals no threatened flora within a 20 kilometre radius of the application area (GIS Database). The nearest recorded threatened flora is the *Eremophila praecox*, located approximately 33 kilometres south west of the proposed clearing. The nearest recorded Declared Rare Flora (DRF) is the *Gastrolobium graniticum*, located approximately 93 kilometres south west of the proposed clearing.

A search of DEC databases was conducted by DEC, on behalf of the applicant resulted in 12 Priority listed flora species, which have been previously recorded in the general area (Ecotec, 2007). The species recorded are:

- *Acacia epedunculata* - P1;
- *Alyxia tetanifolia* - P3;
- *Astartea* sp. *Bungalbin Hill* P3;
- *Baeckea* sp. *Bulla Bulling* - P1;
- *Elachanthus pusillus* - P2;
- *Eremophila parvifolia* subsp. *parvifolia* P4;
- *Eremophila praecox* P1;
- *Eucalyptus justonii* P2;
- *Frankenia georgei* P3;
- *Lepidium fasciculatum* P1;
- *Parmeliopsis macrospora* P3; and
- *Xanthoparmelia dayiana* P3 (Ecotec, 2007)

The Ecotec (2007) survey did not record any species of threatened flora within the areas under this application. Given the previous disturbances, and degraded condition of the vegetation present within the proposed clearing area, the potential for any of these species to be located within the Gordon-Sirdar mining area is considered low (Ecotec, 2007), and therefore, the assessor does not consider a spring survey necessary.

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

Methodology Ecotec (2007).
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05.

(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) in the vicinity of the proposed clearing area (GIS Database). No TECs were identified during the Ecotec (2007) survey.

The nearest recorded TEC is the WH03 Community, located approximately 160 kilometres south-east from the clearing permit application area (GIS Database). The clearing will not impact this community.

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

Methodology Ecotec (2007).
GIS Database
- Threatened Ecological Communities - CALM.

(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

Approximately 100% of the Pre-European vegetation remains in the IBRA Murchison Bioregion, within which this proposal is located (see table below) (GIS Database, Shepherd *et al.*, 2001). Available aerial photography (Google Earth, 2007) and information from the National Land and Water Resources Audit (Commonwealth of Australia, 2001), indicate that the areas surrounding the clearing permit application area have not been cleared extensively.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european % in IUCN Class I-IV Reserves
IBRA Bioregion – Murchison	28,120,558	28,120,558	100	Least Concern	6.6
Beard veg assoc. – State					
540	202,424	202,424	100	Least Concern	27.8
Beard veg assoc. – Bioregion					
540	70,369	70,369	100	Least Concern	0

* Shepherd *et al.* (2001) updated 2005

** Department of Natural Resources and Environment (2002)

The Department of Natural Resources and Environment (2002) considers the conservation status of Beard vegetation association 540 as being of least concern. This is mainly due to the vegetation association being extensive in size, and remaining uncleared.

Therefore, the proposed clearing area cannot be considered a remnant of native vegetation within an extensively cleared area.

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

Methodology Commonwealth of Australia (2001).
Department of Natural Resources and Environment (2002).
Google Earth (2007).
Shepherd *et al.* (2001).
GIS Database:
- Pre-European Vegetation - DA 01/01.

(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 databases, there are no watercourses or waterbodies within the application area (GIS Database). The nearest watercourse is a non-perennial drainage line, approximately 260 metres west of the proposed clearing (GIS Database). The database also indicates a non-perennial lake, approximately 300 metres south of the proposed clearing area (GIS Database). The available aerial photography (Google Earth, 2007) reveals the lake is a dry salt lake, resembling a clay pan. It is unlikely that the degraded vegetation present within the site is associated with these watercourses and waterbodies.

No groundwater dependent ecosystems are known to occur in or near the application area (GIS Database).

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

Methodology Google Earth (2007).

GIS Database:

- Hydrography, linear - DOE 1/2/04.
- Hydrography, linear (medium scale, 250k GA).
- Hydrography, Lakes (course scale, 1M GA).
- Geodata, Lakes - GA 28/06/02.
- Potential Groundwater Dependand Ecosystems - DOE 2004.
- Rivers, DoW.

(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 proposed clearing area is located within two Land Systems:

- Carnegie Land System: Salt lakes with extensive fringing saline plains, dune and sandy banks, supporting low halophytic shrublands and scattered tall acacia shrublands; lake beds are highly saline, gypsiferous and mainly unvegetated; and
- Graves Land System: Basalt and greenstone rises and low hills, supporting eucalypt woodlands with prominent saltbush and bluebush understoreys (Curry *et al.*, 1994; GIS Database, Payne *et al.*, 1998).

The Carnegie land system is not susceptible to erosion (Curry *et al.*, 1994). The Graves Land System is susceptible to water erosion when vegetation is removed (Payne, *et al.*, 1998). However, based on the small area of proposed clearing and previous disturbances, it is unlikely that the clearing will lead to further land degradation over either of these land systems described above.

No introduced flora was recorded during the Ecotec (2007) survey, however, Ward's Weed (*Carrichtera annua*) and Ruby Dock (*Rumex vesicarius*) are likely to be present in the area (Barmenco, 2007). Ward's weed is a short-lived, non invasive species and control measures are not usually required (Barmenco, 2007). Ruby Dock can inhibit growth of other species if it becomes established in disturbed areas prior to establishment of native vegetation (Barmenco, 2007). Barmenco commits to implement weed control measures if Ruby Dock or any other invasive weeds become apparent.

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

Methodology Barmenco (2007).

Curry *et al.* (1994).

Ecotec (2007).

Payne *et al.* (1998).

GIS Database:

- Rangeland Land System Mapping - DA.
- Topographic Contours, Statewide - DOLA 12/09/02.

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

Comments Proposal is not likely to be at variance to this Principle

The nearest DEC management area is the Class "C" Bullock Holes Timber Reserve, located approximately 13 kilometres east of the proposed clearing area (GIS Database). The nearest Class "A" DEC management area is the Goongarrie National Park, located 38 kilometres north of the application area. Based on the proposed area of clearing (4.639 hectares), and the distance between the proposed clearing area and the conservation areas, adverse impacts on the environmental values of the reserves are unlikely.

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

- Methodology** GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05.
 - CALM proposed 2015 pastoral lease exclusions.
 - CALM Regional Parks - CALM 12/04/02.
 - Register of National Estate - EA 28/01/03.
 - System 1 to 5 and 7 to 12 Areas - DEP 06/95.

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

Comments **Proposal is not likely to be at variance to this Principle**

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

Groundwater within the area under application is saline, at between 14,000-35,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the small size of the proposed clearing recharge will be minimal, which will therefore not result in any deterioration of any surface or groundwater. Depth to groundwater is also unlikely to be affected, which will not lead to further salinity risk.

Surface water drains to the non-perennial lake, approximately 300 metres south of the proposed clearing area (GIS Database). It is unlikely that clearing of vegetation will lead to degradation of water quality in the vicinity, due to low risk of erosion or sedimentation of drainage channels. Barmenco (2007), in their Mining Proposal, have outlined management measures for control of surface water runoff, including that a windrow will be constructed around the outer perimeter of the upper surface of the waste dump to prevent runoff.

Barmenco (2007) has also committed to:

- Education of site personnel through environmental induction and training;
- Minimising destruction of vegetation; and
- Preventing discharge of groundwater to vegetated areas and avoiding overspray of dust suppression water into fringing vegetation.

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

- Methodology** GIS Database
- Geodata, Lakes - GA 28/06/02.
 - Groundwater Salinity, Statewide - DOW.
 - Public Drinking Water Source Areas (PDWSAs) - DOW.
 - Rivers, DoW.
 - Topographic Contours, Statewide - DOLA 12/09/02.

(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 limited amount of clearing proposed (4.639 hectares) in comparison with the extent of the Raeside-Ponton catchment area (11,589,533 hectares) (GIS Database) is unlikely to result in incremental increases in peak flood height or duration.

The mean annual rainfall is 300 millimetres, while the evaporation of the area is at around 2800 millimetres per year (GIS Database). Therefore, it is unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

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

- Methodology** GIS Database:
- Hydrographic Catchments - Catchments - DOW
 - Evaporation Isopleths - BOM 09/98
 - Rainfall, Mean Annual - BOM 30/09/01

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

Comments

There are two native title claims over the area under application; WC98_0027 and WC99_030 (GIS Database). These claims have been registered with the National Native Title Tribunal. 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*.

There are no known Aboriginal Sites of Significance located within the clearing permit 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.

The proposed waste dump is subject to the *Mining Act 1978* approval process. A mining proposal must be approved by Department of Industry and Resources prior to the commencement of the proposed works.

It is the proponent's responsibility to liaise with DEC 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 - DIA.
- Native Title Claims - DLI.

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Mineral Production	Mechanical Removal	4.639	The proposal has been assessed against the Clearing Principles, and is considered to be not at variance to Principle (e), not likely to be at variance to Principles (a), (c), (d), (f), (h), (i) and (j), and may be at variance to principles (b) and (g). It is recommended that conditions be imposed on the permit in relation to weed management, as well as reporting on any clearing undertaken during the life of the permit.

5. References

- Barmingo Investments Pty Ltd (2007) *Information provided in support of the Clearing Permit CPS1983/1*, Western Australia.
- Commonwealth of Australia (2006) *National Land and Water Resources Audit – Australian Natural Resource Atlas V2.0* [online] http://audit.ea.gov.au/anra/atlas_home.cfm, Government of Australia.
- Cowan, M. (2001) *Murchison 1 (MUR1 – East Murchison subregion)*, in *A Biodiversity Audit for Western Australia*, Department of Conservation and Land Management, Perth, Western Australia.
- Curry, P.J., Payne, A.L., Leighton, K.A., Hennig, P. and Blood, D.A. (1994) *An inventory and condition survey of the Murchison River catchment, Western Australia*, Technical Bulletin No.84, Department of Agriculture Western Australia, South Perth, Western Australia.
- Department of Natural Resources and Environment (2002) *Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local*. Department of Natural Resources and Environment, Victoria.
- Ecotec (2007) *Flora and Vegetation Assessment of the Gordon-Sirdar Area*, report prepared for Barmingo Investments Pty Ltd, Craigie, Western Australia.
- Google Earth (2007) *Google Earth, Version 4.1.7087.5048 (beta)*, Google.
- Payne, A.L., Van Vreeswyk, A.M.E., Pringle, H.J.R., Leighton, K.A. and Hennig, P. (1998) *An inventory and condition survey of the Sandstone-Yalgoo-Paynes Find area, Western Australia*, Technical Bulletin No.90, Department of Agriculture Western Australia, South Perth, Western Australia.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia

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.