



## 1. Application details

### 1.1. Permit application details

Permit application No.: 3013/2  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Hannans Reward Limited, Cullen Resources Limited

### 1.3. Property details

Property: Prospecting Licence 77/3613  
Local Government Area: Shire of Kondinin  
Colloquial name: Forrestania Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 3 May 2012

## Site Information

### 1.6. Existing environment and information

#### 1.6.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard Vegetation Associations have been mapped for the whole of Western Australia. One Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd, 2009).</p> <p>511: Medium woodland; salmon gum &amp; morrel.</p> <p>The application area was surveyed by Botanica Consulting staff in May 2008 (Botanica Consulting, 2008). The following vegetation types were identified within the application area:</p> <p><b>Eucalyptus Mallee Woodland:</b> Dominant upperstorey comprised of <i>Eucalyptus salmonophloia</i>, <i>E. urna</i> and <i>E. eremophila</i> ssp. <i>eremophila</i> a midstorey comprised of <i>Acacia hemiteles</i>, <i>Melaleuca adnata</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> over an understorey of <i>Lepidosperma drummondii</i>. The Priority flora species <i>Microcorys</i> sp. Forrestania (Priority 4) was recorded within this vegetation type.</p> <p><b>Acacia steedmanii Shrubland:</b> Dominant midstorey comprised of <i>Acacia steedmanii</i> over an understorey comprised of <i>Allocasuarina corniculata</i>, <i>Dodonaea lobulata</i> and <i>Callitris preissii</i>.</p> <p>No introduced weed species were recorded within the application area (Botanica Consulting, 2008).</p>	<p>The applicant has applied to clear up to six hectares of native vegetation within a 45 hectare area for the purpose of mineral exploration.</p> <p>The exploration activities will comprise drilling 1-2 drill holes, which will require clearing for an access track, drill pad and sump (Hannans Reward, 2009).</p>	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).</p>	<p>The vegetation condition was derived from a vegetation survey conducted by Botanica Consulting (2008).</p> <p>Clearing permit CPS 3013/1 was granted by the Department of Mines and Petroleum on 7 May 2009 and was valid from 6 June 2009 to 4 May 2012. An application to amend the permit was received by the Department of Mines and Petroleum on 5 April 2012. The application requested an extension to the duration of the permit to 4 May 2017. The amount of native vegetation authorised to clear and the clearing permit boundary that was approved to clear under CPS 3013/1 will remain unchanged.</p>

## 2. 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 occurs within the Southern Cross (COO2) sub-region of the Coolgardie Bioregion of the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). This sub-region is characterised by subdued relief, comprising of gently undulating lands dissected by broad valleys with bands of low greenstone hills (CALM, 2002). The valleys of this sub-region have Quaternary duplex and gradational soils, with chains of saline playa-lakes supporting dwarf shrub lands of samphire. Around these lakes, diverse *Eucalyptus* woodlands, rich in endemic eucalypts occur on the low greenstone hills, valley alluvials and broad plains of calcareous earth (CALM, 2002). At mid-level, the granite basement outcrops and supports swards of *Borya constricta*, with stands of *Acacia acuminata* and *Eucalyptus loxophleba*, while the upper-levels are comprised of the eroded remnants of a lateritic duricrust giving way to yellow sand-plains, gravely sand-plains and lateritic breakaways. Mallees and scrub-heaths occur on the uplands and sand lunettes associated with playas along the broad valley floors and sand sheets around the granite outcrops (CALM, 2002). The vegetation described within the application area by Botanica Consulting (2008) is typical of the bioregion.

The application area occurs within the Lake Cronin Red Book Area which is listed on the Register of National Estate for its high level of flora and fauna diversity and endemism. According to the Australian Heritage Database (2009), 16 fauna species that are endemic to either the south-west region or to Western Australia occur within the Lake Cronin area. The Lake Cronin area is also described as being an important refuge for rare species due to widespread clearing in the wheatbelt to the west. Rare species include fauna such as the Malleefowl (*Leipoa ocellata*) and flora species such as *Eucalyptus steedmanii*.

A flora and vegetation survey was conducted over the application area by Botanica Consulting in May 2008 (Botanica Consulting, 2008). This survey involved the area being traversed by two people via a four-wheel drive and on foot where appropriate. Different vegetation groups encountered during the survey were described and the vegetation associations were examined for the presence or absence of any Declared Rare Flora (DRF) and Priority Flora species (Botanica Consulting, 2008).

The vegetation survey identified 60 species of native flora belonging to 27 genera from 21 families (Botanica Consulting, 2008). This is not considered to be biologically diverse. Myrtaceae (17) and Mimosaceae (10) were the most species rich and diverse families within the application area (Botanica Consulting, 2008). No introduced species were recorded during the survey (Botanica Consulting, 2008). Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

According to available databases, no DRF or Priority Flora species occur within the application area (GIS Database). A database search of the Department of Environment and Conservation's (DEC) Rare and Priority Flora Database by Botanica Consulting (2008) identified five species of DRF and 38 Priority flora species as potentially occurring within a two kilometre buffer zone of the application area (Botanica Consulting, 2008). No DRF were recorded whilst one Priority flora species was recorded during the flora survey, namely *Microcorys* sp. Forrestania (Priority 4) (Botanica Consulting, 2008).

*Microcorys* sp. Forrestania (V. English 2004) (Priority 4) is a low erect shrub growing to 40 centimetres tall and flowering from January to April (Western Australian Herbarium, 2009). This species is associated with yellow sandy clay or red-brown clay in open woodlands or cleared areas (Western Australian Herbarium, 2009). This species appears to thrive after disturbance. This species has previously been recorded from Mt Holland and Forrestania (Armstrong, 2006). Botanica Consulting (2008) recorded a population of 25 as occurring within the application area. As *Microcorys* sp. Forrestania is a disturbance opportunist, the population size is likely to increase following clearing (Armstrong, 2006), provided the area cleared is rehabilitated.

An area search of the Department of Environment and Conservation's online fauna database conducted by the assessing officer suggests that the application area is diverse in reptile species (DEC, 2009). The database search found 42 reptile species as potentially occurring within the application area, or within a 40 kilometre radius of the application area.

There are numerous old gridlines located within Prospecting Licence 77/3613, several of which come into very close proximity to the application area (Hannans Reward, 2009). Therefore, vegetation disturbance will be minimised as the previous tracks and grid lines will be re-established where practicable (Hannans Reward, 2009).

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

#### Methodology

Armstrong (2006)  
Australian Heritage Database (2009)  
Botanica Consulting (2008)  
CALM (2002)  
DEC (2009)  
Hannans Reward (2009)  
Western Australian Herbarium (2009)

GIS Database:

- IBRA WA (Regions – Sub Regions)
- Clearing Regulations - Environmentally Sensitive Areas
- Threatened and Priority Flora

**(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**

The assessing officer has conducted a search of the Department of Environment and Conservation's online fauna database comprising a 40 kilometre radius around the application area.

This search identified nine Amphibian, 18 Mammalian, 27 Avian and 42 Reptilian species that may occur within the application area (DEC, 2009). Of these, the following species of conservation significance have the potential to occur within the application area: Lake Cronin Snake (*Paroplocephalus atriceps*), Carpet Python (*Morelia spilota* subsp. *imbricata*), Western Mouse (*Pseudomys occidentalis*), Western Brush Wallaby (*Macropus irma*), Chuditch (*Dasyurus geoffroi*), Carnaby's Cockatoo (*Calyptorhynchus latirostris*), Shy Heathwren (*Hylacola cauta* subsp. *whitlocki*), Malleefowl (*Leipoa ocellata*), Crested Bellbird (*Oreocia gutturalis* subsp. *gutturalis*), White Browed Babbler (*Pomotostomus superciliosus* subsp. *ashbyi*), Peregrine Falcon (*Falco peregrinus* subsp. *macropus*) and the Western Rosella (*Platycercus icterotis* subsp. *xanthogenys*).

A vegetation survey conducted by Botanica Consulting (2008) recorded two habitat types as occurring within the application area:

**Eucalyptus Mallee Woodland** - Dominant upperstorey comprised of *Eucalyptus salmonophloia*, *E. uma* and *E. eremophila* ssp. *eremophila* a midstorey comprised of *Acacia hemiteles*, *Melaleuca adnata* and *Senna artemisioides* subsp. *filifolia* over an understorey of *Lepidosperma drummondii*; and  
**Acacia steedmanii Shrubland** - Dominant midstorey comprised of *Acacia steedmanii* over an understorey comprised of *Allocasuarina comiculata*, *Dodonaea lobulata* and *Callitris preissii*.

The Lake Cronin Nature Reserve contains potentially important contemporary refugia for many species (Australian Heritage Database, 2009). The habitat types described by Botanica Consulting (2008) are well represented throughout the Coolgardie Bioregion and the Lake Cronin Nature Reserve. However, there is a non-perennial minor watercourse located approximately 0.9 kilometres to the north-west of the application area which falls within an Environmentally Sensitive Area (ESA) for its fringing vegetation (GIS Database). The vegetation associated with the drainage channel is riparian and likely to be a fauna refuge. Given the small size of the application area (six hectares), and that the fringing vegetation falls outside of the application area, it is unlikely that the proposed clearing will significantly impact on fauna habitat.

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

**Methodology** Australian Heritage Database (2009)  
Botanica Consulting (2008)  
DEC (2009)  
GIS Database:  
- Clearing Regulations - Environmentally Sensitive Areas

**(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 available databases, no Declared Rare Flora (DRF) occur within the application area (GIS Database). One population of *Banksia sphaerocarpa* var. *dolichostyla* (DRF) and two populations of *Eucalyptus steedmanii* (DRF) have been recorded approximately 1.6 kilometres south-west, 2.4 kilometres north-east and 3.2 kilometres east-south-east of the application area, respectively (GIS Database).

No DRF were recorded during the flora survey (Botanica Consulting, 2008).

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

**Methodology** Botanica Consulting (2008)  
GIS Database:  
- Threatened and Priority Flora

**(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**

A search of available databases reveals that there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest TEC is located approximately 38 kilometres to the north-north-east of the application area (Parker Range System). It is not expected that the proposed clearing will

impact the conservation of this TEC.

None of the vegetation types identified by Botanica Consulting (2008) are Threatened Ecological Communities, or ecological communities at risk.

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

**Methodology** Botanica Consulting (2008)  
GIS Database:  
- Threatened Ecological Sites Buffered

**(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 Coolgardie Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 98.4% of the pre-European vegetation remains (see table) (GIS Database; Shepherd, 2009). The vegetation in the application area is recorded as Beard Vegetation Association 511: Medium woodland; salmon gum and morrel (GIS Database; Shepherd, 2009). According to Shepherd (2009), approximately 93.8% of Beard Vegetation Association 511 remains within the Coolgardie Bioregion.

The vegetation within the application area is not a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves
IBRA Bioregion - Coolgardie	12,912,204	12,707,873	~98.4	Least Concern	~10.9
Beard vegetation associations - State					
511	700,409	499,600	~71.3	Least Concern	~14.1
Beard vegetation associations - Coolgardie Bioregion					
511	464,424	435,794	~93.8	Least Concern	~17.5

\* Shepherd (2009)

\*\* 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 (2009)  
GIS Database:  
- IBRA WA (Regions – Sub Regions)  
- Pre-European Vegetation

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

**Comments** **Proposal is not likely to be at variance to this Principle**  
According to known GIS datasets, there are no known watercourses or water bodies within the application area (GIS Database).

Lake Cronin is located approximately 8.72 kilometres to the south-east of the application area and whilst this proposal is within the Register of National Estate surrounding Lake Cronin, the loss of six hectares of vegetation is not likely to impact on the lake at such a distance.

The vegetation type identified by Botanica Consulting (2008) is not an example of riparian vegetation, and therefore the proposed clearing is unlikely to have any significant impact on any vegetation associated with watercourses or wetlands.

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

**Methodology** Botanica Consulting (2008)  
GIS Database:

- ANCA, Wetlands
- Hydrography, linear

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

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

According to available GIS Databases, there are two soil types (Ms8 and X17) within the application area. These soil types are described as:

**X17**

Slopes and valleys with chief soils being sandy neutral and alkaline yellow mottled soils;

**Ms8**

- (i) on depositional slopes, sandy yellow earths containing some ironstone gravels at depths below 6-7 feet;
- (ii) on erosional ridges and slopes, ironstone gravels all underlain by hardened mottled-zone material by depths of 12-24 inches (Bureau of Rural Sciences, 1992).

Sandy earths have a moderate to high risk of wind erosion while ironstone gravels have a low to moderate risk of wind erosion (Schoknecht, 2002). However, the linear nature of the clearing suggests that the potential for wind erosion is low.

Rainfall in the area is low (344.4 millimetres/year - Bureau of Meteorology, 2009) and run-off will be low due to a high pan evaporation rate (2,200 millimetres/year - Luke et al., 1987) and moderate permeability of soils present. Therefore, the effect of water erosion is likely to be minimal.

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

**Methodology**

- Bureau of Meteorology (2009)
- Bureau of Rural Sciences (1992)
- Luke et al. (1987)
- Schoknecht (2002)
- GIS Database:
  - Soils, Statewide

**(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 may be at variance to this Principle**

The application area occurs within an ESA (Register of National Estate), which is a buffer zone surrounding Lake Cronin (GIS Database). At its closest point, the clearing is approximately 5.8 kilometres from the Lake Cronin Nature Reserve boundary (GIS Database).

According to the Australian Heritage Database (Australian Heritage Database, 2009) the Lake Cronin Nature Reserve is an area of approximately 31,000 hectares and is a potentially important contemporary refugia for many species.

The Lake Cronin Nature Reserve is one of a number of areas within the wheatbelt region that is significant for rare species due to its high diversity and level of local endemism (Australian Heritage Database, 2009). This nature reserve is an important refuge for two species which are listed as vulnerable at a national level, the Malleefowl (*Leipoa ocellata*) and *Eucalyptus steedmanii* (Australian Heritage Database, 2009).

Lake Cronin Nature Reserve is surrounded by extensive vegetation and the clearing of up to six hectares of vegetation at a distance of approximately 5.8 kilometres or greater from the reserve will not significantly affect ecological linkages to the reserve.

Based on the above, the proposed clearing may be at variance to this Principle. However, it is considered that the clearing to take place is low impact and of a small scale (six hectares) and subsequently will not significantly impact on the environmental values of the Lake Cronin Nature Reserve.

**Methodology**

- Australian Heritage Database (2009)
- GIS Database:
  - Clearing Regulations - Environmentally Sensitive Areas
  - Clearing Regulations - Schedule One Areas
  - DEC Tenure

**(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**

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

There are no permanent water bodies or watercourses within the application area (GIS Database). The application area experiences an average annual rainfall of approximately 344.4 millimetres, falling mainly during the winter months (Bureau of Meteorology, 2009). The application area experiences an average annual evaporation rate of approximately 2200 millimetres (Luke et al., 1987). Surface water flow is likely to be low during normal seasonal rains. Therefore, during normal rainfall events, surface water within the application area is likely to evaporate or be utilised by vegetation quickly.

The application area is located within the Yilgarn-Southwest Groundwater Province (GIS Database). The groundwater salinity within the application area is approximately 14,000 - 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Vegetation is not likely to be dependent on groundwater at such a hyper saline level. Given the size of the area to be cleared (six hectares) compared to the size of the Yilgarn-Southwest Groundwater Province (24,601,260 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

There are no known groundwater dependent ecosystems within the application area (GIS Database).

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

**Methodology Bureau of Meteorology (2009)**

Luke et al. (1987)

GIS Database:

- Hydrography, linear
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Potential Groundwater Dependent Ecosystems – DoE 2004
- Public Drinking Water Source Areas (PDWSAs)

**(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 within the Swan Avon-Lockhart Catchment area (GIS Database). The small area to be cleared (six hectares) in relation to the size of the Swan Avon-Lockhart Catchment area (2,839,267 hectares) is not likely to lead to an increase in flood height or duration (GIS Database).

Low annual rainfall (approximately 344.4 millimetres) (Bureau of Meteorology, 2009), high evaporation rates (2,200 millimetres/year) (Luke et al., 1987) and the absence of water bodies and watercourses in the application area (GIS Database) would suggest that this area is not subject to flooding.

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

**Methodology Bureau of Meteorology (2009)**

Luke et al. (1987)

GIS Database:

- Hydrographic Catchments - Catchments
- Hydrography, linear

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

**Comments**

There is one native title claim over the area under application: WC00/7 (GIS Database). This claim has been registered with the Native Title Tribunal on behalf of the claimant group. However, the mining tenure 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 registered 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.

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.

Clearing permit CPS 3013/1 was granted by the Department of Mines and Petroleum on 7 May 2009 and was valid from 6 June 2009 to 4 May 2012. An application to amend the permit was received by the Department of Mines and Petroleum on 5 April 2012. The application requested an extension to the duration of the permit to 4 May 2017. The amount of native vegetation authorised to clear and the clearing permit boundary that was approved to clear under CPS 3013/1 will remain unchanged.

- Methodology** GIS Database:
- Aboriginal Sites of Significance
  - Native Title Claims – Registered with the NNTT

### 3. References

- Armstrong, P. (2006) Vegetation Survey and Rare Flora Search at North Ironcap Prospect, Conducted July 2006. Unpublished report prepared for Hannans Reward Ltd. Paul Armstrong and Associates, Western Australia.
- Australian Heritage Database (2009) Register of National Estate: Lake Cronin Area. [http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place\\_detail;search=place\\_name%3Dlake%2520cronin%2520%3Bkeyword\\_PD%3Don%3Bkeyword\\_SS%3Don%3Bkeyword\\_PH%3Don%3Blatitude\\_1dir%3DS%3Blongitude\\_1dir%3DE%3Blongitude\\_2dir%3DE%3Blatitude\\_2dir%3DS%3Bin\\_region%3Dpart;place\\_id=9929](http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=place_name%3Dlake%2520cronin%2520%3Bkeyword_PD%3Don%3Bkeyword_SS%3Don%3Bkeyword_PH%3Don%3Blatitude_1dir%3DS%3Blongitude_1dir%3DE%3Blongitude_2dir%3DE%3Blatitude_2dir%3DS%3Bin_region%3Dpart;place_id=9929) (Accessed 1 May 2009).
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- Shepherd, D.P. (2009) 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.
- Western Australian Herbarium (2009) Florabase - the Western Australian Flora. <http://florabase.calm.wa.gov.au/search/quick?q=microcorys+sp.+forrestania>. (Accessed 5 May 2009).

### 4. 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
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.

