



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 3774/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Kagara Nickel Pty Ltd

### 1.3. Property details

Property: Mining Lease 77/99  
Local Government Area: Shire of Kondinin  
Colloquial name: Forrestania 3 Project

### 1.4. Application

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

## 2. Site Information

### 2.1. Existing environment and information

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

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia. One Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd, 2007):	Kagara Nickel Pty Ltd has applied to clear up to 1.41 hectares of native vegetation within an area of approximately 5.7 hectares for the purpose of mineral exploration (evaluation drilling).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	Vegetation descriptions were derived from descriptions by Botanica Consulting Pty Ltd (Botanica Consulting, 2008).

511: Medium woodland; salmon gum and morel.

Kagara Nickel Limited intend to establish drill lines with a backhoe or loader, with topsoil and plant debris conserved and laid aside for later rehabilitation of sites.

The application area was surveyed by Botanica Consulting staff in October 2007 (Botanica Consulting, 2008). The following vegetation type was identified within the application area:

**Eucalyptus Mallee Woodland:**  
Dominant upper storey comprised of *Eucalyptus salmonophloia*, with other upper storey species including *E. urna* and *E. eremophila* over a midstorey of *Acacia hemiteles*, *Melaleuca adnata* and *Senna artemisioides* subsp. *filifolia* over an understorey comprised of *Hibbertia pungens*, *Swainsona purpurea* and *Lepidosperma drummondii*.

## 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 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 vegetation described within the application area by Botanica Consulting (2008) is typical of the bioregion.

The application area occurs within the Lake Cronin 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 (2010), 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 vegetation survey of the application area and surrounding vegetation identified 63 species of native flora belonging to 36 genera from 20 families (Botanica Consulting, 2008). This is not considered to be floristically diverse. *Myrtaceae*, *Mimosaceae* and *Proteaceae* families were the most diverse within the survey area (Botanica Consulting, 2008). One vegetation community has been identified within the application area, being well represented in the local area and bioregion. This vegetation community was identified as being in a good condition according to the Keighery scale (Botanica Consulting, 2008).

No Declared Rare Flora were identified within the application area, although one Priority Flora species (*Microcorys* sp. *forrestania* Priority 4) was identified from one location (Botanica Consulting, 2008). *Microcorys* sp. *forrestania* is a low erect shrub growing to 40 centimetres tall and flowering January to April (Western Australian Herbarium, 2008). This species appears to thrive after disturbance (Armstrong, 2006). This species has previously been recorded from Mt Holland and Forrestania (Armstrong, 2006). As *Microcorys* sp. *forrestania* is a disturbance opportunist, the population size is likely to increase following clearing (Armstrong, 2006), provided the cleared area is rehabilitated.

No introduced species were recorded during the survey (Botanica Consulting, 2008). The potential spread of introduced species as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

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, 2007). The database search found 47 reptile species as potentially occurring within the application area, or within a 20 kilometre radius of the application area (DEC, 2007).

There are numerous old gridlines located within Mining Lease 77/99. The proposed clearing is to be located on lines previously cleared during the 1970's (Kagara Nickel, 2010). The intended exploration and drilling exploration program will have little additional impact on the area (Kagara Nickel, 2010). The proposed clearing is not likely to impact on an area that comprises of higher biological diversity than the remaining vegetation in the bioregion.

No Threatened Ecological Communities were identified within or surrounding the proposed clearing, however the application area is located inside the buffer of a Priority 3 Ecological Community known as Ironcaps Hills Vegetation Complexes (EPA, 2009; GIS Database). Mining is listed as the main threat to this PEC (EPA 2009). The vegetation on site does not comprise the landforms or vegetation associated with this PEC and given the previous disturbance within the application area, the proposed clearing is considered unlikely to impact on its values.

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

**Methodology** Armstrong (2006)  
Australian Heritage Database (2010)  
Botanica Consulting (2008)  
CALM (2002)  
DEC (2007)  
EPA (2009)  
Kagara Nickel (2010)  
Western Australian Herbarium (2008)  
GIS Database:  
- Clearing Regulations - Environmentally Sensitive Areas  
- IBRA WA (Regions - Sub Regions)  
- Register of National Estate (Status)  
- Threatened Ecological Communities

**(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**

The assessing officer has conducted a search of the Department of Environment and Conservation's online fauna database comprising a 20 kilometre radius around the application area.

This search identified 8 Amphibian, 20 Mammalian, 56 Avian and 47 Reptilian species that may occur within the application area (DEC, 2007). 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*), Western Quoll (*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 one habitat type within the application area:

- **Eucalyptus Mallee Woodland**

The habitat identified within the application area is likely to be well represented within the Coolgardie Bioregion given the extent of the pre-European vegetation remaining (98.4%). The habitat type present is not considered restricted, endangered or under threat and does not provide an ecological linkage to any restricted habitats (GIS Database). Apart from the potential for large hollows in Salmon Gums (as described below), no significant fauna habitats have been identified within the application area.

The Carnaby's Cockatoo (**Schedule 1 - Fauna that is rare or likely to become extinct, Wildlife Conservation (Specially Protected Fauna) Notice, 2010**) forage in woodland and heath that is dominated by proteaceous species and nest in hollows of large eucalypts, usually Salmon Gum and Wandoo (DEC, 2006a). The vegetation type 'Eucalyptus Mallee Woodland' may provide nesting hollows for this species. Potential impacts to nesting hollows as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.

The 'Eucalyptus Mallee Woodland' vegetation type may also provide habitat for the Chuditch (**Schedule 1 - Fauna that is rare or likely to become extinct, Wildlife Conservation (Specially Protected Fauna) Notice, 2010**). This species occupies a wide range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts (DEC, 2006b). The Chuditch may occur within the application area, given the presence of suitable habitat. However, the vegetation types present within the application area are well represented throughout the Coolgardie Bioregion.

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

**Methodology** Botanica Consulting (2008)  
DEC (2007)  
DEC (2006a)  
DEC (2006b)  
GIS Database:  
- Holland 50cm Orthomosaic

**(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) species occur within the application area (GIS Database). One population of *Banksia sphaerocarpa* var *dolichostyla* (DRF) and one population of *Eucalyptus steedmanii* (DRF) have been recorded approximately 2.48 kilometres north-west and 4.1 kilometres north-east of the application area respectively (GIS Database).

The application area contains potentially suitable habitat for *Banksia sphaerocarpa* var *dolichostyla*. A flora survey was conducted over the application area by Botanica Consulting in October 2007 (Botanica Consulting, 2008). No DRF or *Environment Protection and Biodiversity Conservation Act 1999* listed threatened flora were identified during this study (Botanica Consulting, 2008).

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

**Methodology** Armstrong (2006)  
Botanica Consulting (2008)  
Western Australian Herbarium (1998)  
GIS Database:  
- Declared Rare 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). There are no known TEC's within a 50 kilometre radius of the application area (GIS Database).

None of the vegetation types identified by Botanica Consulting (2008) are TEC's 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 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 is located within the Coolgardie Bioregion of the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). Shepherd (2007) report that approximately 98.4% of the pre-European vegetation still exists in the Coolgardie Bioregion. The vegetation in the application area is broadly mapped as Beard Vegetation Association 511: Medium woodland; salmon gum and morel (Shepherd, 2007). According to Shepherd (2007) there is approximately 70.6% of this vegetation association remaining in the State and approximately 93.8% remaining in the Coolgardie Bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Coolgardie	12,912,204	12,707,619	~98.4%	Least Concern	~10.9% (~11.0%)
Local Government - Kondinin	741,927	374,477	~50.5	Least Concern	~3.8% (~6.0%)
Beard vegetation associations - State					
511	700,410	494,148	~70.6%	Least Concern	~14.1% (~18.8%)
Beard vegetation associations - Coolgardie Bioregion					
511	464,425	435,798	~93.8%	Least Concern	~17.5% (~18.6%)

\* 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  
- Pre-European Vegetation  
- Holland 50cm Orthomosaic  
- IBRA WA (Regions - Subregions)

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

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

According to available GIS datasets, there are no known watercourses or water bodies within the application area (GIS Database).

The vegetation types identified by Botanica Consulting (2008) are not representative of riparian vegetation.

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

**Methodology** Botanica Consulting (2008)  
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 is not likely to be at variance to this Principle**

According to available GIS Databases, there are three soil types (Ms8x, X17 and Ya28) within the application area (GIS Database). These soil types are described as;

- Ms8:
  - (i) on rolling to undulating terrain, brown and grey cracking clays; and
  - (ii) on rolling areas, similar shallow soils, with a complex association of soils often containing some ironstone gravels;
- X17: On slopes and valleys, sandy, neutral and alkaline yellow mottled soils;
- Ya28: Sandy plains with some clay pans and small salt lakes, dunes and lunettes, with the chief soils being sandy alkaline yellow mottled soils (DAFF, 2008).

Shallow and deep sands have a high risk of wind erodibility and seasonal water logging may occur over the sandy topsoil and clays, whilst cracking clays have a low to moderate risk of wind erodibility (Schoknecht, 2002). However, the linear nature of the clearing suggests that the potential for wind erosion is low and provided the disturbed areas are rehabilitated after drilling is completed there would be minimal risk of increased salinity and/or water logging.

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

**Methodology** DAFF (2008)  
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 the Lake Cronin Area (Register of National Estate), which surrounds Lake Cronin (GIS Database). This area is regarded as an Environmentally Sensitive Area.

According to the Australian Heritage Database (2010) the Lake Cronin Area is an area of approximately 31,000 hectares and is a potentially important contemporary refugia for many species. The Lake Cronin Area 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, 2010). This conservation area 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, 2010).

The application area is also situated approximately 4.1 kilometres west of the Lake Cronin Nature Reserve. The Lake Cronin Nature Reserve is surrounded by extensive vegetation. The clearing of up to 1.41 hectares of vegetation within the application area will not significantly affect ecological linkages to the reserve.

An area to the south-west of the Lake Cronin Nature Reserve (which the application area is located within), has been identified as a potential 'C' Class Nature Reserve (EPA, 2009). This location was chosen to protect the drainage catchment that feeds into Lake Cronin, as well as to protect the extensive sandplain and woodland vegetation which represents vegetation communities and fauna habitats that have been extensively cleared and fragmented in the adjacent Wheatbelt (EPA, 2009). Due to the absence of watercourses, and the proposed clearing occurring on previously cleared drill lines, it is unlikely the proposed clearing will impact the environmental values of the proposed 'C' Class Nature Reserve.

Based on the above, the proposed clearing may be at variance to this Principle. However, it is considered that the proposed clearing is low impact and of a small scale (1.41 hectares) and will not significantly impact on the environmental values of the Lake Cronin Area and Nature Reserve.

**Methodology** Australian Heritage Database (2010)  
EPA (2009)  
GIS Database:  
- Environmentally Sensitive Areas  
- Schedule One Areas

- DEC Tenure
- Register of National Estate

**(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 Public Drinking Water Source Areas within a 50 kilometre radius of the proposed clearing (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, 2010). 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.

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 (2010)  
 Luke et al. (1987)  
 GIS Database  
 - Public Drinking Water Source Area  
 - Hydrography - Linear  
 - Potential Groundwater Dependent Ecosystems

**(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-Yilgarn Catchment area (GIS Database). The small area to be cleared (1.41 hectares) in relation to the size of the Swan Avon-Yilgarn Catchment area (5,836,045 hectares) is not likely to lead to an increase in flood height or duration (GIS Database).

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

- Methodology** GIS Database  
 - Hydrographic Catchments - Catchments  
 - Hydrography - Linear

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

**Comments**

There are no native title claims over the area under application (GIS Database). 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 registered Aboriginal Sites of Significance located within the clearing permit application area (GIS Database). The closest registered Aboriginal Site of Significance is located approximately 6.4 kilometres east of 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.

The clearing permit application was advertised on 7 June 2010 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received during the public comment period.

- Methodology** GIS Database:  
 - Aboriginal Sites of Significance  
 - Native Title Claims

**4. Assessor's comments**

## Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing may be at variance to Principles (b) and (h) is not likely to be at variance to Principles (a), (c), (d), (f), (g), (i), and (j) and is not at variance to Principle (e).

## 5. 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 (2010) 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](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) (Accessed 29 July 2010).
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- 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.
- EPA (2009) Advice on Conservation Values and Review of Nature Reserve Proposals in the Lake Cronin Region. Advice of the Environmental Protection Authority to the Minister for Environment under Section 16(e) of the *Environmental Protection Act 1986*.
- Kagara Nickel (2010) Internal Letter - Clearance Permit on M77/99 - Memorandum. Received by Department of Mines and Petroleum, Native Vegetation Assessment Branch 19 April 2010.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
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- Schoknecht N. (2002) Soil Groups of Western Australia. A simple guide to the main soils of Western Australia. Resource Management Technical Report 246. Edition 3.
- 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.
- Western Australian Herbarium (2008) Florabase - The Western Australian Flora - Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 29 July 2010).

## 6. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government.
<b>CALM</b>	Department of Conservation and Land Management, Western Australia.
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia.
<b>DA</b>	Department of Agriculture, Western Australia.
<b>DEC</b>	Department of Environment and Conservation
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DoE), Western Australia.
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia.
<b>DMP</b>	Department of Mines and Petroleum, Western Australia.
<b>DoE</b>	Department of Environment, Western Australia.
<b>DoIR</b>	Department of Industry and Resources, Western Australia.
<b>DOLA</b>	Department of Land Administration, Western Australia.
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environment Protection Act 1986, Western Australia.

<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System.
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia.
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI</b>	Rights in Water and Irrigation Act 1914, Western Australia.
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia.
<b>TECs</b>	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.