



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4361/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Tectonic Resources NL

### 1.3. Property details

Property: Exploration Licence 74/448  
Local Government Area: Shire of Ravensthorpe  
Colloquial name: Bandalup Pools Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 4 August 2011

## 2. Site Information

### 2.1. Existing environment and information

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

**Vegetation Description** Beard vegetation associations have been mapped for the whole of Western Australia. Two Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2009):

47: Shrublands; tallerack mallee-heath; and  
516: Shrublands; mallee scrub, black marlock.

The application area was surveyed by E.J. Hickman (2011) between 21 February and 24 February 2011. The following vegetation types were identified within the application area:

*Eucalyptus falcata*/*Eucalyptus pleurocarpa*: Open Shrub Mallee, Scrub, Heath, Low Heath C, Open Dwarf D;

*Eucalyptus falcata*: Shrub Mallee Thicket, Low Scrub, Low Heath C;

*Banksia laevigata*/*Beaufortia orbifolia*: Very Open Shrub Mallee, Thicket, Heath, Open Dwarf Scrub D;

*Melaleuca pentagona*: Very Open Shrub Mallee, Dense Thicket, Open Low Scrub, Open Dwarf Scrub C;

*Melaleuca thapsina*: Dense Thicket, Open Dwarf Scrub C and D;

*Eucalyptus gardneri* subsp. *ravensthorpensis*: Low Forest, Open low Scrub, Open Dwarf Scrub C and D;

*Eucalyptus clivicola*: Low forest, Open Scrub, Open low Scrub, Open Dwarf Scrub D, Very Open Sedges;

*Eucalyptus flocktoniae*/*Eucalyptus phenax*: Tree Mallee, Scrub, Low Scrub, Open Dwarf Scrub C and D;

*Eucalyptus flocktoniae*/*Eucalyptus* species: Shrub Mallee, Open Scrub, Open Low Scrub, Dwarf Scrub C and D, Open Sedges;

*Eucalyptus uncinata*/*Eucalyptus incrassata*: Shrub Mallee, Scrub, Heath, Open Dwarf Scrub C and

D, Very Open Sedges;

*Eucalyptus indurata/Melaleuca pauperiflora*: Open Shrub Mallee, Scrub, Heath, Open Dwarf Scrub D;

*Eucalyptus oleosa* subsp. *corvina*: Tree Mallee, Open Scrub, Open Low Scrub, Open Dwarf Scrub D;

*Eucalyptus flocktoniae/Melaleuca* sp. Gorse (ASG 7224): Very Open Shrub Mallee, Heath, Open Dwarf Scrub C and D;

*Acacia ophiolithica*: Open Scrub, Heath, Open Low Scrub;

*Eucalyptus* sp. Ravensthorpe (ASG 616)/*Melaleuca cliffortioides*: Very Open Shrub Mallee, Heath, Open Dwarf Scrub D, Very Open Sedges;

*Eucalyptus extensa*: Low forest, Low Scrub, Open Dwarf Scrub;

*Eucalyptus platypus*: Dense Low Forest;

*Eucalyptus leptocalyx/Melaleuca rigidifolia*: Open Shrub Mallee, Open Scrub, Low Scrub;

*Eucalyptus leptocalyx*: Very Open Shrub Mallee, Dense Thicket, Open Low Scrub, Open Dwarf Scrub C;

*Eucalyptus pleurocarpa/Banksia media*: Open Shrub Mallee, Open Scrub, Heath, Low Heath, Open Dwarf Scrub D;

*Eucalyptus* sp. Ravensthorpe (ASG 616): Very Open Shrub Mallee, Dense Thicket, Open Low Scrub, Open Dwarf Scrub C;

*Eucalyptus kessellii*: Open Shrub Mallee, Open Scrub, Heath, Low Heath, Open Dwarf Scrub D;

*Dryandra cirsioides*: Heath, Low Heath C and D;

*Melaleuca stramentosa*: Open Shrub Mallee, Dense Heath, Dwarf Scrub C and D;

*Eucalyptus occidentalis*: Open Low Woodland, Scrub, Heath, Open Dwarf Scrub C and D, Open Sedges;

*Eucalyptus sporadica*: Tree Mallee, Thicket, Heath, Low Heath C; and

*Melaleuca curicularis*: Scrub.

<b>Clearing Description</b>	<p>Tectonic Resources NL has applied to clear up to 9.99 hectares of native vegetation within an area of approximately 271 hectares for the purpose of mineral exploration.</p> <p>The majority of the clearing (9.52 hectares) is to be undertaken within previously disturbed areas, while only 0.47 hectares of previously undisturbed vegetation will be cleared.</p>
<b>Vegetation Condition</b>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).</p>
<b>Comment</b>	<p>The application area is located in the Ravensthorpe and Esperance regions of Western Australia and is situated approximately 24 kilometres south east of Ravensthorpe.</p>

### 3. Assessment of application against clearing principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

<b>Comments</b>	<p><b>Proposal may be at variance to this principle</b></p> <p>The application area occurs within the Fitzgerald (ESP1) and Recherche (ESP2) subregions of the Esperance Plains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Fitzgerald (ESP1) subregion is characterised by variable relief, comprising subdued relief on the sandplains of the coastal region, punctuated with metamorphosed granite and quartz ranges both inland and on the coastal plain (CALM, 2002). The region is dominated by duplex soils, deep and shallow sands on the plains and dissected areas, and shallow sandy soils on the mountain ranges (CALM, 2002). The Recherche (ESP2) subregion has variable relief, comprising the Quarternary coastal sandplains and dunes overlaying proterozoic gneiss and granite as well as Eocene and more recent coastal limestones (CALM, 2002). Numerous granitic islands occur in the near</p>
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shore area of this subregion (CALM, 2002). The vegetation types of this subregion are diverse and consist of heath, coastal dune scrub, mallee, mallee-heath and granite heath (CALM, 2002).

A flora and vegetation survey of the application area was undertaken by E.J. Hickman (2011) between 21 February and 24 February 2011. This survey identified 27 vegetation communities within the application area (E.J. Hickman, 2011). From this survey two Priority 1 Ecological Communities, *Banksia laevigata* – *Banksia lemsonian* proteaceous thicket and Heath on Komatiite at Bandalup Hill, were recorded within the application area (E.J. Hickman, 2011). Tectonic Resources NL (2011) have re-aligned their proposed drill tracks to avoid these communities, however, widening of existing tracks through these communities is unlikely to have a significant impact.

The flora and vegetation survey conducted by E.J. Hickman (2011) also identified the following two Priority Flora species:

- *Acacia errabunda* (Priority 3) – found at five locations within the application area in relatively low numbers ;and
- *Eucalyptus stoatei* (Priority 4) – found at four locations within the application area with a single tree at each site.

Given the low number of individuals present, it is unlikely that the proposed clearing will impact upon the conservation of either of these Priority Flora species.

A search of the Department of Environment and Conservation (DEC's ) online database NatureMap revealed records for 134 fauna taxa within 10 kilometres of the centre of the application area (120° 17' 53" E, 33° 40' 55" S) (DEC, 2011). Given that many conservation reserves are present within the local area and the previously disturbed nature of the application area, it is unlikely that the application area contains greater faunal biodiversity than the surrounding areas.

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

**Methodology** CALM (2002)  
DEC (2011)  
E.J. Hickman (2011)  
Tectonic Resources NL (2011)  
GIS Database:  
- IBRA WA (regions – subregions)

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

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

A search of NatureMap by the assessing officer identified records of six Threatened fauna species, Carnaby's Black Cockatoo (*Calyptrorhynchus latirostris*), Western Bristlebird (*Dasyornis longirostris*), Western Quoll (*Dasyurus geofforii*), Malleefowl (*Leipoa ocellata*), Dibbler (*paranthechinus apicalis*) and Heath mouse (*Pseudomys shortridgei*), within a 10 kilometre radius of the centre of the application area (120° 17' 53" E, 33° 40' 55" S) (DEC, 2011). Suitable habitat for two of these species, Malleefowl (*Leipoa ocellata*) and Heath Mouse (*Pseudomys shortridgei*), has been identified within the application area.

The application area contains numerous drill tracks from exploration activities previously undertaken over the area. Tectonic Resources NL (2011) intend to utilise these previously disturbed areas where possible with 9.52 hectares of the proposed clearing scheduled for re-clearing and widening of existing drill tracks. It is therefore considered to be unlikely that the proposed clearing will impact on any significant habitat for fauna indigenous to Western Australia.

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

**Methodology** DEC (2011)  
Tectonic Resources NL (2011)

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

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

There are no known records of Declared Rare Flora (DRF) within the application area (GIS Database).

A vegetation survey of the application area was conducted by E.J. Hickman (2011) in February 2011. The survey was conducted by walking the proposed access route and drill grid lines (E.J. Hickman, 2011). No DRF taxa were recorded during this survey (E.J. Hickman, 2011).

A search of NatureMap identified records of five DRF species within 10 kilometres of the centre of the application area (120° 17' 53" E, 33° 40' 55" S), *Beyeria cockertonii*, *Eucalyptus purpurata*, *Hibbertia abyssa*, *Kunzea similis* subsp. *mediterranea* and *Marianthus mollis* (DEC, 2011). Potential impacts to these DRF

species as a result of the proposed clearing may be minimised by the implementation of a flora management condition.

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

**Methodology** DEC (2011)  
E.J. Hickman (2011)  
GIS Database:  
- Declared Rare and Priority Flora List

**(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 records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is located approximately 62 kilometres south west of the application area (GIS Database). At this distance, there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

**Methodology** 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 likely to be at variance to this Principle**

The application area falls within the Esperance Plains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 51.31% of the pre-European vegetation is still present within this bioregion.

The vegetation in the application area is broadly mapped as Beard vegetation associations:

47: Shrublands; tallerack mallee-heath; and  
516: Shrublands; mallee scrub, black marlock.

According to Shepherd (2009) approximately 35.25% and 68.77% of Beard vegetation associations 47 and 516, respectively, remain within the Esperance Plains bioregion (see table on next page).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Esperance Plains	2,899,950	1,488,030	~51.31	Least Concern	~28.4 (~53.69)
IBRA Subregion - Fitzgerald	1,570,678	876,154	~55.78	Least Concern	~27.69 (~48.76)
IBRA Subregion - Recherche	1,329,273	611,876	~46.03	Depleted	~29.24 (~60.75)
Local Government - Ravensthorpe	982,191	610,239	~62.13	Least Concern	~19.47 (~30.46)
<b>Beard vegetation associations - State</b>					
47	1,033,055	372,187	~36.03	Depleted	~17.5 (~48.16)
516	607,402	332,576	~54.75	Least Concern	~24.07 (~43.46)
<b>Beard vegetation associations - Bioregion</b>					
47	959,938	338,403	~35.25	Depleted	~18.12 (~50.97)
516	318,747	219,187	~68.77	Least Concern	~28.38 (~40.79)
<b>Beard vegetation associations - Fitzgerald subregion</b>					
47	546,402	278,294	~50.93	Least Concern	~30.62 (~59.68)
516	219,038	182,678	~83.40	Least Concern	~37.95 (~44.91)
<b>Beard vegetation associations - Recherche subregion</b>					
47	413,535	60,110	~14.54	Vulnerable	~1.61 (~10.67)
516	99,708	36,509	~36.62	Depleted	~7.37 (~20.13)

\* Shepherd (2009)

\*\* Department of Natural Resources and Environment (2002)

While only 14.54% of Beard vegetation association 47 remains within the Recherche subregion of the Esperance Plains region, approximately 36.03% of this vegetation association still remains in the state. The majority of the proposed clearing is to occur within previously disturbed areas and is therefore not considered to be a significant remnant in an area that has been extensively cleared.

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

**Methodology** Department of Natural Resources and Environment (2002)  
Shepherd (2009)  
GIS Database:  
- IBRA WA (regions – subregions)  
- 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 at variance to this Principle**

There are two perennial natural pools and numerous minor non-perennial watercourses within the application area (GIS Database). The vegetation surrounding the natural pools has not been extensively surveyed, therefore potential impacts to riparian vegetation may be minimised by the implementation of a watercourse management condition.

Vegetation mapping of the application area conducted by E.J. Hickman (2011) identified two vegetation communities as occurring in association with minor non-perennial watercourses:

*Eucalyptus oleosa* subsp. *corvina*: Tree Mallee, Open Scrub, Open Low Scrub, Open Dwarf Scrub D; and

*Eucalyptus sporadica*: Tree Mallee, thicket, Heath, Low Heath C with *Melaleuca curicularis* scrub.

Given the scale and nature of the proposed clearing it is unlikely that either of these vegetation associations will be significantly impacted.

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

**Methodology** E.J. Hickman (2011)  
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**

In order to reduce any potential land degradation impacts, Tectonic Resources NL (2011) have outlined the following management strategies:

- Minimising the area requiring vegetation removal;
- Confining vehicle movements to clearly defined tracks;
- Following dry soil procedures to prevent the spread of dieback;
- Establishing vegetation on bare surfaces on completion of construction activities; and
- Locating stream crossings where natural conditions provide for minimal bed and bank disturbance.

As the majority of the clearing is to occur within previously disturbed areas, it is considered unlikely that the proposed clearing will cause appreciable land degradation.

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

**Methodology** Tectonic Resources (2011)

**(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 application area is not located within land managed by the Department of Environment and Conservation (DEC) for the purpose of conservation (GID Database). The nearest known DEC conservation reserve is an un-named conservation area located approximately 130 metres east of the application area at the closest point (GIS Database). Given the nature of the clearing, primarily clearing previously disturbed areas and widening existing tracks, it is unlikely that the proposed clearing will impact upon this conservation area.

The majority of the application area lies within Red Book Area 3.8 (GIS Database). Given the size of the area to be cleared (9.99 hectares) compared to the size of Red Book Area 3.8 (13,003 hectares) and the nature of the clearing (primarily widening existing drill tracks), it is not likely that the proposed clearing will impact this conservation area. There is, however, a potential dieback risk within this region. Potential degradation impacts from the spread of dieback and weeds through the application area may be minimised by the implementation of a dieback and weed management condition.

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

**Methodology** GIS Database:  
- Clearing Regulations – Environmentally Sensitive Areas  
- DEC Tenure  
- EPA Red Book  
- 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).

The groundwater salinity within the application area is approximately 7,000 – 14,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be saline. Given the size of the area to be cleared (9.99 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.

The application area is located within a Temperate Mediterranean climate with an average annual rainfall of approximately 425.4 millimetres recorded from the nearest weather station at Ravensthorpe approximately 24 kilometres north west of the application area (BoM, 2011; CALM, 2002). The small size of the proposed

clearing area within the above climate is unlikely to result in significant changes to surface water flows.

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** BoM (2011)  
CALM (2002)  
GIS Database:  
- Groundwater Provinces  
- Groundwater Salinity, Statewide  
- Potential Groundwater Dependent Ecosystems  
- Public Drinking Water Source Areas (PDWSA's)

**(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 a Temperate Mediterranean environment with an average annual rainfall of approximately 425.4 millimetres recorded from the nearest weather station at Ravensthorpe approximately 24 kilometres north west of the application area (BoM, 2011; CALM, 2002). It is likely that during times of intense rainfall there may be some localised flooding in adjacent areas, however, annual evaporation rates are approximately 1,800 millimetres, therefore there is little surface water flow during normal seasonal rains (GIS Database).

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

**Methodology** BoM (2011)  
CALM (2002)  
GIS Database:  
- Evaporation Isopleths

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

**Comments**

There are three Native Title Claims (WC03/6, WC96/109 and WC98/70) over the area under application (GIS Database). These claims have been registered with the National 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*.

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.

The clearing permit application was advertised on 23 May 2011 by the Department of Mines and Petroleum inviting submissions from the public. Two submissions were received in relation to the proposed clearing. The South West Aboriginal Land and Sea Council requested the delay of the clearing permit assessment until it is clear what is happening in relation to compliance with the Heritage Protection Agreement. A response was sent outlining the mining tenure approvals process. A submission was also received from the Shire of Ravensthorpe detailing concern regarding waterways within the application area. This was addressed in the assessment of the clearing permit application.

**Methodology** Gis Database:  
- Aboriginal Sites of Significance  
- Native Title Claims – Filed at the Federal Court  
- Native Title Claims – Registered with the NNTT

## 4. References

- BoM (2011) BoM Website - Climate Averages by Number, Averages for RAVENSTHORPE.  
[www.bom.gov.au/climate/averages/tables/cw\\_002038.shtml](http://www.bom.gov.au/climate/averages/tables/cw_002038.shtml) (Accessed 11 July 2011).
- DEC (2011) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL:  
<http://naturemap.dec.wa.gov.au/>
- CALM (Department of Conservation and Land Management) (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- 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.
- E.J. Hickman (2011) Philips River Project Bandalup Pools Drill Line Proposal 2011 Threatened Flora and Threatened Ecological Communities Survey. Albany, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- 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.
- Tectonic Resources NL (2011) Philips River Project Native Vegetation Clearing Permit Application Supporting Documentation E74/448. Ravensthorpe, Western Australia.

## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>CALM</b>	Department of Conservation and Land Management (now DEC), Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DEC), 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 (now DEC), Western Australia
<b>DoIR</b>	Department of Industry and Resources (now DMP), Western Australia
<b>DOLA</b>	Department of Land Administration, Western Australia
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environmental Protection Act 1986, Western Australia
<b>EPBC Act</b>	Environmental Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<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 Act</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>TEC</b>	Threatened Ecological Community

### 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.