



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 5428/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Tronox Management Pty Ltd

### 1.3. Property details

Property: Mining Lease 70/1205  
Mining Lease 70/1208  
Mining Lease 70/1209

Local Government Area: Shire of Irwin

Colloquial name: Dongara Exploration Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 28 February 2013

## 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 and are useful to look at vegetation in a regional context. The following Beard vegetation association has been mapped within the application area (GIS Database):

**378:** Shrublands; scrub-heath with scattered *Banksia* spp., *Eucalyptus todtiana* and *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplain region.

Woodman Environmental Consultants (WEC) conducted vegetation mapping over the area as part of mapping several tenements in the Dongara area (WEC, 2009). Astron Environmental Services conducted a targeted survey of the proposed 2013 drilling program in October and November 2012. Three Floristic Community Types (FCTs) were mapped over the application area:

**4:** Low Woodland to Thicket of *Banksia attenuata* and *Banksia menziesii* over mixed shrubs dominated by myrtaceous species on brown or yellow sand on lower to mid slopes and plains;

**5a:** Species rich woodlands and heaths on grey sand in the eastern portion of the Eneabba sandplain. Common species include *Conospermum boreale* subsp. *boreale*, *Ecdeiocolea monostachya*, *Eremaea beaufortoides*, *Hakea polyanthema* and *Banksia candolleana*; and

**5b:** Thicket dominated by *Banksia hookeriana* and/or *Banksia attenuata*, with emergent *Banksia prionotes* on yellow sand on upper slopes and dune crests.

##### Clearing Description

Tronox Management Pty Ltd (Tronox) has applied to clear up to 3.22 hectares of native vegetation within an application area of approximately 12.4 hectares (GIS Database). The proposed clearing is part of Tronox's 2013 exploration drilling program for mineral sands. The application area is located approximately 35 kilometres south-east of Dongara (GIS Database).

Native vegetation clearing will be minimised by driving over vegetation where possible. In areas where vegetation is too dense to employ this technique a rubber tyred front end loader will flatten vegetation using a raised blade.

##### Vegetation Condition

Pristine: No obvious signs of disturbance (Keighery, 1994);

to

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

##### Comment

The vegetation condition was determined by botanists from Astron Environmental Services (2012).

### 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 at variance to this Principle**

Structural vegetation mapping and flora surveying was undertaken by botanists from Woodman Environmental Consulting (WEC) over several Dongara tenements during October to December 2006, October to November 2007, and August and October 2008 (WEC, 2009). A botanical survey was undertaken of the proposed 2013 exploration program by Astron Environmental Services during October and November 2012. The vegetation of the application area has been mapped as Floristic Community Types (FCT) 4, 5a and 5b. FCT 5a has been identified as having a high conservation significance due to its potential as habitat for conservation significant flora species (Astron Environmental Services, 2012). There is 1.15 hectares of FCT 5a proposed to be cleared within the application area (Tronox, 2012a). There has been 11,787 hectares of this FCT mapped within the local area (Tronox, 2012a). No Threatened or Priority Ecological Communities have been recorded within the application area (Astron Environmental Services, 2012).

The flora survey of the proposed 2013 exploration program recorded two Priority Flora species within the application area; *Hemiandra* sp. Eneabba (Priority 3) and *Stawellia dimorphantha* (Priority 4) (Astron Environmental Services, 2012). Both species were recorded from one location, with three and one plants recorded respectively (Tronox, 2012a). The potential removal of the recorded individuals is unlikely to have a significant impact on these species.

Field surveys conducted in 2006, 2007 and January 2012 have not recorded any occurrences of dieback (*Phytophthora cinnamomi*) in Tronox's Dongara Tenements (Tronox, 2012a). A survey of the proposed drill lines was also conducted in Spring 2012. Tronox have committed to pathogen and *Phytophthora cinnamomi* hygiene management to prevent the introduction of dieback (Tronox, 2012b). Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a dieback management condition.

The fauna diversity of the application area is likely to be similar to that of the surrounding area. The fauna habitats provided by the vegetation in FCTs 4, 5a and 5b are likely to occur throughout the Northern Sandplains area where these FCTs occur. There are no notable fauna habitat features within the application area that would encourage a higher level of faunal diversity compared to surrounding areas, such as wetlands, watercourses, ridges or hill tops (GIS Database).

The application area occurs within a subregion and locality known for its high biodiversity and its habitat for Threatened Flora. To minimise the impact on both Threatened Flora and the vegetation in general, Tronox has developed low impact drilling practices and management measures for their 2013 Dongara exploration program.

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

**Methodology** Astron Environmental Services (2012)  
Tronox (2012a)  
Tronox (2012b)  
WEC (2009)  
GIS Database:  
- Arrowsmith 50 cm Orthomosaic - Landgate 2006  
- Hydrology, Linear  
- Threatened Ecological Sites Buffered

#### (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**

Tronox's Dongara tenements provide habitat for a number of species of native fauna including foraging habitat for conservation significant species (Tronox, 2012a). Fauna studies have been undertaken over the Dongara tenements and a broad range of habitat types exist:

- Dense mixed shrublands/heathlands/sedgeland on white and yellow sands;
- Dampland areas of tall mixed thickets over white sandy loams to sandy clays;
- Allocasuarina/Banksia woodland over shrubs and sedges on yellow sand; and
- Seasonal wetlands/Melaleuca dominated claypans (Bamford, 2011 cited in Tronox, 2012a).

Based on vegetation mapping undertaken by WEC (2009), the fauna habitat types of the application area are likely to be 'dense mixed shrublands/heathlands/sedgeland on white and yellow sands' and 'Allocasuarina/Banksia woodland over shrubs and sedges on yellow sand'.

The application area contains existing disturbance from previous drill site tracks (GIS Database). This disturbance somewhat diminishes the quality of fauna habitat and its potential to be significant habitat for native fauna. The application area does not contain notable habitat features such as watercourses or wetlands, ridges or hill tops (GIS Database).

The proposed clearing will involve low impact clearing of 3.22 hectares of native vegetation. In accordance with the Exploration Environmental Management Plan, low impact vegetation flattening techniques will be employed and large trees and thick vegetation will be avoided wherever possible (Tronox, 2012b). Flattening of vegetation in corridors which will be 2.6 metres wide (with the exception of drilling locations and the end of drill lines which will be approximately 4 metres in width) is unlikely to result in a loss of significant habitat for any fauna species indigenous to Western Australia.

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

**Methodology** Tronox (2012a)  
Tronox (2012b)  
WEC (2009)  
GIS Database:  
- Arrowsmith 50 cm Orthomosaic - Landgate 2006  
- Hydrology, Linear

**(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**

Astron Environmental Services conducted a targeted survey of the proposed 2013 drilling program in October and November 2012. The Threatened Flora species *Paracaleana dixonii* was recorded during the flora survey, however, all drill lines and access tracks have been realigned to be greater than 50 metres from any *Paracaleana dixonii* (Astron Environmental Services, 2012; Tronox, 2012a). The nearest *Paracaleana dixonii* individual recorded during the survey was approximately 4.5 kilometres east of the application area (Astron Environmental Services, 2012). This species was recorded in Floristic Community Type (FCT) 5a, which is also present within the application area (Astron Environmental Services, 2012). All drill lines and access tracks within FCT 5a were searched as part of the survey (Astron Environmental Services, 2012).

Standard management measures within the Exploration Environmental Management Plan for flora and vegetation include (Tronox, 2012b):

- Driving around vegetation where practical and locate drill hole sites in areas where impacts on surrounding vegetation is minimised;
- In areas where the vegetation is too dense to access the drill site, flat roll the vegetation using a front end loader with blade raised, thereby not disturbing the root stock or the topsoil;
- Avoid trees and thick vegetation where possible;
- All vehicle movements will be restricted to defined tracks and survey lines;
- The number of vehicle passes to and from the drill sites is to be minimised; and
- When the clearing is conducted, locations of Threatened Flora will be recognised by flagging and/or GPS data and drill holes will be located away from the sites. Individual plants will be avoided where practical.

The proposed clearing will impact potential habitat of *Paracaleana dixonii* however, the exploration has been designed to minimise disturbance to Threatened Flora and its habitat.

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

**Methodology** Astron Environmental Services (2012)  
Tronox (2012a)  
Tronox (2012b)

**(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 revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC is located approximately 28.5 kilometres east of the application area (GIS Database). At this distance, the proposed clearing is unlikely to impact on the TEC.

Botanists from WEC undertook comprehensive structural vegetation mapping studies over several Dongara tenements during October to December 2006, which included the application area. None of the Floristic Community Types recorded in the survey area corresponded to TECs (WEC, 2009). No TECs were identified during the flora survey by Astron Environmental Services (2012) during October and November 2012.

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

**Methodology** Astron Environmental Services (2012)  
WEC (2009)

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 clearing application area falls within the Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 44.9% of the pre-European vegetation remains (see table) (Government of Western Australia, 2011; GIS Database).

The vegetation of the application area has been mapped as Beard vegetation association 378 (GIS Database). This Beard vegetation association has over 60% remaining at a State and Bioregional level (Government of Western Australia, 2011).

The Leseur Sandplain subregion has been extensively cleared for agricultural purposes, however, the application area itself is neither a remnant nor does it form part of any remnants within the local area (CALM, 2002; GIS Database).

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and Post Clearing %)
IBRA Bioregion – Geraldton Sandplains	3,136,026	1,408,070	~44.9	Depleted	15.4 (34.1)
IBRA Subregion – Leseur Sandplain	1,171,770	504,200	~43.0	Depleted	17.9 (41.3)
Local Government – Shire of Irwin	236,968	117,340	~49.5	Depleted	12.1 (24.4)
<b>Beard Veg Assoc. – State</b>					
378	95,109	60,977	~64.1	Least Concern	14.1 (22.0)
<b>Beard Veg Assoc. – Bioregion</b>					
378	95,109	60,977	~64.1	Least Concern	14.1 (22.0)
<b>Beard Veg Assoc. – Subregion</b>					
378	90,923	60,547	~66.6	Least Concern	14.8 (22.2)

\* Government of Western Australia (2011)

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

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

**Methodology** CALM (2002)  
 Department of Natural Resources and Environment (2002)  
 Government of Western Australia (2011)  
 GIS Database:  
 - Arrowsmith 50 cm Orthomosaic - Landgate 2006  
 - 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 not at variance to this Principle**

There are no watercourses or wetlands within the application area (GIS Database). The vegetation of the application area has been mapped as Floristic Community Types 4, 5a and 5b and none of these FCTs are associated with watercourses or wetlands (Astron Environmental Services, 2012).

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

**Methodology** Astron Environmental Services (2012)  
 GIS Database:  
 - Geodata, Lakes  
 - 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**

The proposed clearing area is located on the Swan Coastal Plain physiographic region and occurs within the Eneabba Plain sub-unit (Pain et al., 2011). The Eneabba Plain is described as an area of undulating but gently rising plain between the Tamala Limestone or Spearwood Dunes to the west, and the Gingin Scarp to the east.

Tronox (2012b) will implement low impact vegetation clearing techniques to minimise the potential for land degradation. For example, vegetation will be driven over or flattened using a rubber tyred front end loader using a raised bucket, as opposed to blade-down clearing. This technique will leave vegetation in situ, thereby preserving rootstock and minimising disturbance to topsoil. Wheel rutting and the creation of preferential flow paths for surface water run-off will also be reduced, minimising the potential for soil erosion. Other management strategies to be implemented during the proposed vegetation clearing include (Tronox, 2012b):

- All vehicle movements will be restricted to defined tracks and survey lines;
- All vehicles will engage four wheel drive mode to minimise the potential for wheel rutting;
- All vehicles used during the proposed clearing and exploration drilling are relatively light, thereby reducing the potential for soil compaction;
- Drilling is conducted using an aircore rig which does not involve the use of any drilling fluids, mud or other materials with potential for land contamination; and
- Large trees and thick vegetation will be avoided where possible.

Provided that the management strategies as outlined above are implemented, the proposed clearing is unlikely to cause appreciable land degradation.

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

**Methodology** Pain et al. (2011)  
Tronox (2012b)

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

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

The proposed clearing is not located within a conservation reserve (GIS Database). The nearest Department of Environment and Conservation (DEC) managed conservation reserve is an un-named Nature Reserve (R47436) which is located approximately 1.5 kilometres east of the application area (GIS Database). Another nearby conservation area is Beekeepers Nature Reserve which is located approximately 4.5 kilometres west of the application area (GIS Database). Despite the close proximity to several conservation areas, it is considered that the proposed clearing is low impact and of a small scale and will not significantly impact on the environmental values of the nearby conservation areas.

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

**Methodology** GIS Database:  
- 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 surface water bodies within the application area (GIS Database). Therefore, it is unlikely the small amount of clearing associated with this proposal will cause a deterioration in surface water quality.

The small area of proposed clearing is unlikely to cause deterioration in the quality of underground water.

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

**Methodology** GIS Database:  
- Hydrography, Linear  
- 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 relatively flat and the proposed clearing of 3.22 hectares for exploration activities is not likely to increase the incidence or intensity of flooding (GIS Database).

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

**Methodology** GIS Database:  
- Topographic Contours, Statewide

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

##### Comments

There is one Native Title Claim (WC04/2) over the area under application (GIS Database). This claim has 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 14 January 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

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

#### 4. References

- Astron Environmental Services (2012) Botanical Survey of 2013 Exploration Access Lines Dongara. Unpublished report for Tronox Management Pty Ltd, dated October, November 2012.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Coolgardie 3 (GS3 - Lesueur Sandplains subregion) Department of Conservation and Land Management, Western Australia.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Government of Western Australia (2011) 2011 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pain, P., Gregory, L., Wilson, P. and McKenzie, N. (2011) The Physiographic Regions of Australia, Explanatory Notes. Australian Collaborative Land Evaluation Program and National Committee on Soil and Terrain.
- Tronox (2012a) Dongara Clearing Permit Application Environmental Risk Assessment. Supporting information for a clearing permit application, dated December 2012.
- Tronox (2012b) Environmental Management Plan, Dongara Project M70/1195-1200 & M70/1205-1219.
- WEC (2009) Dongara Tenements Flora and Vegetation Studies Regional FCT Analysis. Report Prepared by Woodman Environmental Consulting for Tiwest Pty Ltd, October 2009.

#### 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>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System

ha	Hectare (10,000 square metres)
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 Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	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.