



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4209/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: ARC Energy Limited

### 1.3. Property details

Property: Petroleum Production Licence L 5  
Local Government Area: Shire of Carnamah  
Colloquial name: Woodada Deep-01

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3		Mechanical Removal	Petroleum Production

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 12 May 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 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, 2009).

378: Shrublands; scrub-heath with scattered *Banksia* spp, *Eucalyptus tottiana* & *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplain Region

The application area was surveyed by staff from Woodman Environmental (2011) in 2007. This survey identified the following vegetation community within the application area:

- Heath dominated by *Banksia attenuata* and *Melaleuca leuropoma* with emergent *Banksia prionotes*, *Banksia menziesii* and *Eucalyptus tottiana* on yellow sand (Woodman Environmental, 2011).

**Clearing Description** Arc Energy Limited is proposing to clear 3 hectares of native vegetation within a boundary of 4.04 hectares for the purpose of petroleum production. Mechanical clearing of this native vegetation will allow for infrastructure required for hydraulic fracture activities.

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

**Comment** The application area is located in the Geraldton Sandplains region of Western Australia and is situated approximately 12 kilometres west of Eneabba (GIS Database).

## 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 Lesueur Sandplains (GS2) subregion of the Geraldton Sandplain Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This sub-region is comprised of coastal Aeolian and limestones, Jurassic siltstones and sandstones of the central Perth Basin (CALM, 2002). There are extensive yellow sandplains in the south-eastern parts and shrub-heaths rich in endemics occur on a mosaic of lateritic mesas, sandplains, coastal sands and limestones (CALM, 2002).

The Lesueur Sandplains bioregion contains a high proportion of endemic plants with over 250 plants endemic to the subregion (CALM, 2002). The area is recognised Australia-wide and internationally as having particularly high floristic diversity, with an area of 10 square metres supporting up to 80 different species. The level of threat

faced is similar to that of the Avon Wheatbelt, but the reserve system is more representative (CALM, 2002). The main threatening processes to the region are feral animals, grazing pressures, changing fire regimes, increasing land fragmentation, exotic weeds and changes to hydrology (ANRA, 2009).

A targeted Rare and Priority flora search conducted by Woodman Environmental (2011) on 11 February 2011 identified one Priority 4 flora taxa (*Banksia elegans*) within the application area. Approximately 150 individual *Banksia elegans* plants will be impacted by the proposed clearing (Woodman Environmental, 2011). The regional distribution of this taxon extends from approximately 100 kilometres south of Eneabba to immediately north of Geraldton (Woodman Environmental, 2011). Given its widespread nature and its presence locally, outside of the application area, it is unlikely that the proposed clearing will impact upon the conservation status of this species.

No weed species have been recorded within the application area during flora surveys undertaken by Woodman Environmental (2011). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Ecologia (2011) conducted a desktop fauna survey based on database searches and a review of previous surveys within the local area. This survey revealed the potential for 19 native mammals, nine introduced mammals, 190 birds, 79 reptiles and 13 amphibians to occur within the application area (Ecologia, 2011). Due to the small size of the application area and the presence of similar surrounding habitat, the proposed clearing is not likely to impact on faunal diversity either locally or regionally.

The application area is located within a *Phytophthora cinnamomi* dieback risk area. The disease has previously been isolated from some areas within the Gas Field, with these areas displaying disease symptoms indicative of *Phytophthora cinnamomi* infestation (Glevan Consulting, 2004). The implementation of a dieback management condition may reduce the potential impact of dieback within the application area.

The application area consists of mostly previously cleared areas. Therefore the biodiversity values of the vegetation proposed to be cleared have been significantly reduced. The vegetation communities within the application area are not likely to be considered as rare, geographically restricted or of significant conservation value.

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

**Methodology** ANRA (2009)  
CALM (2002)  
Ecologia (2011)  
Glevan Consulting (2004)  
Woodman Environmental (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**

Based on results from database searches and a review of previous surveys within the local area, a desktop fauna survey of the application area was conducted by Ecologia (2011). This survey revealed the potential for 19 native mammals, nine introduced mammals, 190 birds, 79 reptiles and 13 amphibians to occur within the application area (Ecologia, 2011). Of these, 33 are species of conservation significance (Ecologia, 2011). However, based on the habitats present, only the following ten conservation significant species have been assessed as having a medium to high likelihood of occurrence within the application area (Ecologia, 2011):

- Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) – Endangered and Schedule 1;
- Rainbow Bee-eater (*Merops ornatus*) – Migratory and Schedule 3;
- Gilled Slender Blue-tongue (*Cyclodomorphus branchialis*) – Schedule 1;
- *Ctenopus gemmula* – Priority 3;
- Black-striped Snake (*Neelaps calonotus*) – Priority 3;
- Western Brush Wallaby (*Macropus irma*) – Priority 4;
- Australian Bustard (*Ardeotis australis*) – Priority 4;
- Rufous Fieldwren (*Campestris montanellus montanellus*) – Priority 4;
- Shy Heathwren (*Hylacola cauta whitlocki*) – Priority 4; and
- Crested Bellbird (*Oreoica gutturalis gutturalis*) – Priority 4.

The fauna habitat within the application area consists entirely of dense mixed proteaceous shrubland on loose white sand (Ecologia, 2011). *Banksia* species dominate the vegetation, making up 70 to 90 percent of the plant cover in most areas (Ecologia, 2011). The sandy substrate is mostly covered by dense leaf litter with patches of wood litter providing additional habitat (Ecologia, 2011). The loose, moist sand beneath leaf litter throughout the application area is ideal for burrowing reptiles, while birds feed on the *Banksia* inflorescences (Ecologia,

2011).

This habitat type is common throughout Beard vegetation association 378, which is described as scrub-heath with scattered *Banksia* spp., *Eucalyptus tottiana* and *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplains Region (GIS Database; Shepherd, 2009). According to Shepherd (2009) approximately 60,940 hectares of this vegetation remains within the Geraldton Sandplains bioregion. It is not likely that the proposed clearing of 3 hectares of native vegetation within this Beard vegetation association will significantly impact the conservation of this habitat type.

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

**Methodology** Ecologia (2011)  
Shepherd (2009)  
GIS Database:  
- Pre-European Vegetation

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

A targeted flora survey of the application area was undertaken by Woodman Environmental (2011) on 11 February 2011. No DRF were recorded during this survey (Woodman Environmental, 2011).

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

**Methodology** Woodman Environmental (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**

According to available databases there are no Threatened Ecological Communities (TEC's) within the application area. The nearest TEC is located approximately 11.5 kilometres south-east 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 Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 44.99% of the pre-European vegetation remains in this bioregion.

The vegetation in the application area is recorded as Beard vegetation association:

378: Shrublands; scrub-heath with scattered *Banksia* spp., *Eucalyptus tottiana* and *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplains Region (GIS Database; Shepherd, 2009).

According to Shepherd (2009) approximately 64.07% of this Beard vegetation association remains within the Geraldton Sandplains 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 - Geraldton Sandplains	3,136,025	1,410,755	~44.99	Depleted	~15.38 (~34.03)
IBRA Subregion - Lesueur Sandplains	1,171,770	503,894	~43	Depleted	~17.89 (~41.25)
Local Government - Carnamah	287,233	118,545	~41.27	Depleted	~21.75 (~41.97)
Beard vegetation associations - State					
378	95,109	60,940	~64.07	Least Concern	~14.14 (~22.03)
Beard vegetation associations - Bioregion					
378	95,109	60,940	~64.07	Least Concern	~14.14 (~22.03)
Beard vegetation associations - subregion					
378	90,923	60,509	~66.55	Least Concern	~14.79 (~22.19)

\* Shepherd (2009)

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

Whilst the sub-region has been extensively cleared, the proposed clearing of 3 hectares of native vegetation is unlikely to significantly reduce the extent of Beard vegetation association 378 below current levels. Therefore, the vegetation within the application area is not likely 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 not at variance to this Principle**  
According to available GIS Databases there are no wetlands or watercourses within the application area (GIS Database).

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

**Methodology** 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 may be at variance to this Principle**  
The soils within the application area are light, sandy and well-drained (ARC Energy, 2006). These soils consist of calcareous and siliceous sand underlain by aeolianite, which is often exposed (ARC Energy, 2006).

According to available databases, the following soil type is within the application area (GIS Database):

**CA27** – Sandy plains with occasional pockets of sand dunes, a few small swamps, and stream courses with the chief soils being leached sands, often with sandy clay substrate between 3 and 6 foot in depth.

Schoknecht (2002) describes this soil type as part of the Sandy duplexes supergroup. These soils have a medium to high risk of wind erodibility and are prone to wind erosion in exposed situations if left bare of surface cover (Schoknecht, 2002). Potential land degradation impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

**Methodology** ARC Energy (2006)  
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 is not likely to be at variance to this Principle**

The application area occurs within an Environmentally Sensitive Area (ESA) (Register of National Estate), which is the Lake Logue Nature Reserve (GIS Database).

According to the Australian Heritage Database (2011) the Lake Logue Nature Reserve is approximately 4,886 hectares and is a wide shallow valley which is flanked on the west coastal limestone ridges and a high ridge of Mesozoic sandstone and shale on the east. The deep sand of the Lake Logue Nature Reserve supports rich heath which is dominated by Banksia, Myrtle, Legume and Wattle species (Australian Heritage Database, 2011).

The application was referred to the Department of Environment and Conservation (DEC) for comment on this Principle. A reply was received stating DEC had no comment regarding the proposed clearing.

Given the small size of the application area (3 hectares) within an area that has previously been cleared for petroleum drilling activities it is considered unlikely that the proposed clearing will significantly impact on the environmental values of this conservation area.

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

**Methodology** Australian Heritage Database (2011)  
GIS Database:  
- Clearing Regulations – Environmentally Sensitive Areas  
- DEC Tenure  
- Register of National Estate (status)

**(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 nearest PDWSA is Eneabba Water Reserve which is located approximately 12.5 kilometres east of the application area at its closest point (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the water quality of the Eneabba Water Reserve.

The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (GIS Database). Given the size of the area to be cleared (3 hectares) compared to the size of the Perth Groundwater Province (4,660,027 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

According to available databases, there is the potential for groundwater dependant ecosystems to be located within the application area (GIS Database). Given the small scale of the proposed clearing (3 hectares), it is unlikely to alter the watertable or salinity levels within the application area.

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

**Methodology** GIS Database:  
- Groundwater Provinces  
- Groundwater Salinity, Statewide  
- Potential Groundwater Dependant Ecosystems  
- Public Drinking Water Source Area

**(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 experiences a Mediterranean climate with an average annual rainfall of approximately 498 millimetres recorded from the nearest weather station at Eneabba, approximately 12 kilometres east of the application area (CALM, 2002; BoM, 2011).

According to available databases there are no watercourses located within the application area (GIS Database). Additionally, the permeable nature of the soils within the application area tends to allow rainwater to

percolate vertically to the water table rather than running laterally off the surface (ARC Energy, 2006).

The application area is located within the Indoon Logue catchment area (GIS Database). However, the small area to be cleared (3 hectares) in relation to the size of the Indoon Logue catchment area (137, 421 hectares) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database).

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

**Methodology** ARC Energy (2006)  
BoM (2011)  
CALM (2002)  
GIS Database:  
- Hydrographic Catchments – Catchments  
- Hydrography, linear

#### **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 Native Title Tribunal on behalf of the claimant group. However, the petroleum 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 21 February 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

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

#### **4. References**

- ANRA (2009) Australian Natural Resources Atlas ? Biodiversity Assessment ? Geraldton Sandplains. <http://www.anra.gov.au/topics/vegetation/assessment/wa/libra-gs-ecosystems-recovery.html> (Accessed 17 March 2011)
- ARC Energy (2006) Woodada Gas Field Environmental Management Plan - Production Licence L4/L5. Unpublished Report dated 19 May 2006
- Australian Heritage Database (2011) Lake Logue Nature Reserve <http://www.environment.gov.au> (Accessed 22 February 2011)
- BoM (2011) BoM Website - Climate Averages by Number, Averages for ENEABBA. [www.bom.gov.au/climate/averages/tables/cw\\_002038.shtml](http://www.bom.gov.au/climate/averages/tables/cw_002038.shtml) (Accessed 21 February 2011).
- DEC (2011) Managing Dieback. Department of Environment and Conservation. URL: <http://www.dec.wa.gov.au/content/view/full/213/548/1/3/>. Accessed 24 February 2011.
- 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.
- Ecologia (2011) Woodada Deep-01 Level 1 Vertebrate Fauna Assessment. Prepared for AWE Limited. Unpublished Report dated February 2011.
- Glevan Consulting (2004) *Phytophthora cinnamomi* - Management recommendations - Woodada Gas Field. Unpublished report dated May 2004
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- 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. (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.
- Woodman Environmental (2011) Woodada Deep-01 Targeted Flora Search. Prepared for AWE Limited. Unpublished Report dated February 2011.

## 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
<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.