



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4701/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: BHP Billiton Minerals Pty Ltd

### 1.3. Property details

Property: Exploration Licence 69/2067  
Local Government Area: Shire of Ngaanyatjaraku  
Colloquial name:

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 5 January 2012

## 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. Three Beard vegetation associations have been mapped within the application area:

Beard vegetation association 18: Low woodland; mulga (*Acacia aneura*);

Beard vegetation association 39: Shrublands; mulga scrub; and

Beard vegetation association 236: Hummock grasslands, shrub steppe; mulga and mallee (Marble Gum) over hard spinifex (GIS Database; Shepherd, 2009).

No vegetation surveys have been undertaken over the application area, therefore the vegetation communities have not been described or mapped for this area in any further detail than Beard vegetation mapping.

**Clearing Description** BHP Billiton Minerals Pty Ltd (2011) has applied to clear up to 15 hectares of native vegetation for the purpose of mineral exploration. The clearing will comprise of drill pads and temporary access tracks.

The vegetation and topsoil will be stockpiled separately for use in rehabilitation.

**Vegetation Condition** Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

**Comment** The vegetation condition has been inferred from orthophotos, field photographs and historical land uses classified using the Keighery (1994) scale.

## 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 may be at variance to this Principle**

The application area occurs within the Central subregion of the Great Victoria Desert Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Mann-Musgrave Block subregion of the Central Ranges IBRA bioregion (GIS Database). The Central subregion is characterised by salt plains with extensive seif dunes running east west, occasional outcropping and quartzite hills. The vegetation is primarily *Eucalyptus gongylocarpa*, Mulga and *E. youngiana* over hummock grassland dominated by *Triodia basedowii* on Aeolian sands. *Acacia* spp. dominates colluvial soils with *Eremophila* and *Santalum* spp. *halophytes* being confined to edges of salt lakes and saline drainage systems (CALM, 2002a). The Mann-Musgrave Block subregion is characterised by sandplains that support low open woodlands of either Desert Oak or Mulga over *Triodia basedowii* hummock grasslands. Low open woodlands of Ironwood (*Acacia estrophiolata*) and Corkwoods (*Hakea* spp.) over tussock and hummock grasses often fringe the ranges. The ranges support mixed wattle scrub or *Callitris glaucophylla* woodlands over hummock and tussock grasslands (CALM, 2002b).

The vegetation within the application area has been broadly mapped as Beard vegetation associations 18: Low woodlands of mulga (*Acacia aneura*); 39: Shrublands; mulga scrub; and 236: Hummock grasslands with shrub steppe of mulga and Marble Gum (*Eucalyptus gongylocarpa*) over hard Spinifex (Shepherd, 2009; GIS Database). According to Shepherd (2009), these vegetation associations are common and widespread both locally and regionally, and remain largely uncleared.

Due to the lack of previous flora surveys over the application area, ENV Australia (2011) conducted a broad desktop flora review, partially over the application area and surrounding areas, and has found no known records of Declared Rare Flora (DRF) or Priority Flora species. A search on the Department of Environment and Conservation Declared Rare and Priority Flora databases revealed no DRF potentially occurring within a 40 kilometre radius of the application area. One Priority one flora species (*Euphorbia parvicaruncula*) and a Priority three flora species (*Stackhousia clementii*) may potentially occur in the application area (DEC, 2011a). No Threatened Ecological Communities or Priority Ecological Communities were recorded or identified within the application area (GIS Database). A search on NatureMap (DEC, 2011a) found that no weed species had been recorded within the application area or surrounding region.

Weeds Australia (2011) list 63 weed species that are known to occur or have the potential to occur in the Great Victoria Desert. Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Analysis of aerial imagery identified three potential broad fauna habitat types within the application area, these being: mulga plain and sand dune/sand plain (GIS Database). Both are considered to be in 'very good' condition (Keighery, 1994). Fauna habitat such as mulga plains with potential tree hollows, logs or leaf litter is suitable for conservation significant fauna such as the Brush-tailed Mulgara (*Dasymercus blythi*) and the Greater Bilby (*Macrotis lagotis*) that may potentially occur in the area. Sand dunes and sand plains habitat are ideal for conservation significant fauna as above and also the Northern Marsupial Mole (*Notoryctes caurinus*) (ENV Australia, 2011).

The shortage of biological survey data from the area, both supplied by the applicant and available from other sources, brings a level of uncertainty when assessing the level of biological diversity of the application area. However, the broad-scale vegetation types and fauna habitat types are common and widespread both locally and regionally. Aerial imagery also suggests the widespread availability of similar vegetation communities and landforms, and the application area is not considered to support a higher biological diversity than the adjoining local or regional areas (GIS Database). Given the relatively small area proposed to be cleared (15 hectares), it is not likely that the proposed clearing will have any significance on biodiversity at a regional scale.

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

<b>Methodology</b>	CALM (2002a) CALM (2002b) DEC (2011a) ENV Australia (2011) Shepherd (2009) Keighery (1994) Weeds Australia (2011) GIS Database: - Cooper 1.2m Orthomosaic - Landgate 2002 - Mount Eveline 1.3m Orthomosaic - Landgate 2005 - Threatened Ecological Sites Buffered - IBRA WA (regions - subregions)
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**(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.**

**Comments** **Proposal may be at variance to this Principle**  
No targeted fauna surveys were undertaken within the application areas and the fauna habitats present within the application area have not been recorded. ENV Australia (2011) conducted a desktop fauna review of the surrounding area adjacent to the application area in January 2011. No fauna trapping surveys were undertaken. The review identified three broad fauna habitat types from aerial photography:

1. Mulga Plain - consists of low open woodlands of mulga (*Acacia aneura*) over *Triodia basedowii* occurring in low lying areas. A moderate diversity of microhabitats is expected, with tree hollows, logs, leaf litter and debris and soil suitable for digging and burrowing animals;
2. Sand Dune/Sand Plain - consist of low shrublands of mulga (*Acacia aneura*) and Marble Gum (*Eucalyptus gongylocarpa*) over *Triodia basedowii*. Microhabitat diversity is expected to be low, with logs, debris and litter being scarce. Areas of loose sand within this habitat would be ideal for burrowing fauna; and
3. Rocky Hill - comprised of rocky landforms that are elevated from the surrounding plains and likely to be characterised by stony soils with simple vegetation structure. The vegetation of this habitat consists of low shrublands of mixed Acacia species over *Triodia basedowii*. The microhabitats are

reliant on substrate rather than vegetation structure as few vegetation associated niches are available. The rocky substrate provides numerous microhabitats in the form of breakaways, cracks, crevices and possibly caves, and supports a large assemblage of terrestrial fauna (ENV Australia, 2011).

Analysis of aerial photography suggests the vegetation condition to be in 'very good' condition (Keighery, 1994; GIS Database). Erosion and grazing pressures from camels damaging trees and shrubs and impacting waterholes and drainage systems in the surrounding areas has degraded the vegetation condition (ENV Australia, 2011). Several significant fauna habitats may be present within the application areas such as breakaways, logs and drainage lines (ENV Australia, 2011; GIS Database). The application area occurs within the Central subregion of the Great Victoria Desert Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Mann-Musgrave Block subregion of the Central Ranges IBRA bioregion (GIS Database). Both of these bioregions retain approximately 99.9% of their pre-European vegetation (GIS Database; Shepherd, 2009). Analysis of aerial imagery demonstrates that the local area remains largely uncleared. The vegetation communities and associated fauna habitats are considered common and widespread in the local area, and throughout the Great Victoria Desert and Central Ranges IBRA bioregions.

There are three species of mammals and two species of birds listed as Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* or protected under Western Australian legislation, that may potentially occur within the application area based on habitat type and vegetation mapping associated with the adjacent area which is similar to the application area (DEC, 2011a; GIS Database). Of these species, the Australian Bustard (*Ardeotis australis*), Striated Grasswren (*Amytornis striatus*), Brush-tailed Mulgara (*Dasycercus blythi*), Greater Bilby (*Macrotis lagotis*) and Northern Marsupial Mole (*Notoryctes typhlops*) may occupy areas within the application area due to potential suitable faunal habitats occurring in the area (DEC, 2011a).

Some of these species are considered highly mobile and/or have a wide distribution so the clearing is unlikely to significantly impact on the species. The Brush-tailed Mulgara, Greater Bilby, Northern Marsupial Mole and Black-footed Wallaby are ground-dwelling conservation significant fauna with limited dispersal abilities and are more likely to be impacted on by any development (ENV Australia, 2011; GIS Database). Therefore, any core habitats such as burrows could be considered as significant and should be avoided.

The area proposed to be cleared is small (15 hectares), within an 8,100 hectare application area, and there are large amounts of uncleared vegetation in the Central Ranges and Great Victoria Desert. However, there is very little biological knowledge of the region. Only limited fauna information is available for the Central Ranges and Musgraves area due to a lack of fauna surveys being completed in the remote region (ENV Australia, 2011). The conservation values of the application area in regards to fauna, in particular conservation significant species, are uncertain and cannot be fully understood until on-ground fauna surveys are conducted. Potential impacts to conservation significant fauna as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.

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

**Methodology** DEC (2011a)  
ENV Australia (2011)  
Keighery (1994)  
Shepherd (2009)  
GIS Database:  
- Mount Eveline 1.3m Orthomosaic - Landgate 2005  
- Cooper 1.25m Orthomosaic - Landgate 2002  
- IBRA WA (regions - subregions)  
- Threatened Ecological Sites Buffered  
- Threatened Fauna

**(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**

No flora survey has been conducted within the application area.

Searches made on the available GIS Databases reveal that there are no known records of Declared Rare Flora (DRF) existing in the application area, or within 20 kilometres of the application area (GIS Database). A search of the Department of Environment and Conservation Declared Rare and Priority Flora databases revealed that no DRF species have been recorded in the application area (DEC, 2011a).

The significance of the vegetation within the application area for the continued existence of DRF is difficult to quantify with the limited information provided by the applicant and the general paucity of biological information in the bioregion.

Based on the above, the proposed clearing may be at variance to this Principle. Potential impacts to DRF as a result of the proposed clearing may be minimised by the implementation of a flora management condition.

**Methodology** DEC (2011a)  
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**

A search of the available databases shows that there are no Threatened Ecological Communities situated within 100 kilometres of the application area (GIS Database).

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 at variance to this Principle**

The application area falls within the Central Ranges and Great Victoria Desert IBRA bioregions (GIS Database). Shepherd (2009) reports that approximately 99.9% of the pre-European vegetation still exists in these bioregions.

The vegetations within the application area is recorded as:

**Beard vegetation association 18:** Low woodland; mulga (*Acacia aneura*);

**Beard vegetation association 39:** Shrublands; mulga scrub; and

**Beard vegetation association 236:** Hummock grasslands, shrub steppe; mulga and mallee (Marble Gum) over hard Spinifex (GIS Database; Shepherd, 2009).

According to Shepherd (2009) these Beard vegetation associations remain largely uncleared (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Central Ranges	4,701,520	4,700,253	~99.97	Least Concern	-
IBRA Bioregion - Great Victoria Desert	21,794,207.35	21,785,242	~99.96	Least Concern	8.46
<b>Beard vegetation associations - State</b>					
18	19,892,304	19,890,275	~99.99	Least Concern	2.13
39	6,613,569	6,613,469	~100	Least Concern	7.25
236	1,626,899	1,617,443	~99.42	Least Concern	-
<b>Beard vegetation associations - Central Ranges Bioregion</b>					
18	1,075,927	1,075,180	~99.93	Least Concern	-
39	404,691	404,691	~100	Least Concern	-
<b>Beard vegetation associations - Great Victoria Desert Bioregion</b>					
39	1,183,999	1,183,999	~100	Least Concern	2.96
236	1,619,192	1,612,408	~99.58	Least Concern	-

\* Shepherd (2009)

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

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

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

According to available databases, there are no watercourses or wetlands within the application area (GIS Database). The vegetation within the application area is not considered to be growing in association with any watercourse or wetland.

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

**Methodology** 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 Central Ranges and Great Victoria Desert regions are widely affected by the grazing of feral camel herds, with the camel population increasing exponentially each year (Ward, 2007; DEC, 2011b). Both bioregions are also under increased grazing pressures by livestock which has damaged native vegetation (CALM, 2002a; CALM, 2002b).

The proposed clearing of 15 hectares and associated mineral exploration activities are not likely to result in large areas of disturbed or open land. Given the nature and scale of the proposed activities, the clearing is not likely to result in appreciable land degradation.

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

**Methodology** CALM (2002a)  
CALM (2002b)  
DEC (2011b)  
Ward (2007)

**(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 any conservation areas (GIS Database). The nearest conservation area is the Gibson Desert Nature Reserve, located approximately 145 kilometres north-west of the application area (GIS Database). Given the distance separating Gibson Desert Nature Reserve and the application area, the proposed clearing is not likely to impact the environmental values of the conservation area.

The application area occurs within the Ranges of the Western Desert Environmentally Sensitive Area (Register of National Estate) (GIS Database). According to the Australian Heritage Database (2011) the Ranges of the Western Desert are a system of ranges with many gorges and valleys. The ranges are dominated by spinifex steppe, mulga and mallee scrub (Australian Heritage Database, 2011). Despite the area being on the Register of National Estate for natural values, 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 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:  
- DEC Tenure  
- Register of National Estate

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

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

The application area is not located within a Public Drinking Water Source Area (GIS Database). The application area is located within the proclaimed East Murchison groundwater area under the *Rights in Water and Irrigation*

Act 1994 (GIS Database).

There are no permanent watercourses or water bodies within the application area (GIS Database). Any surface water within the application area is likely to only remain for short periods following significant rainfall events. The proposed clearing is not likely to cause deterioration in the quality of any surface water within or outside of the application area.

Given the low impact nature of the proposed clearing activities, the proposed clearing is not likely to cause deterioration in the quality of any underground water.

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

**Methodology** GIS Database:  
- Geodata, Lakes  
- Groundwater Salinity, Statewide  
- Hydrography, Linear  
- Public Drinking Water Source Areas

**(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 an arid climate with varied and unpredictable rainfall in the Great Victoria Desert bioregion, and slightly higher winter rainfall in the Central Ranges bioregion (CALM, 2002a; CALM, 2002b), where the annual evaporation rate exceeds the annual rainfall (BoM, 2011). Any surface water resulting from normal rain events is expected to be short lived.

The application area is located within the Warburton Basin catchment area which covers a total area of approximately 17,195,990 hectares (GIS Database). The proposed clearing of 15 hectares is not likely to cause or exacerbate the incidence or intensity of floods in the catchment or local areas.

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

**Methodology** BoM (2011)  
CALM (2002a)  
CALM (2002b)  
GIS Database:  
- Hydrographic Catchments - Catchments

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

**Comments**

There is one Native Title claim (WC04/3) over the area under application. 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 28 November 2011 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received in relation to the proposed clearing, stating no objection to the application.

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

## 4. References

- Australian Heritage Database (2011) Department of Sustainability, Environment, Water, Population and Communities, viewed 14 December 2011, <<http://www.environment.gov.au/heritage/index.html>>.
- BoM (2011) Climate Statistics for Australian Locations. A Search for Climate Statistics for Warburton Airfield, Australian Government Bureau of Meteorology, viewed 14 December 2011, <[http://reg.bom.gov.au/climate/averages/tables/cw\\_013011.shtml](http://reg.bom.gov.au/climate/averages/tables/cw_013011.shtml)>.
- CALM (2002a) Biological Summary of the 2002 Biodiversity Audit for Western Australia, A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 - Great Victoria Desert 2 (GVD2) - Great Victoria Desert Central subregion), ed. N.L McKenzie, J.E May and S. McKenna, Government of Western Australia, Perth, Western Australia.
- CALM (2002b) Biological Summary of the 2002 Biodiversity Audit for Western Australia, A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 - Central Ranges 1 (CR1) - Mann-Musgrave Block subregion), ed. N.L McKenzie, J.E May and S. McKenna, Government of Western Australia, Perth, Western Australia.
- DEC (2011a) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation, viewed 14 December 2011, <<http://naturemap.dec.wa.gov.au>>.
- DEC (2011b) Feral Camels in Western Australia, Department of Environment and Conservation, viewed 23 December 2011, <<http://www.dec.wa.gov.au/content/view/3224/1968/1/1/>>.
- 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.
- ENV Australia (2011) Musgraves Flora and Fauna Desktop Review. Unpublished report prepared for Traka Resources Limited, January 2011.
- 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.
- Ward, B (2007) Feral Camel Distribution and Abundance of the Warburton Central Ranges and Northern Great Victoria Desert. Draft report Department of Environment and Conservation Perth WA.
- Weeds Australia (2011) An Australian Weeds Committee National, Canberra, viewed on 20 December 2011, <[www.weeds.org.au/](http://www.weeds.org.au/)>.

## 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.