



1. Application details

1.1. Permit application details

Permit application No.: 997/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Apache Northwest Pty Ltd (Apache)

1.3. Property details

Property: TERRITORIAL SEA PRODUCTION LICENSE 6 (TL/6)

Local Government Area:

Colloquial name: Varanus Island

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
9.86		Mechanical Removal	Hazard reduction or fire control

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Varanus Island is classified as Beard Vegetation Association 117: Hummock grasslands, grass steppe, soft spinifex (<i>Triodia pungens</i>). Semeniuk (1990) further described and mapped the vegetation of the island at a finer scale, distinguishing six vegetation assemblages. These are: (1) low (to 20 cm) open hermland of <i>Frankenia pauciflora</i> on exposed limestone, which is exposed to wind and sea spray and has poorly developed soil; (2) low (to 50 cm) open shrubland of <i>Scaevola spinescens</i>, <i>Rhagodia preissii</i>, and <i>Sarcostemma viminalis</i> subsp. <i>australe</i> on limestone plains and ridges inland from the exposed coastal limestone; (3) low (to 50 cm) open shrubland of <i>Sarcostemma viminalis</i> subsp. <i>australe</i>, <i>Capparis spinosa</i> and <i>Pittosporum phylliraeoides</i> on more sheltered and inland parts of undulating limestone terrain; (4) open grassland of <i>Spinifex longifolius</i> on white sands of coastal dunes; (5) closed mixed grassland/hermland of <i>Setaria dielsii</i> and <i>Amaranthus pallidiflorus</i> on the deeper orange sands of inland plains; and (6) low (to 50 cm) open shrubland of <i>Sarcostemma viminalis</i> subsp. <i>australe</i> with mixed grassland on orange sand, particularly where it is shallow over limestone.</p> <p>Since 1999, a total of 122 plant species have been recorded on Varanus Island and neighbouring Bridled Island. No Declared Rare Flora or Priority species have been found. The majority of plant species in the proposed clearing area are colonising or invasive species that readily inhabit previously disturbed areas.</p>	<p>The area under application is 9.86 ha which represents 34% of an area leased by Apache. All of the vegetation in the proposed clearing area has been previously removed or disturbed to establish and maintain access to oil and gas infrastructure and to reduce the risk of fire. The actual area of clearing in any one calendar year would be much less than 9.86 ha because of the following: (1) the majority of the 4.28 ha area covered by the gas plant and the 4.30 ha area covered by the crude storage bund is unvegetated; (2) estimates of the gas plant and crude storage tank areas also include roads, pathways and the majority of infrastructure except storage tanks and control buildings; (3) natural variation in climatic conditions will influence the growth of vegetation; and (4) vegetation will only be disturbed or removed where necessary (Apache 2005).</p> <p>The clearing methods proposed are: (1) manual (hand) removal of vegetation; (2) mechanical removal of vegetation (eg. bulldozer); (3) Chemical spraying of vegetation (eg. underneath pipe racks and cable trays); (4) disturbance to vegetation such as by placement of above-ground piping for electrical and water services and associated foot traffic; and (5) incineration of cleared vegetation material. It is proposed that the majority of clearing will be conducted by hand removal of vegetation.</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>According to Shepherd et al. (2001), approximately 100% of Beard Vegetation Unit 117 remains intact. However, the scale of Beards mapping is broad and previous clearing on Varanus Island has not been captured in these reports.</p> <p>Vegetation communities on Varanus Island are monitored in September of each year. Transects cover both disturbed and undisturbed areas (Apache 2005).</p>

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

Varanus Island has an area of 85 hectares and is the largest of the 34 islands, islets and rocks that make up the Lowendal group (Apache 2005). Varanus Island is a C Class Nature Reserve (Lowendal Nature Reserve 33902), declared for the purpose of conservation of flora and fauna. It is vested in the Conservation Commission of Western Australia and managed by the Department of Conservation and Land Management (CALM). Twenty-nine hectares are leased to Apache for the operation of oil and gas processing facilities. Petroleum activities have been operating on the island as well as in the surrounding waters since 1986.

The vegetation proposed to be cleared is part of Beard Vegetation Association 117: Hummock grasslands, grass steppe; soft spinifex (GIS database). According to Shepherd et al. (2001), 100% of the pre-European extent of Vegetation Association 117 remains, with 13.3% in IUCN Class I-IV Reserves. Semeniuk (1990) further described and mapped the vegetation of the island at a finer scale, distinguishing six vegetation assemblages, along with mangroves and unvegetated areas on beaches and limestone outcrops. The proposed clearing area is mapped as artificially disturbed, because the vegetation within it has been previously removed or disturbed to establish and maintain access to oil and gas infrastructure. The proposed clearing area does not include any mangroves or former mangrove habitat. Despite the survey by Semeniuk (1990) and annual monitoring of disturbed and undisturbed vegetation, no flora of conservation significance has been found within the proposed clearing area (Apache 2005; GIS database).

Varanus Island has high conservation value due to the number of seabirds and turtles that nest on it. However, these species occupy beaches and/or adjacent sand dunes; habitats that predominantly occur outside the proposed clearing area.

CALM considers the application to clear native vegetation for the routine maintenance of oil and gas infrastructure and fire-risk reduction on Apache's Varanus Island Lease as having a negligible impact on the biodiversity values of the island considering the confined nature of the clearing to existing infrastructure and pre-disturbed areas (CALM 2006).

Given that the area of proposed clearing has been previously cleared and that large areas of undisturbed contiguous vegetation are abundant elsewhere on Varanus Island and surrounding islands in the Lowendal, Barrow and Montebello Island groups, it is unlikely that the vegetation on it is of high biodiversity significance. Therefore, the proposal is considered not likely to be at variance to this principle.

Methodology

Apache (2005)

CALM (2006)

GIS database: Pre-European Vegetation - DA 01/01

GIS database: Declared Rare and Priority Flora List - CALM 01/07/05

Semeniuk (1990)

Shepherd et al. (2001)

(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

Varanus Island has high conservation value due to the number of seabirds and turtles that nest on it. Approximately 87 bird species have been recorded on the Lowendal Islands and Varanus Island is an important breeding site for the Wedge-tailed Shearwater, which inhabits the shifting sand dunes behind the beaches (Apache 2005). This species is listed under the Japan-Australia Migratory Bird agreement, a treaty for the protection of migratory birds and birds in danger of extinction, along with their environment, between Japan and the Government of Australia. Other sea birds such as Rosette Terns, Crested terns and Lesser Crested Terns perch and breed on the rocky shores of the Lowendal Islands. Many of the sandy beaches are important nesting sites for the Green Turtle *Chelonia mydas*, the Flatback Turtle *Natator depressus*, and the Hawksbill Turtle *Eretmochelys imbricata*, all of which are listed as threatened (Vulnerable) under Schedule 1 (Fauna that is rare or is likely to become extinct) of the *Wildlife Conservation Act 1950*. About a dozen types of lizards have been observed on the Lowendal Islands (Apache 2005).

Significant fauna of the island has been and continues to be monitored (including marine assemblages, seabirds, wedge-tailed shearwaters, and sea turtles) by Apache (Apache 2005). While the oil and gas processing plant is immediately adjacent to Wedge-tailed Shearwater rookeries and sea turtle nesting beaches, the proposed clearing area is not likely to be used as a feeding, nesting or shelter resource for these species as they occupy more coastal habitats (beaches and adjacent dunes). In addition, Apache has management procedures in place to avoid disturbance of significant fauna in the nearby area. For example, the use of bright lights near beaches is to be avoided between November and March to avoid attracting turtles and hatchlings away from the water, and no disturbance is to be created within 10 m from any existing Wedge-tailed Shearwater nesting burrow (Apache 2005).

For other fauna species such as lizards, the vegetation in the proposed clearing area may provide some habitat. However, it is not likely to provide significant habitat for fauna given that it has been previously cleared,

disturbed and/or degraded, and that large areas of undisturbed contiguous vegetation are abundant elsewhere on Varanus Island and surrounding islands in the Lowendal, Barrow and Montebello Island groups.

Therefore, the proposal is considered not likely to be at variance to this principle.

Methodology Apache (2005)

(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

Since 1999, a total of 122 species of plants have been recorded on Varanus Island and neighbouring Bridled Island in the Lowendal Island group (Apache 2005). No declared rare plant species listed under the Schedules of the *Wildlife Conservation Act 1950*, or plants listed by CALM as priority flora are known from the island or have been found during flora and vegetation surveys or annual vegetation monitoring activities (Apache 2005, GIS database).

Astron (2001, 2002, 2004) considers several plant species found on Varanus Island to be significant for one or more of the following reasons (cited in Apache 2005):

- There are less than two or three remaining populations on Varanus Island and they occur within Apache's lease area, therefore significant in terms of local biodiversity and for maintaining original species composition on the island;
- The species is at the extreme limit of its known range;
- The species is not abundant on the island and is known to be difficult to regenerate; or
- The species has not been fully identified taxonomically.

However, no flora of conservation significance has been recorded as present within the area of clearing proposed under this application. As the vegetation in the proposed clearing area has been disturbed or cleared previously, the majority of plant species it comprises are colonising or invasive species and perennial shrubs are isolated occurrences (Apache 2005).

Therefore, it is not likely that the proposal will be at variance to this principle.

Methodology Apache 2005
 Astron (2001)
 Astron (2002)
 Astron (2004)
 CALM 2005
 GIS Database: Declared Rare and Priority Flora List - CALM 01/07/05

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

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

There are no known threatened ecological communities on Varanus Island (GIS database; Apache 2005). Therefore the proposed clearing is unlikely to be at variance to this principle.

Methodology Apache 2005
 GIS database: Threatened ecological communities - CALM 12/0405.

(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 vegetation proposed to be cleared is part of Beard Vegetation Association 117: Hummock grasslands, grass steppe; soft spinifex (GIS database). According to Shepherd et al. (2001), 100% of the pre-European extent of Vegetation Association 117 remains, with 13.3% in IUCN Class I-IV Reserves (Shepherd et al. 2001).

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Class I-IV status**	% in IUCN reserves
IBRA Bioregion: Pilbara	17,944,694	17,944,694	100	Least concern	
Beard vegetation association: 117	917,087	917,087	100	Least concern	13.3

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

Semeniuk (1990) further described and mapped the vegetation of the island at a finer scale, distinguishing six

vegetation assemblages, along with mangroves and unvegetated areas on beaches and limestone outcrops. The proposed clearing area does not include any mangroves or former mangrove habitat. It is mapped by Semeniuk as artificially disturbed areas as all of the vegetation within it has been previously removed or disturbed to establish and maintain access to oil and gas infrastructure and to reduce the risk of fire.

The proposed area of clearing is up to 9.86 ha which represents 34% of the area leased from CALM by Apache Energy, and less than 12% of the 85 ha area of Varanus Island. The actual area of proposed clearing in any one calendar year would be much less than 9.86 ha.

Given all of the above, the proposal is considered to be not at variance to this principle.

Methodology Department of Natural Resources and Environment (2002)
Semeniuk (1990)
GIS database: Pre-European Vegetation - DA 01/01
Shepherd et al. (2001)

(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 defined watercourses or wetlands on Varanus Island (Apache 2005, GIS database). In addition, none of the vegetation assemblages described and mapped by Semeniuk (1990) comprise riparian vegetation. Therefore, the proposal is not considered to be at variance to this principle.

Methodology Apache (2005)
GIS database: Hydrography, Linear - DoE 1/2/04.
Semeniuk (1990)

(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 (removal and disturbance) of vegetation will be undertaken only in areas that have been previously disturbed. Most of the clearing (over 96%) will involve hand removal of vegetation. This method is likely to minimise clearing-related land degradation, particularly soil erosion. Some small areas of clearing will involve: (a) either hand removal or spraying (3.4%); (b) either hand removal or bulldozing (0.1%); or (c) laying of metal pipe on top of vegetation (0.1%). Consequently, the potential area of clearing by bulldozing, a higher-impact method, is minimal. Apache (2005) stated that soil erosion by wind or water is unlikely as most of the proposed clearing is located in areas with shallow sandy soil and low relief, and the soils have been compacted from previous operations.

Given the low average annual rainfall (approximately 250 mm per annum) and high evaporation rate, it is highly unlikely that the proposed clearing of up to 9.86 ha of previously disturbed low shrubland, herbland, and grassland vegetation will result in waterlogging or increased soil salinity.

Twelve weed species and six introduced mainland plant species have been recorded on Varanus Island. None of these are Declared Noxious Weeds. However, Apache implements an ongoing weed control program on the Island, which is undertaken by the environmental specialists, Astron Environmental Services Pty Ltd (Apache 2006). This includes monitoring, searches, mapping and eradication (Apache 2005) and forms part of Varanus Island Vegetation Management Plan approved by CALM (Apache 2006). Strict quarantine procedures are also in place to ensure that the risk of further introductions of weeds or other foreign plant species is minimised (Apache 2006).

In their Vegetation Management Plan, Apache have committed to the following management controls prior to the removal or disturbance of vegetation:

- A survey of the area will be done to check for the presence of weeds; and
- If weed species are present, they are to be removed and the surrounding soil will be checked for the presence and if necessary, removal of seeds (Apache 2006).

Given all of the above, the clearing proposed under this application is unlikely to cause appreciable land degradation on or offsite. Therefore, the proposal is considered not likely to be at variance to this principle.

Methodology Apache (2005)
Apache (2006)

(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 at variance to this Principle

Varanus Island is a C Class Nature Reserve vested in the Conservation Commission of Western Australia and managed by CALM. The proposed clearing area falls within a 29 ha area currently leased to Apache for the

operation of existing oil and gas processing facilities.

CALM considers the application to clear native vegetation for the routine maintenance of oil and gas infrastructure and fire-risk reduction on Apache's Varanus Island lease as having a negligible impact on the biodiversity values of the island considering the confined nature of the clearing to existing infrastructure and pre-disturbed areas (CALM 2006).

Therefore, the proposal is considered to be not at variance to this principle.

Methodology CALM (2006)

(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 at variance to this Principle

There are no wetlands or watercourses on Varanus Island and surface water only occurs very briefly as a result of major rainfall events.

The uppermost groundwater aquifer is located within the Pleistocene aged sands and is unconfined. The watertable level and groundwater flow patterns are subject to tidal influence, and groundwater quality is naturally saline. Investigations conducted in the mid-1990s found that the watertable over most of the Apache lease area lies at a mean elevation of 1.8 m above sea level at low tide and 2.6 m at high tide, corresponding to a daily height variation of 0.8 m (Apache 2005).

The amount of increased groundwater recharge that could potentially result from the proposed clearing of up to 9.86 ha of previously disturbed low shrubland, herbland, and grassland vegetation is considered negligible and would not be detrimental to underground water quality. Therefore, the proposal is considered to be not at variance to this principle.

Methodology Apache (2005)

(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 at variance to this Principle

There are no wetlands or watercourses on Varanus Island and any brief occurrence of surface water is limited to rainfall events. Given the sandy soils and rock outcrop, the coastal location, the low annual rainfall (~250 mm pa) and the high evaporation rate, the Island is not prone to flooding. In addition, natural groundwater levels are unlikely to be altered as a result of the proposed vegetation clearing of up to 9.86 ha of previously disturbed vegetation. Therefore, the proposal is considered to be not at variance with this principle.

Methodology

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

Comments

Apache has a current operating licence and three works approval licences granted in accordance with the *Environmental Protection Act 1986* (DoE, 2005). The proposed clearing is not at variance to these licences, and no amendments to the licences will be required. There is no inforce groundwater or surface water licence for this area and a Water Allocation is not required for the proposed fire-risk reduction and maintenance activities (DoE, 2006).

There are no Registered Indigenous Heritage Sites or native title claims over the area under application (GIS database).

Methodology

DoE (2005)

DoE (2006)

GIS database: Native Title Claims - DLI 7/11/2005

GIS database: Aboriginal Sites of Significance y DIA 28/02/2003

4. Assessor's recommendations

Purpose	Method Applied	Area (ha)/ trees	Decision	Comment / recommendation
Hazard reduction or fire control	Mechanical Removal	9.86	Grant	The assessable criteria have been addressed and the clearing as proposed is not likely to be at variance with Principles (a), (b), (c) and (d), and is not at variance with Principles (e), (f), (g), (h), (i), and (j). Therefore, the assessing officer recommends that the permit be granted subject to the following conditions: 1. The Permit Holder shall record the following for each instance of clearing: (a) the location where clearing occurred, expressed as grid

coordinates using the Geocentric Datum of Australia 1994 coordinate system;

- (b) the area cleared in square meters;
- (c) the method of clearing;
- (d) the purpose of clearing; and
- (e) the area rehabilitated in square meters.

2. The Permit Holder shall provide a report to the Director, Environment, DoIR by 9 May of each year in which clearing was conducted, setting out the records required under condition 1 of this permit in relation to clearing carried out between 1 January and 31 December of the previous year.

5. References

- Apache (2005) Varanus Island supporting documentation for a clearing permit (purpose permit): fire-risk reduction and maintenance activities. Unpublished report to the Department of Industry and Resources. Perth, Western Australia.
- Apache (2006) Varanus Island Vegetation Management Plan. Unpublished report to the Department of Conservation and Land Management. Perth, Western Australia.
- CALM Land clearing proposal advice. Advice to Assessing Officer, Department of Industry and Resources (DoIR). 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.
- DoE (2005) Water Allocation/Licence Advice. Advice to Assessing Officer for CPS 950, Department of Industry and Resources (DoIR). Department of Environment, Western Australia.
- DoE (2006) Water Allocation/Licence Advice. Advice to Assessing Officer for CPS 997, Department of Industry and Resources (DoIR). Department of Environment, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Semeniuk V. (1990) Appendix 11 Monitoring of Terrestrial Vegetation, Lowendal Island Group for Harriet Oilfield development. Results of survey June 1990. In Harriet Field development Fifth Annual Environmental Report, June 2000. Unpublished report edited by LeProvost Environmental Consultants for Hadson. Reproduced in Apache (2005).
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAWA	Department of Agriculture, Western Australia.
DA	Department of Agriculture, Western Australia.
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
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	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

P1	Priority One - Poorly Known taxa: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands.
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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.