Government of **Western Australia**
Department of **Mines and Petroleum**

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 3179/1
**Permit type:** Purpose Permit

### 1.2. Proponent details

**Proponent's name:** **Shark Bay Resources Pty Ltd**

### 1.3. Property details

**Property:** *Shark Bay Solar Salt Industry Agreement Act 1983*, Mining Lease 260SA (AM 70/260)
**Local Government Area:** Shire of Shark Bay
**Colloquial name:** Usless Loop Project

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|---|---|---|---|
| 9 | | Mechanical Removal | Landfill |

## 2. Site Information

### 2.1. Existing environment and information

*2.1.1. Description of the native vegetation under application*

**Vegetation Description**
Vegetation within the application area has been mapped at a 1:250,000 scale as the following Beard Vegetation Association (Shepherd, 2007; GIS Database);

**- 112:** hummock grasslands, shrub steppe; *Acacia ligulata* over *Triodia plurinervata*.

Mattiske Consulting Pty Ltd (1996) describe the vegetation of the application area as:

**Association 9:** low closed to open shrubland with occasional emergent *Acacia ligulata* over *Triodia plurinervata* and/or *Triodia bromoides* on red sand dunes, occasionally with limestone pebbles larger than 20 centimetres, on the lower to upper slopes above birridas.

**Clearing Description**
Shark Bay Resources Pty Ltd proposes to clear up to nine hectares of native vegetation within a purpose permit boundary totalling approximately 9.4 hectares. The proposed clearing is for the purposes of constructing a landfill site to receive inert waste (class I landfill), putrescible waste (class II landfill) and type 1 special waste (Shark Bay Resources Pty Ltd, 2009). This site will be used by Shark Bay Resources Pty Ltd (2009) and the Useless Loop town site.

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

to

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

**Comment**
The vegetation condition has been derived from descriptions provided by Sark Bay Resources Pty Ltd (2009), Mattiske Consulting Pty Ltd (1996) and aerial imagery viewed by the assessing officer.

Much of the application area has suffered disturbance from a historic borrow pit.

## 1. 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 is located within the Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (Shepherd, 2007; GIS Database). Approximately 42.8% of the pre-European vegetation remains within the Geraldton Sandplains IBRA region (Shepherd, 2007; GIS database). The vegetation of the Geraldton Sandplains IBRA region comprises mainly proteaceous scrub-heaths, rich in endemics on sandy earths. In terms of its flora and fauna, the area represents the interzone between the south-western bioregions of Western Australia and the Carnarvon bioregion (Department of Conservation and Land Management, 2002).

The application area is located within a section of the Shark Bay Resources Pty Ltd State Agreement Mining Lease area that has been subject to a high degree of disturbance from mining activities over a long period of time. Aerial imagery indicates that the application area is situated adjacent to several salt crystallisation ponds and the Shark Bay airstrip (Shark Bay Resources Pty Ltd, 2009). The aerial imagery and photographs submitted with the clearing permit application demonstrate that the vegetation throughout the application area has been adversely impacted by a historic borrow pit (Shark Bay Resources Pty Ltd, 2009; GIS Database). As

a result, the vegetation condition ranges from 'Very Good' in small isolated areas; to 'Degraded' for areas within the vicinity of the historical borrow pit and access tracks.

Mattiske Consulting Pty Ltd (1996) surveyed the Shark Bay Resources Pty Ltd State Agreement Mining Lease area and recorded a total of 185 vascular plants species from 124 genera and 54 families. The floristic diversity of the vegetation that has been identified on Mining Lease 260SA would be considered high. The vegetation within the application area was identified and described as Association 9: low closed to open shrubland with occasional emergent *Acacia ligulata* over *Triodia plurinervata* and/or *Triodia bromoides* on red sand dunes, occasionally with limestone pebbles larger than 20 centimetres, on the lower to upper slopes above birridas (Mattiske Consulting Pty Ltd, 1996). Mattiske Consulting Pty Ltd (1996) commented that Association 9 was common in the north of the lease area and also off the mining lease area.

The previous disturbances that have occurred within the application area as well as the nearby mining activities are likely to have impacted on the biodiversity of the area, which would otherwise be quite high. Given the widespread distribution of higher quality vegetation throughout and off the mining lease area (Mattiske Consulting Pty Ltd, 1996), the vegetation within the application area is unlikely to be considered an area of outstanding biodiversity.

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

**Methodology**

Department of Conservation and Land Management (2002)
Mattiske Consulting Pty Ltd (1996)
Shark Bay Resources Pty Ltd (2009)
Shepherd (2007)
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- Shark Bay 1.4m Orthomosaic - Landgate 2002

**(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**

The vegetation within the application area has been described by Mattiske Consulting Pty Ltd (1996) as low closed to open shrubland with occasional emergent *Acacia ligulata* over *Triodia plurinervata* and/or *Triodia bromoides* on red sand dunes, occasionally with limestone pebbles large than 20 centimetres, on the lower to upper slopes above birridas. Mattiske Consulting Pty Ltd (1996) stated that the vegetation association of the application area was common in the north of the mining lease area and that the vegetation association is common off the lease area. As the vegetation and landforms within the application area are common throughout the lease area and adjoining areas, it would be considered likely that most fauna would be able to relocate into these surrounding areas if present within the application area upon clearing commencing.

The application area is located within a section of the Shark Bay Resources Pty Ltd State Agreement Mining Lease area that has been adversely impacted on by mining activities over a long period of time. Aerial imagery indicates that the application area is situated adjacent to several salt crystallisation ponds and the Shark Bay airstrip (Shark Bay Resources Pty Ltd, 2009). The aerial imagery and photographs demonstrate that the vegetation throughout the application area has been adversely impacted by the construction of a historical borrow pit (Shark Bay Resources Pty Ltd, 2009). The relatively high degree of disturbance that has occurred within the application area is likely to have impacted on the habitat value for the area.

Given that the application area has been disturbed by past and present mining activities and that larger areas of higher quality vegetation exist throughout and adjacent to the Shark Bay Resources Pty Ltd State Agreement Mining Lease area, it is unlikely that the vegetation within the application area would be considered as significant habitat for fauna.

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

**Methodology**

Mattiske Consulting Pty Ltd (1996)
Shark Bay Resources Pty Ltd (2009)

**(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**

Mattiske Consulting Pty Ltd undertook a flora and vegetation survey of Shark Bay Resources Pty Ltd Mining Lease area (Mattiske Consulting Pty Ltd, 1996). The flora and vegetation survey included a search of the Department of Environment and Conservation's (DEC's) Declared Rare and Priority Flora Database and a field survey to define and map the vegetation communities within the survey area and a search for the existence of conservation significant species (Mattiske Consulting Pty Ltd, 1996).

Mattiske Consulting Pty Ltd (1996) identified the vegetation within the application area as Association 9 - low closed to open shrubland with occasional emergent *Acacia ligulata* over *Triodia plurinervata* and/or *Triodia*

*bromoides* on red sand dunes, occasionally with limestone pebbles larger than 20 centimetres, on the lower to upper slopes above birridas. Mattiske Consulting Pty Ltd (1996) reported that Association 9 comprised of the DRF *Triodia bromoides*. The Assessing Officer reviewed Florabase on 4 August 2009 and notes that *Triodia bromoides* has been reclassified as a Priority 4 species (Western Australian Herbarium, 1998-2009). Given the vegetation type of the application area, *Triodia bromoides* is likely to be present within the application area.

Mattiske Consulting Pty Ltd (1996) stated that *Triodia bromoides* is common in many areas of the south-eastern and southern parts of the Shark Bay Resources Pty Ltd Mining Lease area and that Association 9 was common on and off the lease area. If present within the application area, the proposed clearing may impact on a small number of individuals of *Triodia bromoides*. Given that *Triodia bromoides* is common in many areas of the south-eastern and southern parts lease area (Mattiske Consulting Pty Ltd, 1996), the proposed clearing is unlikely to significantly impact on the conservation of this species.

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

**Methodology** Mattiske Consulting Pty Ltd (1996)
Western Australian Herbarium (1998-2009)

**(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 (TEC's) within the application area (Shark Bay Resources Pty Ltd, 2009; GIS Database). The nearest known TEC is located approximately 75 kilometres south-east of the application area (GIS Database). Given the distance between the proposal and the nearest known TEC, the proposed clearing is unlikely to impact on the conservation of that TEC.

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

**Methodology** Shark Bay Resources Pty Ltd (2009)
GIS Database:
- Threatened Ecological Communities

**(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 is located within the Geraldton Sandplains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 42.8% of the pre-European vegetation remains (Shepherd, 2007; GIS Database). See table below.

The vegetation of the clearing application area has been mapped as Beard Vegetation Association 112: hummock grasslands, shrub steppe; *Acacia ligulata* over *Triodia plurinervata* (GIS Database). According to Shepherd (2007) approximately 98.3% of Beard Vegetation Association 112 remains within the State. See table below.

There is no information available to indicate the extent of Beard vegetation association 112 remaining within the Geraldton Sandplains IBRA region.

According to the Bioregional Conservation Status of Ecological Vegetation Classes, the conservation status for the Geraldton Sandplains Bioregion is "Depleted" with approximately 42.8% of the pre-European vegetation remaining, the conservation status of the Geraldton Sandplains IBRA region is unlikely to be considered at risk of becoming listed as "Vulnerable" (Department of Natural Resources and Environment, 2002).

According to the Bioregional Conservation Status of Ecological Vegetation Classes the conservation status for Beard Vegetation Association 112 is of "Least Concern" (Department of Natural Resources and Environment, 2002).

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-european % in IUCN Class I-IV Reserves |
|---|---|---|---|---|---|
| IBRA Bioregion – Geraldton Sandplains | 3,136,024 | 1,341,266 | ~42.8 | Depleted | 15.3 |
| Beard Veg Assoc. – State | | | | | |
| 112 | 26,454 | 26,004 | ~98.3 | Least Concern | 1.1 |
| Beard Veg Assoc. – Bioregion | | | | | |
| No information available | - | - | - | - | - |

* Shepherd (2007)
** Department of Natural Resources and Environment (2002)

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, (2007)
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- 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 drainage lines within the application area (GIS Database). Aerial imagery and photographs supplied with the clearing permit application indicate that the vegetation within the application area is not growing in association with a wetland or watercourse (Shark Bay Resources Pty Ltd, 2009; GIS Database)

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

**Methodology** Shark Bay Resources Pty Ltd (2009)
GIS Database:
- Geodata, Lakes
- Hydrography, Linear
- Shark Bay North 1.4m Orthomosaic
- Rivers

**(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 application area is located at Useloop Loop which experiences mean annual rainfall of 300 millimetres and mean annual evaporation of approximately 2,600 millimetres (Mattiske Consulting Pty Ltd, 1996; GIS Database). Due to the sandy nature of the soils within the application area, it would be expected that any runoff from normal season rainfall events would infiltrate into the soil which would thereby minimise the risk of water erosion or water logging occurring.

Groundwater salinities within the application area have been measured in the range of 3,000-7,000 milligrams/Litre Total Dissolved Solids (GIS Database). The application area is situated immediately adjacent to several salt crystallisation ponds which would be considered as hyper-saline. Topographic information indicates that application area is located at a vertical elevation ranging between 0-10 metres above the crystallisation ponds (GIS Database). Given the elevation of the application area from the salt crystallisation ponds as well as the low rainfall to high evaporation rate of the Shark Bay area, the proposed clearing is unlikely to increase land salinisation on or off site.

Once clearing has been undertaken the cleared area will be used as a landfill site, therefore, not leaving soil open to erosion. The assessing officer recommends that should a clearing permit be granted a condition be placed on the permit for the purpose of staged clearing.

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

**Methodology** Mattiske Consulting Pty Ltd (1996)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity
- Topographic Contours

**(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 located within the Shark Bay Area Register of National Estate and the marine area surrounding the application area is part of the Shark Bay Marine Park (Australian Heritage Database, 2009; GIS Database). The Assessing Officer notes that the application area is located within a portion of the *Shark Bay Solar Salt Industry Agreement Act 1983* Mining Lease 260SA that has been excised from the Shark Bay World Heritage Area (Australian Heritage Database, 2009).

The Shark Bay Marine Park boundary is located approximately 1.5 kilometres west of the application area at its closest point (GIS Database). The Shark Bay Area Register of National Estate and Shark Bay Marine Park have immense conservation value as they provide significant habitat for a high number of marine aquatic and terrestrial fauna species (Australian Heritage Database, 2009). The application area is located within the operational Shark Bay Resources Pty Ltd mine site and as a result the vegetation has been subject to a considerable degree of disturbance over many years (Shark Bay Resources Pty Ltd, 2009). Aerial imagery and photographs submitted by Shark Bay Resources Pty Ltd indicate that the application area is situated immediately adjacent to several salt crystallisation ponds and the Shark Bay airstrip (Shark Bay Resources Pty Ltd, 2009), and it appears evident that the vegetation within the application area has been adversely impacted on by the construction of a historic borrow pit (Shark Bay Resources Pty Ltd, 2009). Given the disturbances that have occurred, it is likely that the conservation value of the vegetation within the vicinity of the Shark Bay Resources Pty Ltd mine site has been significantly reduced. It is considered unlikely that the conservation value of the Shark Bay Area Register of National Estate or Shark Bay Marine Park would be adversely impacted by the proposed clearing.

The nearest Department of Environment and Conservation managed land is Friday Island Nature Reserve which is located approximately 4 kilometres north-west of the application area (GIS Database). Friday Island is listed as an 'A' Class nature reserve and is an important guano deposit and rookery for Cormorants. Given its isolation and distance from the application area, it is unlikely that the proposed clearing will have an impact on Friday Island Nature Reserve or the Cormorants that reside on the island.

The Heirisson Prong Biosphere Project which is situated approximately eight kilometres north-west of the application area is of conservation significance as the project aims to re-establish rare and endangered mammals on a mainland peninsula at Shark Bay, Western Australia (Wildlife Research and Management Pty Ltd, 2005). The area north of the predator proof fence is managed by the Useless Loop Community Biosphere Project Group Inc (ULCBPG) under a management agreement signed in 1990 between the ULCBPG and the Shark Bay Salt Joint Venture (SBSJV) (Richards et al. 2000). Given the distance separating the Heirisson Prong Biosphere Project and the application area, it is unlikely that the proposed clearing will have a detrimental impact to the conservation 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 (2009)
Richards et al., (2000)
Shark Bay Resources Pty Ltd (2009)
Wildlife Research and Management Pty Ltd (2005)
GIS Database:
- CALM Managed Lands and Waters

**(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**

Aerial imagery and photographs supplied with the clearing permit application, as well as analysis of Geographic Information System (GIS) hydrographic information indicates that there are no permanent wetlands or watercourses within the application area (Shark Bay Resources Pty Ltd, 2009; GIS Database). The application area is situated adjacent to several salt crystallisation ponds which are used by Shark Bay Resources Pty Ltd for the production of salt. The quality of surface water within the crystallisation ponds is likely to be considered hyper-saline. The proposed clearing is not likely to reduce the quality of surface water in any nearby watercourses.

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

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

**Methodology** Shark Bay Resources Pty Ltd (2009)
GIS Database:
- Hydrography, linear
- Rainfall, Mean Annual
- 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 proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding for the following reasons:

- low annual rainfall of approximately 300 millimetres rainfall per year (GIS Database);
- high evaporation rates of approximately 2,600 millimetres rainfall per year (GIS Database);
- gently undulating topography (GIS Databse); and
- lack of standing waterbodies or watercourses (GIS Database)

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

**Methodology** GIS Database
- Hydrography, linear
- Topographic Contours, Statewide

### Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

**Comments**

The clearing permit application was advertised on 20 July 2009 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

There is one Native Title claim over the area under application; WC98/017 (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenement 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 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 Sites of Aboriginal Significance are damaged through the clearing process.

The applicant was issued with a works approval licence (Licence Number L7184/1997/9) on 20 September 2007, from the Department of Environment and Conservation. This Licence allows for the disposal of waste within Mining Lease 260SA (AM 70/260) pursuant to certain terms and conditions.

It is the proponent's responsibility to liaise with the DEC and the DoW to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licence or approvals are required for the proposed works.

**Methodology** GIS Database
- Native Title Claims
- Sites of Aboriginal Significance

## 2. Assessor's comments

**Comment**

The proposal has been assessed against the Clearing Principles and the proposed clearing is not likely to be at variance to Principles (a), (b), (c), (d), (e), (f), (g), (h), (i) and (j).

Should the permit be granted, it is recommended that conditions be imposed on the permit for the purposes of weed management, retaining topsoil and vegetative material, staged clearing, recording keeping and permit reporting.

## 3. References

Australian Heritage Database (2009). Shark Bay Area, Shark Bay, WA, Australia. Department of Environment, Water, Heritage and the Arts, Australian Government, http://www.environment.gov.au/heritage/places/world/shark-bay/information.html, report produced 4 August 2009.

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.

Department of Conservation and Land Management (2002). "A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions". Department of Conservation and Land Management, pp 252-264.

Keighery, B.J. (1994). Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting Pty Ltd (1996). Flora and Vegetation - Useless Loop Shark Bay, Prepared for John Consulting Services, Prepared by Mattiske Consulting Pty Ltd, September 1996.

Richards, J. D., Short, J. and Cane, B. (2000). A short history of community involvement in the Heirisson Prong Endangered Mammal Research Project 1989 to 1999, and beyond... Report to the Useless loop Community Biosphere Project Group Inc, published by CSIRO Wildlife and Ecology, Perth Western Australia.

Shark Bay Resources Pty Ltd (2009). Additional information Accompanying Clearing Permit Application 3179/1, Prepared for the Department of Mines and Petroleum, Prepared by Shark Bay Resources Pty Ltd.

Shepherd, D.P. (2007). 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Western Australian Herbarium (1998-2009). Florabase - The Western Australia Flora, A search for *Plectrachne bromoides*, Department of Environment and Conservation, <http://florabase.calm.wa.gov.au.html>, accessed 4 August 2009.

Wildlife Research and Management Pty Ltd (2005). Heirisson Prong Threatened Species Project, <http://www.wildliferesearchmanagement.com.au/overview.htm>, last updated 8 November 2005, accessed 31 July 2008.

## 4. Glossary

### Acronyms:

| | |
|---|---|
| **BoM** | Bureau of Meteorology, Australian Government. |
| **CALM** | Department of Conservation and Land Management, Western Australia. |
| **DAFWA** | Department of Agriculture and Food, Western Australia. |
| **DA** | Department of Agriculture, Western Australia. |
| **DEC** | Department of Environment and Conservation |
| **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. |
| **DMP** | Department of Mines and Petroleum, Western Australia. |
| **DoE** | Department of Environment, Western Australia. |
| **DoIR** | Department of Industry and Resources, Western Australia. |
| **DOLA** | Department of Land Administration, Western Australia. |
| **DoW** | Department of Water |
| **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. 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. |