



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5808/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Yarri Mining Pty Ltd

1.3. Property details

Property: Mining Lease 08/488
Mining Lease 08/496
Local Government Area: Shire of Ashburton
Colloquial name: Onslow Camp Dunes Project – Stage 2.

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: 24 October 2013
Decision Date: Grant

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>Beard vegetation associations have been mapped over much of Western Australia. The following Beard vegetation association occurs in the application area (GIS Database):</p> <ul style="list-style-type: none"> Cape Yannare Coastal Plain 670: Hummock grasslands, shrub steppe; scattered shrubs over <i>Triodia basedowii</i>. <p>Flora and vegetation surveys of the application area identified the following vegetation communities within the application area (Newland Environmental, 2012 and 2013c):</p> <ul style="list-style-type: none"> <i>Triodia</i> open hummock grassland on sand dunes; <i>Triodia</i> hummock grassland on plains; <i>Tecticornia</i> sp. flood plains; Scalded claypan; <i>Triodia epactia</i> sand dune; <i>Triodia schinzii</i> sand dune; Scattered shrub dune swale; <i>Triodia epactia</i> sand plain; <i>Tecticornia</i> sp. on flood plains; and Vegetated clay pan. 	<p>Onslow Camp Dunes Project - Stage 2. Yarri Mining Pty Ltd proposes to clear up to 37.17 hectares of native vegetation within a total boundary of approximately 60.17 hectares, to establish a dune sand mining operation and mining-related infrastructure. The project is located approximately 14.3 kilometres south of Onslow, in the Shire of Ashburton.</p>	<p>Excellent: Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species (Keighery, 1994);</p> <p>to</p> <p>Degraded: basic vegetation structure severely impacted by disturbance (Keighery, 1994).</p>	<p>Vegetation condition in the application area was assessed during flora and vegetation surveys undertaken over the application area. The vegetation condition of the surveyed area was assessed using condition scales based on Trudgen (1988). The vegetation condition recorded within the surveyed areas was converted to corresponding conditions from the Keighery (1994) scale.</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**

The application area is situated in the Cape Range subregion of the Carnarvon bioregion as described in the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This subregion is described as consisting of a mosaic of saline alluvial plains with samphire and saltbush low shrublands, Bowgada low woodland on sandy ridges and plains, Snakewood scrub on clay flats and tree to shrub steppe over hummock grasslands on and between red sand dune fields (Department of Conservation and Land Management, 2002). Limestone strata with *Acacia stuartii* or *A. bivenosa* shrubland outcrop in the north, where extensive tidal flats in sheltered embayments support mangal communities (Department of Conservation and Land Management, 2002).

Rapallo and Newland Environmental were commissioned to undertake Level 1 fauna surveys of the application area in 2011 and 2013 respectively (Rapallo, 2011; Newland Environmental, 2013a). The fauna survey undertaken by Rapallo in 2011 surveyed the southern half of the application area, whereas the fauna survey undertaken by Newland Environmental in 2013 surveyed the northern half of the application area. During the fauna survey undertaken by Rapallo 11 species of reptiles, 24 species of bird, three native mammal species and three introduced mammal species were recorded (Rapallo, 2011). During the survey undertaken by Newland Environmental in 2013 one native mammal species, three introduced mammal species, 21 bird species and 20 reptile species were recorded (Newland Environmental, 2013a). The fauna habitats recorded in the application area are widespread at both the local and regional level (Rapallo, 2011; Newland Environmental, 2013a). The habitats of the project area are relatively homogeneous and as such, are unlikely to support a high faunal diversity (Newland Environmental, 2013a).

Flora and vegetation surveys of the application area were undertaken in 2011 and 2013 (Newland Environmental, 2012 and 2013c). The flora and vegetation survey undertaken by Newland Environmental in 2011 surveyed the southern half of the application area, with the northern half of the application area surveyed by Newland Environmental in 2013. The flora and vegetation survey undertaken in 2011 identified 4 vegetation associations in the surveyed area whereas the survey undertaken in 2013 identified six vegetation associations in the surveyed area (Newland Environmental, 2012 and 2013c). There were no vegetation associations identified during these surveys which were considered as being rare, restricted, unique or representative of Threatened Ecological Communities or Priority Ecological Communities (Newland Environmental, 2012 and 2013c). The condition of the surveyed vegetation varied from excellent to degraded (Newland Environmental, 2012 and 2013c). Factors contributing to the assigned vegetation condition were the presence of weed species and erosion and scouring within the surveyed areas (Newland Environmental, 2012 and 2013c).

A total of 59 vascular taxa from 42 genera and 19 families and 48 vascular taxa from 36 genera and 17 families were recorded during the surveys undertaken in 2011 and 2013 respectively (Newland Environmental, 2012 and 2013c). *Poaceae*, *Fabaceae* and *Chenopodiaceae* were the dominant families in terms of taxa and genera numbers (Newland Environmental, 2012 and 2013c). No Threatened or Priority listed flora species were recorded during both surveys (Newland Environmental, 2012 and 2013c). Four introduced flora species were recorded during these surveys; Buffel Grass (*Cenchrus ciliaris*), Birdwood Grass (*Cenchrus setiger*), Purslane (*Portulaca oleracea*) and Mimosa Bush (*Vachellia farnesiana*) (Newland Environmental, 2012 and 2013c). None of these species are listed as 'Declared Plants' under the *Agricultural and Related Resources Protection Act 1976* (Newland Environmental, 2012 and 2013c). To minimise the impact clearing could have on biodiversity values within the area, a weed management condition has been placed on the permit.

The Onslow regional area appears to be outside of the high diversity areas associated with the central and eastern Pilbara Region (Newland Environmental, 2012 and 2013c). The number of flora taxa recorded during both surveys is considered representative of the typical floristic diversity expected for the Onslow Region, in a small survey area (Newland Environmental, 2012 and 2013c).

The application area is situated approximately 15 metres at its closest point from Red Book area 9.8: Coastal Region Exmouth Gulf To Mary Anne Islands (GIS Database). This Red Book area was originally demarcated in the belief the area may provide a supply of nutrients to the adjacent marine ecosystem as well as being a nursery area for fisheries (Environmental Protection Authority, 1975). The majority of this Red Book area exists to the north of the application area, with a linear extension of the Red Book area which extends southwards traversing near the north western boundary of the application area (Yarri Mining Pty Ltd, 2013; GIS Database). The proposed dune sand mining operations are expected to remain within the application area and should not intercept the Red Book area. The proposed dune sand mining operation is expected to result in localised impacts which are not anticipated to adversely impact the supply of nutrients to marine ecosystems or nursery areas for fisheries.

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)
Environmental Protection Authority (1975)
Newland Environmental (2012)
Newland Environmental (2013a)
Newland Environmental (2013b)

Newland Environmental (2013c)
Rapallo (2011)
Yarri Mining Pty Ltd (2013)
GIS Database
-IBRA WA (Regions – Sub Regions)
-Schedule One Areas

(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 Level 1 fauna surveys undertaken over the application area identified the following fauna habitat types; dune crest, dune side, dune swale, flood plain and clay pan (Rapallo, 2011; Newland Environmental, 2013a). Each fauna habitat was assessed for the presence of unique or specialised habitat associated with conservation significant fauna species (Yarri Mining Pty Ltd, 2013). There were no fauna habitats identified in the application areas which were considered to be unique or specialised (Yarri Mining Pty Ltd, 2013). The fauna habitats recorded in the application area are widespread at both the local and regional level with the sand dunes of the application area forming part of a grouping that extends over 50 kilometres north and south of the application area (Rapallo, 2011; Newland Environmental, 2013a). Given the widespread nature of these habitats, the project area is unlikely to constitute significant habitat for fauna in the local area.

The Rainbow Bee-eater (*Merops ornatus*) (Schedule 3, Migratory) was recorded during the surveys undertaken by Rapallo and Newland Environmental (Rapallo, 2011; Newland Environmental, 2013a). This species is highly mobile and utilises a wide variety of habitats and therefore its conservation status and distribution are unlikely to be significantly impacted by the proposed activities (Newland Environmental, 2013).

Both the Australian Bustard (*Ardeotis australis*) (Priority 4) and the Bush Stone-curlew (*Burhinus grallarius*) (Priority 4) could utilise the application area due to the presence of suitable habitats for both species (Rapallo, 2011; Newland Environmental, 2013a). Whilst clearing activities could result in the loss of habitat for both species, there are large areas of undisturbed suitable habitat remaining for both species across their range. In addition, both species are capable of leaving areas undergoing disturbance. Therefore, the proposed clearing activities are unlikely to result in adverse impacts to the conservation status or distribution of either species.

Whilst the presence of the Keeled-slider (*Lerista planiventralis* subsp. *maryani*) (Priority 1) has not been confirmed by the fauna survey work undertaken to date, it is possible this species utilises the habitats of the application area (Newland Environmental, 2013a). The fauna habitats found in the application area are widespread and common in the region, therefore the clearing activities would not be expected to result in the loss of significant habitat for this species.

Tracks similar to those made by Mulgara (*Dasyercus cristicauda* (Endangered, Schedule 1) or *Dasyercus blythi* (Priority 4)) were recorded at two locations during the survey undertaken by Rapallo (Rapallo 2011). It is not possible to determine what species of Mulgara utilises the habitats of the application area from tracks alone (Rapallo, 2011).

In 2013, a targeted Mulgara survey was undertaken in the southern half of the application area in accordance with approval requirements for Stage 1 of the proposed dune sand mining operation (Newland Environmental, 2013b). This targeted survey consisted of a trapping program, excavation of potential Mulgara burrows and transect searches for potential Mulgara burrows which had not previously been recorded (Newland Environmental, 2013b). No Mulgara were captured during the trapping program and all previously identified potential Mulgara burrows were deemed to be dormant (Newland Environmental, 2013b). No new potential Mulgara burrows were located during the survey (Newland Environmental, 2013b).

The absence of the Mulgara from the application area during the targeted trapping program lead the consulting biologists conducting the trapping program to hypothesise that the application area is not a refugia for Mulgara species during times of poor rainfall (Newland Environmental, 2013b). The targeted survey for Mulgara was undertaken following a wet season which featured below average rainfall (Newland Environmental, 2013b). Based on the above, it is possible Mulgara could utilise the application area after periods of significant rainfall, and therefore the clearing activities could result in the loss of suitable Mulgara habitat. The proposed activities are not anticipated to result in adverse impacts to the distribution of suitable Mulgara habitat since the fauna habitats found in the application area are widespread in the surrounding region.

The Tropical Short-tailed Mouse (*Leggadina lakedownensis*) (Priority 4) was not recorded during the fauna surveys undertaken in the application area or the Mulgara trapping program (Rapallo, 2012; Newland Environmental 2013a and 2013b). The Tropical Short-tailed Mouse could utilise the habitats of the project area and therefore, despite its presence not being confirmed by any of the above survey work, it is possible this species could occur in the application area. The Tropical Short-tailed Mouse has been recorded over a large extent of Northern Western Australia and therefore it is unlikely this species is confined to the application area (Department of Environment and Conservation, 2013). In addition, the habitats of the application area are continuous with the surrounding environment and therefore it is unlikely the clearing of 37.17 hectares of vegetation would result in a significant loss of this species habitat.

It is possible that migratory and marine bird species could utilise the habitats of the application area (Rapallo, 2011; Newland Environmental, 2013a). Due to the mobile nature of these species, it is considered unlikely the clearing activities will result in adverse impacts to the conservation status of these species.

The proposed activities are unlikely to adversely impact the conservation status or distribution of conservation significant fauna species as the fauna habitats which exist in the application area are widespread in the surrounding region and the activities proposed under this permit will only disturb small areas of these habitats. In addition, the majority of the conservation significant fauna species expected to occur within the application area are capable of leaving areas undergoing disturbance and none of these species are confined to the application area.

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

Methodology Department of Environment and Conservation (2013)
Newland Environmental (2013a)
Newland Environmental (2013b)
Rapallo (2011)
Yarri Mining Pty Ltd (2013).

(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.**

Flora and vegetation surveys undertaken across the application area did not locate any Threatened flora species (Newland Environmental 2012 and 2013c). The closest recorded occurrences of Threatened flora exist approximately 253 kilometres to the southeast of the application area (GIS Database).

One Threatened flora species has been recorded within Carnarvon bioregion; *Eucalyptus beardiana* (Western Australian Herbarium, 2013). This species range does not extend far past the southern border of the Carnarvon bio-region, a significant distance to the south of the application area (Western Australian Herbarium, 2013). Therefore, it is unlikely any impact to Threatened flora species will result from the proposed activities.

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

Methodology Newland Environmental (2012)
Newland Environmental (2013c)
Western Australian Herbarium (2013)
GIS Database
-Threatened and Priority Flora

(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.**

The nearest Threatened Ecological Community (TEC) is situated approximately 227 kilometres to the east south east of the application area (GIS Database). Flora and vegetation surveys undertaken within the application area did not identify any vegetation communities representative of TEC's within the application area (Newland Environmental 2012 and 2013c).

Based on the above, the proposed activities are not likely to be at variance to this Principle.

Methodology Newland Environmental (2012)
Newland Environmental (2013c)
GIS Database
-Threatened Ecological Sites.

(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 is situated within the Cape Range sub-region of the Carnarvon bioregion as described in the IBRA and contained within Beard Vegetation association 670 (GIS Database). This Beard vegetation association retains almost 100% of its pre-European extent for the Cape Range sub-region (see table below). Hence, the application areas vegetation does not represent a significant remnant of vegetation within an extensively cleared area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Land
IBRA Bioregion – Cape Range	2,368,970	2,356,438	~99.5	Least Concern	~3.2
Beard veg assoc. – State					
670	147,810	147,793	~99.99	Least Concern	0
Beard veg assoc. – Bioregion					
670	147,808	147,792	~99.99	Least Concern	0

* Government of Western Australia (2013)

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

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

Methodology Government of Western Australia (2013)
 Department of Natural Resources and Environment (2002)
 GIS Database:
 -Pre-European vegetation
 -IBRA WA (Regions – Sub-regions).

(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**

The application area does not contain any permanent or ephemeral wetlands or watercourses (GIS Database). As no watercourses appear to be present in the application area, it is not anticipated that the proposed clearing would impact riparian vegetation associations.

Two non-perennial lakes partially enter the eastern boundary of the application area (GIS Database). These non-perennial lakes are expected to remain at least 50 metres outside of the sand mining footprint (Yarri Mining Pty Ltd, 2013). Vegetation communities associated with these lakes were mapped during the flora and vegetation surveys of the application area. The non-perennial lakes are situated within the scalded clay pan vegetation association (Newland Environmental, 2012). This vegetation association was found to be in degraded condition due to erosion and scalding (Newland Environmental, 2012). The scalded clay pan areas were sparsely vegetated with a single flora species, *Eriachne benthamii*, providing cover over only 15% of the area (Newland Environmental, 2012).

In the unlikely event the mining operations did intercept the non-perennial lakes, the proposed activities would not be expected to result in adverse impacts to the scalded clay pan vegetation association due to the widespread nature of this vegetation community and the small area of this vegetation community present in the application area (Newland Environmental, 2012).

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

Methodology Newland Environmental (2012)
 GIS Database
 -Hydrography, linear properties.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposal may be at variance to this Principle.**

The application area is situated within the Dune and Onslow land systems as mapped by the Western Australian Department of Agriculture (GIS Database). The Dune and Onslow land systems are both susceptible to erosion and therefore the proposed clearing activities could lead to localised erosion impacts within the cleared areas (Van Vreeswyk et al, 2004). Based on the above, the proposed clearing activities may be at variance to this Principle.

The clearing activities will be performed to facilitate a temporary dune sand mining operation. After mining activities have ceased, the proponent will be required to rehabilitate the cleared areas to achieve a stable post-mining landform in accordance with tenement conditions on the mining leases. Therefore, any localised erosion impacts resulting from the proposed clearing activities will be short term in nature. In addition, the cleared areas will be surrounded by undisturbed areas which should act to slow the movement of wind and surface water flows over the cleared areas, thereby constraining the capability of wind and surface water flows to erode the surface material in the cleared areas. Potential impacts from erosion may be also minimised by the implementation of a soil management condition.

Methodology Van Vreeswyk et al (2004)
 GIS Database
 -Rangeland System Mapping

(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 closest conservation area to the application area is the Class A Locker Island Nature Reserve (GIS Database), situated approximately 34 kilometres west north-west of the application area on an island off the coast of Western Australia.

A former component of the Mount Minnie pastoral lease which appears to have been separated from the pastoral lease for conservation purposes also exists 7 kilometres to the southeast of the application area (GIS Database). However, this area still appears to be Unallocated Crown Land and does not appear to have been vested in the conservation estate (GIS Database).

Neither area is expected to be impacted by the proposed activities due to the spatial distances between both areas and the proposed dune sand mining operation.

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

Methodology GIS Database
 -DEC Tenure

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

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

The application area is situated approximately 27 kilometres to the east of the nearest Public Drinking Water Source Area (PDWSA), the Priority 1 Cane River Water Reserve (GIS Database). The proposed activities are surficial in nature and are not expected to result in adverse impacts to groundwater sources underlying the application area.

The application area is devoid of surface water features, with the exception of two non-perennial lakes which partially enter the eastern border of the application area and low lying areas subject to inundation situated adjacent to the application areas western boundary (GIS Database). Surface water flows through the application area are therefore likely to comprise overland flows associated with cyclonic conditions and significant rainfall events. The clearing activities may result in increases in the sediment load of these overland flows. Any increase in the sediment load of overland surface water flows is expected to be temporary in nature as the cleared areas will be rehabilitated at the completion of mining activities.

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

Methodology GIS Database
 -Hydrography linear properties
 -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 is situated within the Ashburton River Catchment which has an area of approximately 7,877,743 hectares (GIS Database). The clearing of an area 37.17 hectares in size is not expected to increase the incidence or intensity of flooding within the Ashburton River Catchment.

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

Methodology GIS Database
-Hydrographic Catchments

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

Comments

There is one Native Title Claim (WC2010/004) over the area under application (GIS Database). This claim has been registered with the Native Title Tribunal on behalf of the claimant group. However, the 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 Regulation (formerly 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 30 September 2013 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received from the public regarding this application.

Methodology GIS Database
-Aboriginal sites of significance
-Native Title Claims – Registered with the NNTT

4. References

- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- Department of Environment and Conservation (2013) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed October 2013.
- 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.
- Environmental Protection Authority (1975) Conservation reserves for Western Australia as recommended by the Environmental Protection Authority 1975. Systems 4, 8, 9, 10, 11, 12.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Newland Environmental (2012) Flora and Vegetation Survey for the Onslow Camp Dune Project on M08/488 and G08/80. Prepared for Onslow Resources Ltd.
- Newland Environmental (2013a) Level 1 fauna survey of the Onslow Camp Dunes Stage 2 Project Area on M08/496 & L08/128 August 2013. Prepared for Onslow Resources Ltd.
- Newland Environmental (2013b) Onslow Camp Dunes Project Targeted Mulgara Survey on M08/488 & G08/80. Prepared for Onslow Resources Ltd.
- Newland Environmental (2013c) Flora and Vegetation Survey for the Onslow Camp Dunes North Project on M08/496 and L08/117. Prepared for Onslow Resources Ltd.
- Rapallo (2011) Level 1 Fauna Survey of the Onslow Camp Dunes Project Area For Onslow Resources Ltd. Prepared for Onslow Resources Ltd.
- Trudgen M. E. (1988) A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished report prepared for Bowman Bishaw and Associates, West Perth.
- Western Australian Herbarium (2013) Flora Base - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed October 2013).
- Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.
- Yarri Mining Pty Ltd (2013) Onslow Camp Dunes Project – Stage 2: supporting information for a Native Vegetation Clearing Permit application - Purpose Permit.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), 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 (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
EP Act	Environmental Protection Act 1986, Western Australia
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI Act	Rights in Water and Irrigation Act 1914, Western Australia
s.17	Section 17 of the Environment Protection Act 1986, Western Australia
TEC	Threatened Ecological Community

Definitions:

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

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

Schedule 4 **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.