



1. Application details

1.1. Permit application details

Permit application No.: 2979/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Robe River Mining Co Pty Ltd

1.3. Property details

Property: Iron Ore (Cleveland Cliffs) Agreement Act 1964, Special Lease for Mining Operations 3116/4627, Lot 54 on deposited Plan 241547
Local Government Area: Shire Of Ashburton
Colloquial name: Wandoo Housing Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2		Mechanical Removal	Maintenance Yard

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
Vegetation within the application area has been mapped at a 1:250,000 scale as Beard vegetation; 173: Hummock grasslands, shrub steppe; kanji over soft Spinifex & <i>Triodia wiseana</i> on basalt association (Shepherd et al., 2001; GIS Database). Biota Environmental Sciences were commissioned by Robe River to undertake a flora and vegetation assessment around Pannawonica, including the application area in January 2008. Biota has described the vegetation types within the application area as; <i>AiAbTw</i> – <i>Acacia inaequilatera</i> scattered tall shrubs over <i>Acacia bivenosa</i> scattered shrubs over <i>Triodia wiseana</i> hummock grassland; Cleared – Currently cleared of vegetation, or extensively degraded by historic clearing and weed invasion (Biota Environmental Sciences, 2008).	Robe River has applied to clear up to 2 ha of native vegetation for the extension of its Wandoo housing project at the Pannawonica town site. The proposed clearing area is located within the Pannawonica town site on lease 3316/4267. Clearing will be by mechanical means. The cleared area will be used for a maintenance yard to store equipment and machinery for the town.	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).	The vegetation condition rating was based on the results from the flora and vegetation survey conducted by Biota Environmental Sciences in January 2008. The area had some historically cleared areas, and the remaining vegetation unit is intact and in very good condition. This was inferred from descriptions of bordering vegetation provided by Biota Environmental Sciences (2008).

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 located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) region that encompasses an area of 17,804,164 hectares (GIS Database). The vegetation within the application area consists of Beard vegetation association 173 which is common and widespread throughout this region, with approximately 99.9% of the Pre-European extent remaining (Shepherd et al., 2001; GIS Database).

Biota Environmental Sciences (2008) have surveyed the area under application and identified one vegetation

type; *Acacia inaequilatera* scattered tall shrubs over *Acacia bivenosa* scattered shrubs over *Triodia wiseana* hummock grassland. This vegetation type is not of particular local or regional significance and is relatively common for the Pannawonica locality (Biota Environmental Sciences, 2008). This vegetation type is not particularly rich in native species (Biota Environmental Sciences, 2008).

The application area is located within the Pannawonica town site on Lease 3116/4627. The Pannawonica town site was built by Robe River in 1971-72 as a service centre for the mines which are located near to the town, and as a result the town site and surrounding areas have been subject to a considerable degree of disturbance over a long period of time (Biota Environmental Sciences, 2008). The condition of the vegetation within the application area has been described as 'very good' to 'degraded' (Biota Environmental Sciences, 2008).

The application area does not contain any significant landform features of the Pilbara region and Biota Environmental Sciences (2008) have confirmed that none of the vegetation and landform types that were identified within the application area were of local or regional significance. An Assessing Officer visited the application area on 30 January 2008 and concluded that due to the disturbance that has occurred, the vegetation of the application area is unlikely to be considered as an area of outstanding biodiversity.

Given the location of the application area within an existing town site and that only one common vegetation type has been identified with the area it is unlikely the proposed clearing will impact the biodiversity values of vegetation in the local area.

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

Methodology Biota Environmental Sciences (2008)
Shepherd et al. (2001)
GIS Database
- Interim Biogeographic Regionalisation of Australia
- Pre-European Vegetation

(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

Biota Environmental Sciences conducted a fauna assessment of the application area in conjunction with the flora and vegetation survey (Biota Environmental Sciences, 2008). This assessment included a search of the Department of Environment and Conservation (DEC), Western Australian Museum, and *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* databases. An on-site assessment of fauna habitat was also conducted by a botanist with zoological experience and later confirmed by zoologists from Biota Environmental Sciences (Biota Environmental Sciences, 2008).

Biota Environmental Sciences (2008) identified one common fauna habitat across the application area: Stony Undulating Plain; Mixed *Acacia* scattered to open shrubland over *Triodia wiseana* (occasionally *Triodia epactia*) hummock grassland. Stony undulating plains are common in the Pannawonica locality (Biota Environmental Sciences, 2008). Such areas typically support a sparse to open cover of mixed wattles, particularly *Acacia inaequilatera*, *Acacia ancistrocarpa*, *Acacia atkinsiana*, *Acacia bivenosa* and occasionally *Acacia orthocarpa* over a hummock grassland of Hard Spinifex (*Triodia wiseana*) or sometimes Soft Spinifex (*Triodia epactia*) (Biota Environmental Sciences, 2008). Such areas tend to have a low avian species richness due to the lack of a dense shrub or tree overstorey, but may support numerous species of other vertebrates (Biota Environmental Sciences, 2008).

A search of the databases revealed 18 fauna species of conservation significance with the potential to occur within the application area, based on known distributions. Ten of these species are considered unlikely to occur in the area due to lack of suitable habitat: Night Parrot (*Pezoporus occidentalis*), Mulgara (*Dasyurus cristicauda*), Black-flanked Rock-wallaby (*Petrogale lateralis lateralis*), Pilbara Olive Python (*Liasis olivaceus barroni*), Pilbara Orange Leafnosed-bat (*Rhinonictis aurantius*), Lake Downs Mouse (*Leggadina lakedowensis*), Ghost Bat (*Macroderma gigas*), Star Finch – western (*Neochmia ruficauda subclarescens*), Great Egret (*Ardea alba*) and Cattle Egret (*Ardea ibis*).

The following species of conservation significance were considered most likely to occur within the application area;

The Northern Quoll (*Dasyurus hallucatus*) is listed as Schedule 1 - fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2008* and Vulnerable under the *EPBC Act 1999* in Western Australia. This species is found in separate populations in the Kimberley and Pilbara. They are most common on dissected rocky escarpment but are also found in eucalypt forest and woodland (Van Dyck & Strahan, 2008). There are more than 50 records of the Northern Quoll in the Pannawonica locality (Biota Environmental Sciences, 2008). The habitat that these individuals were recorded in was described as breakaways along mesa edges adjacent to large drainage lines (Biota Environmental Sciences, 2008). This habitat is not found in the application area and while it is possible the Northern Quoll may forage through the habitat in the area it would not be expected to use the application as primary habitat. Given the lack of preferable habitat and the small size of the proposed clearing is not likely to significantly impact this species.

The Peregrine Falcon (*Falco peregrinus*) is listed as Schedule 4 - other specially protected fauna in the *Wildlife Conservation (Specially Protected Fauna) Notice, 2008*. The species has a widespread distribution across Western Australia excluding most deserts and the Nullarbor Plain (Johnstone & Storr, 2004). This species has been recorded in the Pannawonica locality and would probably occur over the application area (Biota Environmental Sciences, 2008). However, given the small scale of the proposed clearing and its location in an already cleared area it is unlikely the proposed clearing will have any significant impact on the habitat the Peregrine Falcon.

The Australian Bustard (*Ardeotis australis*) is listed as Priority 4 by DEC. This species is known to inhabit grasslands, low shrublands, grassy woodlands as well as altered environments such as croplands and airfields (Department of Environment and Climate Change, 2005). It has been recorded numerous times in the Pannawonica locality (Biota Environmental Sciences, 2008). Given this species wide distribution and habitat range, and the small scale of the proposed clearing it is not likely that the application area supports significant habitat for the Australian Bustard.

Ramphotyphlops ganei, a blind snake, is listed as Priority 1 by DEC. It is known from scattered records from the Newman, Millstream and Pannawonica regions (Storr, Smith & Johnstone, 2002). Little is known about this species habitat preference but it may be associated with moist gorges and gullies (Wilson & Swan, 2003). Given its habitat preference and the small scale of the proposed clearing it is unlikely the proposed clearing will remove significant habitat for this species.

The Bush Stone-curlew (*Burhinus grallarius*) is listed as Priority 4 by DEC. Bush Stone-curlew's are found across most of the state and are usually inhabit lightly wooded country near daytime shelter e.g. thickets or long grass (Johnstone & Storr, 2004). There are records of this species from the Pannawonica locality and it is probable that this species could occur in the application area at times (Biota Environmental Sciences, 2008). However, given the small scale of clearing and its large distribution, it is not likely that any significant habitat of this species will be removed.

The Western Pebble-mound Mouse (*Pseudomys chapmani*) is listed as Priority 4 by DEC. This species is common to very common in the Pilbara where suitable habitat of scree slopes and stony plains are present (Biota Environmental Sciences, 2008). It has been recorded previously from the Pannawonica locality but does not appear to be common in the area (Biota Environmental Sciences, 2008). The Western Pebble-mound Mouse may forage through the application area but no pebble-mounds were recorded during the fauna habitat assessment so the proposed clearing is not likely to impact significant habitat for this species.

The Rainbow Bee-eater (*Merops ornatus*) is listed as a migratory bird by the Japan-Australia Migratory Bird Agreement (JAMBA) and is protected under the *EPBC Act 1999*. The Rainbow Bee-eater is found across most of Australia and inhabits open forests and woodlands, shrublands and various cleared or semi-cleared habitats (DEWHA, 2009b). This species has been recorded numerous times from the Pannawonica locality and would likely occur over the application area (Biota Environmental Sciences, 2008). However, given the small nature of the proposed clearing and the large distribution of the Rainbow Bee-eater it is not likely the proposed clearing will impact significant habitat for this species.

The Great Egret (*Ardea alba*) and the Cattle Egret (*Ardea ibis*) are both listed as migratory birds by JAMBA and the China-Australia Migratory Bird Agreement (CAMBA) and protected under the *EPBC Act 1999*. Both species have been recorded from pools along the Robe River approximately 14 kilometres southwest of Pannawonica (Biota Environmental Sciences, 2008). Both birds are usually associated with wetlands and areas of water (Johnstone & Storr, 2004). Given the application area contains no water sources and the small scale of the proposed clearing it is not likely these species will be significantly impacted.

The application area is located within Pannawonica and is immediately adjacent to existing infrastructure and roads. The fauna habitat identified within the application area is common around the Pannawonica locality (Biota Environmental Sciences, 2008). The vegetation within the application area is ranging from 'very good' to 'degraded' condition with weeds present within the application area, reducing its value as fauna habitat (Biota Environmental Sciences, 2008). There are no significant habitat features (e.g. caves, rock crevices, water sources) present within the application area (Biota Environmental Sciences, 2008). The relatively small area of clearing of previously disturbed vegetation, immediately adjacent to other disturbed areas is unlikely to have any significant impact on fauna habitat at either a local or regional level.

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

Methodology Biota Environmental Sciences (2008)
DEWHA (2009)
Johnstone & Storr (2004)
Storr, Smith & Johnstone (2002)
Van Dyck & Strahan (2008)
Wilson & Swan (2003)

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

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

According to available databases there are no known records of Declared Rare Flora (DRF) or Priority flora species within the clearing application area (GIS Database). A Declared Rare Flora and Priority Flora survey was undertaken by botanists from Biota Environmental Sciences in February 2008. No DRF or Priority flora species were recorded within the application area during the survey (Biota Environmental Sciences, 2008). Five seedlings of the Priority 3 *Goodenia pascua* have been recorded from one of the deep clay areas (Gilgai) on the northern side of the airstrip, approximately 2 kilometres northeast (Biota Environmental Sciences, 2008). No individuals of *Goodenia pascua* have been recorded within the application area and there are no areas of Gilgai in the proposed clearing area (Biota Environmental Sciences, 2008). The proposed clearing is unlikely to have any impact on the continued existence of any Rare or Priority Flora.

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

Methodology Biota Environmental Sciences (2008)
GIS Database
- Declared Rare and Priority Flora List

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

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

According to available databases there are no known Threatened Ecological Communities (TEC's) within the application area (GIS Database). There were no TEC's identified during the botanical survey (Biota Environmental Sciences, 2008). The nearest known TEC is located approximately 77 kilometres east of the application area (GIS Database). Given the distance between the application area and the nearest known TEC it is unlikely the proposed clearing will impact the conservation of that TEC.

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

Methodology Biota Environmental Sciences (2008)
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 at variance to this Principle

The application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) region in which approximately 99.9% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd et al., 2001).

The vegetation of the application area has been mapped as Beard vegetation association 173: Hummock grasslands, shrub steppe; kanji over soft Spinifex & *Triodia wiseana* on basalt (GIS Database; Shepherd et al., 2001). According to Shepherd et al., (2001) approximately 100% of Beard vegetation association 173 remains at both the state and regional level. Therefore the area proposed to clear does not represent a remnant of native vegetation within an area that has been extensively cleared.

While a small percentage of the vegetation types within the Pilbara bioregion are protected within conservation reserves, the bioregion remains largely uncleared. As a result, the conservation of vegetation associations within the bioregion is not likely to be impacted by this proposal.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-european % in IUCN Class I-IV Reserves (and post clearing %)*
IBRA Bioregion – Pilbara	17,804,164	17,794,651	~99.9	Least Concern	6.3
Beard veg assoc. – State					
173	1,753,116	1,753,116	~100	Least Concern	7.5
Beard veg assoc. – Bioregion					
173	1,752,533	1,752,533	~100	Least Concern	7.5

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd et al. (2001)
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 at variance to this Principle

There are no permanent or ephemeral wetlands or watercourses within the application area (GIS Database). Biota Environmental Sciences (2008) have advised that the vegetation to be cleared is not associated with any watercourses, wetlands or wetland dependant vegetation. A site visit by an Assessing Officer on 30 January 2008 confirmed that there are no wetlands or watercourses within the application area.

The only creekline of note in the vicinity occurs through the central section of the New Wastewater infrastructure area located approximately 400 metres southwest of the application area. It is likely that this creekline and associated vegetation has been artificially created since the construction of the Pannawonica town site wastewater treatment facility (Biota Environmental Sciences, 2008). This creekline contains an abundance of weed species and artificially promoted wetland vegetation, and as a result the vegetation is considered to be degraded (Biota Environmental Sciences, 2008). The proposed clearing will not impact on this creekline.

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

Methodology Biota Environmental Sciences (2008)
GIS Database
- Hydrography, linear

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

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

According to available databases the application area is comprised of the Rocklea Land System (GIS Database). The Rocklea Land System is characterised by basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex (and occasionally soft spinifex) grasslands (Van Vreeswyk et al., 2004). According to Van Vreeswyk et al. (2004) landforms in the Rocklea Land System comprise:

- Hills, ridges, plateaux and upper slopes;
- Lower slopes;
- Stony plains and interfluves;
- Gilgai plains;
- Upper drainage lines;
- Drainage floors and channel.

Biota Environmental Sciences (2008) indicate that the application area is located in the landform unit Stony plains and interfluves which has been described as gently undulating to undulating plains, interfluves and low rises up to 1.5 kilometres in extent, surface mantles of abundant to very abundant pebbles and cobbles of basalt and occasionally shale and other rocks (Van Vreeswyk et al., 2004). The soils of this landform unit consist of calcareous shallow loams, red sandy earths, and shallow red/brown non-cracking clays (Van Vreeswyk et al., 2004). This land system has a very low erosion hazard (Van Vreeswyk et al., 2004). An Assessing Officer has previously visited the application area on 30 January 2008 and observed no evidence of wind or water erosion within the proposed clearing area. Robe River proposes to clear up to two hectares for the purpose of constructing a maintenance yard. The proposed clearing may lead to an increase in surface runoff but given the small nature of the clearing, the stony nature of the surface materials and minimal elevation within the application area, water and/or wind erosion is unlikely to occur (GIS Database).

Based on the above, the proposal is not likely to be at variance to this proposal.

Methodology Biota Environmental Sciences (2008)
BoM (2009)
Van Vreeswyk et al. (2004)
GIS Database
- Evaporation Isopleths
- Topographic Contours, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

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

The application is not located within a conservation area or any DEC managed lands (GIS Database). The nearest conservation areas are the Cane River Conservation Park and the Millstream Chichester National Park situated approximately 60 kilometres southwest and 70 kilometres east of the application area respectively (GIS Database; Biota Environmental Sciences, 2008). Based on the distance between the proposed clearing and the nearest conservation area, the proposed clearing is not likely to impact on the conservation values of any conservation areas.

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

Methodology Biota Environmental Sciences (2008)
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

There are no permanent naturally occurring watercourses, drainage systems or wetlands within the application area (GIS Database; Biota Environmental Sciences, 2008). The Land System associated with the application area has high resistance to erosion (Van Vreeswyk et al., 2004), thereby reducing the risk of sediment export which may result in sedimentation and turbidity in nearby watercourses. The proposed clearing is unlikely to cause deterioration in the quality of surface water in the local area.

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

Groundwater salinities have been measured in the range from 500 to 1,000 milligrams/litres Total Dissolved Solids (TDS) (GIS Database). The proposed clearing is located at Pannawonica which experiences mean annual rainfall of 409.1 millimetres and mean annual evaporation of approximately 3,400 millimetres (BoM, 2008; GIS Database). Given the low rainfall to evaporation ratio, it is likely that the majority of groundwater recharge would occur following significant rainfall events. It is unlikely that the proposed clearing will significantly increase groundwater recharge, or impact the quality of groundwater.

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

Methodology Biota Environmental Sciences (2008)
Van Vreeswyk et al. (2004)
GIS Database
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(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 located in an arid region where the average annual evaporation rate greatly exceeds the average annual rainfall (BoM, 2009; GIS Database). There are no permanent or intermittent watercourses located within the application area (GIS Database). Most of the rainfall in the Pannawonica region is the result of heavy rainfall triggered by cyclonic activity and sporadic thunderstorms (Biota Environmental Sciences, 2008).

An Assessing Officer visiting the application area on 30 January 2008 observed that a considerable portion of the vegetation around the Pannawonica townsite, including the application area is subject to a significant degree of disturbance and covered by town infrastructure. Given the size of the proposed clearing (2 hectares) in relation to the Robe River catchment area (757,138 hectares) it is not likely the proposed clearing will cause or increase the incidence of flooding or result in an increase in peak flood height (GIS Database).

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

Methodology Biota Environmental Sciences (2008)
BoM (2009)
GIS Database
- Hydrography, linear
- Hydrographic Catchments, catchments
- Evaporation Isoleths

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

Comments

There are no native title claims over the area under application (GIS Database). 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*.

According to available databases 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.

One direct interest submission was received stating no objection to the proposal.

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

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

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and is not at variance to Principle (e) and (f), is not likely to be at variance to Principles (a), (b), (c), (d), (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 and permit reporting.

5. References

- Biota Environmental Sciences (2008) Wandoo Housing Project Native Vegetation Clearing Report, Prepared for Robe River Iron Associates, Prepared by Biota Environmental Sciences, March 2008.
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- Department of Environment, Water, Heritage and the Arts (2009) *Merops ornatus* - Rainbow Bee-eater. Available online at http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=670. Accessed 23 March, 2009.
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- 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.
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- Van Dyck, S. & Strahan, R. (eds.) (2008) The Mammals of Australia. Third Edition. New Holland Publisher (Australia) Pty Ltd, Sydney.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P. and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia. Department of Agriculture, western Australia.
- Wilson, S. & Swan, G. (2003) Reptiles of Australia. Princeton University Press, Princeton, New Jersey.

6. 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.
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.