



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4469/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (Mount Newman) Agreement Act 1964, Mineral Lease 244SA (AML 70/244)
Local Government Area: Shire of East Pilbara
Colloquial name: Gurinbiddy Exploration Program

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
150		Mechanical Removal	State Agreement

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 8 September 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. Three Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2009):

18: Low woodland; mulga (*Acacia aneura*);

29: Sparse low woodland; mulga, discontinuous in scattered groups; and

82: Hummock grassland, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database; Shepherd, 2009).

A level 2 flora and vegetation survey was conducted by staff from GHD (2010) between 28 May and 3 June 2010. This survey identified seven broad vegetation associations occurring within the application area (GHD, 2010):

Triodia Hummock grassland - Hummock Grassland of *Triodia pungens* with Open Mallee of *Eucalyptus leucophloia* subsp. *leucophloia*, *Eucalyptus kingsmillii* subsp. *kingsmillii* and *Eucalyptus gamophylla* over Low Scattered Shrubs of *Acacia pruinocarpa*, *Acacia catenulata* subsp. *occidentalis* and *Keraudrenia velutina* subsp. *elliptica* on skeletal clay loam on ridgelines;

Acacia closed woodland - Low Closed Woodland of *Acacia adsurgens* or *Acacia catenulata* subsp. *occidentalis* over Open Shrubland of *Acacia* sp. *mulga* short phyllodes (B.R. Maslin et al. BRM 9201), *Acacia aneura* var ? *pilbarana* and *Acacia tenuissima* over Very Open Hummock Grassland of *Triodia pungens* on skeletal red loams in deeply incised gullies;

Eucalyptus low open woodland - Low Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* and *Corymbia hamersleyana* over Low Open Shrubland of *Mirbelia viminalis*, *Sida arenicola* and *Keraudrenia velutina* subsp. *elliptica* over Hummock Grassland of *Triodia* sp. Mt Ella (M.E.Trudgen 12739) and *Triodia pungens* on red skeletal clay loam on steep slopes;

Eucalyptus open woodland - Open Woodland of *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana*, *Eucalyptus gamophylla* over Open Shrubland of *Acacia bivenosa*, *Gossypium robinsonii*, *Acacia tenuissima* over a Hummock Grassland of *Triodia pungens* and *Triodia melvillei* on skeletal red clay loam on lower slopes;

Eucalyptus low open woodland - Low Open Woodland of *Eucalyptus gamophylla*, *Eucalyptus trivalva* and *Eucalyptus kingsmillii* subsp. *kingsmillii* over an Open Shrubland of *Acacia aneura* var. ? *pilbarana*, *Acacia adsurgens* and *Acacia bivenosa* over a Hummock Grassland of *Triodia pungens* on red sandy clay loam plains;

Acacia low woodland - Low Woodland of *Acacia ayersiana*, *Acacia aneura* var. ? *microcarpa* and *Eucalyptus tephrodes* over Open Shrubland of *Acacia adsurgens*, *Acacia ancistrocarpa* and *Acacia catenulata* subsp. *occidentalis* over a Hummock Grassland of *Triodia pungens* and *Triodia melvillei* on red clay loam plains; and

Aristida tussock grasslands - Open Tussock Grassland of *Aristida jerichoensis* var. *subpinulifera* and *Enneapogon lindleyanus* with occurrences of High Open Shrubland of *Acacia* ? *ayersiana* and *Acacia sibirica*.

Clearing Description

BHP Billiton Iron Ore Pty Ltd is proposing to clear up to 150 hectares of native vegetation for the purpose of mineral exploration.

Vegetation Condition

Clearing will be conducted using a dozer/excavator and vegetation and topsoil will be stockpiled for later use in rehabilitation.

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994);

To

Pristine: No obvious signs of disturbance (Keighery, 1994).

Comment

The application area is located within the Pilbara region of Western Australia and is situated approximately 75 kilometres west of Newman.

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 proposed clearing is located approximately 53 kilometres north west of Newman in the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). At a broad scale, vegetation can be described as Mulga low woodlands over bunch grasses on fine textured soils in valley floors and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002). Rare features of the subregion include gorges of the Hamersley Ranges (particularly those within Karijini National Park), Palm Spring, Duck Creek and Themeda grasslands (CALM, 2002). Permanent spring systems such as Weeli Wollie are also listed for their importance as refugia (CALM, 2002).

A flora and vegetation survey of the application area was conducted by staff from GHD (2010) between 28 May and 3 June 2010. A total of 174 flora taxa from 29 families were recorded during this survey (GHD, 2010). This is considerably lower diversity than has been previously recorded in adjacent areas (GHD, 2010). It is likely that this is largely due to low rainfall experienced prior to the survey taking place (GHD, 2010).

One introduced taxa, *Bidens bipinnata*, was recorded in the application area during the flora survey conducted by GHD (2010). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. This species is not listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

There are no known Priority Ecological Communities (PEC's) within the application area (GIS Database). The nearest PEC is approximately 9 kilometres north west of the application area (GIS Database). At this distance, there is little likelihood of any impact to the PEC as a result of the proposed clearing.

A flora and vegetation survey of the application area conducted by GHD (2010) identified the following seven priority flora species within the application area:

- *Aristida jerichoensis* var. *subspinulifera* (P1) – recorded at one location within the application area;
- *Spartothamnella puberula* (P2) – recorded at one location within the application area;
- *Dampiera metallorum* (P3) – recorded at two locations within the application area;
- *Indigofera gilesii* subsp. *gilesii* (P3) – six individuals recorded within the application area;
- *Rhagodia* sp. Hamersley (P3) – this species occurred in large numbers on site (in the 1000's), however it is known from numerous locations outside of the application area (Western Australian Herbarium, 2011);
- *Triodia* sp. Mt Ella (P3) – located on site, however not within the footprint of the proposed exploration program. This species is also known from locations outside of the application area; and

- *Eremophila magnifica* subsp. *magnifica* (P4) – numbers within the application area were not recorded, however according to the Western Australian Herbarium (2011) this species is common in the Eastern Pilbara.

A fauna survey conducted by GHD (2010) recorded a total of 31 fauna species within the application area. According to GHD (2010) this represents lower species diversity than other areas within the Pilbara.

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

Methodology CALM (2002)
GHD (2010)
Western Australian Herbarium (2011)
GIS Database:
- IBRA WA (regions – subregions)
- Threatened Ecological Sites Buffered

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposal may be at variance to this Principle

A fauna survey of the application area was conducted by staff from GHD (2010) between 27 and 31 May 2010. This survey identified the following five major fauna habitat types within the application area (GHD, 2010):

Gorge/Gullies: High habitat significance;
Breakaways and slopes: Moderate habitat significance;
Plains: Moderate habitat significance;
Minor Drainage lines: - Moderate habitat significance;
Hill crest: Low habitat value.

Desktop surveys and a subsequent reconnaissance survey undertaken by GHD (2010) identified the potential for the following nine conservation significant fauna species to occur within the application area:

- Northern Quoll (*Dasyurus hallucatus*) (Endangered) – May occur within application area however it is uncommon in areas greater than 200 kilometres from the coast. The application area is approximately 300 kilometres from the coast (GIS Database);
- Pilbara Leaf-nosed Bat (*Rhinonictis aurantia*) (Vulnerable) – Likely to occur within application area as there is potentially suitable habitat present;
- Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) (Vulnerable) – Likely to occur within the application area. The preferred habitat for this species is the Gorge/Gully habitat, however, it may occur in all habitat types;
- Short-tailed Mouse (*Leggadina lakedownensis*) (Priority 4) – Possibly occurs within the application area. May occur on slopes, plains and along minor drainage lines;
- Ghost Bat (*Macroderma gigus*) (Priority 4) – May occur within application area as there is potentially suitable habitat;
- Western Pebble-mound Mouse (*Pseudomys chapmani*) – Mounds of the Western Pebble-mound Mouse have been recorded within the application area. The proposed clearing has the potential to impact on this species at a low level through the destruction of active mounds. BHP Billiton Iron Ore (2011) keeps records of all encountered locations of mounds and avoids them where possible. It is unlikely that the proposed clearing will impact on the conservation of this species;
- Australian Bustard (*Ardeotis australis*) – 1 individual recorded within the application area during reconnaissance survey. This species is highly mobile and inhabits a wide variety of habitats;
- Rainbow Bee-eater (*Merops ornatus*) (Migratory) – Likely to occur within the application area as suitable habitat is present; and
- Fork-tailed swift (*Apus pacificus*) (Migratory) – Likely to occur within the application area. This species rarely utilises land surfaces and is therefore unlikely to be impacted by the proposed clearing.

The Gorge/Gullies habitat is considered highly significant, potentially providing habitat for the Pilbara Leaf-nosed Bat, Pilbara Olive Python and the Ghost Bat. Potential impacts to these fauna species as a result of the proposed clearing may be minimised by the implementation of a fauna habitat protection condition prohibiting clearing from occurring in the Gorge/Gully habitat.

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

Methodology BHP Billiton Iron Ore (2011)
GHD (2010)

(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

There are no known records of Declared Rare Flora (DRF) species within the application area (GIS Database). The nearest DRF species is *Lepidium catapycnon*, recorded approximately 2.5 kilometres east of the application area (GIS Database). At this distance it is considered unlikely that the proposed clearing will impact

the conservation of this species.

A flora and vegetation survey of the application area conducted by GHD (2010) identified the presence of suitable habitat and associated species for the DRF species *Lepidium catapycnon* within the application area. However, no individuals of this species were recorded during the flora survey (GHD, 2010).

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

Methodology GHD (2010)
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

There are no known records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is approximately 72 kilometres east of the application area (GIS Database). At this distance, there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

Methodology GIS Database:
- Threatened Ecological Sites Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

The application area is located within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.89% of the pre-European vegetation remains in the Pilbara bioregion.

The vegetation in the application area has been broadly mapped as Beard vegetation associations:

- 18: Low woodland; mulga (*Acacia aneura*);
- 29: Sparse low woodland; mulga, discontinuous in scattered groups; and
- 82: Hummock grassland, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database; Shepherd, 2009).

According to Shepherd (2009) approximately 100% of Beard vegetation associations 18, 29 and 82 remain within the Pilbara bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,193	17,785,001	~99.89	Least Concern	~6.32
IBRA Subregion - Hamersley	5,634,727	5,634,727	~100	Least Concern	~12.88
Beard vegetation associations - State					
18	19,892,305	19,890,275	~99.99	Least Concern	~2.13
29	7,903,991	7,903,991	~100	Least Concern	~0.29
82	2,565,901	2,565,901	~100	Least Concern	~10.24
Beard vegetation associations - Bioregion					
18	676,557	676,557	~100	Least Concern	~16.8
29	1,133,220	1,133,220	~100	Least Concern	~1.91
82	2,563,583	2,563,583	~100	Least Concern	~10.25

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

The vegetation within the application area is not considered to be a remnant of native vegetation in an area that has been extensively cleared.

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (regions – subregions)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

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

There are no permanent wetlands or watercourses within the application area, however there are numerous ephemeral watercourses (GIS Database).

A flora and vegetation survey of the application area conducted by GHD (2010) identified vegetation associated with ephemeral watercourses within the following three broad vegetation associations:

Low Open Woodland of *Eucalyptus gamophylla*, *Eucalyptus trivalva* and *Eucalyptus kingsmillii* subsp. *kingsmillii* over an Open Shrubland of *Acacia aneura* var. ? *pilbarana*, *Acacia adsurgens* and *Acacia bivenosa* over a Hummock Grassland of *Triodia pungens* on red sandy clay loam plains;

Low Woodland of *Acacia ayersiana*, *Acacia aneura* var. ? *macrocarpa* and *Eucalyptus tephrodes* over Open Shrubland of *Acacia adsurgens*, *Acacia ancistrocarpa* and *Acacia cantenulata* subsp. *occidentalis* over a Hummock Grassland of *Triodia pungens* and *Triodia melvillei* on red clay loam plains; and

Open Tussock Grassland of *Aristida jerichoensis* var. *subspinulifera* and *Enneapogon lindleyanus* with occurrences of High Open Shrubland of *Acacia* ? *ayersiana* and *Acacia sibirica*.

These vegetation communities are common throughout the application area and are not considered to be locally or regionally significant. Given the low impact, non contiguous nature of the exploration activities to be undertaken, it is considered unlikely that the proposed clearing will have a significant impact on any vegetation growing in association with these vegetation communities.

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

Methodology GHD (2010)
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

The application area intersects the following six land systems (GIS Database):

The Boolgeeda land system is characterised by stony lower slopes and plains below hill systems supporting hard and soft Spinifex grasslands and mulga shrublands (Van Vreeswyk et al., 2004). This vegetation is generally not prone to degradation and the system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Newman land system is characterised by rugged jaspillite plateaux, ridges and mountains supporting hard Spinifex grasslands (Van Vreeswyk et al., 2004). This land system is not prone to degradation and has erosion resistant surfaces (BHP Billiton Iron Ore, 2011).

The Platform land system is characterised by dissected slopes and raised plains supporting hard Spinifex grasslands (Van Vreeswyk et al, 2004). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

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, 2004). This land system has very low erosion susceptibility (Van Vreeswyk et al., 2004).

The Spearhole land system is characterised by gently undulating hardpan plains supporting groved mulga shrublands and hard Spinifex (Van Vreeswyk et al., 2004). This land system is not prone to erosion (Van Vreeswyk et al., 2004).

The Wannamunna land system is characterised by hardpan plains and internal drainage tracts supporting mulga shrublands and woodlands (and occasionally eucalypt woodlands). This land system generally has low susceptibility to erosion (Van Vreeswyk et al., 2004).

Given that none of the land systems are prone to erosion, the proposed clearing is not likely to cause appreciable land degradation.

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

Methodology BHP Billiton Iron Ore (2011)
Van Vreeswyk et al. (2004)
GIS Database:
- Rangeland Land 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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest conservation reserve is Karijini National Park, located approximately 27 kilometres north west of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the environmental values of any conservation areas.

Based on the above, the proposed clearing is 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

According to available GIS Databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Newman Water Reserve, approximately 45 kilometres east of the application area (GIS Database). At this distance it is unlikely that the proposed clearing will impact on the water quality of the Newman Water Reserve.

The groundwater salinity within the application area is approximately 500 - 1,000 milligrams/Litre Total Dissolved Solids (FDS) (GIS Database). Given the non contiguous, low impact nature of the clearing within the Hamersley Groundwater Province (101,668,326 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

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

Methodology GIS Database:
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Public Drinking Water Source Area (PDWSA)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

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

The application area experiences a semi-desert tropical climate with an average annual rainfall of approximately 313.4 millimetres recorded at Newman Aero weather station approximately 52 kilometres south east of the application area (BoM, 2011; CALM, 2002). The majority of rainfall in this area usually falls in summer cyclonic or thunderstorm events (CALM, 2002). Large runoff as well as localised and regional flooding can occur following intense rainfall events (BHP Billiton Iron Ore, 2011).

It is highly unlikely that the proposed clearing would significantly alter the hydrology of any one catchment and thus increase the incidence or intensity of flooding (BHP Billiton Iron Ore, 2011). The hardplains, rocky hill sides and stony plains of the site would act to attenuate water velocities and dissipate runoff, therefore reducing the possibility of flooding (BHP Billiton Iron Ore, 2011).

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

Methodology BHP Billiton Iron Ore (2011)
BoM (2011)
CALM (2002)

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

Comments

There are two Native Title Claims (WC10/11 and WC05/3) over the area under application (GIS Database). These claims have 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 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 18 July 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology

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

4. References

- BHP Billiton Iron Ore (2011) Gurinbidy, Purpose Permit Native Vegetation Clearing Permit Application Supporting Document. Unpublished report prepared by ENV Australia Pty Ltd.
- BoM (2011) BoM Website - Climate Averages by Number, Averages for NEWMAN AERO. www.bom.gov.au/climate/averages/tables.shtml (Accessed 22 August 2011).
- CALM (Department of Conservation and Land Management) (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- 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.
- GHD (2010) Report for Coondewanna Exploration Tenement Level 2 Flora and Level 1 Fauna Report. Unpublished report dated August 2010.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- 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.
- Western Australian Herbarium (2011) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed 22/08/2011).

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	Environment 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.