



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4746/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Hamersley Iron Pty Ltd

1.3. Property details

Property: Iron Ore (Hamersley Range) Agreement Act 1963, Mineral Lease 4SA (AML 70/4)
Local Government Area: Shire of Ashburton
Colloquial name: Western Turner Syncline

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 2 February 2012

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. Two Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2009):

82: Hummock grassland, low tree steppe; snappy gum over *Triodia wiseana*; and

567: Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii*.

A flora and vegetation survey of the application area and the surrounding areas, conducted by Biota Environmental Sciences (Biota) (2010) in July 2007 identified fifteen vegetation communities within the application area:

Creekline

AciEvTwCEsCEcBTe - *Acacia citrinoviridis*, *Eucalyptus victrix* low open forest over *Triodia wiseana* very open hummock grassland with **Cenchrus setiger*, **Cenchrus ciliaris*, *Bothriochloa ewartiana* very open tussock grassland;

EgPIAatGOrTw - *Eucalyptus gamophylla* low mallee woodland over *Petalostylis labicheoides*, *Acacia atkinsiana*, *Gossypium robinsonii* open shrubland over *Triodia wiseana* open hummock grassland; and

AmoGOrAm - *Acacia monticola*, *Gossypium robinsonii* tall shrubland over *Acacia maitlandii* open heath.

Gully

CfFbAciDpTeTw - *Corymbia ferritcola*, *Ficus brachypoda* low open woodland over *Acacia citrinoviridis* tall open shrubland over *Dodonaea pachyneura* open shrubland over *Triodia epactia*, *Triodia wiseana* very open hummock grassland; and

ElChAmGrTeTwTHt - *Eucalyptus leucophloia* subsp. *leucophloia*, *Corymbia hamersleyana* scattered low trees over *Acacia maitlandii*, *Gossypium robinsonii* tall shrubland over *Triodia epactia*, *Triodia wiseana* very open hummock grassland and *Themeda triandra* very open tussock grassland.

Hillslope

EgAbCOcTw - *Eucalyptus gamophylla* low mallee woodland over *Acacia bivenosa*, *Codonocarpus cotinifolius* tall shrubland over *Triodia wiseana* hummock grassland;

CdAmTb - *Corymbia deserticola* subsp. *deserticola* low open woodland over *Acacia maitlandii* open heath over *Triodia brizoides* hummock grassland;

AmAmoAspTwTe - *Acacia maitlandii*, *Acacia monticola* tall shrubland over *Acacia spondylophylla* low open shrubland over *Triodia wiseana*, *Triodia epactia* hummock grassland;

AbAatTwTe - *Acacia bivenosa* tall open shrubland over *Acacia atkinsiana* open shrubland over *Triodia wiseana*, *Triodia epactia* hummock grassland;

CdAatAexTw - *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Acacia atkinsiana*, *Acacia exilis* open shrubland over *Triodia wiseana* hummock grassland;

CdAmoAspTw - *Corymbia deserticola* subsp. *deserticola* scattered low trees over *Acacia monticola*, *A. spondylophylla* shrubland over *Triodia wiseana* (*Triodia* aff. *melvillei*, *Triodia schinzi*) hummock grassland;

EIAmAspTeTw - *Eucalyptus leucophloia* subsp. *leucophloia* low woodland over *Acacia maitlandii* open shrubland over *Acacia spondylophylla* low open shrubland over *Triodia epactia*, *Triodia wiseana* hummock grassland;

EIAmAspGOMkTwERIm - *Eucalyptus leucophloia* subsp. *leucophloia* low open woodland over *Acacia maitlandii* open shrubland over *Acacia spondylophylla* low shrubland over *Triodia wiseana* hummock grassland with *Eriachne mucronata* scattered tussock grasses;

EsAbCAPuTw - *Eucalyptus socialis* subsp. *eucentrica* low mallee woodland over *Acacia bivenosa* tall shrubland over *Capparis umbonata* low open shrubland over *Triodia wiseana* hummock grassland; and

EIAprAspAatAmTw - *Eucalyptus leucophloia* subsp. *leucophloia* scattered low trees over *Acacia pruinocarpa*, *Acacia spondylophylla*, *Acacia atkinsiana*, *Acacia maitlandii* open shrubland over *Triodia wiseana* hummock grassland.

Clearing Description Hamersley Iron Pty Ltd is proposing to clear up to 8.8 hectares of native vegetation within a broader boundary of approximately 125 hectares for the purpose of undertaking mineral exploration.

Clearing will be conducted using blade down techniques where practicable or scrub rake on level terrain. Existing tracks may require maintenance and tracks may be graded using blade down techniques.

Vegetation Condition Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);

To

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

Comment The application area is located within the Pilbara region of Western Australia and is situated approximately 8 kilometres north west of Tom Price.

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 8 kilometres north west of Tom Price in the Hamersley subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database), The Hamersley subregion can be broadly described as Mulga low woodland over bunch grasses on fine textured soils in valley floors and *Eucalyptus leucophloia* over *Triodia brizoides* on skeletal soils of the ranges (CALM, 2002).

A flora survey of the application area and the surrounding areas was conducted by Biota (2010) in July 2007. This survey identified a total of 251 flora taxa from 110 genera and 44 families within an 812 hectare survey area (Biota, 2010). The survey was conducted during a relatively poor season, however other surveys in the local area have shown equivalent or far greater diversity with one survey recording 334 taxa within a 418 hectare survey area (Biota, 2010). It is therefore considered unlikely that the application area contains greater flora diversity than surrounding areas.

One Priority 3 flora species, *Sida* sp. Barlee Range, was recorded at two locations within the application area During a flora survey conducted by Biota (2010) (Rio Tinto, 2011). Three locations of this species were

recorded from outside of the application area during this survey (Biota, 2010). Additionally, according to FloraBase, this species is known from a broad distribution within the Pilbara and northern Gascoyne (Western Australian Herbarium, 2012). It is considered unlikely that the proposed clearing will impact on the conservation of this species.

There are no known Threatened Ecological Communities (TEC) or Priority Ecological Communities (PEC) within the application area (GIS Database).

A flora and vegetation survey conducted by Biota (2009) identified thirteen weed species, *Acetosa vesicaria*, *Alternanthera pungens*, *Bidens bipinnata*, *Cenchrus ciliaris*, *Conyza bonariensis*, *Cynodon dactylon*, *Echinochloa colona*, *Euphorbia cyathophora*, *Malvastrum americanum*, *Melinis repens*, *Solanum nigrum*, *Sonchus oleraceus* and *Vachellia farnesiana*, within and adjacent to the application area. 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. None of these species are listed as '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.

A fauna survey was conducted over the application area and the surrounding areas by Biota (2009) in September 2007 and September 2008. This survey recorded a total of 110 vertebrate fauna species within the application area, comprised of 44 herpetofauna, 52 avifauna and 14 mammal species (Biota, 2009). The species recorded are considered to be representative of the taxa commonly recorded in this part of the bioregion (Biota, 2009).

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

Methodology Biota (2009)
Biota (2010)
CALM (2002)
Rio Tinto (2011)
Western Australian Herbarium (2012)
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 is not likely to be at variance to this Principle

A fauna survey was conducted over the application area and the surrounding areas by Biota (2009) in September 2007 and September 2008. This survey identified the following six broad fauna habitats (Biota (2009):

- *Acacia* spp. shrubs over Spinifex hummock grassland on colluvial spurs, foothills and low rises;
- *Acacia* spp. shrubs over Spinifex hummock grassland on hill slopes;
- *Acacia* spp. shrubs over Spinifex hummock grassland on calcrete low rises or colluvial spurs;
- *Acacia* spp. shrubs over Spinifex hummock grassland in creeklines and minor drainage areas;
- Mulga woodland over Spinifex hummock grassland in broad drainage areas; and
- *Corymbia* sp. and *Eucalyptus* sp. *Scattered low trees* over *Acacia* spp. shrubland over Spinifex hummock grassland and *Themeda* sp. tussock grassland and gullies.

Based on a fauna survey conducted, known fauna distributions and habitat preferences the following four conservation significant fauna species occur or are considered likely to occur within the application area (Biota, 2009; Rio Tinto, 2011):

- Western Pebble-mound Mouse (*Pseudomys chapmani*) Priority 4 – captured throughout the application area and a number of active mounds were noted. Destruction of mounds are likely to impact on individuals of this species, however it is common to very common in suitable habitat within the Hamersley and Chichester subregions and the conservation of this species is not likely to be impacted;
- Pilbara Olive Python (*Liasis olivaceus barroni*) Schedule 1, Vulnerable – likely to occur within the gorges, gullies and rocky habitat within the application area. Given the small, low impact nature of the proposed clearing and the abundance of similar habitat outside of the application area, it is considered unlikely that the proposed clearing will impact on the conservation of this species;
- Peregrine Falcon (*Falco peregrinus*) Schedule 4 – known to occur within the vicinity of the application area

and it's possible that the application area encompasses the home range of one or more individual birds. This species is highly mobile and while the proposed clearing has the potential to disturb birds within the area, it is considered unlikely to impact on the conservation of this species; and

- Australian Bustard (*Ardeotis australis*) Priority 4 – likely to occur within the application area from time to time. Given the highly mobile nature of this species and the low impact, non-contiguous nature of the proposed clearing, the impacts to this species are likely to be negligible.

A further nine conservation significant fauna species have been assessed as potentially occurring within the application area (Biota, 2009):

- Northern Quoll (*Dasyurus hallucatus*) Vulnerable – may occur within the gorge/gully habitat of the application area. Fauna surveys within the gorge/gully habitat did not record this species. A search of the Department of Environment and Conservations (DEC) (2012) NatureMap database identified no records of this species have been recorded within a 40 kilometre radius of the centre point of the application area;

- Pilbara Orange Leaf-nosed Bat (*Rhinonictis aurantius*) Vulnerable – core roosting habitat of deep caves are not present within the application area, however this species may forage within the application area;

- Blind Snake (*Ramphotyphlops ganei*) Priority 1 – gorges and gullies are not particularly extensive, deep or moist and may not offer the preferred habitat for this species;

- Long-tailed Dunnart (*Sminthopsis longicaudata*) Priority 4 – this species has been found to be relatively common and widespread in its preferred habitat. A small amount of the preferred habitat for this species, consisting of plateaus near breakaways and scree slopes, is present within the application area however the proposed clearing is not likely to impact on the conservation of this species;

- Ghost Bat (*Macroderma gigas*) Priority 4 – may forage within the application area, however suitable roost caves are not present;

- Bush-stone Curlew (*Burhinus grallarius*) Priority 4 – widespread throughout much of Australia and common in tropical regions. Populations in the Pilbara are considered secure and the proposed clearing is not likely to impact on the conservation of this species;

- Short-tailed Mouse or Lakeland Downs Mouse (*Leggadina lakedownensis*) Priority 4 – preferred habitat of cracking clays is absent from the application area;

- Fork-tailed Swift (*Apus pacificus*) Migratory – this species has a temporary and spatially patchy distribution throughout Australia. This species may occur within the application area at irregular intervals and the proposed clearing is not likely to impact on the conservation of this species; and

- Oriental Plover (*Charadrius veredus*) Migratory – this species occurs mainly in the Kimberly and north-eastern interior and is considered a casual visitor elsewhere. The proposed clearing is not likely to impact on the conservation of this species.

There is the potential for 13 conservation significant fauna species to occur, however the preferred habitat for many of these species is not present within the application area. The proposed clearing is considered unlikely to impact on the conservation of any conservation significant fauna species.

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

Methodology Biota (2009)
DEC (2012)
Rio Tinto (2011)

(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). A flora and vegetation survey of the application area conducted by Biota (2010) did not identify any DRF.

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

Methodology Biota (2010)
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

There are no Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is located approximately 7 kilometres north 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

(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 within the Pilbara bioregion.

The vegetation within the application area has been broadly mapped as the following two Beard vegetation associations:

82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*; and
567: Hummock grasslands, shrub steppe; mulga & kanji over soft spinifex & *Triodia basedowii*.

According to Shepherd (2009) approximately 100% of vegetation types 82 and 567 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
Beard vegetation associations - State					
82	2,565,901	2,565,901	~100	Least Concern	~10.24
567	777,507	777,507	~100	Least Concern	~22.33
Beard vegetation associations - Bioregion					
82	2,563,583	2,563,583	~100	Least Concern	~10.25
567	776,824	776,824	~100	Least Concern	~22.35

* 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

According to available databases there are no permanent wetlands or watercourses within the application area, however there are numerous minor, non-perennial watercourses (GIS Database).

A flora and vegetation survey of the application area and the surrounding areas conducted by Biota (2010) identified three vegetation communities associated with non-perennial watercourses. The vegetation growing in association with these non-perennial watercourses is common within the Pilbara (Rio Tinto, 2011). It is therefore considered unlikely that the proposed clearing will impact on the conservation of vegetation growing in association with these watercourses.

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

Methodology Biota (2010)
Rio Tinto (2011)
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 two land systems (GIS Database):

The Newman land system is characterised by rugged jaspilite plateaux, ridges and mountains supporting hard Spinifex grasslands (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

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).

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

Methodology Van Vreeswyk et al. (2004)
GIS Database:
- IBRA WA (regions – subregions)

(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 onshore conservation reserve is the Karijini National Park, located approximately 19 kilometres east 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 (GIS Database).

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

The application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Millstream Water Reserve, located approximately 40 kilometres north of the application area (GIS Database). At this distance it is considered unlikely that the proposed clearing will impact on the quality of the Millstream Water Reserve.

The groundwater salinity within the application area is approximately 500 – 1,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the relatively low impact, non contiguous nature of the proposed clearing within the Hamersley Groundwater Province (10,166,832 hectares), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

According to available databases, there are no permanent wetlands or watercourses within the application area however there are numerous minor, non-perennial watercourses (GIS Database). Rainfall in the Pilbara tends to be unpredictable and erratic, and the rocky-sloping topography of much of the upper catchments often produces considerable runoff (Van Vreeswyk et al., 2004). As such, ephemeral watercourses tend to have high levels of sedimentation and turbidity after rainfall events (Van Vreeswyk et al., 2004). Given the small scale (8.8 hectares) of the proposed clearing it is considered unlikely to increase the sediment load of any temporary surface water within the application area.

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

Methodology Van Vreeswyk et al. (2004)
GIS Database:
- Groundwater Provinces
- 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**

Local flooding occurs seasonally in the Pilbara as a result of cyclonic and sporadic thunderstorm activity (Rio Tinto, 2011). It is likely the non-perennial drainage lines within the application area experience natural seasonal flooding during times of intense rainfall (Rio Tinto, 2011). Given the small size (8.8 hectares) and the non-contiguous nature of the proposed clearing, it is considered unlikely to cause, or exacerbate, the incidence or intensity of flooding.

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

Methodology Rio Tinto (2011)

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

Comments

There is one Native Title Claim (WC97/89) 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 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 19 December 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 - Determined by the Federal Court

4. References

- Biota (2009) Tom Price Power Line West Detritals: Two-Phase Fauna Survey. Draft Report Prepared for Pilbara Iron Pty Ltd dated September 2009. Biota Environmental Sciences.
- Biota (2010) A Vegetation and Flora Survey of the Tom Price Power Line West Detritals. Unpublished report prepared for Pilbara Iron Company dated March 2012. Biota Environmental Sciences.
- DEC (2012) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. Accessed 27/01/2012.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management
- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Rio Tinto (2011) Statement Addressing the 10 Clearing Principles: RC drilling at Section 08 and Sec 257. Unpublished report dated October 2011.
- 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 (2012) FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed 24/01/2012).

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.