



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4756/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Pty Ltd

1.3. Property details

Property: Iron Ore (Hope Downs) Agreement Act 1992, Mining Lease 282SA (AM 70/282)

Local Government Area: Shire of East Pilbara

Colloquial name: Jinidi Iron Ore Mine Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
45		Mechanical Removal	Drilling Investigations and Associated Works

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):

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

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

A flora and vegetation survey of the application area was conducted in October 2011 by Biota Environmental Sciences (Biota) (2011). This survey identified the following 23 vegetation communities within the application area (Biota, 2011):

Vegetation of Drainage Lines

EvAci - *Eucalyptus victrix* scattered trees over *Acacia citrinoviridis* tall shrubland;

ExPIGOrApyTHtEUa - *Eucalyptus xerothermica* low open woodland over *Petalostylis labicheoides*, *Gossypium robinsonii*, *Acacia pyrifolia* tall open scrub over *Themeda triandra*, *Eulalia aurea* tussock grassland;

ExAciTloTp - *Eucalyptus xerothermica* scattered low trees over *Acacia citrinoviridis* tall shrubland over *Triodia longiceps*, *Triodia pungens* hummock grassland;

EcEvAci - *Eucalyptus camaldulensis*, *Eucalyptus victrix* open woodland over *Acacia citrinoviridis* tall shrubland;

ExAanAcaTp - *Eucalyptus xerothermica* low open woodland over *Acacia "aneura"*, *Acacia catenulata* tall open scrub over *Triodia pungens* very open hummock grassland;

EvHITlo - *Eucalyptus victrix*, *Hakea lorea* scattered low trees over *Triodia longiceps* hummock grassland;

EgAaTp - *Eucalyptus gamophylla* low open mallee woodland over *Acacia ancistrocarpa* open shrubland over *Triodia pungens* open hummock grassland;

ChAmoAtuPITp - *Corymbia hamersleyana* low open woodland over *Acacia monticola*, *Acacia tumida* var. *pilbarensis*, *Petalostylis labicheoides* tall open scrub over *Triodia pungens* very open hummock grassland;

Vegetation of Hills

EIAbTbrTw - *Eucalyptus leucophloia* scattered low trees over *Acacia bivenosa* open shrubland over *Triodia brizoides*, *Triodia wiseana* hummock grassland;

AciERfTw - *Acacia citrinoviridis* tall open shrubland over *Eremophila fraseri* open shrubland over *Triodia wiseana* very open hummock grassland;

EITbr - *Eucalyptus leucophloia* scattered low trees over *Triodia brizoides* hummock grassland;

EITwTsps - *Eucalyptus leucophloia* scattered low trees over *Triodia wiseana*, *Triodia* sp. Shovelanna Hill hummock grassland;

EIAiTsps *Eucalyptus leucophloia* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over *Triodia* sp. Shovelanna Hill hummock grassland.

Vegetation of Stony Plains

ChAbTw - *Corymbia hamersleyana* scattered low trees over *Acacia bivenosa* open shrubland over *Triodia wiseana* open hummock grassland;

EsAbTw - *Eucalyptus socialis* low open mallee woodland over *Acacia bivenosa* scattered shrubs over *Triodia wiseana* open hummock grassland;

AanAcaTw - *Acacia "aneura"*, *Acacia catenulata* over *Triodia wiseana* very open hummock grassland to hummock grassland;

AanAcaTp - *Acacia "aneura"*, *Acacia catenulata* low open forest over *Triodia pungens* very open hummock grassland;

AanAcaTsps - *Acacia "aneura"*, *Acacia catenulata* over *Triodia* sp. Shovelanna Hill very open hummock grassland;

AcaAanTbr - *Acacia catenulata*, (*Acacia "aneura"*) tall open scrub over *Triodia brizoides* very open hummock grassland;

EgAaTsps - *Eucalyptus gamophylla* low open mallee woodland over *Acacia ancistrocarpa* open shrubland over *Triodia* sp. Shovelanna Hill open hummock grassland;

EgAaTpTsps - *Eucalyptus gamophylla* low open mallee woodland over *Acacia ancistrocarpa* open shrubland over *Triodia pungens*, *Triodia* sp. Shovelanna Hill hummock grassland;

ChAiTsps - *Corymbia hamersleyana* scattered low trees over *Acacia inaequilatera* scattered tall shrubs over *Triodia* sp. Shovelanna Hill hummock grassland;

TwTa - *Triodia wiseana* (*Triodia angusta*) open hummock grassland.

Clearing Description	<p>BHP Billiton Iron Ore Pty Ltd is proposing to clear up to 45 hectares of native vegetation within a broader boundary of approximately 2,318 hectares for the purpose of drilling investigations and associated works to determine the location of a proposed mine access road, transmission line and ancillary infrastructure.</p> <p>Clearing will be conducted by mechanical means.</p>
Vegetation Condition	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).</p>
Comment	<p>The application area is located within the Pilbara region of Western Australia and is situated approximately 66 kilometres north west of Newman.</p>

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments	<p>Proposal is at variance to this Principle</p> <p>The proposed clearing is located approximately 66 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 <i>Eucalyptus leucophloia</i> over <i>Triodia brizoides</i> on skeletal soils of the ranges (CALM, 2002). Rare features of the subregion include gorges of the Hamersley Ranges (particularly those within</p>
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Karijini National Park), Palm Spring, Duck Creek and Themeda grasslands (CALM, 2002). Permanent spring systems such as Weeli Wolli are also listed for their importance as refugia (CALM, 2002).

A flora and vegetation survey of the application area was conducted by Biota (2011) in October 2011. This survey identified 23 vegetation communities within the application area, none of which are considered to be Threatened Ecological Communities (TEC's) or Priority Ecological Communities (PEC's) (Biota, 2011).

According to available databases, the application area lies within two buffer zones for the Weeli Wolli Springs Priority 1 Ecological Community (GIS Database). This PEC is related to vegetation associated with natural springs occurring along Weeli Wolli Creek. No natural springs were located within the application area and the Department of Environment and Conservation (DEC) advised that the proposed clearing is not likely to impact upon the conservation values of this PEC (BHP Billiton Iron Ore Pty Ltd, pers comm., 5 December 2011).

One Declared Rare Flora (DRF) species, *Lepidium catapycnon*, and two Priority 3 flora species, *Acacia subtiliformis* and *Goodenia* sp. East Pilbara, were recorded within the application area (Biota, 2011). BHP Billiton (2011) have committed to avoiding all known locations of the DRF species *Lepidium catapycnon*. Potential impact to the DRF species *Lepidium catapycnon*, as a result of the proposed clearing, may be minimised by the implementation of a flora management condition excluding clearing from within 50 metres of all known locations of this species.

Both Priority 3 Flora species *Acacia subtiliformis* and *Goodenia* sp. East Pilbara are known from numerous populations outside of the application area (Western Australian Herbarium, 2012). *Acacia subtiliformis* has been recorded from 11 locations within the Pilbara and *Goodenia* sp. East Pilbara is known from 14 locations within the Pilbara (Western Australian Herbarium, 2012). These species were also recorded extensively by Biota (2011) in areas adjacent to the application area. It is considered unlikely that the proposed clearing will significantly impact on the conservation of either of these species.

A flora and vegetation survey of the application area conducted by Biota (2011) identified the possibility for a weed invasion as a result of the proposed clearing. 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. 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 of the application area was conducted by Biota (2011) in October 2011. No conservation significant fauna species were recorded within the application area during this survey (Biota, 2011). A desktop survey identified that nine conservation significant fauna species may occur within or within 20 kilometres of the application area (Biota, 2011). Lack of core habitat and the highly mobile nature of the majority of the conservation significant species render it unlikely that the proposed clearing will impact on the conservation of any conservation significant fauna species.

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

Methodology BHP Billiton (2011)
Biota (2011)
CALM (2002)
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 of the application area was conducted by Biota (2011) in October 2011. This survey did not identify any conservation significant fauna species within the application area, however a desktop survey identified the following nine conservation significant fauna species as being recorded within 20 kilometres of the application area (Biota, 2011):

Northern Quoll (*Dasyurus hallucatus*) Endangered – the study area represents the south eastern extent for this species and there are very few records from the locality. While the Major Drainage Line Habitat within the application area represents potential foraging habitat, core habitat such as rocky breakaways and gorges is generally absent from the study area. It is therefore considered unlikely that the proposed clearing will significantly impact on the conservation of this species;

Pilbara Olive Python (*Liasis olivaceus barroni*) (Vulnerable) – occurs in rocky areas within the Pilbara, showing preference for habitats near water, particularly rock pools. This species may periodically occur within the study area given that suitable habitat is present in surrounding areas, however there is no core habitat for this species within the application area. It is therefore considered unlikely that the proposed clearing will significantly impact on the conservation of this species;

Pilbara Orange Leaf-nosed Bat (*Rhinioncteris aurantius*) (Vulnerable) – roosts in deep caves offering suitable humidity and stable temperature. This habitat is not present within the application area, therefore, while this species may forage in the application area, it is unlikely to roost. It is therefore considered unlikely that the proposed clearing will significantly impact on the conservation of this species;

Blind Snake (*Ramphotyphlops ganei*) (Priority 1) – this species is thought to inhabit moist gorges and gullies, however recent records have been collected from rocky hills and screes. The predominance of stony habitat supporting stony gullies in the application area increases the likelihood of this species being present. However, given the low impact, non-contiguous nature of the proposed clearing, it is considered unlikely to impact on the conservation of this species;

Western Pebble-mound Mouse (*Pseudomys chapmani*) (Priority 4) – has been recorded within the application area. It is considered common to very common in suitable habitat of stony hillsides with hummock grasslands. Habitat for this species is common within and outside of the application area and it is considered unlikely that the proposed clearing will impact on the conservation of this species;

Australia Bustard (*Ardeotis australis*) (Priority 4) – occurs over much of Western Australia, with the exception of the more heavily wooded southern portions of the state. While it is likely that this species is present within the application area from time to time, it is highly mobile and will move away from any disturbance. It is therefore considered unlikely that the proposed clearing will significantly impact on the conservation of this species; and

Three Migratory species, Eastern Great Egret (*Ardea modesta*), Eastern Osprey (*Pandion cristatus*) and Rainbow Bee-eater (*Merops ornatus*) have all been assessed as potentially occurring within the application area. Both the Eastern Great Egret and the Eastern Osprey are largely dependent on the presence of significant water bodies, which may be temporarily available in the Major Drainage Area. However, given the temporary nature of the water bodies both species are considered to be largely absent from the application area. Banks of larger creeklines may also provide suitable nesting habitat for the Rainbow Bee-eater, however this species is regionally common and it's unlikely the conservation of this species will be impact by the proposed clearing.

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

Methodology Biota (2011)

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

Comments Proposal is at variance to this Principle

One Declared Rare Flora (DRF) species, *Lepidium catapycnon*, was recorded within the application area (Biota, 2011). BHP Billiton (2011) have committed to avoiding all known locations of this DRF species. Potential impact to the DRF species *Lepidium catapycnon*, as a result of the proposed clearing, may be minimised by the implementation of a flora management condition excluding clearing from within 50 metres of all known locations of this species.

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

Methodology Biota (2011)
BHP Billiton (2011)

(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) known to occur within the application area (GIS Database). The nearest TEC is approximately 61 kilometres South East of the application area. At this distance it is considered unlikely that the proposed clearing will impact on this community.

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 within the Pilbara bioregion.

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

18: Low woodland; mulga (*Acacia aneura*); and
 82: Hummock grassland, low tree steppe; snappy gum over *Triodia wiseana*.

According to Shepherd (2009) approximately 100% of Beard vegetation associations 18 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
Beard vegetation associations - State					
18	19,892,305	19,890,275	~99.99	Least Concern	~2.13
82	2,565,901	2,565,901	~100	Least Concern	~10.4
Beard vegetation associations - Bioregion					
18	676,557	676,557	~100	Least Concern	~16.8
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 at variance to this Principle

There are no permanent wetlands or watercourses within the application area, however there are numerous non-perennial watercourses (GIS Database). One major non-perennial watercourse, Weeli Wolli Creek, intersects the application area. BHP Billiton has advised that no drilling will be conducted within the vegetation associated with Weeli Wolli Creek, however, an access track may be required (BHP Billiton Iron Ore Pty Ltd, pers comm., 23 January 2012). Potential impacts to the vegetation associated with Weeli Wolli Creek may be minimised by the implementation of a condition limiting the amount of clearing within this vegetation association.

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

Methodology 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 may be at variance to this Principle

The application area intersects the following seven 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 Calcrete land system is characterised by low calcrete platforms and plains supporting shrubby hard spinifex grasslands (Van Vreeswyk et al., 2004). This land system has been assessed as having a low erosion risk (Van Vreeswyk et al., 2004).

The Egerton land system is characterised by dissected hardpan plains supporting mulga shrublands and hard spinifex hummock grasslands (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

The Oakover land system is characterised by breakaways, mesas, plateaux and stony plains of calcrete supporting hard spinifex grasslands (Van Vreeswyk et al., 2004). This land system is not generally prone to degradation or susceptible to soil erosion (Van Vreeswyk et al., 2004).

The Pindering land system is characterised by gravelly hardpan plains supporting groved mulga shrublands with hard and soft spinifex (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).

The River land system is characterised by active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands (Van Vreeswyk et al., 2004). This land system is largely stabilised by buffel grass and spinifex and accelerated erosion is uncommon, however, susceptibility to erosion is high or very high if vegetation is removed (Van Vreeswyk et al., 2004).

Land degradation may occur within the River land system should the vegetation be removed. Potential erosion as a result of the proposed clearing may be minimised by the implementation of a condition limiting clearing within this land system.

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

Methodology 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 application area is not located within a conservation area (GIS Database). The nearest known conservation area is Karijini National Park located approximately 49 kilometres west of the application area (GIS Database). At this distance it is considered 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

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 40 kilometres south 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 between 500 – 1,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). Given the low impact, non contiguous nature, the proposed clearing is not likely to alter the salinity levels within the application area.

There are no permanent wetlands or watercourses within the application area (GIS Database). It is therefore considered unlikely that the proposed clearing will impact on the quality of any surface water.

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

Methodology GIS Database:
- Goundwater Salinity, Statewide
- Hydrography, linear
- 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 millimetres recorded at Newman Aero weather station approximately 66 kilometres south east of the application area (BoM, 2012; CALM, 2002). The majority of rainfall in this area usually falls in summer cyclonic and thunderstorm events (CALM, 2002). Large runoff as well as localised and regional flooding can occur following intense rainfall events and, given its non contiguous nature, it is considered unlikely that the proposed clearing will 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 BoM (2012)
CALM (2002)

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

Comments

There are two Native Title Claims (WC05/6 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 groups. 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 two 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 26 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 – Registered with the NNTT

4. References

- BHP Billiton (2011) Jinidi Iron Ore Mine: Investigative Works for the Mine Access Corridor. Vegetation Clearing Purpose Permit Application Supporting Document. Unpublished report dated December 2011.
- Biota (2011) Jinidi Mine Access Road Infrastructure Corridor - Flora and Fauna Values. Unpublished report prepared for BHP Billiton Iron Ore dated November 2011. Biota Environmental Sciences.
- BoM (2012) BoM Website - Climate Averages by Number, Averages for NEWMAN AERO. www.bom.gov.au/climate/averages/tables.shtml (Accessed 18 January 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.
- 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 25/01/2012).

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.