Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1645/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **BHP Billiton Iron Ore Pty Ltd**

1.3. Property details

Property: State Agreement Act, Mining Lease 244SA (AML 70/244)

Local Government Area: Shire of East Pilbara

Colloquial name: Newman Hub railway upgrade

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The vegetation of the application area is broadly mapped as: Beard Vegetation Association 82: hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database; Shepherd et al., 2001). A vegetation survey of the areas surrounding the Mount Whaleback and Orebody 29 minesites, was conducted by ENV Australia environmental consultants (ENV) in August 2006, and included the rail corridor. The survey identified the following four vegetation associations as occurring within the current clearing permit application area: 1. *Corymbia hamersleyana*, *Acacia citrinoviridis* and *Acacia aneura* woodland over open *Acacia bivenosa* shrubland over *Cenchrus ciliaris* grassland. 2. Acacia aneura woodland over an *open Rhagodia eremaea* shrubland over *Triodia* hummock grassland. 3. Scattered *Eucalyptus leucophloia* subsp. *leucophloia* trees over an open *Acacia aneura* and *Acacia bivenosa* shrubland over a *Triodia basedowii* hummock grassland. 4. Scattered tall Hakea lorea subsp. lorea and *Acacia bivenosa* shrubs over an open *Senna glutinosa* subsp. *pruinosa* shrubland over a *Triodia pungens* hummock grassland (BHP, 2006; ENV, 2006b, 2006c). ENV (2006c) described the vegetation condition of the application area as 'good to very good' on the southern side of the railway line, and 'poor' on the northern side. Much of the application area is degraded due to a long history of disturbance from human activity associated with the adjacent railway line and minesite (ENV, 2006c). The weed species *Cenchrus ciliaris*, Buffel Grass was recorded as widespread throughout the application area (ENV, 2006c).	BHP Billiton Iron Ore Pty Ltd (BHP Billiton) have applied to clear up to 13 ha, within a total application area of approximately 17.8 ha, for the purpose of railway upgrade works along a section (approximately 2km long) of the existing Newman to Port Hedland railway line. The project will include railway construction works, associated infrastructure, laydown areas and topsoil stockpiles (BHP, 2006). The railway upgrade is associated with the Newman Hub expansion project, at the Mount Whaleback minesite near Newman (BHP, 2006). The proposed clearing will occur within the existing 80 metre wide rail corridor. The existing railway line lies within this corridor, and approximately 15m either side of the railway line has previously been cleared for railway construction and maintenance activities (BHP, 2006).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The application area is located immediately adjacent to the existing Mount Whaleback opencut iron ore mine, which is located approximately 5 km west of the town of Newman, in the Pilbara region (GIS Database).

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 clearing permit application area is a long narrow corridor either side of an existing railway line. The southern end of the application area is immediately adjacent to a large operational minesite and associated roads and infrastructure. ENV (2006c) report that much of the application area is degraded due to longterm disturbance associated with the adjacent minesite.

Numerous biological surveys have been conducted over the Mount Whaleback area, over a number of years. The area surrounding the Mount Whaleback minesite has been more comprehensively surveyed for terrestrial fauna, compared to other development areas in the Pilbara region (ENV, 2006a). DEC considers that the flora and fauna assessments have demonstrated adequately that the vegetation proposed to clear is representative of other areas in the region and is not restricted in nature, or of significant biodiversity value (DEC, 2007).

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

Methodology

DEC (2007).
ENV (2006a)
ENV (2006c).

(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

Many biological surveys have been conducted in the Pilbara Bioregion, over several years, mainly on behalf of the mining industry (ENV, 2006a). Approximately 10 terrestrial fauna surveys have been undertaken in the vicinity of the Ophthalmia Ranges, which are located approximately 5 km to the north of the Mount Whaleback minesite, and extend to the east of Newman. Two previous fauna surveys were conducted within the Mount Whaleback mine project area in 1997 and 1998 (BHP Billiton, 2006a).

A fauna survey covering a large area surrounding the Mount Whaleback and Orebody 29 minesites was conducted by ENV Australia environmental consultants in August 2006 (ENV, 2006a). This survey included parts of the current clearing permit application area. ENV (2006c) report that much of the current clearing permit application area is degraded due to weed invasion and longterm disturbance associated with the railway line and adjacent minesite. The fauna habitats occurring within the clearing permit application areas are not likely to be unique or restricted in distribution, and are not considered to have any special conservation significance (ENV, 2006c). All of the habitat types within the application areas are well represented within the wider Pilbara region (ENV, 2006a).

The three fauna surveys conducted within the Mount Whaleback project area have recorded a cumulative total of 32 mammals, 54 reptiles, 80 birds and 3 frog species (ENV, 2006a). This represents 65% of the total expected terrestrial vertebrate fauna for the Ophthalmia Ranges. The 2006 survey also identified a number of species which were not recorded in the previous surveys. DEC (2007) considers that the results of the fauna assessment surveys of the Mount Whaleback area, have enabled a comprehensive characterisation of the Mount Whaleback area from a faunal perspective. DEC is confident that the fauna habitat present at Mount Whaleback has now been adequately surveyed to ascertain the conservation significance of the area under application, and it would appear that the area does not contain habitat which is restricted to the application area. The surveys have adequately demonstrated that the vegetation and fauna habitats proposed to be cleared are adequately represented in a broader context in the Ophthalmia Range (DEC, 2007).

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

Methodology

BHP Billiton (2006a).
DEC (2007).
ENV (2006a).
ENV (2006c).

(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 populations of Declared Rare Flora (DRF) within the clearing permit application area. The nearest known DRF are six populations of *Lepidium catapycnon*, approximately 6-8 km west/northwest of the application area (GIS Database). DEC has advised that the proposed clearing is unlikely to have any impact on these populations (DEC, 2007).

The area surrounding the Mount Whaleback minesite has been the subject of numerous surveys. A flora survey of the Mount Whaleback area, conducted by BHP Billiton Iron Ore Environment Department in 1999, specifically targeted *Lepidium catapycnon*, which is known to occur in the Mount Whaleback area (BHP Billiton,

2006a). The survey aimed to locate and describe the distribution and abundance of this species, to better understand its ecology. Thirty six sub-populations were found during the study, concentrated in an area 3-4km west/north-west of the Mount Whaleback minesite. The study found that the species has a strong habitat preference for steep hill slopes (BHP Billiton, 2006a).

In August 2006, ENV conducted a flora and vegetation survey covering approximately 1700 ha surrounding the Mount Whaleback and Orebody 29 minesites (ENV, 2006b). This survey included the rail corridor and included a targeted search for Declared Rare and Priority flora, particularly focusing on habitat suitable for *Lepidium catapycnon*. Two populations of *L. catapycnon* were recorded during this survey, totalling 33 individual plants. Both of these populations were located to the west of the Mount Whaleback mine pit, approximately 6 km west of the current clearing permit application area. No other DRF or Priority Flora species were recorded during the August 2006 survey (ENV, 2006b).

A specific Rare and Priority Flora survey of the current clearing permit application area was conducted by ENV (2006c) on 29th September 2006. The survey was conducted on foot using transects along the full length of the proposed disturbance area, representing all the vegetation types occurring within the application area (ENV, 2006c).

No DRF species were recorded within the current clearing permit application area during any of the abovementioned surveys (ENV, 2006c). One plant of the Priority Flora species *Abutilon trudgenii* (P3) was recorded within the application area during the September 2006 survey (ENV, 2006c). BHP (2006b) has advised that this plant is not expected to be disturbed by the proposed clearing. According to ENV (2006c) *A. trudgenii* is widely distributed in the Pilbara Bioregion and favours disturbed sites.

DEC databases have no records of any other populations of Declared Rare or Priority flora within a 50km radius of the areas applied to clear (GIS Database).

A search of DEC databases, conducted by ENV, revealed one DRF species (*L. catapycnon*) and 24 Priority Flora species with the potential to occur within the application area, based on known distributions. ENV (2006c) determined that the following five species were most likely to occur within the application area, based on their habitat preferences; *Eremophila* sp. Ophthalmia Range (P1); *Isotropis winneckei* (P1); *Abutilon trudgenii* (P3); *Tephrosia* sp. Cathedral Gorge (P3), and *Triumfetta leptacantha* (P3). However, only *A. trudgenii* was recorded during the survey of the application area (ENV, 2006c).

BHP Billiton has prepared a Significant Species Management Plan, which aims to minimise impacts on flora species of conservation significance. The location of significant flora species, their habitat and significant vegetation will be recorded. BHP Billiton will report on activities undertaken to monitor and manage significant species, as part of the Annual Environmental Report submitted to DoIR each year (BHP Billiton, 2006b).

DEC will be providing ongoing advice and consultation to the proponent on the content and implementation of the Significant Species Management Plan, which is intended to provide clear management objectives and procedures to protect and minimise the impact of mining activities on conservation significant flora. Provided the proponent successfully adopts the management protocols of the plan, it is unlikely that the proposed clearing will have any significant impact on flora of conservation significance (DEC, 2007).

The flora associations and species richness within the application areas are similar to adjacent areas, and no rare flora species are likely to be impacted by the proposed clearing (DEC, 2007; ENV, 2006c).

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

Methodology

BHP Billiton (2006a).
BHP Billiton (2006b).
DEC (2007).
ENV (2006b).
ENV (2006c).
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05.
- Pre-European Vegetation - DA 01/01.

(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 Threatened Ecological Communities (TEC's) within the area applied to clear (GIS Database). The nearest known TEC is the Ethel Gorge aquifer stygobiont community which is located approximately 14 km east of the area applied to clear (GIS Database).

DEC confirms that there are no known TEC's located within the application area, or in close proximity to the application area (DEC, 2007).

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

Methodology DEC (2007).
GIS Database: Threatened Ecological Communities - CALM 12/04/05.

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

Comments **Proposal is not at variance to this Principle**
The application area falls within the Hamersley subregion of the Pilbara Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Shepherd et al. (2001) report that approximately 99.9% of the pre-European vegetation still exists in the IBRA Pilbara Bioregion, and approximately 100% still exists within the Hamersley subregion. The vegetation of the application area is broadly mapped as Beard Vegetation Association 82: hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana*. Shepherd et al, (2001) report that there is approximately 100% of this vegetation type remaining, with approximately 10.2% in reserves.

Although large scale mining operations are located in close proximity to the application area, the region in which the clearing is proposed to occur has not undergone broad scale clearing. Hence the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared (DEC, 2007).

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

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion - Pilbara	17,804,164*	17,794,651*	~99.9%	Least concern	
IBRA subregion - Hamersley	5,634,727*	5,634,727*	~100%	Least concern	
Shire of East Pilbara	No information available				
Beard vegetation association - 82	2,565,930	2,565,930	~100%	Least concern	10.2%

* Shepherd et al. (2001)
** Department of Natural Resources and Environment (2002)

Methodology DEC (2007).
Department of Natural Resources and Environment (2002).
Shepherd et al. (2001).
GIS Database:
- Pre-European Vegetation - DA 01/01.
- Interim Biogeographic Regionalisation for Australia - EA 18/10/00.

(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 watercourses or wetlands within the area proposed to clear (GIS Database). Creeks in the surrounding area are dry for most of the year, only flowing briefly immediately following significant rainfall (BHP Billiton, 2006a).

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

Methodology BHP Billiton (2006a).
GIS Database:
- Hydrography, Linear - DOE 01/02/04.

(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**
There are no recorded acid sulphate soils in the area and the clearing is unlikely to result in an increased risk of salinity (BHP Billiton, 2006a; GIS Database).

The application area is broadly mapped as the Newman and River Land Systems (GIS Database).

The Newman Land System consists of lower slopes, with stony soils and some red loamy earths; narrow

drainage floors up to 400m in width with stony mantles on shallow red loam soils; and lower stony plains with stony soils, shallow loams or loamy earth soils. The Newman Land System soils are not particularly prone to soil erosion (DAFWA, 2006).

The River Land System consists of stony soils and red loamy earths, and soil disturbance or altered water flows may cause localised soil erosion (DAFWA, 2006).

DAFWA (2006) advised that clearing within the above land systems is unlikely to cause appreciable land degradation provided surface water runoff is managed.

The proponent has advised that appropriate measures will be implemented to minimise erosion and surface-water run-off (BHP Billiton, 2006a).

Weed control measures will be implemented to control the spread of weeds (BHP Billiton, 2006a).

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

Methodology BHP Billiton (2006a).
DAFWA (2006).
GIS Database:
- Acid Sulphate soil risk map, SCP - DOE 4/1/04.
- Rangeland Land System Mapping - DA.
- Salinity Risk LM 25m - DOLA 00.

(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

There are no conservation areas in the vicinity of the application area. The nearest DEC managed lands are the Karijini National Park, approximately 115km west/northwest of the application area; and the Collier Range National Park, approximately 120km south/southwest of the application area (GIS Database).

This proposal is unlikely to have an impact on any conservation area, based on the large distance to the nearest conservation reserve.

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

Methodology GIS Database: CALM Managed Lands and Waters - CALM 1/07/05.

(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 located within the Newman Water Reserve, a Public Drinking Water Source Area (PDWSA) (GIS Database). The Department of Water (DoW) has advised that the proposed activities are compatible with the DoW's Land Use Compatibility tables, and the DoW has no objection to the proposed clearing within the water reserve (DoW, 2007).

Drainage lines and gullies in the area feed into Whaleback Creek, which feeds into the Fortescue River (GIS Database). Creeklines are dry most of the year, only flowing briefly following significant rainfall (BHP Billiton, 2006a). Appropriate surface water management practices will be implemented to minimise erosion and minimise potential impacts on the quality of surface water (BHP Billiton, 2006a).

Groundwater quality monitoring is conducted as part of the existing mine operations at the nearby Mount Whaleback and Orebody 29 minesites (BHP Billiton, 2006a).

The proposed clearing is unlikely to cause deterioration in the quality of any surface or underground water.

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

Methodology BHP Billiton (2006a).
DoW (2007).
GIS Database:
- Hydrography, Linear - DOE 1/02/04.
- Public Drinking Water Source Areas - DOE 09/08/05.

(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

Average annual rainfall at Mount Whaleback is 310 mm, and the average annual evaporation exceeds the annual rainfall by as much as 2500 mm per year (BHP Billiton, 2006a).

There are no watercourses within the application area (GIS Database). Creeklines are dry most of the year, only flowing briefly following significant rainfall (BHP Billiton, 2006a).

Natural flooding occurs occasionally during the wet season (November to March) following significant rainfall (BHP Billiton, 2006a).

The proposed clearing is not likely 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

BHP Billiton (2006a).
GIS Database - Hydrography, Linear - DOE 01/02/04.

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

Comments

When this clearing permit application was advertised, one public submission was received, raising concerns regarding potential impacts of the proposed clearing on Aboriginal Heritage sites within the application area. Aboriginal Sites of Significance are protected under the *Aboriginal Heritage Act 1972*. The proponent is committed to the management and protection of Aboriginal heritage sites (BHP Billiton, 2005). BHP Billiton has a heritage protocol agreement with the Nyiyaparli people (traditional owners of Mount Whaleback), and regularly consult with the Nyiyaparli people to undertake Aboriginal heritage surveys in and around Newman (BHP Billiton, 2006a). BHP Billiton also has an internal process; the Project Environment and Aboriginal Heritage Review (PEAHR), which is designed to prevent inadvertent disturbance of Aboriginal heritage sites within BHP Billiton operations. Prior to the commencement of any land disturbance activity, a PEAHR must be completed and submitted to BHP Billiton's Aboriginal Affairs Department, for assessment. All land disturbance activities must be approved by BHP Billiton's Environment and Aboriginal Heritage staff (BHP Billiton, 2005).

There is one Aboriginal Site of Significance (Site ID: 6702) recorded as occurring over the clearing permit application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

There is a native title claim (WC99/004) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenements have been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. 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*.

The application area is within the Newman Water Reserve, a Public Drinking Water Source Area (PDWSA) (GIS Database). The DoW has advised that it has no objection to the proposed clearing within the water reserve (DoW, 2007).

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

Methodology

BHP Billiton (2005).
BHP Billiton (2006a).
DoW (2007).
GIS Database:
- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	13	**Grant**	The proposal has been assessed against the clearing principles. The proposal is either not at variance, or not likely to be at variance to any of the clearing principles. The assessing officer therefore recommends that the permit should be granted, subject to the following conditions: 1. The Permit Holder shall record the following for each instance of clearing: (a) the location where the clearing occurred, expressed as grid coordinates using the Geocentric Datum of Australia 1994 coordinate system; (b) the size of the area cleared in hectares; (c) the method of clearing; (d) the purpose of clearing; (e) the area rehabilitated in hectares; (f) the dates on which the area was cleared. 2. The Permit Holder shall implement erosion control measures to minimise potential erosion within the areas approved to clear, and adjacent areas. 3. The Permit Holder shall implement weed control measures to prevent the establishment or spread of weeds within the areas approved to clear, and adjacent areas. 4. The Permit Holder shall provide a report to the Director, Environment Division, Department of Industry and Resources by 1 September each year, demonstrating adherence to all the conditions of this permit, and setting out the records required under Condition 1 of this permit in relation to clearing carried out between 1 July and 30 June of the previous financial year. This report can be included as part of the Annual Environmental Report submitted to DoIR.

5. References

BHP Billiton (2005) Aboriginal Heritage Induction Handbook. BHP Billiton Iron Ore Pty Ltd, Western Australia.

BHP Billiton (2006a) RGP4 Newman Hub Rail Corridor - Vegetation Clearing Permit (purpose permit) supporting documentation. November 2006. BHP Billiton Iron Ore Pty Ltd, Western Australia.

BHP Billiton (2006b) Newman - Mount Whaleback, Orebody 29, 30 and 35 mine Sites - Significant Species Management Plan, Revision 1. BHP Billiton Iron Ore Pty Ltd, Western Australia.

DAFWA (2006) Land degradation assessment report. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia.

DEC (2007) Land clearing proposal advice. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Environment and Conservation, Western Australia.

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.

DoW (2007) Public Drinking Water Source Area (PDWSA) Advice. Advice to Assessing Officer, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Environment, Western Australia.

ENV (2006a) Mount Whaleback Fauna Assessment Survey - Phase 111 Summary Report. ENV Australia, Western Australia.

ENV (2006b) Mount Whaleback Flora and Vegetation Assessment - Phase 111 Summary Report. ENV Australia, Western Australia.

ENV (2006c) Newman Hub Rail Corridor Declared Rare and Priority Flora Survey. ENV Australia, Western Australia.

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., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2005).

6. Glossary

Acronyms:

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

Definitions:

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

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

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

Schedule 1	**Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
Schedule 2	**Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
Schedule 3	**Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
Schedule 4	**Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

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

P1 **Priority One: Taxa with few, poorly known populations on threatened lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P2 **Priority Two: Taxa with few, poorly known populations on conservation lands**: Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P3 **Priority Three: Taxa with several, poorly known populations, some on conservation lands**: Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

P4 **Priority Four: Taxa in need of monitoring**: Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

P5 **Priority Five: Taxa in need of monitoring**: Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

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

EX **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.

EX(W) **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

CR **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

EN **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

VU **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.