



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4186/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Galaxy Resources Limited**

1.3. Property details

Property: Exploration Licence 74/287
Local Government Area: Ravensthorpe
Colloquial name: Bakers Hill North East Exploration Program

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 10 March 2011

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
<p>Beard vegetation associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation in a regional context. The application area has been mapped as Beard vegetation association 352 Medium woodland; York gum (GIS Database).</p> <p>A reconnaissance flora and vegetation survey of the application area was undertaken on 13 December 2010 by an independent botanist contracted by Keith Lindbeck and Associates (Keith Lindbeck and Associates, 2011a).</p> <p>The flora survey determined that there are two vegetation types within the application area.</p> <p>1. Woodland of <i>Eucalyptus salmonophloia</i> over scattered tall mallee <i>E. oleosa</i> subsp. <i>corvina</i> over <i>Acacia sulcata</i>, <i>Dodonaea ptarmicaefolia</i>, <i>Santalum acuminatum</i>, <i>Cassinia arcuata</i> (P2), <i>Threlkeldia diffusa</i>, <i>Senna artemisioides</i>, <i>Enchylaena tomentosa</i>, <i>Eremophila glabra</i> and <i>A. erinacea</i> on deep loam over clay.</p> <p>2. Woodland of scattered <i>Eucalyptus oleosa</i> subsp. <i>corvina</i>, <i>Acacia acuminata</i>, <i>Santalum spicatum</i>, <i>A. cyclops</i>, <i>Dodonaea ptarmicaefolia</i>, <i>Senna artemisioides</i>, <i>Scaevola spinescens</i>, <i>Enchylaena tomentosa</i> and <i>Eremophila glabra</i> on stony sandy loam over dolerite ridges.</p>	<p>Galaxy Resources has applied to clear up to 0.6 hectares of native vegetation within an application area of approximately 8 hectares. The application area is located in the Bakers Hill north east area, approximately 13 kilometres south west of Ravensthorpe (GIS Database).</p> <p>The purpose of the clearing permit application is to conduct exploration drilling. The majority of clearing will consist of vegetation rolling and any topsoil and vegetation cleared will be stockpiled for use in rehabilitation works (Keith Lindbeck and Associates, 2011a).</p>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).</p>	<p>The vegetation condition is based on the Level 1 flora and vegetation survey carried out by Keith Lindbeck and Associates on 13 December 2010.</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 **Proposal is not likely to be at variance to this Principle**
The application area falls within the Fitzgerald sub-region of the Esperance Plains Interim Biogeographic

Regionalisation for Australia (IBRA) bioregion (GIS Database). This sub-region includes the Stirling Ranges Flora, the Fitzgerald River National Park (Biosphere) and has been recognised as a centre of species diversity in southwest Western Australia (CALM, 2002). The vegetation within this sub-region is characterised as having myrtaceous and proteaceous scrub and mallee heaths on sand plain overlying Eocene sediments; rich in endemics. Herb fields and heaths (rich in endemics) on abrupt granite tors and quartzite ranges that rise from the plain. Eucalypt woodlands occur in gullies and alluvial foot-slopes (CALM, 2002).

The application area is located within the Cocanarup Timber Reserve (Crown Reserve 30795) and Red Book Area, System 3.3 (GIS Database). The Cocanarup Timber Reserve is listed on the Register of National Estate for its natural values and is an Environmentally Sensitive Area (GIS Database).

Level 1 flora and fauna surveys of the application area were conducted by Keith Lindbeck and Associates in December 2010. This involved both desktop studies and site surveys of the application area (Keith Lindbeck and Associates, 2011a).

Keith Lindbeck and Associates (2011a) advised that the results of the flora and vegetation survey suggest that the application area appears to have considerably less plant diversity than that of nearby areas (Ravensthorpe Range, Bandalup Hill and Kundip areas) that support high levels of floristic diversity (Keith Lindbeck and Associates, 2011a). Given this, the proposed clearing is not likely to compromise the biological diversity within a regional context.

The flora and vegetation survey determined that the condition of the majority of the vegetation in the application area was 'Excellent', with two vegetation types being recorded (Keith Lindbeck and Associates, 2011a). The vegetation types were not representative of Threatened or Priority Ecological Communities and no vegetation associations, natural features or landforms observed were considered to be unique or of high conservation value in the context of the Esperance bioregion (Keith Lindbeck and Associates, 2011a).

The Department of Environment and Conservation (DEC) database listed 12 Declared Rare Flora (DRF) and 78 Priority Flora, and the Environment Protection and Biodiversity Conservation Protected Matters Search Tool listed six flora species of conservation significance with the potential to occur within the application area, three of which were additional to the DEC database search (Keith Lindbeck and Associates, 2011a).

The reconnaissance survey was conducted in mid-December 2010 and as such annual plants were not able to be identified. No DRF were identified, and one occurrence of one Priority Two species (*Cassinia arcuata*) was recorded approximately 10 metres from a proposed drill hole (Keith Lindbeck and Associates, 2011a). Other occurrences of this species were also recorded in the survey area away from the proposed access and drill lines where there will be no impact. Galaxy Resources have stated that this species will not be disturbed by the proposed clearing (Keith Lindbeck and Associates, 2011b).

According to Keith Lindbeck and Associates (2011a) few weeds have been recorded within the application area. Scarlet Pimpernel (*Anagallis arvensis*) and other annuals were recorded mostly in the north east of the application area (Keith Lindbeck and Associates, 2011a). The presence of introduced flora species may decrease the biodiversity of the survey areas. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The application area is located within a Dieback (*Phytophthora cinnamomi*) Risk Zone (Keith Lindbeck and Associates, 2011a). Keith Lindbeck and Associates (2011a) have noted that Dieback is not known in the immediate Cocanarup area and no signs of dieback were observed during the survey. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a dieback management condition.

Methodology Based on the above, the proposed clearing is not likely to be at variance to this Principle.
CALM (2002)
Keith Lindbeck and Associates (2011a)
Keith Lindbeck and Associates (2011b)
GIS Database:
- Cadastre for labelling
- EPA Red Book 1976-91
- IBRA WA (Regions - Sub-Regions)
- Register of National Estate
- System 1 to 5 and 7 to 12 areas

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

Comments **Proposal may be at variance to this Principle**

A Level 1 fauna reconnaissance assessment of the application area was undertaken in November 2010 (Keith Lindbeck and Associates, 2011a). Overall, the condition of the majority of the vegetation in the survey area was determined to be 'Excellent', and two medium Eucalypt woodland habitats were described (Keith Lindbeck

and Associates, 2011a).

Evidence or sightings of two species of mammals and four bird species were recorded during the reconnaissance fauna survey (Keith Lindbeck and Associates, 2011a). Many diggings were noted during the survey. These could be an indication of the presence of several species of mammal including the Echidna (*Tachyglossus aculeatus*), Numbat (*Myrmecobius fasciatus*) and Pig (*Sus scrofa*). Prior to the reconnaissance survey, sightings of snake species including the Tiger Snake (*Notechis scutatus*) and Dugite (*Pseudonaja affinis*) have been reported (Keith Lindbeck and Associates, 2011a).

Desktop studies were conducted by Keith Lindbeck and Associates (2011a). This consisted of interrogating:

- the Environment Protection and Biodiversity and Conservation (EPBC) Protected Matters Search tool to determine any species listed under the *Environment Protection and Biodiversity Act 1999* (EPBC Act 1999) for the area;
- threatened and Priority Fauna Database held by the Department of Environment and Conservation (DEC);
- the Western Australia Museum database NatureMap for records of vouchered fauna specimens; and
- the Birds Australia Atlas Database for bird species listed within the survey areas.

The results showed that 21 mammal species, 11 amphibians, 36 reptiles and 184 birds may occur within the application area (Keith Lindbeck and Associates, 2011a). Results of the DEC database searches indicated that sixteen species of conservation significance could potentially occur in the application area (Keith Lindbeck and Associates, 2011a). Based on available habitats the following fauna species were considered most likely to occur within the application area:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) (listed as Endangered under the EPBC Act 1999 and Schedule 1 species under the *Wildlife Conservation Act 1950*); and
- Chuditch (*Dasyurus geoffroi*) (Schedule 1 species under the *Wildlife Conservation Act 1950*).

The *Eucalyptus salmonophloia* woodland contained sizeable Eucalypt species that may provide significant fauna habitat. *Eucalyptus salmonophloia* stags, hollows and potential hollows could be utilised by Carnaby's Cockatoo for breeding and as refuges for Chuditch and Numbat. Although this habitat is significant, it was also established that it is not unique, to the Ravensthorpe area, as the vegetation types are also represented in three reserves within the Esperance Plains and three reserves locally (Keith Lindbeck and Associates, 2011a).

The Numbat (*Myrmecobius fasciatus*) (Schedule 1 species under the *Wildlife Conservation Act 1950*) was not listed to occur in the vicinity of the application area, however it could potentially occur in the Ravensthorpe area as captive bred animals have been released in the Cocanarup Timber Reserve since 2006 (Keith Lindbeck and Associates, 2011a). No surveys have been conducted to date to determine the dispersal and/or survival of these individuals (Keith Lindbeck and Associates, 2011a). The Numbat's preferred habitat is in Eucalyptus forests and woodlands dominated by *Eucalyptus marginata*, *Eucalyptus calophylla* and *Eucalyptus wandoo* (SEWPAC, 2011a). It is unlikely that Numbats would frequent the application area as the habitat within the application area does not contain these particular Eucalyptus species and the area consists of predominantly mid storey species as opposed to upper storey forests.

Potential impacts to conservation significant fauna species as a result of the proposed clearing may be minimised by the implementation of a fauna management condition. The nature of the proposed disturbance is expected to be relatively low as the vegetation will be scrub rolled rather than completely cleared. Therefore the disturbed vegetation within the application area will regenerate readily following completion of the exploration program.

The Galaxy Resources Exploration Management Plan highlighted that Malleefowl mounds are not common in the area, however if encountered (active or not) during the clearing will be avoided by a minimum of 50 metres (Keith Lindbeck and Associates, 2010). Potential impacts to Malleefowl as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.

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

Methodology Keith Lindbeck and Associates (2010)
Keith Lindbeck and Associates (2011a)
Keith Lindbeck and Associates (2011b)
SEWPAC (2011a)

(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

A desktop review was conducted by Keith Lindbeck and Associates (2011a) to determine if any Declared Rare Flora (DRF) occur within the application area. This review consisted of assessing the Department of Environment and Conservation's DRF database and the online Protected Matters Search Tool that interrogates the *Environment Protection and Biodiversity Conservation Act 1999* (Keith Lindbeck and Associates, 2011a).

The search of the databases revealed that twelve DRF species could occur within the application area (Keith Lindbeck and Associates, 2011a). The nearest recorded population is located approximately 10 kilometres south of the application area (GIS database). No DRF were recorded during the flora and vegetation survey of the application area (Keith Lindbeck and Associates, 2011a).

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

Methodology Keith Lindbeck and Associates (2011a)
GIS Database:
- Declared Rare and Priority Flora List

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

Comments **Proposal is not likely to be at variance to this Principle**
There are no known Threatened Ecological Communities (TEC's) within the application area (GIS Database). In addition, Keith Lindbeck and Associates (2011a) reported that the communities recorded during the flora and vegetation survey did not comprise species consistent with any TEC's.

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

Methodology Keith Lindbeck and Associates (2011a)
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 may be at variance to this Principle**
The application area falls within the Fitzgerald sub-region of the Esperance Plains Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reported that approximately 51% of the Pre-European vegetation remains within the bioregion (see table). The vegetation of the application area has been broadly mapped as Beard vegetation association 352: Medium woodland; York gum (GIS Database). This vegetation association remains at approximately 20.02% at a state level and approximately 28.84% within the Esperance Plains bioregion (Shepherd, 2009). This places vegetation association 352 as "vulnerable" according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002). However the remaining vegetation within the bioregion and sub region is categorised "Least Concern".

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Esperance Plains	2,899,950	1,488,029	~51.31	Least Concern	28.4
IBRA Subregion - Fitzgerald	1,570,677	876,153	~55.78	Least Concern	27.69
Local Government - Ravensthorpe	982,190	601,790	~61.27	Least Concern	19.47
Beard vegetation associations - State					
352	724,272	144,969	~20.02	Vulnerable	0.42 (2.07)
Beard vegetation associations - Esperance Plains Bioregion					
352	22,816	6,581	~28.84	Vulnerable	0.05 (0.16)
Beard vegetation associations - Fitzgerald subregion					
352	22,816	6,581	~28.84	Vulnerable	0.05 (0.16)

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

At a local level the proposed clearing is located within the Cocanarup Timber Reserve, which covers an area of approximately 3672 hectares, and remains largely undisturbed.

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:

- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

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

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

There are no watercourses located within the application area (GIS Database). The Phillips River is located approximately 930 metres south of the application area and a minor ephemeral drainage line is located east of the application area (GIS Database). Given the nature of the proposed clearing it is unlikely that any significant impact would occur to any vegetation associated with the nearby watercourses. The Galaxy Resources Exploration Management Plan states that seasonal watercourses will be avoided during clearing activities (Keith Lindbeck and Associates, 2010).

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

Methodology Keith Lindbeck and Associates (2010)

GIS Database:
 - Hydrography, linear
 - Ramsar Wetlands
 - Rivers

(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 soils within the application area comprise dark red/brown cracking clays over dolerite, white sandy clay with quartz 'gravel' over quartz pegmatite, and colluvial and alluvial gritty loams at the northern base of the Quarry Deposit (Keith Lindbeck and Associates, 2011a).

The majority of the proposed clearing will be by vegetation rolling (Keith Lindbeck and Associates, 2011b). This protects the soil from potential wind erosion and also minimises topsoil disturbance. As the topsoil will not be disturbed (with the exception of the construction of sumps), it is anticipated that soil erosion will be minimal. In addition, given the nature and size of the proposed clearing, it is unlikely that appreciable land degradation will occur.

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

Methodology Keith Lindbeck and Associates (2011a)

Keith Lindbeck and Associates (2011b)

(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 falls within the following conservation areas: the Cocanarup Reserve which is identified as an Environmentally Sensitive Area and is listed on the Register of National Estate (GIS Database); Red Book Area, System 3.3 Cocanarup Reserve; and a Timber Reserve (Crown Reserve 30795) (GIS Database).

The Cocanarup Reserve is significant, as the salmon gum (*Eucalyptus salmonophloia*) woodland and jam (*Acacia acuminata*) woodland of this reserve are remnants of the vegetation communities which were widespread in the wheat belt before clearing occurred. Many ecotypes that occur in this reserve are poorly reserved elsewhere in the region (SEWPAC, 2011b).

Review of Redbook Areas in 1993 recommended that Timber Reserve C30795 retain its current vesting and also be managed for conservation of flora and fauna (EPA, 1993).

The Register of National Estate area covers 9000 hectares (GIS Database). The proposed clearing of 0.6 hectares within the application area of approximately 8 hectares is not likely to have any significant impact on the conservation values of this or any nearby conservation areas.

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

Methodology EPA (1993)

SEWPAC (2011b)
 GIS Database:
 - EPA Red Book 1976-91
 - Register of National Estate
 - System 1 to 5 and 7 to 12 areas

(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 (GIS Database). The groundwater salinity within the application area is between 7000 - 14,000 milligrams per litre of Total Dissolved Solids (GIS Database).

There are no watercourses located within the application area (GIS Database). The Phillips River is located approximately 930 metres south of the application area and a minor ephemeral drainage line is located east of the proposed exploration area (GIS Database).

The clearing of 0.6 hectares of native vegetation within the application area is not likely to have a significant impact on the quality of the groundwater or surface water in the local area.

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

Methodology Keith Lindbeck and Associates (2010)

GIS Database:

- Groundwater Salinity, Statewide
- Hydrography, Linear
- Public Drinking Water Source Areas (PDWSA)
- Rivers

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

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

The application area is located within the Culham Inlet Phillips West Steere catchment which covers an area of 71,334 hectares (GIS Database).

There is one minor ephemeral creek that runs into application area (GIS Database). This is expected to be dry throughout the summer months. This region has an average annual rainfall of approximately 425 millimetres and around 75% of the rainfall occurs between March and October (Keith Lindbeck and Associates, 2011a). The average annual evaporation rate is approximately 1,800 millimetres (GIS Database). Given the small amount of vegetation proposed to be cleared and the extent of native vegetation in the area, it is considered unlikely that the proposed clearing will result in increased risk of peak flood height or duration.

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

Methodology Keith Lindbeck and Associates (2010a)

GIS Database:

- Evaporation Isopleths
- Hydrographic Catchments – Catchments
- Hydrography, Linear

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

Comments

There are two Native Title Claims (WC96/109 and WC98/70) over the area under application (GIS Database). These claims have been registered with the National 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 noted that the proposed clearing may impact on a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of the Environment, Water, Heritage and the Arts (DEWHA) for environmental impact assessment under the EPBC Act. The proponent is advised to contact the DEWHA for further information regarding notification and referral responsibilities under the EPBC Act.

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 14 February 2010 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

- Methodology** GIS Database:
- Native Title Determined
 - Native Title Federal
 - Native Title NNTT
 - Sites of Aboriginal Significance

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, 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.
- EPA (1993) Red Book Status Report (1993) on the implementation of Conservation Reserves for Western Australia, as recommended by the Environmental Protection Authority (1976 – 1984).
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Keith Lindbeck and Associates (2010) Regional Exploration Environmental Management Plan. Report prepared for Galaxy Resources Limited, November 2010.
- Keith Lindbeck and Associates (2011a) Bakers Hill North East Project Level 1 Flora, Vegetation and Fauna Survey. Report prepared for Galaxy Resources Limited, February 2011.
- Keith Lindbeck and Associates (2011b) Proposed Bakers Hill North East Exploration Program. Report prepared for Galaxy Resources Limited, February 2011.
- SEWPAC (2011a) Department of Sustainability, Environment, Water, Population and Communities (2011). *Myrmecobius fasciatus* in Species Profile and Threats Database, Department of Sustainability, Environment, Water, Population and Communities, Canberra. Available from: <http://www.environment.gov.au/sprat>. Accessed Tues, 8 Feb 2011 15:39:44 +1100.
- SEWPAC (2011b) Australian Heritage Database. Cocanarup Reserve, Jerramungup Ravensthorpe Rd, Ravensthorpe, WA, Australia. <http://www.environment.gov.au/cgi-bin/ahdb/search.pl>. Department of Sustainability, Environment, Water, Population and Communities.
- Shepherd (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.

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	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
s.17	Section 17 of the <i>Environment Protection Act 1986</i> , 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.