



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 4132/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Sandfire Resources NL

### 1.3. Property details

Property: Mining Lease 52/1046  
Miscellaneous Licence 52/122  
Local Government Area: Shire of Meekatharra  
Colloquial name: DeGrussa Copper-Gold Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 17 February 2011

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** Beard vegetation associations have been mapped at a 1:250,000 scale 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  
29: Sparse low woodland; mulga & *Acacia victoriae* in scattered groups.

The application area was surveyed by Mattiske Consulting (2010) in August 2009 and January, March and May 2010. The following seven vegetation types were recorded in the application area:

S1: Open scrub of *Grevillea berrryana*, *Acacia aneura* var. *aneura* and *Acacia kempeana* over *Eremophila incisa*, *Eremophila margarethae*, *Eremophila forrestii* subsp. *forrestii*, *Ptilotus obovatus* and *Ptilotus schwartzii* over *Aristida contorta* and *Monachather paradoxus* on red/brown sandy loam flats with dolerite, ironstone and quartz (rarely) pebbles;

S2: Low woodland of *Acacia aneura* var. *aneura* and *Grevillea berrryana* over *Eremophila incisa* and *Ptilotus* species on red/brown sandy loam flats with ironstone pebbles;

LW1: Low woodland of *Acacia aneura* var. *aneura*, *Acacia macraneura*, *Acacia pruinocarpa* and *Grevillea berrryana* over *Eremophila foliosissima*, *Eremophila forrestii* subsp. *forrestii* and *Eremophila galeata* over *Ptilotus* species and mixed grasses on red/brown sandy loam flats on ironstone pebbles;

LW2: Open low woodland of *Acacia aneura* var. *aneura*, *Acacia cuthbertsonii* subsp. *linearis* and *Acacia tetragonophylla* over *Eremophila galeata*, *Eremophila margarethae* over *Ptilotus* and *Senna* species on red/brown sandy loam flats with quartz pebbles;

C1: Open scrub of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifera*, *Acacia kempeana* and *Acacia tetragonophylla* over *Psychdrax latifolia*, *Senna artemisioides* subsp. *helmsii*, *Eremophila galeata*, *Ptilotus obovatus* and *Solanum lasiophyllum* over mixed herbs and grasses on flow-lines with dolerite and ironstone pebbles on red/brown clay loam;

C2: Low open woodland of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifera*, *Acacia craspedocarpa*, *Acacia tetragonophylla* over *Eremophila galeata* over *Alternanthera nodiflora* and *Cyperus ?centralis* over mixed grasses with occasional emergent *Eucalyptus victrix* on flow-lines with dolerite and ironstone pebbles on red/brown sandy loam gravel; and

C4: Scrub of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifera*, *Acacia macraneura*, *Acacia cyperophylla* over *Psyrdrax latifolia*, *Eremophila galeata*, *Ptilotus obovatus* and mixed grasses with occasional emergent *Corymbia candida* subsp. *dipsodes* on flow-lines with ironstone and dolerite pebbles on red clay loam.

<b>Clearing Description</b>	Sandfire Resources NL is proposing to clear up to 242 hectares of native vegetation within the larger boundary of 1,324.5 hectares for the purpose of Mineral Production.  Vegetation and topsoil will be cleared with a bulldozer and vegetation will be stockpiled separately for rehabilitation.
<b>Vegetation Condition</b>	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); To Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).
<b>Comment</b>	The application area is located in the Gascoyne region of Western Australia and is situated approximately 138 kilometres north-east of Meekatharra (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.

<b>Comments</b>	<p><b>Proposal is not likely to be at variance to this Principle</b></p> <p>The application area lies within the Augustus (GAS3) sub-region of the Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This sub-region is characterised by rugged low Proterozoic sedimentary and granite ranges divided by broad flat valleys (CALM, 2002).</p> <p>A vegetation survey of the broader Doolgunna area, conducted by Mattiske Consulting (2010), identified 21 intact vegetation types, seven of which occur within the application area. During the vegetation survey, 274 vascular plant taxa from 109 plant genera and 40 plant families were recorded within the Doolgunna project area (Mattiske Consulting, 2010). The vegetation communities defined within the application area are well represented regionally and are not considered locally significant (MBS Environmental, 2010).</p> <p>According to available GIS databases the application area lies within the buffer zone of the following two Priority 1 Ecological Communities:</p> <ul style="list-style-type: none"><li>- Robinson Range vegetation complexes (banded ironstone formation): A vegetation survey conducted by Mattiske Consulting (2010) did not identify any vegetation complexes associated with banded ironstone formations within the application area; and</li><li>- Three Springs Plutonic calcrete groundwater assemblage type on Gascoyne paelaeodrainage on Three Rivers Station): It is unlikely that the proposed clearing will impact the assemblages of invertebrates in groundwater calcretes.</li></ul> <p>One Priority 3 species, <i>Hemigenia tysonii</i>, has been recorded at ten locations within the broader application area. Nine of these populations, approximately 775-950 individual plants, will be required to be removed for project development. <i>Hemigenia tysonii</i> also occurs within the wider Doolgunna Project area which will not be impacted by the proposed clearing (MBS Environmental, 2010). It is not likely that the proposed clearing will affect the conservation status of this Priority flora species (MBS Environmental, 2010).</p> <p>A vegetation survey conducted by Mattiske Consulting (2010) recorded seven introduced species, <i>Bidens bipinnata</i>, <i>Cenchrus</i> sp., <i>Cucumis melo</i> subsp. <i>agrestis</i>, <i>Cucumis myriocarpus</i>, <i>Lysimachia arvensis</i>, <i>Oxalis corniculata</i> and <i>Mesembryanthemum crystallinum</i> within the application area. Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. None of these species are listed as 'Declared Plant' species under the <i>Agriculture and Related Resources Protection Act 1976</i> by the Department of Agriculture and Food. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p> <p>A vertebrate fauna assessment conducted by Ninnox Wildlife Consulting (2010) identified the potential for eight amphibian, 67 reptile, 123 birds and 21 mammals to occur within the application area. Ninnox Wildlife Consulting (2010) identified four fauna habitats, one shrubland, one woodland and two creekline, within the application area. These habitats are common both locally and regionally. It is therefore considered unlikely that the application area contains greater faunal diversity than the adjacent areas.</p> <p>Based on the above, the proposed clearing is not likely to be at variance to this Principle.</p>
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**Methodology** CALM (2002)  
Matiske Consulting (2010)  
MBS Environmental (2010)  
Ninox Wildlife Consulting (2010)  
GIS Database:  
- IBRA WA (Regions – Sub regions)  
- 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**

Ninox Wildlife Consulting (2010) conducted a fauna survey of the application area between 12 April and 20 April 2010. Based on vegetation mapping by Matiske Consulting (2010) four habitat types occur within the application area:

Habitat 1: Shrubland communities associated with flats and red/brown sandy loam;

Habitat 2: Low woodland communities associated with ironstone or quartz pebbles on flats with red/brown sandy loam;

Habitat 3: Shrubland or low woodland communities associated with flowlines and dolerite and ironstone pebbles on red/brown sandy loams; and

Habitat 4: Shrubland or low woodland communities with occasional emergent *Eucalyptus victrix* or *Corymbia candida* associated with flowlines and dolerite and ironstone pebbles on red/brown sandy loam (Ninox Wildlife Consulting, 2010).

The presence of *Eucalyptus victrix* and *Corymbia candida* along ephemeral water bodies within Habitat 4 represents significant habitat for fauna species indigenous to Western Australia. Sandfire Resources have revised their application area to exclude the majority of this habitat type. Although a small portion of this habitat may still be impacted, it is adequately represented outside of the application area. It is considered unlikely that the proposed clearing will significantly impact significant habitat for fauna indigenous to Western Australia.

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

**Methodology** Matiske Consulting (2010)  
Ninox Wildlife Consulting (2010)

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

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

According to available GIS databases there are no known records of Declared Rare Flora (DRF) within the application area (GIS Database).

A flora survey was conducted over the application area by staff from Matiske Consulting (2010). No DRF or species listed under the *Environmental Protection and Biodiversity Conservation Act 1999* were recorded within the application area (Matiske Consulting, 2010).

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

**Methodology** Matiske Consulting (2010)  
GIS Database:  
- Declared Rare and Priority Flora List

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

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

According to the available GIS Databases there are no known records of Threatened Ecological Communities (TEC's) within the application area (GIS Database). The nearest known TEC is located approximately 239 kilometres north of the application area (GIS Database). At this distance, there is little likelihood of any impact to the TEC as a result of the proposed clearing.

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

**Methodology** GIS Database:  
- Threatened Ecological Sites 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 falls within the Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA)

bioregion (GIS Database). Shepherd (2009) reports that approximately 100% of the pre-European vegetation remains in this bioregion.

The vegetation within the application area is recorded as Beard vegetation associations:

18: Low woodland; mulga (*Acacia aneura*); and  
 29: Sparse low woodland; mulga & *Acacia victoriae* in scattered groups (GIS Database; Shepherd, 2009).

According to Shepherd (2009) approximately 100% of these Beard vegetation associations remain within the Gascoyne bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Gascoyne	18,075,219	18,075,219	~100	Least Concern	~1.93
Beard vegetation associations - State					
18	19,892,305	19,890,275	~99.99	Least Concern	~2.13
29	7,903,991	7,903,991	~100	Least Concern	~0.29
Beard vegetation associations - Bioregion					
18	3,273,580	3,273,580	~100	Least Concern	~2.49
29	3,802,460	3,802,460	~100	Least Concern	~0.03

\* Shepherd (2009)

\*\* Department of Natural Resources and Environment (2002)

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 may be at variance to this Principle**

According to available GIS Databases, there are no permanent wetlands or watercourses within the application area, however there are several minor ephemeral watercourses and wash areas within the application area (GIS Database).

Based on vegetation mapping conducted by Mattiske Consulting (2010) three of the seven vegetation associations found within the application area are associated with flow-lines:

C1: Open scrub of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifer*, *Acacia kempeana* and *Acacia tetragonophylla* over *Psydrax latifolia*, *Senna artemisioides* subsp. *helmsii*, *Eremophila galeata*, *Ptilotus obovatus* and *Solanum lasiophyllum* over mixed herbs and grasses on flow-lines with dolerite and ironstone pebbles on red/brown clay loam;

C2: Low open woodland of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifer*, *Acacia craspedocarpa*, *Acacia tetragonophylla* over *Eremophila galeata* over *Alternanthera nodiflora* and *Cyperus ?centralis* over mixed grasses with occasional emergent *Eucalyptus victrix* on flow-lines with dolerite and ironstone pebbles on red/brown sandy loam gravel; and

C4: Scrub of *Acacia aneura* var. *aneura*, *Acacia aneura* var. *conifer*, *Acacia aneura* var. *macrocarpa*, *Acacia cyperophylla* over *Psydrax latifolia*, *Eremophila galeata*, *Ptilotus obovatus* and mixed grasses with occasional emergent *Corymbia candida* subsp. *dipsodes* on flow-lines with ironstone and dolerite pebbles on red clay loam.

Sandfire Resources NL have decreased the size of the initial application area, thereby removing the majority of the C2 and C4 communities. Part of these communities are still likely to be impacted, however given the presence of these vegetation communities locally outside of the application area, the proposed clearing is not

likely to significantly impact upon the conservation of these vegetation communities.

Vegetation community C1 is common locally and regionally. It is not likely that the proposed clearing will significantly impact upon the conservation of this vegetation community.

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

**Methodology** Mattiske Consulting (2010)  
GIS Database:  
- Hydrography, linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

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

According to the available datasets the application area intersects the Beasley, Horseshoe and Three Rivers land systems (GIS Database).

The Beasley Land system is described as low ridges, hills and laterised residuals above stony footslopes and broad, stony lower plains supporting scattered mulga and snakewood-dominated shrubland (Curry et al., 1994). This land system is mostly resistant to erosion (Curry et al., 1994).

The Horseshoe land system is described as undulating stony plains and low rounded hills based on Proterozoic metamorphic rocks, with somewhat saline drainage foci and alluvial tracts; supports scattered mulga and wait-a-while shrublands with halophytes (Curry et al., 1994). This land system is generally not susceptible to erosion (Curry et al., 1994).

The Three Rivers land system is described as broad hardpan plains with minor sandy banks and sparse mulga shrublands, in the far south-east of this area (Payne et al., 1998). With excessive use the hardpan plains and plains receiving concentrated sheet flow are both susceptible to erosion (Payne et al., 1998). Additionally, the sandy banks are also susceptible to erosion (Payne et al., 1998).

While the land forms within the Three Rivers land system have the potential to erode, a number of management strategies will be adopted to reduce the likelihood of erosion. These strategies include:

- Minimising the area requiring vegetation removal;
- Conducting topsoil-stripping activities during periods of low winds;
- Progressive rehabilitation of completed surfaces to minimise active areas exposed;
- Scarifying or deep ripping (as appropriate) compacted tracks and roads prior to rehabilitation; and
- Confining vehicle movements to defined haul roads and tracks (MBS Environmental, 2010).

With these strategies introduced, it is not likely that the proposed clearing will cause appreciable land degradation.

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

**Methodology** Curry et al. (1994)  
MBS Environmental (2010)  
Payne et al. (1998)  
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 may be at variance to this Principle**

According to available GIS Databases, the application area lies within the former Doolgunna leasehold, now proposed conservation reserve. This area is currently managed by the Department of Environment and Conservation (DEC) and is therefore classified as non-permitted under Schedule 1 of the Clearing of Native Vegetation Regulations. Consultation with DEC identified that poor representation of the present Beard vegetation associations within conservation areas is a key concern. The following two Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2009):

- 18: Low woodland; mulga (*Acacia aneura*); and
- 29: Sparse low woodland; mulga & *Acacia victoriae* in scattered groups.

Shepherd (2009) reports that approximately 1,250,895 hectares and 412,866 hectares, respectively, of these Beard vegetation associations are currently within DEC managed lands. It is considered that the proposed clearing of 242 hectares across these two vegetation associations is unlikely to have a significant impact on the representation of the vegetation associations within DEC managed lands.

The implementation of a weed control condition may assist in ensuring that degradation of the DEC managed

land is contained to the proposed impact areas.

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

**Methodology** Shepherd (2009)  
GIS Database:  
- DEC Tenure  
- Pre-European Vegetation

**(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 experiences a desert climate with bimodal rainfall (CALM, 2002). Groundwater within the application area has low salinity levels of between 500 to 1000 milligrams per litre Total Dissolved Solids (TDS) (GIS Database). Salinity within this range is considered acceptable for most uses with acceptable drinking water between 500 to 750 milligrams per litre TDS and acceptable irrigation water between 500 to 1,200 milligrams per litre TDS.

According to available GIS databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Meekatharra Water Reserve which is located approximately 122 kilometres south-west of the application area at its closest point (GIS Database). Given the distance separating the application area and the nearest water supply, the proposed clearing is not likely to impact on the water quality of the Meekatharra Water Reserve.

There are no permanent wetlands or watercourses within the application area (GIS Database). While there are several minor ephemeral watercourses and wash areas within the application area, the sporadic nature of rainfall within the local area means that water only holds for short periods of time.

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

**Methodology** CALM (2002)  
GIS Database:  
- Groundwater 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 desert climate with an average annual rainfall of approximately 241.4 millimetres recorded at the nearby Doolgunna weather station (CALM, 2002; BoM, 2011).

The DeGrussa Project area is located on relatively flat to slightly undulating terrain which may on occasion be at risk of flooding following short intense rainfall events (MBS Environmental, 2010). It is not likely that the proposed clearing of 242 hectares of native vegetation within a broader application area of 1,324.5 hectares 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 (2011)  
CALM (2002)  
MBS Environmental (2010)

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

**Comments**

There are two Native Title Claims (WC06/2 and WC99/46) 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 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 3 January 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 NNTT

#### 4. References

- BoM (2011) BOM Website - Climate Averages by Number, Averages for DOOLGUNNA.  
[www.bom.gov.au/climate/averages/tables/cw\\_007151.shtml](http://www.bom.gov.au/climate/averages/tables/cw_007151.shtml) (Accessed 14 January 2011).
- Curry, P.J., Payne, A.L., Leighton, K.A., Hennig, P. and Blood, D.A. An Inventory and Condition Survey of the Murchison River Catchment and Surrounds, Western Australia.
- Department of Conservation and Land Management (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting (2010) Flora and Vegetation Survey of the Doolgunna Project. Unpublished report prepared for Sandfire Resources NL, June 2010.
- MBS Environmental (2010) Purpose Permit Application: DeGrussa Copper-Gold Project Native Vegetation Management Plan and Assessment of Clearing Principles. Unpublished report prepared for Sandfire resources NL. December 2010.
- Ninox Wildlife Consulting (2010) A Level 1 Vertebrate Fauna Assessment of the Sandfire Resources NL DeGrussa Copper-Gold Project, North of Meekatharra, Western Australia. Unpublished report prepared for Sandfire Resources NL, May 2010.
- Payne, A.I., Van Vreeswyk, A.M.E., Pringle, H.J.R., Leighton, K.A. and Hennig, P. (1998) An Inventory and Condition Survey of the Sandstone-Yalgoo-Paynes Find Area, Western Australia, Western Australia, Department of Agriculture, 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.

#### 5. Glossary

##### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>CALM</b>	Department of Conservation and Land Management (now DEC), Western Australia
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia
<b>DEH</b>	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
<b>DEP</b>	Department of Environment Protection (now DEC), Western Australia
<b>DIA</b>	Department of Indigenous Affairs
<b>DLI</b>	Department of Land Information, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia
<b>DoE</b>	Department of Environment (now DEC), Western Australia
<b>DoIR</b>	Department of Industry and Resources (now DMP), Western Australia
<b>DOLA</b>	Department of Land Administration, Western Australia
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environmental Protection Act 1986, Western Australia
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI Act</b>	Rights in Water and Irrigation Act 1914, Western Australia
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia
<b>TEC</b>	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.