Government of **Western Australia**
Department of **Mines and Petroleum**

# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

**Permit application No.:** 4718/1
**Permit type:** Purpose Permit

### 1.2. Proponent details

**Proponent's name:** **Crescent Gold Limited**

### 1.3. Property details

**Property:** Mining Lease 38/261
**Local Government Area:** Shire of Laverton
**Colloquial name:** Burtville Gold Mine

### 1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|---|---|---|---|
| 65 | | Mechanical Removal | Mineral Production |

### 1.5. Decision on application

**Decision on Permit Application:** Grant
**Decision Date:** 29 December 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 for the whole of Western Australia and are useful to look at vegetation in a regional context. The following Beard vegetation association is located within the application area (GIS Database):

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

A Level 1 flora and vegetation survey of the application area was undertaken by J&J Tucker Environmental Solutions (J&J Tucker) on the 11 and 12 April 2008. J&J Tucker collated the information and MBS Environmental compiled the flora and vegetation report. The survey identified the following landform and vegetation units and areas (MBS Environmental, 2008):

1. Drainage Tract Mulga Shrubland (DRMS): *Acacia aneura*, *Acacia tetragonophylla* over *Eremophila spp* over understorey of *Ptilotus spp*, *Solanum spp* and *Dianella revolute*.

2. Banded Ironstone Formation (BIF): A small ironstone blow which is dominated by mulga vegetation over *Eremophila* species over chenopod and solanum species with *Dodonaea rigida* occurring more densely on this blow than elsewhere in the prospect.

3. Disturbed Areas: Previous mining operations have occurred within the application area. Former mining areas include a laydown area, run of mine (ROM) pad and low grade stockpile to the western side of the survey area, an open cut pit centrally located in the survey area and two waste dumps to the north of the pit. Further information on specific areas include:

**Clearing Description**

Crescent Gold Limited has applied to clear 65 hectares within an application area of approximately 180 hectares (GIS Database). The application area is located approximately 28 kilometres southeast of Laverton (GIS Database) within the Laverton Gold Project area.

The purpose of the application is to develop the Burtville Gold Mine including haul road construction, ROM construction, excavation of open pits, waste landform construction and various other mine related infrastructure (Crescent Gold Limited, 2011). Clearing will be by bulldozer or other heavy plant equipment. Vegetation and topsoil will be stockpiled for use in subsequent site rehabilitation (Crescent Gold Limited, 2011).

**Vegetation Condition**

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994);

to

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

**Comment**

Rating of vegetation condition against a condition scale was not included in the flora and vegetation survey report. A range in vegetation condition was selected by the assessing officer based on the results presented in the survey report.

The majority of the application area was highly disturbed due to previous mining activities (MBS Environmental, 2008).

MBS Environmental (2008) noted that annual and ephemeral flora were scarce and mainly absent during the survey due to limited rainfall in the months prior to the survey and that identification of species relied on vegetative characteristics due to a lack of species in flower or with available remnant flowers and fruit.

- Laydown area - Dominated by chenopod species with occasional *Senna* species.
- Previous Camp Area - Various *Eucalypt* species, a feral cactus and *Tamarix aphylla*.
- Waste Dumps - Rehabilitation has been undertaken, however, the floral associations are atypical of the Laverton Region and are dominated by *Acacia acuminata*, *Acacia jennerae*, *Atriplex nummularia*, *Atriplex vesicaria* and *Senna artemisioides subsp filifolia*. This association would be appropriate to the Kalgoorlie Region.
- Possible old town site - Scattered individuals of various tree and bush species, including *Hakea preissii*, *Acacia aneura*, and *Eremophila* species among an understorey dominated by chenopods and also including *Ptilotus* species and *Senna* species among others.

## 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 was surveyed on the 11 and 12 April 2008 as part of a Level 1 flora and vegetation survey. The majority of the survey area was highly disturbed due to previous mining (MBS Environmental, 2008). MBS Environmental (2008) states that the only portions of the survey area that appear to be in a natural condition are in the southern part of the survey area and that this section was considered to be a representative topographically and floristically of the Laverton area. A total of 48 flora taxa from 23 families and 28 genera were recorded within the survey area (MBS Environmental, 2008). MBS Environmental (2008) noted that annual and ephemeral flora were scarce and mainly absent during the survey due to limited rainfall in the months prior to the survey and that identification of species relied on vegetative characteristics due to a lack of species in flower or with available remnant flowers and fruit.

The vegetation survey identified two landform and vegetation units within the application area that were outside of the disturbed areas. These were identified as Drainage Tract Mulga Shrubland (DRMS) and Banded Ironstone Formation (BIF) and are located within the south eastern portion of the application area (MBS Environmental, 2008). The species recorded for the DRMS unit are included in the dominant and/or common species list in the DRMS site type described in Pringle et al. (1994). The BIF unit is predominantly located within the Jundee Land System (GIS Database) and the species recorded for this unit are consistent with species listed as occurring in the site types found throughout the Jundee Land System (Pringle et al., 1994).

The vegetation survey reports some rehabilitation has occurred within the application area, however, existing rehabilitation has used a seed mix that is typical of the Kalgoorlie region rather than that of the Laverton Region (MBS Environmental, 2008). The vegetation survey also identified weeds throughout the survey area including Athel Pine (*Tamarix aphylla*), Ruby Dock (*Acetosa vesicaria*), *Salsola tragus* and a native weed, Small Leaf Bluebush (*Maireana brevifoli*) (MBS Environmental, 2008). The Agricultural Protection Board has declared Athel Pine (*Tamarix aphylla*) to be a PI weed under the *Agriculture and Related Resources Protection Act 1976* (Agricultural Protection Board, 2011). Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

According to available databases (GIS Database) and Crescent Gold Limited (2011), no Declared Rare Flora, Priority Flora or Threatened or Priority Ecological Communities are located within the application area.

A reconnaissance site survey for fauna was undertaken on 15 May 2008. This identified Mulga woodland on a rocky-clay substrate as the dominant vegetation type and noted the presence of Red Kangaroos (*Macropus rufus*), Euros (*Macropus robustus*), rabbits, cats and dingoes/dogs (Coffey Environments, 2008). The survey identified one or more conservation significant bird species as likely to or occasionally occurring within the application area. According to Coffey Environments (2008), the proposed mining developments are unlikely to significantly impact on these species as they will move away to other areas if disturbed. Coffey Environments (2008) states that all vertebrate species likely to occur within the project area are wide-ranging and have been recorded in various other surveys within the bioregion and are unlikely to be impacted on a regional level.

Given that the majority of the application area has been previously disturbed, it is not likely that vegetation within the application area comprises a higher level of biological diversity than surrounding undisturbed areas.

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

**Methodology**

Agricultural Protection Board (2011)
Coffey Environments (2008)
Crescent Gold Limited (2011)
MBS Environmental (2008)
Pringle et al. (1994)
GIS Database:

- Rangeland Land System Mapping
- Threatened and Priority Flora
- Threatened Ecological Sites Buffered

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

**Comments**

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

A Level 1 fauna assessment was conducted by Coffey Environments in 2008. This included a desktop assessment of published and unpublished literature and a reconnaissance site survey on 15 May 2008. The closest and most comprehensive survey available for desktop assessment was a Level 2 fauna assessment undertaken by Coffey Environments in 2008 for the Duketon Gold Project area, located approximately 120 kilometres north of the Laverton Gold Project Area (Coffey Environments, 2008). According to Coffey Environments (2008), this area contains similar habitats represented in the Laverton Gold Project Area.

The fauna survey identified open Mulga woodland on a rocky-clay substrate as the dominant vegetation type with large areas of the site being significantly degraded as a result of previous mining and pastoral activities (Coffey Environments, 2008). The inspection of the Burtville deposit area indicated that the area contained Mulga woodland represented widely in the Laverton region (Coffey Environments, 2008). The vegetation survey identified two landform and vegetation units outside disturbed areas including DRMS and BIF (MBS Environmental, 2008). The vegetation present within these units is likely to be found in areas surrounding the application area.

During the reconnaissance site survey the presence of Red Kangaroos (*Macropus rufus*), Euros (*Macropus robustus*), rabbits, cats and dingoes/dogs were noted (Coffey Environments, 2008). For short-range endemics (SRE), Coffey Environments (2008) state that although no specific SRE investigations were undertaken, none of the habitats within the study site are unique or locally uncommon and are therefore unlikely to support SRE fauna that are not found elsewhere in the immediate vicinity. According to Coffey Environments (2008), the vertebrate fauna assemblages that exist are similar to that in neighbouring areas and their loss at a local level is unlikely to be regionally significant.

The fauna survey lists the following conservation significant species as potentially occurring within the area:

- Mulgara (*Dasycercus cristicauda*) – Vulnerable; Schedule 1;
- Banded Hare-wallaby (*Lagostrophus fasciatus fasciatus*) – Vulnerable; Schedule 1;
- Numbat (*Myrmecobius fasciatus*) – Vulnerable; Schedule 1;
- Malleefowl (*Leipoa ocellata*) – Vulnerable; Schedule 1;
- Giant Desert Skink (*Egernia kintorei*) – Vulnerable; Schedule 1;
- Peregrine Falcon (*Falco peregrinus*) – Schedule 4;
- *Branchinella apophysata* – Priority 1;
- Australian Bustard (*Ardeotis australis*) – Priority 4;
- Slender-billed Thornbill (western) (*Acanthiza iredalei iredalei*) – Vulnerable;
- Princess Parrot (*Polytelis alexandrae*) – Vulnerable; Priority 4;
- Rainbow Bee-eater (*Merops ornatus*) – Marine; Migratory under *EPBC Act*; Schedule 3;
- Great Egret (*Ardea alba*) – Marine; Migratory under *EPBC Act*;
- Oriental Plover (*Charadrius veredus*) – Marine; Migratory under *EPBC Act*; Schedule 3; and
- Fork-tailed Swift (*Apus pacificus*) – Marine; Migratory under *EPBC Act*; Schedule 3.

According to Coffey Environments (2008), several of these species are unlikely to occur in the application area due to various reasons including local species extinction (Banded Hare-wallaby) and absence of suitable habitat (Mulgara, Malleefowl, Giant Desert Skink, Slender-billed Thornbill and Great Egret). Coffey Environments (2008) notes that the Peregrine Falcon, Australian Bustard, Princess Parrot and Fork-tailed Swift may infrequently or occasionally be seen in the area, however, proposed mining developments are unlikely to significantly impact on these species as they will move away to other areas if disturbed. Rainbow Bee-eaters have been seen in the area and were reported as likely to be found within the project area. Coffey Environments (2008) states that this species is migratory and will readily move to other areas if it is disturbed and is therefore unlikely to be significantly impacted by the proposed development given the abundance of similar habitat in adjacent areas.

Given most of the application area has been disturbed and similar intact habitat exists within the vicinity, vegetation within the application area is not likely to represent significant fauna habitat.

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

**Methodology**

Coffey Environments (2008)
MBS Environmental (2008)

**(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 databases, there are no records of Declared Rare Flora (DRF) within the application

area (GIS Database). No DRF was recorded during the vegetation survey undertaken on the 11 and 12 April 2008 (MBS Environmental, 2008).

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

**Methodology** MBS Environmental (2008)
GIS Database:
- Threatened and Priority Flora

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

**Comments** **Proposal is not likely to be at variance to this Principle**
According to available databases, there are no Threatened Ecological Communities (TECs) within the application area (GIS database). The vegetation survey did not record any TECs (MBS Environmental, 2008).

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

**Methodology** MBS Environmental (2008)
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 Murchison Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 100% of the pre-European vegetation remains (see table) (GIS Database; Shepherd, 2009).

The vegetation of the application area has been mapped as the following Beard vegetation association (GIS Database):

18: Low woodlands; mulga (*Acacia aneura*).

According to Shepherd (2009), approximately 100% of this Beard vegetation association remains at both a state and bioregional level. Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared.

| | Pre-European area (ha)* | Current extent (ha)* | Remaining %* | Conservation Status** | Pre-European % in IUCN Class I-IV Reserves* |
|---|---|---|---|---|---|
| IBRA Bioregion – Murchison | 28,120,587 | 28,120,587 | ~100 | Least Concern | 1.06 |
| Beard veg assoc. – State | | | | | |
| 18 | 19,892,304 | 19,890,275 | ~100 | Least Concern | 2.1 |
| Beard veg assoc. – Bioregion | | | | | |
| 18 | 12,403,172 | 12,403,172 | ~100 | Least Concern | 0.4 |

* 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 – 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 at variance to this Principle**
There are several minor, non-perennial watercourses within the application area (GIS Database). According to Crescent Gold Limited (2011), these flow only after major rainfall events. Aerial photography shows that two of the watercourses have been disturbed and traverse the previous mine site footprint including an open pit (GIS Database). The remaining watercourses are located within the south eastern portion of the application area.

The vegetation survey recorded this area as Drainage Tract Mulga Shrubland (DRMS) and describes it as a poorly defined drainage line that is typical of the area comprising *Acacia aneura*, *Acacia tetragonophylla* over *Eremophila spp* over understorey of *Ptilotus spp*, *Solanum spp* and *Dianella revolute* (MBS Environmental, 2008).

The non-perennial watercourses drain towards Lake Carey, located approximately 26 kilometres west southwest of the application area (GIS Database). There are numerous non-perennial watercourses in the local area that also drain into Lake Carey (GIS Database). Based on this, the proposed clearing is not likely to impact the environment of Lake Carey.

Crescent Gold Limited (2011) state that wherever possible, Crescent will try to avoid disturbance to drainage lines that may be considered significant in relation to local and/or regional surface water flow.

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

**Methodology**

Crescent Gold Limited (2011)
MBS Environmental (2008)
GIS Database:
- Burtville 50cm Orthomosaic – Landgate 2006 (Image)
- Hydrography, linear
- Rivers

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

**Comments**

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

The application area has been mapped as occurring on the Nubev, Violet and Jundee land systems (GIS Database). The Nubev land system covers most of the application area. Drainage zones in this land system are moderately susceptible to soil erosion, particularly where perennial shrub cover is substantially reduced or the soil surface is disturbed (Pringle et al., 1994). Disturbance of the protective stone mantle on saline stony plains is also likely to initiate water erosion (Pringle et al., 1994). According to the vegetation survey, the only portion of the survey area that appears to be in a natural condition is the southern part of the application area (MBS Environmental, 2008). This area contains non-perennial watercourses that occur within the Nubev Land System and was recorded as vegetation unit DRMS during the vegetation survey. Crescent Gold Limited (2011) state that the drainage lines flow only after major rainfall events. Clearing in the vicinity of these drainage lines may therefore lead to soil erosion, particularly during and following rainfall events.

The Jundee land system covers a small portion within the south eastern corner of the application area. Pringle et al. (1994) states that impedance to natural sheet flows in this land system can initiate soil erosion and cause water starvation and consequent loss of vigour in vegetation downslope. Gravel mantles provide effective protection against soil erosion (Pringle et al., 1994).

Pringle et al. (1994) describes the Violet land system as having abundant mantles which provide effective protection against soil erosion over most of this land system, except where the soil surface has been disturbed. In such circumstances, the soil becomes moderately susceptible to water erosion. Narrow drainage tracts are mildly susceptible to water erosion (Pringle et al., 1994). Aerial photography shows that the application area covered by this land system is part of the previous mine site footprint (GIS Database). No watercourses are visible within this part of the application area (GIS Database).

The descriptions above indicate some areas are moderately susceptible to soil erosion, particularly where protective mantles and drainage zones are disturbed or cleared. However, available databases indicate the application area is relatively flat and experiences low rainfall (GIS Database). Based on this, clearing in most areas of the application area is unlikely to lead to appreciable soil erosion. Clearing of the non-perennial watercourses outside the disturbed areas may lead to more significant soil erosion. Crescent Gold Limited (2011) states that clearing of the drainage lines will be avoided where possible and soil erosion can be mitigated by management measures detailed in the Laverton Gold Project Environmental Management Plan. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The average annual evaporation rate is 11 times the average annual rainfall, so it is unlikely the proposed clearing will result in increased groundwater recharge causing raised saline water tables (GIS Database).

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

**Methodology**

Crescent Gold Limited (2011)
MBS Environmental (2008)
Pringle et al. (1994)
GIS Database:
- Burtville 50cm Orthomosaic – Landgate 2006 (Image)
- Evaporation Isopleths
- Hydrography, linear
- Rainfall, mean annual

- Rangeland Land System Mapping
- Topographic Contours, Statewide

**(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 does not lie within any conservation areas or DEC managed lands (GIS Database). The nearest conservation reserve is an unnamed Class C Nature Reserve, located approximately 135 kilometres southwest of the application area (GIS Database). Based on the distance between the application area and the nature reserve, the proposed clearing is not likely to impact the environmental values of any conservation area.

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

**Methodology**

GIS Database:
- DEC Tenure

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

**Comments**

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

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). There are no permanent waterbodies or watercourses within the application area, however, there are several minor non perennial watercourses that pass through the application area (GIS Database). Clearing in the vicinity of these is likely to lead to soil erosion and may result in increased sedimentation in watercourses within the area. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

The annual average rainfall for the application area is 300 millimetres and the average annual evaporation rate is approximately 3,300 millimetres (GIS Database). Therefore, during normal rainfall events surface water within the application area is likely to evaporate quickly. However, substantial rainfall events create surface sheet flow which is likely to have a higher level of sediments. During normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of watercourses within the application area.

According to available databases, groundwater salinity within the application area is between 1,000 and 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be brackish but still suitable for livestock. The proposed clearing is not likely to cause salinity levels within the application area to alter.

Crescent Gold Limited (2011) states that clearing of the ephemeral drainage lines will be avoided where possible and appropriate surface water management practices will be implemented through the Laverton Gold Project Environmental Management Plan to minimise erosion and minimise potential impacts on the quality of surface water.

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

**Methodology**

Crescent Gold Limited (2011)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- Rainfall, mean annual

**(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**

With an average annual rainfall of 300 millimetres and an average evaporation rate of approximately 3,300 millimetres there is likely to be little surface flow during normal seasonal rains (GIS Database). Given the likelihood of little surface flow, the proposed clearing of 65 hectares is not likely to cause or increase the incidence or intensity of flooding.

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

**Methodology**

GIS Database:
- Evaporation Isopleths
- Rainfall, mean annual

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

**Comments**

There are no native title claims over the area under application (GIS Database). 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.*

According to available databases, there are three 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 5 December 2011 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

**Methodology**

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – Determined by the Federal Court
- Native Title Claims – Filed at the Federal Court
- Native Title Claims – Registered with the NNTT

## 4. References


Agricultural Protection Board (2011) *Agriculture and Related Resources Protection Act 1976* Declared Plants. January 2011.

Coffey Environments (2008) Level 1 Fauna Assessment Burtville Deposit Laverton Gold Project. Unpublished report for Crescent Gold Limited dated 24 June 2008.

Crescent Gold Limited (2011) Native Vegetation Clearing Permit Application: Burtville Gold Mines Laverton Gold Project. Unpublished report dated 17 November 2011.

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.

MBS Environmental (2008) Flora and Vegetation Report for Burtville Area Laverton Gold Project. Unpublished report for Crescent Gold Limited dated June 2008.

Pringle, H.J.R, Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) An inventory and condition survey of rangelands in the north-eastern Goldfields, Western Australia, Technical Bulletin No. 87., Department of Agriculture, South Perth, 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:

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

**s.17** Section 17 of the Environment Protection Act 1986, Western Australia
**TEC** Threatened Ecological Community

## Definitions:

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

**P1** **Priority One - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

**P2** **Priority Two - Poorly Known taxa**: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

**P3** **Priority Three - Poorly Known taxa**: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.

**P4** **Priority Four – Rare taxa**: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.

**R** **Declared Rare Flora – Extant taxa** *(= Threatened Flora = Endangered + Vulnerable)*: taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

**X** **Declared Rare Flora - Presumed Extinct taxa**: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

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

**Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.

**Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.

**Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.

**Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

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

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

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

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

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

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

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

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

**EX(W)** **Extinct in the wild:** A native species which:

(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or

(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

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

**EN** **Endangered:** A native species which:

(a) is not critically endangered; and

(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

**VU** **Vulnerable:** A native species which:

(a) is not critically endangered or endangered; and

(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

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