



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3958/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: St Ives Gold Mining Company Pty Ltd

1.3. Property details

Property: Mining Lease 15/476
Mining Lease 15/884
Mining Lease 15/1561

Local Government Area: Shire of Coolgardie
Colloquial name: Diana Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
67		Mechanical Removal	Mineral Production and associated activities.

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 30 June 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

Vegetation within the application area has been mapped at a 1:250,000 scale as Beard vegetation association (GIS Database):

936: Medium woodland; Salmon Gum.

Botanica Consulting undertook a flora and vegetation survey over the Diana, West Idough and Bellerophon project areas between 22 and 24 September 2009. The following two vegetation communities were recorded within the 'Diana project' application area (Keith Lindbeck and Associates, 2010):

1. *Eucalyptus salubris* Woodland; and
2. *Eucalyptus oleosa* over *Triodia scariosa*;

Clearing Description

St Ives Gold Mining Company Pty Ltd has applied to clear up to 67 hectares within an application area of approximately 168 hectares for the purpose of constructing a mine and associated infrastructure (Keith Lindbeck and Associates, 2010). The proposed programme will comprise of waste dumps, open pit, a Run of Mine pad (ROM), Go line, and a haul road. Clearing will be undertaken by mechanical means.

Vegetation Condition

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

Comment

The clearing application area is located approximately 25 kilometres south-east of Kambalda (GIS Database). The vegetation condition was assessed by botanists from Botanica Consulting. Clearing permit CPS 3958/1 was granted by the Department of Mines and Petroleum on 4 November 2010, and is valid from 4 December 2010 to 30 December 2015. The clearing permit authorised the clearing of 67 hectares of native vegetation. An application for an amendment to clearing permit CPS 3958/1 was submitted by St Ives Gold Mining Company Pty Ltd on 4 April 2011. The proponent has requested to change the annual reporting due date to 31 January. There were no additional environmental impacts as a result of this amendment.

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 is located within the Eastern Goldfields subregion of the Coolgardie (C003) Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). At a broad scale, vegetation can be described as Mallees, Acacia thickets and shrub-heaths on sandplains with diverse Eucalyptus woodlands occurring around salt lakes, on ranges and in valleys (CALM, 2002).

The vegetation within the application area consists of Beard vegetation association 936 which is considered common and widespread through the Coolgardie region, with approximately 98% remaining of the pre-European vegetation remaining (GIS Database).

Eucalyptus woodlands have been identified as having a high species and ecosystem diversity within the Eastern Goldfields subregion (CALM, 2002).

A flora and vegetation survey was undertaken within the application area by Botanica Consulting in September 2009. This survey identified two different vegetation communities within the application area (Keith Lindbeck and Associates, 2010). The condition of these vegetation types was classed as excellent (Botanica Consulting, 2010a). The two vegetation associations are *Eucalyptus salubris* woodland and *Eucalyptus oloesa* over *Triodia scariosa*. In each of the vegetation groups only one Eucalyptus species was recorded (Botanica Consulting, 2010a).

It has been noted that the application area has been impacted by historical tracks and light grazing (Keith Lindbeck and Associates, 2010).

The flora survey of the application area recorded 28 species from 17 genera and 14 families and 30 species from 19 genera and 15 families respectively from the two community types (Botanica Consulting, 2010a). The flora survey revealed the application area to be diverse in flora species, however, these species were not restricted to the application area and occurred across the region (Botanica Consulting, 2010a). No Declared Rare Flora (DRF) or Priority Flora species were recorded within the application area.

There were three weed species found during the flora survey but none of these were located within the application area (Botanica Consulting, 2010a). Pimpernel (*Anagallis arvensis*), Blackberry Nightshade (*Solanum nigrum*) and *Oncosiphon suffruticosum* are not listed by the Western Australian Department of Agriculture and Food (DAFWA) as Declared Plants (Botanica Consulting, 2010a). While these weed species were identified within the Bellerophon and West Idough project areas (north of the Diana Project area) the application area is not weed infested and therefore the biodiversity values are potentially greater than those in areas where weeds are present. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed control condition.

A search was undertaken by the assessing officer of the Department of Environment and Conservation's Naturemap online database for fauna that may occur within a 40 kilometre radius of the application area. The search identified 2 amphibian, 76 avian, 14 mammalian and 37 reptilian species may occur within the application area (NatureMap, 2010). From this information the local area appears to be potentially diverse in avian and reptilian species.

The assessor notes that the application area does not comprise of any significant fauna habitat features such as caves, tree hollows or wetlands within the application area (Botanica Consulting, 2010b). Given the number of vegetation communities, flora species and landform features that have been identified within the application areas, the biodiversity of the application area would be considered moderate. Fauna habitats present within the application area were identified as common and widespread in the wider area (Botanica Consulting, 2010b). The habitat types within the application area are likely to be well represented within the Coolgardie bioregion given the extent of pre-European vegetation remaining is 98.42% (Department of Natural Resources and Environment, 2002; Shepherd, 2009).

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

Methodology Botanica Consulting (2010a)
Botanica Consulting (2010b)
CALM (2002)
Department of Natural Resources and Environment (2002)
Keith Lindbeck and Associates (2010)
NatureMap (2010)
Shepherd (2009)
GIS Database:
- IBRA WA (Regions–Subregions)

(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 survey was carried out over the application area by Botanica Consulting on 22 September 2009. However, an additional reconnaissance survey conducted on November 2009 for nearby locations has been incorporated into the results / discussion of this survey. This survey was conducted in accordance with the Environmental Protection Authority (EPA) Position Statement No. 3 and Guidance Statement 56: 'Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia' (Environmental Protection Authority 2002; 2004).

This survey identified two broad habitat types within the application area (Botanica Consulting, 2010b):

1. Low open woodland over shrubland over (hummock) grassland; and
2. Low open woodland over shrubland over low low shrubland.

Fauna habitats present within the application area were identified as common and widespread in the wider area (Botanica Consulting, 2010b). The survey did not identify any significant fauna habitat features such as caves, tree hollows or wetlands within the application area (Botanica Consulting, 2010b). The habitat areas within the application area are likely to be well represented within the Coolgardie bioregion given the extent of pre-European vegetation remaining is 98.42% (Department of Natural Resources and Environment, 2002; Shepherd, 2009).

Based on previous records and known habitat distributions there are 35 fauna species of conservation significance that have the potential to occur within the application area (Botanica Consulting, 2010b). No fauna species of conservation significance were observed in the application area, however 7 species of the 35 were identified as likely to utilise the area (Botanica Consulting, 2010b). These species are the: Southern Carpet Python (*Morelia spilota imbricata*), Australian Bustard (*Ardeotis australis*), Rainbow Bee-eater (*Merops ornatus*), Fork-tailed Swift (*Apus pacificus*), Peregrine Falcon (*Falco peregrinus*), Shy Heathwren (western sub-species) (*Hylacola cauta whitlocki*), and the Central Long-eared Bat (*Nyctophilus timoriensis timoriensis*).

The South-west Carpet Python (*Morelia spilota imbricata*) is listed as Schedule 4 under *Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)* and a P4 species on the Department of Environment and Conservation's Priority fauna list. This species has been observed at Lake Cowan, 30 kilometres south of the application area (Botanica Consulting, 2010b) and is known to have a variety of habitats such as Banksia woodlands, Eucalyptus woodlands and grasslands (Department of Environment and Conservation, 2010). The presence of this species cannot be discounted (Botanica Consulting, 2010b), therefore the loss of habitat due to clearing whilst not impacting on the conservation of this species overall may have an impact at a local scale.

The Rainbow Bee-eater (*Merops ornatus*) is listed as a migratory bird by the Japan-Australia Migratory Bird Agreement (JAMBA) and is protected under the *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. The Rainbow Bee-eater is found across most of Australia and inhabits open forests and woodlands, shrublands and various cleared or semi-cleared habitats (Department of Environment, Water, Heritage and Arts, 2009). This species was observed foraging and roosting in a number of areas north of the application area. Breeding activity may occur within the application area although populations are not likely to be significant (Botanica Consulting, 2010b).

The Peregrine Falcon (*Falco peregrinus*) is a species listed as Schedule 4 under the *Western Australian Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)* - fauna that is rare or likely to become extinct. This species does have a wide range over most of the state and utilises tall trees for nesting, large hollows, broken spouts of trees for nesting (Botanica Consulting, 2010b; Johnston and Storr, 1998). No nesting sites were observed for the Peregrine Falcon during the survey within the application area although the study site may form part of the larger home range (Botanica Consulting 2010b). The proposed clearing is not likely to significantly impact on this species.

The Shy Heathwren (western ssp) (*Hylacola cauta whitlocki*) is a P4 species on the Department of Environment and Conservation's Priority fauna list. This species was observed in a survey area north of the application area and in the general area by other observers and therefore may occur in denser shrubland sections of the application area (Botanica Consulting 2010b). The proposed clearing may have an impact on this species at a local scale.

The Australian Bustard (*Ardeotis australis*) is a P4 species on the Department of Environment and Conservation's Priority fauna list. Botanica Consulting (2010b) observed potential tracks for this species however the evidence was inconclusive. Observations in the area are rare for this species and it is unlikely to be present in significant numbers (Botanica Consulting, 2010b).

The Fork-tailed Swift (*Apus pacificus*) is listed as a migratory bird by the Japan-Australia Migratory Bird Agreement (JAMBA) and is protected under the *EPBC Act*. This species is a seasonal visitor, may forage in the area but is unlikely to roost (Botanica Consulting, 2010b). This species does not breed in Australia but does visit all states and territories in Australia (Department of Environment, Water, Heritage and Arts, 2010). The proposed clearing is not likely to have an impact on this species at a local scale.

The Central Long-eared Bat (*Nyctophilus timoriensis timoriensis*) is a P4 species on the Department of Environment and Conservation's Priority fauna list and has been recorded in the St Ives Mining Area (Botanica Consulting, 2010b). This species is known to be widespread in the arid Coolgardie bioregion, being common but patchy in mixed eucalypt woodlands with prominent scrub strata (Van Dyck and Strahan, 2008). The proposed clearing may have an impact on this species at a local scale.

The Malleefowl (*Leipoa ocellata*) is listed as Schedule 1 under *Wildlife Conservation (Specially Protected Fauna) Notice 2010(2)*, a migratory bird by the JAMBA and is protected under the *EPBC Act*. Habitats (inactive mounds) have been found during past surveys in the general area but available evidence suggests the species is locally extinct (Botanica Consulting, 2010b). Given the understorey vegetation within the application area is

likely to be comparable to that of the general area, it would not be unreasonable to consider the application area as having potential Malleefowl habitat. Potential impacts to Malleefowl as a result of the proposed clearing may be minimised by the implementation of a fauna management condition.

Given there are no significant habitat features within the application area and the habitat present is regionally common, the area proposed to be cleared is not likely to represent significant habitat for indigenous fauna.

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

Methodology Botanica Consulting (2010b)
Department of Environment and Conservation (2010)
Department of Environment, Water, Heritage and Arts (2009)
Department of Environment, Water, Heritage and Arts (2010)
Department of Natural Resources and Environment (2002)
Environmental Protection Authority (2002)
Environmental Protection Authority (2004)
Johnston and Storr (1998)
Saffer (2010)
Shepherd (2009)
Van Dyck and Strahan (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 recorded Declared Rare Flora (DRF) within the application area (GIS Database). Botanica Consulting conducted a flora survey over the application area in September 2009 during which no DRF species were recorded within the application area (Botanica Consulting, 2010a).

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

Methodology Botanica Consulting (2010a)
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 available databases, there are no known Threatened Ecological Communities (TEC's) within the application area (GIS Database). No vegetation communities described as a TEC were recorded during the botanical survey of the application area (Botanica Consulting, 2010a). The nearest known TEC is located approximately 273 kilometres south-east of the application area (GIS Database).

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

Methodology Botanica Consulting (2010a)
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 Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion within which approximately 98.42% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd 2009).

The vegetation of the application area has been mapped as Beard vegetation association 936: Medium Woodland; Salmon Gum (GIS Database).

According to Shepherd (2009) approximately 97.04% of Beard vegetation association 936 remains at the State level and 100% at the bioregional level (Shepherd 2009). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared.

While a small percentage of the vegetation types within the Coolgardie bioregion are adequately protected within conservation reserves, the bioregion remains largely uncleared. As a result, the conservation of this vegetation association within the bioregion is not likely to be impacted by this proposal.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves*
IBRA Bioregion – Coolgardie	12,912,204	12,707,872	~98.42	Least Concern	10.87
Beard vegetation association – State					
936	698,752	675,065	~97.04	Least Concern	2.25
Beard vegetation association – Bioregion					
936	586,792	586,791	~100	Least Concern	1.2

* 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 not likely to be at variance to this Principle

According to available databases there are no watercourses or wetlands within the application area (GIS Database).

The vegetation proposed to be cleared is not associated with any watercourses, wetlands or wetland dependent vegetation (Keith Lindbeck and Associates, 2010). Lake Lefroy is located approximately 2 kilometres west of the application area (GIS Database), whilst the nearest waterbodies are two non-perennial lakes located within approximately 390 metres and 680 metres of the application area (GIS Database).

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

(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 application area is located within the Kambalda Soil-Landscape Zone (Tille, 2006). This zone is characterised by flat to undulating plains (with hills, ranges and some salt lakes and stony plains) on greenstone and granitic rocks of the Yilgarn Craton (Tille, 2006).

The application area has been identified as comprising of four land system units (known as the Lakeland Land System (Saffer, 2010), these are:

1. Sandy sheets - level to gently undulating plains;
2. Dunes - ill defined linear sandy rises, crests and dunes up to 8 metres above the sandy sheets, becoming more distinct near margins with adjacent salt lake systems;
3. Loamy plains - level to very gently inclined plains slightly lower than sandy sheets; and
4. Claypans - level pans and drainage foci usually circular or oval and up to 2 kilometres in extent.

The pH of the surface soil within the application area ranges from 6.6 - 9.0 (Saffer, 2010) and there has been no known occurrence of acid sulphate soils (CSIRO, 2009). The erosion hazard of the soils within these land units ranges from low to moderate (Saffer, 2010).

The region is mostly free of intense cyclonic activity associated with the north western coastal areas, however, it does receive considerable rainfall from degenerating cyclonic depressions (Keith Lindbeck and Associates, 2010). The application area has an annual average evaporation rate of approximately 9 times the annual average rainfall (Bureau of Meteorology, 2010; GIS Database). Based on this information, recharge to

groundwater would be minimal, thereby reducing the likelihood of salinity increasing as a result of the proposed clearing.

Lake Lefroy is located approximately 2 kilometres west of the project area, a drainage channel into the lake is approximately 2 kilometres south of the project area and a relatively small clay pan is located approximately 1 kilometre north of the Project area (Keith Lindbeck and Associates, 2010). Given that the areas between these water features (and the Diana project area) are well vegetated, the proposed clearing is not likely to lead to land degradation issues such as salinity or waterlogging.

Mine infrastructure from the neighbouring Athena Project which includes a diversion channel to the east is likely to intercept the majority of the catchment surface flow upstream prior to reaching part of the Diana project (Saffer, 2010). Further proposed mine infrastructure for the Diana project is also likely to minimise the potential for erosion once construction has been completed.

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

Methodology Bureau of Meteorology (2010)
CSIRO (2009)
Keith Lindbeck and Associates (2010)
Saffer (2010)
Tille (2006)
GIS Database:
- Evaporation Isopleths
- Soils, 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

According to available databases, the application area is not located within a conservation area or Department of Environment and Conservation (DEC) managed land (GIS Database). The nearest known conservation area is the Kambalda Timber Reserve located approximately 20 kilometres north-west of the application area and the Doric Rocks Nature Reserve located approximately 26 kilometres south-west of the application area (GIS Database). As the locality of Lake Lefroy is between these reserves and the proposed clearing area, it would not be unreasonable to consider that vegetation to be cleared is limited in its function as an ecological linkage to the reserves. Further, given the distances between the application area and the reserves, the proposed clearing is not likely to impact on the environmental values of any conservation reserve.

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). No Public Drinking Water Source Areas are within a 50 kilometre radius of the application areas (GIS Database).

Groundwater within the application area is hypersaline with average salinity ranging from 14,000-35,000 milligrams per Litre Total Dissolved Solids (TDS) (GIS Database). Given the salt lake 'Lake Lefroy' (~554 square kilometres) is located approximately 2 kilometres west of the application area (Keith Lindbeck and Associates, 2010) and the groundwater is already hypersaline, any clearing within the application area is not likely to alter the existing groundwater quality.

There are no water courses or drainage channels located within the application area (GIS Database; Keith Lindbeck and Associates, 2010). The closest waterbody is Lake Lefroy and a drainage channel into the lake is located approximately 2 kilometres south of the application area. Average annual rainfall determined from the Coolgardie Post Office weather station is 264 millimetres (Bureau of Meteorology, 2010), therefore surface water flow is likely to be low during normal seasonal rains. Further, as the application area experiences an average annual evaporation rate of 2400-2600 millimetres (GIS Database) during normal rainfall events, surface water within the application area is likely to evaporate or be used by vegetation quickly.

Given there is a low average annual rainfall and there are no watercourses within the application area, the proposed clearing is not likely to cause sedimentation or deteriorate the quality of surface water in nearby areas.

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

Methodology Bureau of Meteorology (2010)
Keith Lindbeck and Associates (2010)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(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 in the Coolgardie bioregion and is characterised by hot summers and mild wet winters (ANRA, 2010).

Average annual rainfall determined from the Coolgardie Post Office weather station is low at 264 millimetres (Bureau of Meteorology, 2010). The region is mostly free from intense cyclonic activity associated with the north western coastal areas of Western Australia, however, considerable rainfall is received as a result of degenerating cyclonic depressions (Keith Lindbeck and Associates, 2010). Based on an average annual evaporation rate of 2400-2600 millimetres (GIS Database), any surface water resulting from normal rainfall events is likely to be relatively short lived.

There are no watercourses or wetlands within the application area (GIS Database). The application area is relatively flat and is surrounded by large tracts of intact remnant vegetation (Keith Lindbeck and Associates, 2010).

The application area is within the Lake Lefroy catchment area which covers 2,488,250 hectares (GIS Database). Given the size of the area to be cleared (67 hectares) in relation to the size of the catchment area, the proposed clearing is not likely to 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 ANRA (2010)
Bureau of Meteorology (2010)
Keith Lindbeck and Associates (2010)
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 (WC98_027 and WC99_002) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining 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.

Clearing permit CPS 3958/1 was granted by the Department of Mines and Petroleum on 4 November 2010, and is valid from 4 December 2010 to 30 December 2015. The clearing permit authorised the clearing of 67 hectares of native vegetation. An application for an amendment to clearing permit CPS 3958/1 was submitted by St Ives Gold Mining Company Pty Ltd on 4 April 2011. The proponent has requested to change the annual reporting due date to 31 January. There were no additional environmental impacts as a result of this amendment.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims

4. References

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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.