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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3246/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Silver Lake Resources Ltd**

1.3. Property details

Property: Mining Lease 26/242
Local Government Area: City of Kalgoorlie Boulder
Colloquial name: Lakewood Gold Processing Facility – Tailings Storage Facility Extension Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. The following two Beard Vegetation Associations are located within the application areas (GIS Database):

468: Low medium woodland; salmon gum and goldfields blackbutt; and
540: Succulent steppe with open low woodland; sheoak over saltbush (Shepherd, 2007).

A flora and vegetation survey of the application areas was conducted in February 2009 by Recon Environmental (2009) and four vegetation communities were identified:

1. **Plain Sago bush low shrublands (PSAS)-A**
The PSAS vegetation community is found in the centre of broad valleys where there is a concentration of water flow. It usually supports a low shrubland of sago bluebush (*Maireana pyramidata*).

PSAS-A is a mid-level shrubland dominated by *Atriplex nummularia* occurring on a surface soil substrate dominated by old gold process tailings that were historically stockpiled in the area by mining from a period of over 100 years. These tailings were deposited by wind and rain runoff from these old tailings dumps which remained in the Lakewood area before they were reprocessed in the 1990s. The remains of these tailings stockpiles persist in the surrounds and the broader locality.

Vegetation condition as defined by Keighery (1994) is 'Degraded'.

2. **Plain Sago bush low shrublands (PSAS)-D**
The PSAS vegetation community is found in the centre of broad valleys where there is a concentration of water flow. It usually supports a low shrubland of sago bluebush (*Maireana pyramidata*).

PSAS-D is a low chenopod shrubland that has evolved as a result of extensive disturbance over a long period of time. It is in extremely poor condition, has only low species diversity, and in a number of places the soil structure is too damaged (from saline water impacts) to support any perennial cover.

Vegetation condition as defined by Keighery (1994) is 'Degraded'.

3. **Plain mixed Halophyte low shrubland (PXHS)**
The PXHS vegetation community is found on alluvial plains adjoining salt lakes. The dominant layer is usually the low shrubs where either samphire and/or pearl bluebush (*Maireana sedifolia*) dominate.

In the Lakewood area, the extensive historic disturbance due to tree removal, saline water impacts, dispersal of old tailings material and other mining related activities over the past century have all impacted on this vegetation community. Where impacts to soil have been minimal there still remains a fair mix of species diversity, although it is likely that the Eucalypt species recorded in the area have been introduced.

Vegetation condition as defined by Keighery (1994) is 'Degraded'.

4. **Plain Eucalypt Eremophila - Chenopod woodland (PEXW)**
The PEXW vegetation community is found in the wash plains between the low hills and the salt lakes. It is usually characterised by an open Eucalypt woodland of *Eucalyptus salubris* with *E. lesouefii* or *E. salmonophloia* above *Eremophila scoparia*, *Cratystylis conocepgala*, with *Atriplex vesicaria*, *Tecticornia halocnemoides* and *Eremophila decipiens*.

In the Lakewood area, the extensive historic disturbance due to tree removal, saline water impacts, surface hydrology modifications and other mining related activities over the past century have changed the structure of this vegetation community and there are only small remnant pockets of the vegetation community present in the application areas. While the vegetation community retains very little of its Eucalypt woodlands, the understorey in these areas appears to be slowly recovering.

Vegetation condition as defined by Keighery (1994) is 'Degraded'.

These four vegetation communities reflect the two land systems found within the application areas; Gumland and Lefroy (Recon Environmental, 2009). These two land systems were deemed to be the most commonly occurring and are widespread throughout the Kambalda area, extending from Golden Ridge in the north to Higginsville in the south (Recon Environmental, 2009).

Clearing Description

Silver Lake Resources Ltd (hereafter referred to as Silver Lake Resources) have applied for a Purpose Permit to clear up to 17.5 hectares within an area of approximately 141.6 hectares (Silver Lake Resources, 2009). The proposed clearing would allow the proponent to extend an existing tailings storage facility by the addition of two new paddock-style cells and conduct associated works at the Lakewood Gold Processing Facility (Silver Lake Resources, 2009). The application areas are located approximately 4.3 kilometres east south-east of Boulder and approximately 8.2 kilometres south-east of Kalgoorlie (GIS Database).

Vegetation clearing will be conducted using mechanical means (Silver Lake Resources, 2009).

Vegetation Condition

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment

The vegetation condition rating is derived from information provided by Recon Environmental (2009).

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 areas are located within the Eastern Goldfields subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Eastern Goldfields subregion is characterised by Mallees, *Acacia* thickets and shrubheaths on sandplains (CALM, 2002). Diverse *Eucalyptus* woodlands occur around salt lakes, on ranges and in valleys, and salt lakes support dwarf shrublands of samphire (CALM, 2002). The area is rich in endemic *Acacia*s (CALM, 2002).

Recon Environmental (2009) undertook a flora and vegetation survey in February 2009 of the application areas. A total of 53 flora taxa from 25 genera and 15 families were recorded during the survey, none of which were species of Declared Rare Flora (DRF) or Priority Flora (Recon Environmental, 2009).

Four vegetation assemblages were identified within the application areas, and the vegetation condition of all vegetation assemblages was described as being 'Degraded' (Recon Environmental, 2009). Aerial imagery demonstrates that the vegetation within and adjoining the application areas has been severely impacted by historic clearing and mining activities. These disturbances are likely to have had an adverse impact on the floristic and faunal diversity of the vegetation within the application areas. G&G Environmental (2009) have reported that the extensive clearing and mining activity has resulted in the complete removal and destruction of the fauna habitat of the area, including the dominant vegetation of the Coolgardie and Murchison area that commonly supplies fauna habitat for tree nesting reptiles and birds (G&G Environmental, 2009).

The application areas contain Beard Vegetation Associations 468 and 540 and there is approximately 100% of their pre-European vegetation extent remaining within the Coolgardie bioregion and State respectively (Shepherd, 2007; GIS Database). In addition, the Coolgardie bioregion remains largely uncleared with approximately 98.4% of the pre-European vegetation extent remaining. As a result, there is likely to be similar, intact and higher quality vegetation assemblages throughout the local and regional area.

Given the condition of the vegetation, it is unlikely that the application areas comprise of higher biological diversity than the surrounding areas.

Two weed species, *Carrichtera annua* (Ward's Weed) and *Sonchus oleraceus* (Common Sowthistle) were present within the PSAS-D vegetation community (Recon Environmental, 2009). In order to minimise the spread of weed species and the risk of introducing additional weed species into the application areas, it is recommended that, should the permit be granted, a condition be imposed on the permit for the purpose of weed management.

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

Methodology CALM (2002).
G&G Environmental (2009).
Recon Environmental (2009).
Shepherd (2007).
Silver Lake Resources (2009).
GIS Database:
- Interim Biogeographic Regionalisation for Australia.
- Interim Biogeographic Regionalisation for Australia (subregions).
- Pre-European Vegetation.

(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**
G&G Environmental (2009) conducted a desktop fauna survey of the application areas and four species of amphibian, 70 species of reptile, 110 species of bird and 28 species of mammal were identified as potentially occurring within the application areas. This included two species of conservation significant invertebrate (butterflies), three species of conservation significant reptiles, 13 species of conservation significant birds and one species of conservation significant mammal (G&G Environmental, 2009).

Although a field assessment of the fauna habitats present within the application areas was not conducted, G&G Environmental (2009) reported that extensive clearing and mining activity has occurred within the application areas and their surrounds during the last century. This has resulted in the complete removal and destruction of the fauna habitat of the area, including the dominant vegetation of the Coolgardie and Murchison area that commonly supplies fauna habitat for tree nesting reptiles and birds (G&G Environmental, 2009).

As such, it is unlikely that the fauna habitat present within the application areas would support the majority of the fauna species (including the conservation significant species of fauna) recorded by the desktop search (G&G Environmental, 2009). There is extensive, intact vegetation remaining throughout the Coolgardie bioregion; therefore, it is unlikely that the application areas contain the whole or a part of a 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 G&G Environmental (2009).

(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**
Recon Environmental (2009) surveyed the application areas and did not record the occurrence of any Declared Rare Flora (DRF) or Priority Flora species. No records of DRF species were identified within the application areas using the GIS Database. The closest location of a DRF species, *Gastrolobium graniticum*, is situated approximately 66 kilometres west south-west of the application areas (GIS Database).

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

Methodology Recon Environmental (2009).
GIS Database:
- Declared Rare and Priority Flora List.

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

Comments **Proposal is not likely to be at variance to this Principle**
There are no records of Threatened Ecological Communities (TECs) within the application areas (GIS Database). The closest TEC is the Depot Springs stygofauna community, located approximately 335 kilometres to the north north-west of the application areas (GIS Database). The proposed clearing is not likely to impact on any known TEC.

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

Methodology GIS Database:
- Threatened Ecological Communities.

(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 areas fall within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 98.4% of the pre-European vegetation remains (Shepherd, 2007; GIS Database).

The vegetation within the application areas are classified as:

- **Beard Vegetation Association 468:** Medium woodland; salmon gum and goldfields blackbutt; and
- **Beard Vegetation Association 540:** Succulent steppe with open low woodland; sheoak over saltbush (Shepherd, 2007; GIS Database).

As depicted within the table below, the application areas do not represent a significant remnant of vegetation in an area that has been extensively cleared (Shepherd, 2007). The proposed clearing will not reduce the extent of Beard Vegetation Associations 468 and 540 below the recognised threshold level, below which species loss accelerates exponentially at an ecosystem level (EPA, 2000). Therefore, the bioregional conservation status for the Coolgardie bioregion and for the Beard Vegetation Associations 468 and 540 is of 'Least Concern' (Department of Natural Resources and Environment, 2002).

While a relatively small percentage of the vegetation types within the Coolgardie bioregion are protected within conservation reserves, the bioregion remains largely uncleared. The proposed clearing is unlikely to impact on the conservation status for Beard Vegetation Associations 468 and 540 within the Coolgardie bioregion.

	Pre-European area (hectares)*	Current extent (hectares)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Coolgardie	12,912,204	12,707,620	~98.4	Least Concern	~10.87
Beard veg assoc. – State					
468	592,022	592,022	~100	Least Concern	~4.3
540	202,424	202,424	~100	Least Concern	~27.8
Beard veg assoc. – Bioregion					
468	583,358	583,358	~100	Least Concern	~4.3
540	75,810	75,810	~100	Least Concern	Unknown

* Shepherd (2007).
** 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).
EPA (2000).
Shepherd (2007).
GIS Database:
- Interim Biogeographic Regionalisation of Australia.
- 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

No permanent wetlands and watercourses occur within the application areas (GIS Database). The application areas contain several minor non-perennial watercourses and a wash area that intersects the south-west corner of the southern application area (GIS Database). The minor non-perennial watercourses drain to the south into the non-perennial saline lake, Lake Hannan, located approximately 2.2 kilometres south of the application areas (Silver Lake Resources, 2009; GIS Database). Additionally, a major drain (man-made) separates the two application areas (GIS Database).

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

The proposed clearing is for the purpose of constructing two additional cells for a pre-existing tailings storage facility within the Lakewood Gold Processing Facility area (i.e., a brownfields site) (Silver Lake Resources, 2009). The major drain that occurs between the two application areas is associated with a tailings pipeline for another mining operation (GIS Database). As discussed in the flora report by Recon Environmental (2009), the

vegetation communities are classified as being in 'Degraded' condition due to extensive historic disturbance within the application areas and surrounding areas. Although vegetation community PXHS is associated with salt lakes, the degraded nature of the vegetation and the fact the clearing is occurring within a brownfields site implies that the proposed disturbance is unlikely to cause an unacceptable environmental impact.

Methodology Recon Environmental (2009).
Silver Lake Resources (2009).
GIS Database:
- Geodata, Lakes.
- 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

Land system mapping by the Department of Agriculture and Food Western Australia has mapped a variety of rangeland land systems of the adjacent areas, however the application areas for this proposal are not mapped (Recon Environmental, 2009). Recon Environmental (2009) correlated the vegetation communities present within the application areas to the Gumland and Lefroy rangeland land systems. A broad description of each land system is given below:

Gumland:
The Gumland land system is characterised by extensive pedeplains supporting Eucalypt woodlands with halophytic and non-halophytic shrub understorey (Recon Environmental, 2009).

Lefroy:
The Lefroy land system is characterised by salt lakes and fringing saline plains, sandy plains and dunes with halophytic shrublands (Recon Environmental, 2009).

Descriptions of the susceptibility of these land systems to erosion were not available within the Recon Environmental (2009) report.

The proposed clearing of 17.5 hectares for the construction of an additional two cells to a pre-existing tailings storage facility is unlikely to cause appreciable land degradation as the design for the expansion of the facility will include appropriate surface water diversion structures to redirect any surface water runoff.

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

Methodology Recon Environmental (2009).
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 is not likely to be at variance to this Principle

The application areas are not located within a conservation area (GIS Database). The nearest conservation area is the 'C'-class Lakeside Timber Reserve (Reserve No. 19214) which is located approximately 3.2 kilometres east of the application areas (GIS Database). The condition of the vegetation within the application area is degraded and this vegetation does not provide an ecological linkage to the timber reserve. Therefore, the proposed clearing is unlikely to impact on the conservation values of the Lakeside Timber Reserve.

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

Methodology GIS Database:
- CALM Managed Lands and Waters.
- Hydrography, linear.

(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 areas are not located within any proclaimed, gazetted or declared management areas or catchments (GIS Database). There are no named watercourses within the application areas; however the areas contain a number of minor non-perennial watercourses which flow south towards the saline Lake Hannan. The salt lakes in the vicinity of the application areas are likely to remain dry for the majority of the year and only hold surface water for short periods following significant rainfall events. Overall, the proposed clearing of native vegetation is not likely to have an adverse effect on surface water quality.

The application areas are not located within a Public Drinking Water Source Area (GIS Database). Groundwater within the area under application is deemed saline to hypersaline, with a Total Dissolved Solids measurement of between approximately 14,000 to greater than 35,000 milligrams per litre (GIS Database). The application areas experience an average rainfall of between approximately 250 to 300 millimetres per annum and a high evaporation rate of between approximately 2,600 to 2,800 millimetres per annum (GIS Database). It is unlikely that surface water occurs within the application areas or the surrounding areas on a permanent basis, and, as a consequence, recharge to groundwater would likely be low. Overall, the proposed clearing of native vegetation is not likely to have an adverse effect on groundwater quality.

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

Methodology GIS Database:
- Evaporation Isopleths (Evaporation).
- Geodata, Lakes.
- Groundwater Salinity, Statewide.
- Hydrography, linear.
- Isohyets (Rainfall).
- 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 areas receive between approximately 250 to 300 millimetres of rainfall per annum and have an average evaporation rate of between approximately 2,600 and 2,800 millimetres per annum (GIS Database). The watercourses in the vicinity of the application areas are non-perennial in nature and flow as a result of heavy rainfall (GIS Database).

No permanent waterbodies are located within the application areas (GIS Database). The application areas are located in close proximity to Lake Hannan, which is a salt lake located approximately 2.2 kilometres south of the application areas (GIS Database). Salt lakes within the Eastern Goldfields generally remain dry for the majority of the year, although they may hold free-standing water for short periods of time following extreme rainfall events. Given the proximity of the application areas to Lake Hannan, the surface water runoff from the application areas will flow into Lake Hannan after significant rainfall events (GIS Database). However, the clearing associated with the construction of two additional cells to a pre-existing tailings storage facility is unlikely to exacerbate or increase the incidence of flooding in the surrounding areas.

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

Methodology Silver Lake Resources (2009).
GIS Database:
- Evaporation Isopleths (Evaporation).
- Geodata, Lakes.
- Hydrography, linear.
- Isohyets (Rainfall).

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

Comments Two submissions have been received by the Department of Mines and Petroleum for this application and these are addressed below.

One of the submissions raised concerns regarding potential impacts of the proposed clearing on the Native Title Rights of the claimant group within the application areas. There are two native title claims over the area under application; WC98_027 and WC99_029 (GIS Database). These claims have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the tenement 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*.

Another concern raised was that proposed clearing would interfere with the spiritual and other aspects of community life and would create rights whose exercise would cause major disturbance to the land concerned. The land concerned is located within a current and live mining lease (Mining Lease 26/242) within the existing Lakewood minesite, with the purpose of the proposed clearing being to construct an additional two cells to a pre-existing tailings storage facility. The land concerned and the areas surrounding it have been heavily disturbed by historical and current mining operations, being located approximately 4.3 kilometres east south-east of Boulder and directly adjacent to the Kalgoorlie Consolidated Gold Mines (KCGM) Super Pit within 'The Golden Mile' area.

In addition, a concern regarding the limited protection under the provisions of the *Aboriginal Heritage Act 1972* and the Guidelines Issued to Persons Obtaining Miscellaneous Licences was raised within one of the submissions. The land concerned is covered by Mining Lease 26/242 (rather than a miscellaneous licence) and the mining lease 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.

Both submissions raised concerns regarding Aboriginal Sites of Significance being impacted by this proposal. There are no known Aboriginal Sites of Significance located within the application areas or within two kilometres of the application areas (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

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

Methodology

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

4. Assessor's comments

Comment

The clearing principles have been addressed and the proposed clearing is at variance to Principle (f), is not likely to be at variance to Principles (a), (b), (c), (d), (g), (h), (i) and (j) and is not at variance to Principle (e).

Should the permit be granted, it is recommended that conditions be imposed on the permit for the purposes of weed management, retaining vegetation and topsoil, record keeping and permit reporting.

5. References

CALM (2002). A biodiversity audit of Western Australia's 53 biogeographical subregions in 2002. Department of Conservation and Land Management, Western Australia.

Department of Natural Resources and Environment (2002). Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

EPA (2000). Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.

G&G Environmental (2009). Silver Lake Resources: Desktop fauna survey of the tenement M26/242. G&G Environmental Pty Ltd, Western Australia.

Keighery, B.J. (1994). Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Recon Environmental (2009). Lakewood vegetation survey. Read Consulting and Environmental Services, Western Australia.

Shepherd, D.P. (2007). 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

Silver Lake Resources (2009). Lakewood Gold Processing Facility. Proposed extension to the tailings storage facility: Native vegetation clearing permit supporting information. Silver Lake Resources Ltd, Western Australia.

6. Glossary

Acronyms:

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

Definitions:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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