



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5756/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Silver Lake Resources Limited

1.3. Property details

Property: Miscellaneous Licence 21/17
Local Government Area: Shire of Cue
Colloquial name: Murchison Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
30		Mechanical Removal	Construction of a haul road

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 26 September 2013

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	<p>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 associations are located within the application area (GIS Database):</p> <p>18: Low woodland; mulga (<i>Acacia aneura</i>) and 313: Succulent steppe with open scrub; scattered <i>Acacia sclerosperma</i> and <i>A. victoriae</i> over bluebush.</p> <p>A Level 1 flora and vegetation survey has not yet been completed for this area; however a targeted search for priority flora and fauna has been undertaken by Coffey Environments (Coffey) on 6 – 9 August 2013 (Coffey, 2013a). Two vegetation communities have been thus far described by Coffey following this targeted survey:</p> <ol style="list-style-type: none"> 1. Mulga (<i>Acacia aneura</i> complex) low woodlands on sandy substrate 2. <i>Acacia</i> and <i>Eremophila</i> shrublands over Chenopod low shrubland on rocky, quartz substrate
Clearing Description	<p>Murchison Project. Silver Lake Resources Limited (Silver Lake) has applied to clear up to 30 hectares of native vegetation within a total boundary of approximately 39.2 hectares, for the purpose of haul road construction. The project is located approximately 13.4 kilometres south east of Cue, in the Shire of Cue.</p>
Vegetation Condition	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994)</p> <p>to</p> <p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).</p>
Comment	<p>The vegetation condition along Pinnacles Road was determined by Coffey (2013b) following a request for elaboration on the August 2013 Stage 1/ Level 1 report (targeted search; Coffey, 2013a). The majority of Pinnacles Road vegetation is considered to be in a good to very good condition (Coffey, 2013b). Areas of the vegetation that were considered to be good (but not very good) were associated with the western end of the application area, closer to the Great Northern Highway where informal access may occur (Coffey, 2013b). The majority of the vegetation was considered to be in a very good condition, with minimal evidence of invasive flora species and minor grazing pressure from cattle, goats and rabbits (Coffey, 2013b).</p> <p>A Level 1 flora and fauna assessment has not been completed for the application area at this time, and so some inference has been made from the existing unpublished report by Coffey (2012a) for the adjacent Comet project area.</p> <p>Clearing will be by mechanical means.</p>

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposal may be at variance to this Principle

A targeted survey for priority flora and fauna was undertaken within the application area on 6-9 August 2013; however, a Level 1 survey has not yet been completed and vegetation has not yet been mapped. A Level 1 flora and fauna assessment and baseline vegetation survey have been conducted within the adjacent Comet Project Area on 16 and 18 January, and 25 April 2012 respectively (Coffey, 2012a; Coffey, 2012b). A consideration of aerial imagery indicates a similar vegetation structure along Pinnacles Road to the Comet project area (GIS Databases). The results of the Comet surveys may therefore provide some level of inference as to the potential vegetation characteristics present within the application area. The proposed cleared area appears similar in landform to the Comet project area, with undulating plains, and low/ no hills or significant landforms (GIS Database).

No known Threatened Ecological Communities (TECs) occur within the application area (GIS Database) and none were recorded during the Comet vegetation survey (Coffey, 2012a; Coffey, 2012b). Pinnacles Road lies 3.5 kilometres west of the Priority 1 Lake Austin vegetation complex (banded ironstone formation) Priority Ecological Community (PEC) (GIS Database), and 4.3 kilometres north of the Lake Austin water body.

The vegetation types along Pinnacles Road have been described as low Mulga woodland over sandy soils, and *Acacia* and *Eremophila* shrubland over Chenopod low shrubland on rocky, quartz substrate (Coffey, 2013b). There is minimal evidence of introduced flora species (Coffey, 2013b). This vegetation is similar to that described from within the surveyed Comet area, which comprised low open woodland dominated by *Acacia* species over scattered shrubs dominated by *Eremophila* species, and shrubland dominated by *Eremophila* and *Acacia* species.

The vegetation survey conducted within the Comet project area recorded a total of 55 taxa from 14 families and 25 genera. No introduced annual or ephemeral flora species were recorded, but may be more readily identified following further winter rainfall. Introduced species may also be expected to occur within the project area due to disturbances such as grazing, mining and other anthropogenic impacts (Coffey, 2012a; Coffey, 2012b).

Following a targeted search effort for Threatened or Priority flora species, *Acacia speckii* (Priority 4) was identified as present within the application area (Coffey, 2013a). According to NatureMap (DEC, 2013), there are two records of this species within the East Murchison region, and 17 records from within the West Murchison region. A total of 37 plants were identified at the western end of the proposed clearing; three were on the edge of the existing track, while an additional nine were located within 20 metres either side of the existing track and may be included within the proposed clearing activity. Twenty five individuals were found outside the alignment and are unlikely to be directly impacted.

A further 179 plants have been identified from within the Comet project area and 28 plants are known from the Mt Eelya complex- north of Tuckabianna (Coffey, 2013a). At present, the 207 plants from the Comet project and Mt Eelya complex are not proposed for clearing. The clearing of 12 out of 244 individuals within the Silver Lakes Murchison tenements may not in itself represent a significant impact on the local representation of *A. speckii* in the Cue region; however it is possible that the local population may suffer deleterious indirect impacts as a result of the clearing. The nature of the application area (a 13 kilometre strip 25 metres in width) is likely to present a barrier to seed dispersal within the local population (Botanic Gardens and Parks Authority, 2013; Murdoch University, 2013). This may occur by obstructing movement by ants, a potential seed disperser for *A. speckii* and a known disperser of seeds from other *Acacia* species (Murdoch University, 2013; Botanic Parks and Gardens Authority, 2013). If this species does not rely on symbiotic relationships for seed movement, the road may present an even greater barrier to dispersal (Botanic Parks and Gardens Authority, 2013).

Thirty seven individuals were identified, 12 of which were within the current extent of the application area. Combined with those found in the targeted August 2013 survey, a total of 244 *Acacia speckii* individuals have been identified from within the Silver Lake Murchison tenement, and thus far 207 of these are not within areas scheduled for clearing. *Acacia speckii* occurs on rocky soils over granite, basalt or dolerite on rocky hills or rises and is known from 28 records within the Gascoyne, Murchison and Yalgoo bioregions (Western Australian Herbarium, 2013).

According to NatureMap (DEC, 2013), 11 mammal, 114 avian, 21 reptile and 11 invertebrate species have been recorded within an approximate 20 kilometre radius of the application area. Level 1 desktop fauna assessments at Comet indicate vertebrate fauna assemblages likely to be recorded within the survey areas are also likely to be similar to those found in neighbouring areas due to the availability of these fauna habitats in surrounding areas (Coffey, 2012a). Further information provided by Coffey (2013b) in regards to fauna habitat within the current application area concur with these findings, stating that they are well connected to adjacent vegetation and that these habitat types are well represented throughout the bioregion.

Based on the above, the application area is not expected to comprise a higher biological diversity than surrounding areas. However, the absence of a complete Level 1 survey does bring a level of uncertainty to the assessment of the biological diversity of the application area.

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

Methodology Botanic Gardens and Parks Authority (2013)
Coffey (2013a)
Coffey (2013b)
Coffey (2012a)
Coffey (2012b)
DEC (2013)
Murdoch University (2013)
Western Australian Herbarium (2013)
GIS Database:
- Austin 50cm Orthomosaic - Landgate 2005
- Wynyangoo 50cm Orthomosaic - Landgate 2005
- 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 survey has not yet been completed for the application area, however, following the Stage 1/Level 1 survey, two broad fauna habitats were recorded along the proposed clearing (Coffey, 2013b). These were (1) Mulga (*Acacia aneura* complex) low woodlands, and (2) *Acacia* and *Eremophila* shrublands over Chenopod low shrubland. Both habitats were considered to be in good condition with minimal anthropogenic disturbance, and well connected to the surrounding landscape (Coffey, 2013b). Some evidence of grazing by introduced species (cattle, goats and rabbits) was present but not significant as a disturbance to understorey vegetation (Coffey, 2013b). Cats and foxes are also present within the application area (Coffey, 2013b). These habitat types are both well represented across the Murchison bioregion, and are not considered as unique or significant habitats for fauna (Coffey, 2013b).

No drainage lines or otherwise suitable habitats were reported to occur within the application area which might support Short Range Endemic (SRE) invertebrates (Coffey, 2013b); however, focused searches would be expected to be undertaken as Stage 2 of the Pinnacles Road Level 1 flora and fauna survey is completed. According to Coffey's (2012a) survey of the Comet Project area, eight conservation significant species were found to potentially occur on the basis of habitat suitability and presence in nearby surveys. While there is suitable habitat for these species in the survey area, this habitat is widely available in adjacent areas and the region (Coffey, 2012a). Given the surrounding area is mostly uncleared, it is considered unlikely that these species would be significantly dependent on the habitat within the proposed clearing. A targeted search for Malleefowl (*Leipoa ocellata*) (Vulnerable; Schedule 1) on 6-9 August 2013 by Coffey (2013a) found no evidence for the presence of individuals or nest structures.

Methodology Based on the above, the proposed clearing is not likely to be at variance to this Principle.
DEC (2013)
Coffey (2013a)
Coffey (2012a)
GIS Database:
- Hydrography linear

(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

The targeted search conducted by Coffey (2013a) did not identify any Threatened flora within the application area. Available databases also show one record of Threatened Flora within approximately 89 metres of the application area (GIS Database). However, this record is not present within the NatureMap database (DEC, 2013), and was therefore unidentifiable.

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

Methodology Coffey (2013a)
DEC (2013)
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 known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest known TEC is approximately 201 kilometres east, south east of the application area (GIS Database). No TECs were recorded during the Comet Level 1 vegetation survey

undertaken in April 2012 (Coffey, 2012b) or the Comet baseline vegetation monitoring undertaken in September 2012 (Coffey, 2012a).

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

Methodology Coffey (2012a)
Coffey (2012b)
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 Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 99.73% of the pre-European vegetation remains (see table) (GIS Database; Government of Western Australia, 2013).

The vegetation within the application area has been mapped as Beard vegetation associations 18 and 313 (GIS Database). Over 90% of these Beard vegetation associations remain at both a state and bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within an area that has been extensively cleared. Based on aerial imagery, the vegetation within the application area is neither a remnant itself nor does it form part of any remnants within the local area (GIS Database).

Table: remaining quantity of pre-European vegetation associations 18 and 313

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DEC Managed Lands
IBRA Bioregion – Murchison	28,120,587	28,044,823	~99.73	Least Concern	7.70
Beard veg assoc. – State					
18	19,892,305	19,843,727	~99.76	Least Concern	6.29
313	68,843	65,261	~94.80	Least Concern	0.00
Beard veg assoc. – Bioregion					
18	12,403,172	12,363,252	~99.68	Least Concern	4.96
313	68,843	65,261	~94.80	Least Concern	0.00

* Government of Western Australia (2013)

** 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)
Government of Western Australia (2013)
GIS Database:
- IBRA WA (Regions – Sub Regions)
- Pre-European Vegetation
- Austin 50cm Orthomosaic - Landgate 2005
- Wynyangoo 50cm Orthomosaic - Landgate 2005

(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

One minor, non-perennial watercourse is located to the eastern end of the application area, which extends 2.9 kilometres south, south west towards Lake Austin but does not drain into it. A review of aerial imagery indicates vegetation growing along these watercourses is similar to surrounding vegetation (GIS Database). However, this watercourse may be important in providing overland flow to areas of lower relief (UWA, 2012).

The proposed clearing may therefore impact vegetation currently receiving seasonal overland flow via this watercourse. Potential impacts to the existing hydrology as a result of the proposed clearing may be minimised by the implementation of a watercourse management condition.

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

Methodology UWA (2012)
GIS Database:
- Hydrography, linear

- Austin 50cm Orthomosaic - Landgate 2005
- Wynyangoo 50cm Orthomosaic - Landgate 2005

(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 occurs across three land systems (GIS Database). A majority of the proposed clearing occurs within the Yanganoo land system, while the western and eastern ends occur within the Millex and the Gabanintha land systems, respectively.

The Yanganoo land system contains existing areas of degradation to perennial vegetation from grazing pressure, especially along drainage tracts (Curry et al., 1994). The hardpan plain, which comprises a majority of the Yanganoo land system, is locally susceptible to accelerated erosion when existing degradation is present or when roads and tracks are inappropriately maintained (Curry et al., 1994). The Millex land system is vulnerable to increased erosion in degraded areas (Curry et al., 1994), and in the Gabanintha land system creeks and drainage tracts may be susceptible to water erosion (Curry et al., 1994).

Based on the above there is potential for erosion to occur, particularly in instances of existing degradation within the application area, or in association with water bodies such as the minor non-perennial watercourse to the eastern end of the application area (GIS Database). Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

Methodology Curry et al. (1994)
UWA (2012)
GIS Database:
- Hydrography, linear
- 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 area does not lie within any conservation areas of Department of Parks and Wildlife managed lands (GIS Database). The nearest conservation area is the ex-Lakeside pastoral lease, which is former leasehold proposed for conservation. It is located approximately 9.3 kilometres west of the application area (GIS Database). From this distance, the proposed clearing is not likely to impact the environmental values of the proposed 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

The application area does not occur within a Public Drinking Water Source Area (PDWSA), however it is located within the proclaimed East Murchison groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water. The proposed clearing is not located upon any permanent wetlands or watercourses (GIS Database). It does, however, lie approximately four kilometres north of Lake Austin (GIS Databases). One minor, non-perennial watercourse crosses the eastern end of the proposed clearing within the Yanganoo land system (GIS Database). This land system is moderately susceptible to erosion (Curry et al., 1994), and increased sedimentation of this minor, non-perennial watercourse may occur.

Groundwater salinity in the local area is estimated to be between 1,000 – 35,000 milligrams/Litre Total Dissolved Solids (TDS) to the east and west respectively, which is considered marginal to saline (GIS Database). The proposed clearing activity is not likely to significantly alter salinity levels within the application area.

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

Methodology Curry et al. (1994)
GIS Database:
- 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

Mean annual rainfall in the Shire of Cue is estimated at 233.1 millimetres (BoM, 2013). As the annual evaporation rate is approximately 3,500 millimetres, there is likely to be little surface flow during normal seasonal rains (GIS Database).

The application area falls within the Murchison River catchment area (GIS Database). Given the size of the application area (30 hectares) compared to the size of the catchment area (10,380,649 hectares) (GIS Database), the proposed clearing is not likely to increase the potential for flooding in this region.

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

Methodology BoM (2013)
GIS Database:
- Evaporation Isopleths
- Hydrographic Catchments - Catchments

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

Comments

There are two native title claims over the area under application (GIS Database). These claims (WC99/10 and WC99/46) have been registered with the Native Title Tribunal on behalf of the claimant group (GIS Database). 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*.

According to available databases, 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 Regulation (formerly 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 2 September 2013 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 – Registered with the NNTT

4. References

- Australian Government Bureau of Meteorology (BoM) (2013) Climate Statistics for Australian Locations. A Search for Climate Statistics for Cue, BoM, http://www.bom.gov.au/climate/averages/tables/cw_012045.shtml, viewed 3 September 2013.
- Botanic Gardens and Parks Authority (BGPA) (2013). Further Information provided to the assessing officer by BGPA on 4 September 2013.
- Coffey (2013a) Targeted Level 1 Flora and Malleefowl Studies – Stage 1. Unpublished report prepared by Coffey Environments Australia Pty Ltd for Silver Lake Resources Ltd dated 12 August 2013.
- Coffey (2013b) Further Information provided to the assessing officer by Coffey Environments Australia Pty Ltd on 4 September 2013.
- Coffey (2012a) Baseline Vegetation Monitoring Comet Project Area. Unpublished report prepared by Coffey Environments Australia Pty Ltd for Silver Lake Resources Ltd dated September 2012.
- Coffey (2012b) Level 1 Flora and Fauna Assessment Comet Project, Silver Lake. Unpublished report prepared by Coffey Environments Australia Pty Ltd for Silver Lake Resources Ltd dated April 2012.
- Curry, P.J., Payne, A.L., Leighton, K.A., Hennig, P. and Blood, D.A. (1994) Technical Bulletin - An Inventory and Condition Survey of the Murchison River Catchment and Surrounds, Western Australia, No. 84. Department of Agriculture, Government of Western Australia, Perth, Western Australia.
- DEC (2013) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. <http://naturemap.dec.wa.gov.au/default.aspx> (Accessed September 2013).
- 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.
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Murdoch University (2013) Further Information provided to the assessing officer by Murdoch University (School of Environmental Science) on 4 September 2013.
- University of Western Australia (UWA) (2012) West Turner Syncline Stage 2: Potential impacts of mining operations on overland flow dependent vegetation. Report prepared by UWA for Rio Tinto dated October 2012.
- Western Australian Herbarium (2013) Florabase - The Western Australian Flora. Department of Environment and Conservation. Available online at <http://florabase.dec.wa.gov.au/>, viewed September 2013.

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	Environmental 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.