



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4269/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Hamersley Iron Pty Ltd

1.3. Property details

Property: Iron Ore (Hamersley Range) Agreement Act 1963, Mineral Lease 4SA (AML 70/4)
Local Government Area: Shire of East Pilbara
Colloquial name: Brockman 3 Evaluation Drilling Program

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 28 April 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped at a 1:250,000 scale for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database; Shepherd, 2009).

82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database; Shepherd, 2009).

The application area was surveyed by Rio Tinto (2010) on 25 and 26 April 2010. The following vegetation types were identified within and around the application area:

SS1: *Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Acacia exilis*, *Acacia ancistrocarpa* open heath over *Senna glutinosa* subsp. *pruinosa* low open shrubland over *Triodia wiseana* open hummock grassland;

SS2: *Eucalyptus leucophloia* scattered low trees over *Acacia exilis*, *Acacia bivenosa* open heath over *Senna oligophylla* low open shrubland over *Triodia wiseana* open hummock grassland;

SS3: *Eucalyptus gamophylla*, *Eucalyptus leucophloia* low open woodland over *Acacia exilis* shrubland over *Triodia pungens* hummock grassland;

SS4: *Eucalyptus leucophloia*, *Hakea lorea* scattered low trees over *Acacia pyrifolia*, *Acacia pruinocarpa*, *Gossypium robinsonii* high open shrubland over *Acacia maitlandii*, *Acacia exilis* open heath over *Triodia wiseana*, *Triodia pungens* hummock grassland;

SS5: *Eucalyptus leucophloia*, *Corymbia hamersleyana* low open woodland over *Acacia inaequilatera* high open shrubland over *Acacia maitlandii*, *Acacia monticola* low open shrubland over *Triodia wiseana* hummock grassland;

SS6: *Eucalyptus leucophloia*, *Hakea lorea*, *Eucalyptus gamophylla* low woodland over *Acacia pruinocarpa*, *Acacia kempeana* high shrubland over *Acacia maitlandii* low open shrubland over *Triodia wiseana* open hummock grassland;

SS7: *Eucalyptus leucophloia* low open woodland over *Acacia exilis*, *Acacia atkinsiana*, *Acacia kempeana* open scrub over *Triodia wiseana* hummock grassland;

SS8: *Eucalyptus gamophylla*, *Eucalyptus leucophloia* low open woodland over *Acacia bivenosa*,

Acacia exilis open shrubland over *Triodia wiseana* hummock grassland;

SS9: *Hakea lorea* scattered low trees over *Acacia pruinocarpa*, *Acacia kempeana* open shrubland over *Acacia maitlandii*, *Gompholobium* sp. Pilbara low open heath over *Triodia wiseana* open hummock grassland over *eriachne mucronata* very open tussock grassland;

F1: *Acacia aneura*, *Corymbia deserticola* low open forest over *Acacia bivenosa*, *Acacia ancistrocarpa* high open shrubland over *Triodia pungens* closed hummock grassland;

F2: *Corymbia hamersleyana* low open woodland over *Acacia aneura* high shrubland over *Triodia wiseana* hummock grassland;

F3: *Acacia aneura*, *Eucalyptus gamophylla* low open woodland over *Keraundrenia velutina*, *Sida cardiophylla* low open shrubland over *Triodia pungens* open hummock grassland;

FL1: *Eucalyptus xerothermica*, *Eucalyptus gamophylla* low open woodland over *Acacia bivenosa*, *Acacia aneura* open scrub over *Eremophila longifolia*, *Acacia tenuissima* open shrubland over *Triodia pungens* open hummock grassland over *Chrysopogon fallax* very open tussock grassland;

FL2: *Eucalyptus leucophloia* low open woodland over *Acacia monticola*, *Acacia atkinsiana* open scrub over *Triodia wiseana* hummock grassland over *Eriachne mucronata* very open tussock grassland;

FL3: *Eucalyptus leucophloia* low open forest over *Acacia exilis*, *Acacia monticola*, *Acacia atkinsiana* high open shrubland over *Acacia bivenosa*, *Sida cardiophylla* open shrubland over *Triodia wiseana*, *Triodia pungens* very open hummock grassland;

FL4: *Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Acacia atkinsiana*, *Acacia bivenosa* open scrub over *Triodia wiseana* hummock grassland; and

FL5: *Eucalyptus xerothermica*, *Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Acacia maitlandii* high open shrubland over *Rulingia luteiflora*, *Petalostylis labicheoides* shrubland over *Tephrosia rosea* low shrubland over *Triodia pungens* very open hummock grassland over *Themeda triandra*, *Eriachne tenuiculmis* open tussock grassland (Rio Tinto, 2010).

Clearing Description	<p>Hamersley Iron Pty Ltd is proposing to clear up to 1.5 hectares of native vegetation for the purpose of exploration drilling.</p> <p>Clearing will be done using blade raised technique where practicable or scrub rake in level terrain. Where cleared tracks require maintenance, a lowered blade may be used (Hamersley Iron Pty Ltd, 2011).</p>
Vegetation Condition	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); To Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).</p>
Comment	<p>The application area is located in the Pilbara region of Western Australia and is situated approximately 45 kilometres north-west of Tom Price (GIS Database).</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	<p>Proposal is not likely to be at variance to this Principle</p> <p>The application area occurs within the Hamersley (PIL3) subregion of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). This sub-region is characterised by sedimentary ranges and plateaux, dissected by gorges (CALM, 2002). At a broad scale, vegetation can be described as Mulga low woodlands over bunch grasses on fine textured soils in valley floors and <i>Eucalyptus leucophloia</i> over <i>Triodia brizoides</i> on skeletal soils of the ranges (CALM, 2002).</p> <p>A vegetation survey conducted by Rio Tinto (2010) on 25 and 26 April 2010 identified 100 native vascular plant taxa from 49 genera from 24 families within the application area and the surrounding areas. This is deemed to be within the expected range for an area of this size (78 hectares) (Rio Tinto, 2010). The assortment of species present is typical of the local area and is also representative of the greater Pilbara region (Rio Tinto, 2010).</p> <p>A vegetation survey conducted by Rio Tinto (2010) identified one single plant of the Priority 3 taxa <i>Rhagodia</i> sp. Hamersley within the application area. Given only one individual plant of this species was identified within the area it is considered unlikely that the proposed clearing will significantly impact the conservation status of this species.</p>
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No weed species were recorded within the application area during a vegetation survey conducted by Rio Tinto (2010). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This can in turn lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No targeted fauna surveys have been conducted over the application area, however incidental sightings were recorded, habitats within the application area were noted and database searches were conducted over the application area (Rio Tinto, 2010). From these searches, three primary habitats were noted and 18 conservation significant fauna were identified as potentially occurring within the application area (Rio Tinto, 2010). The habitats identified within the application area are widely represented within the greater Brockman area, and are not considered "core habitat" for fauna species (Rio Tinto, 2010). The scale and nature of the proposed clearing render it unlikely that the proposal will impact on the faunal diversity within the application area. Additionally, given the widespread nature of the habitat types occurring within the application area, it is considered unlikely that the application area would contain greater species diversity than the surrounding areas.

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

Methodology CALM (2002)
Rio Tinto (2010)
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

No targeted fauna surveys have been conducted over the application area, however incidental sightings and habitats within the application area were noted, and database searches were conducted over the application area (Rio Tinto, 2010). From these searches the following three primary habitats were identified:

- Flats dominated by *Acacia* spp. & Eucalyptus;
- Flats dominated by Eucalypts over Spinifex (*Triodia* spp.); and
- Minor flowlines (Rio Tinto, 2010).

Highly mobile species may temporarily utilise these habitats, however these habitats are widely represented within the broader Brockman area and are not considered "core habitat" for fauna species. No significant fauna habitats such as caves, waterholes, significant creek lines, wetlands or gorges were observed within the application area (Rio Tinto, 2010).

Searches of databases conducted by Rio Tinto (2010) identified 18 conservation significant fauna species as potentially occurring within 40 kilometres of the application area. Of these 18 species, based on habitat present within the application area, only the following 11 are considered to potentially occur within the application area:

- Northern Quoll – Schedule 1, *Wildlife Conservation Act 1950*. The application area may provide foraging habitat for this species;
- Spectacled Hare Wallaby – Priority 3 on the DEC's Threatened and Priority Fauna list. Potential habitat for this species exists over the study area;
- Notoscincus butleri – Priority 4 on the DEC's Threatened and Priority Fauna list. Potential habitat for this species exists over the study area. There is potential for some mortality of this species, however the conservation status is unlikely to be impacted by the proposed clearing;
- Long-tailed Dunnart – Priority 4 on the DEC's Threatened and Priority Fauna list. Potential habitat for this species exists over the study area;
- Australian Bustard – Priority 4 on the DEC's Threatened and Priority Fauna list. Suitable habitat for this species is present within the application area;
- Bush Stone Curlew – Priority 4 on the DEC's Threatened and Priority Fauna list. Potential habitat for this species exists over the study area;
- Western Pebble-mound Mouse – Priority 4 on the DEC's Threatened and Priority Fauna list. One Pebble-mound Mouse mound was observed within the application area. Impacts on this species are likely to be limited to a small number of individuals, however avoidance of this mound and other mounds within the application area will potentially mitigate any residual impact on this species;
- Short-tailed Mouse – Priority 4 on the DEC's Threatened and Priority Fauna list. May potentially occur within the application area at times, however its preferred habitat of cracking clay is absent from the application area;
- Oriental Plover – Migratory, *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*. May occur within the application area over the summer months (September to March);
- Fork-tailed Swift – Migratory, *EPBC Act 1999*. May occur within the application area at irregular intervals; and
- Rainbow Bee-eater Migratory, *EPBC Act 1999*. Potential habitat may occur within the application area (Rio Tinto, 2010).

Given the common nature of the habitat types within the application area as well as the small size (1.5 hectares within 25.2 hectares) and fragmented nature of the clearing it is unlikely that the proposed clearing will cause

significant loss of habitat for any of the above species.

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

Methodology Rio Tinto (2010)

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

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

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

A flora survey was conducted by Rio Tinto in April 2010 (Rio Tinto, 2010). No DRF taxa were recorded within the application area (Rio Tinto, 2010).

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

Methodology Rio Tinto (2010)
GIS Database:
- Declared Rare and Priority Flora List

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

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

According to available GIS Databases there are no known records of Threatened Ecological Communities (TECs) within the application area (GIS Database).

The nearest TEC, Themeda grasslands on cracking clay, is approximately 10 kilometres north-east of the application area. Due to the small size of the proposed clearing it is unlikely to have an impact on the known TEC.

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

Methodology GIS Database:
- Threatened Ecological Sites Buffered

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

The application area is located within the Pilbara Interim Biogeographical Regionalisation for Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.89 % of the pre-European vegetation remains in the Pilbara bioregion.

The vegetation in the application area is broadly mapped as Beard vegetation association:

82: Hummock grasslands, low tree steppe; snappy gum over *Triodia wiseana* (GIS Database; Shepherd, 2009).

According to Shepherd (2009) approximately 100% of the Beard association 82 remains within the Pilbara bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,193	17,785,001	~99.89	Least Concern	~6.32
Beard vegetation associations - State					
82	2,565,901	2,565,901	~100	Least Concern	~10.24
Beard vegetation associations - Bioregion					
82	2,563,583	2,563,583	~100	Least Concern	~10.25

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

The vegetation under application is not a remnant of native vegetation in an area that has been extensively cleared.

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2009)
GIS Database:
- IBRA WA (regions - subregions)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal may be at variance to this Principle

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

A flora and vegetation survey was conducted over the application area by Rio Tinto in April 2010 (Rio Tinto, 2010). This survey identified five vegetation communities associated with minor non perennial watercourses:

FL1: *Eucalyptus xerothermica*, *Eucalyptus gamophylla* low open woodland over *Acacia bivenosa*, *Acacia aneura* open scrub over *Eremophila longifolia*, *Acacia tenuissima* open shrubland over *Triodia pungens* open hummock grassland over *Chrysopogon fallax* very open tussock grassland;

FL2: *Eucalyptus leucophloia* low open woodland over *Acacia monticola*, *Acacia atkinsiana* open scrub over *Triodia wiseana* hummock grassland over *Eriachne mucronata* very open tussock grassland;

FL3: *Eucalyptus leucophloia* low open forest over *Acacia exilis*, *Acacia monticola*, *Acacia atkinsiana* high open shrubland over *Acacia bivenosa*, *Sida cardiophylla* open shrubland over *Triodia wiseana*, *Triodia pungens* very open hummock grassland;

FL4: *Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Acacia atkinsiana*, *Acacia bivenosa* open scrub over *Triodia wiseana* hummock grassland; and

FL5: *Eucalyptus xerothermica*, *Eucalyptus leucophloia*, *Eucalyptus gamophylla* low woodland over *Acacia maitlandii* high open shrubland over *Rulingia luteiflora*, *Petalostylis labicheoides* shrubland over *Tephrosia rosea* low shrubland over *Triodia pungens* very open hummock grassland over *Themeda triandra*, *Eriachne tenuiculmis* open tussock grassland.

Minor non perennial watercourses are common within the Pilbara bioregion and it is unlikely that the proposed clearing of 1.5 hectares of native vegetation within the broader application area of 25.2 hectares will significantly impact upon vegetation growing in association with any watercourses.

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

Methodology Rio Tinto (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 has been surveyed by the Department of Agriculture and Food (Van Vreeswyk et al., 2004), and lies within the Newman and Platform land systems (GIS Database).

The Newman land system is described as rugged jaspilite plateaux, ridges and mountains supporting hard Spinifex grasslands (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion.

The Platform land system is described as dissected slopes and raised plains supporting hard Spinifex (Van Vreeswyk et al., 2004). This land system is not susceptible to erosion (Van Vreeswyk et al., 2004).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. Potential land degradation impacts may be minimised by the implementation of a rehabilitation condition.

Methodology Van Vreeswyk et al (2004)
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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest known conservation reserve is Karajini National Park, located approximately 55 kilometres 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 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 GIS Databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

The groundwater salinity within the application area is approximately 500 - 1,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be potable water. Given the size of the area to be cleared (1.5 hectares) compared to the size of the Hamersley Groundwater Province (10,166,833 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

The application area is located in a semi-desert-tropical region, with an average annual rainfall of approximately 402.5 millimetres recorded from the nearest weather station at Tom Price approximately 45 kilometres south-east of the application area (BoM, 2011; CALM, 2002). The size of the proposed clearing area within the above climate is unlikely to result in significant changes to surface water flows.

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

Methodology BoM (2011)
CALM (2002)
GIS Database:
- Groundwater – provinces
- Groundwater – Salinity
- Public Drinking Water Source Areas (PDWSA)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

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

The application area experiences a semi-desert, tropical climate with an average annual rainfall of 402.5 millimetres recorded from the nearest weather station at Tom Price approximately 45 kilometres south-east of the application area (CALM, 2002; BoM, 2011).

Rainfall is usually experienced during summer months and can be either cyclonic or thunderstorm events (CALM, 2002). It is likely that during times of intense rainfall there may be some localised flooding in adjacent areas. Local flooding occurs seasonally within the Pilbara region as a result of cyclonic activity and sporadic thunderstorm events. The small size of the proposed clearing (1.5 hectares) is unlikely to significantly alter the intensity of flooding within the application area and surrounding areas.

The application area is located within the Ashburton River catchment area (GIS Database). However, the size of the area to be cleared (1.5 hectares) in relation to the size of the Ashburton River catchment area (7,877,743 hectares) (GIS Database) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database).

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

Methodology BoM (2011)
CALM (2002)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim over the area under application (WC97/89). 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.

The clearing permit application was advertised on 21 March 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the proposed clearing.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – Determined by the Federal Court

4. References

- BoM (2011) BoM Website - Climate Averages by Number, Averages for Tom Price.
www.bom.gov.au/climate/averages/tables/cw_002038.shtml (Accessed 6 April 2011).
- CALM (Department of Conservation and Land Management) (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- Hamersley Iron Pty Ltd (2011) Application for a Clearing Permit (Purpose Permit) Mineral Exploration – ML 4SA. Supporting Documentation, April 2011.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Rio Tinto (2010) Flora and Vegetation Survey for the Proposed Evaluation Drilling at Brockman 3 - Native Vegetation Clearing Permit Supporting Report.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Van Vreeswyk, A.M.E., Payne, A.L., Hennig, P., and Leighton, K.A. (2004) An Inventory and Condition Survey of the Pilbara Region, Western Australia, Department of Agriculture, Western Australia.

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.