



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6477/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Hanking Gold Mining Pty Ltd**

1.3. Property details

Property: Mining Lease 77/159
Mining Lease 77/721
Prospecting Licence 77/3774
Local Government Area: Shire of Yilgarn
Colloquial name: Axehandle Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
148.93		Mechanical Removal	Mineral Production and Associated Activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 26 March 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia. One Beard vegetation association is located within the application area (GIS Database):

Beard association 1068 - Medium woodland; salmon gum, morrel, gimlet & *Eucalyptus sheathiana*.

A Level 2 flora and vegetation assessment was conducted over the application area in 2007 by Read (2014). A total of two vegetation types were identified as occurring within the application area;

- 1) *Eucalyptus longicornis* Woodland on broad Flats; and
- 2) *Eucalyptus salubris* & *E. salmonophloia* Woodland on broad Flats.

Clearing Description Axehandle Project.
Hanking Gold Mining Pty Ltd (HGM) proposes to clear up to 148.93 hectares of native vegetation within a total boundary of approximately 148.97 hectares, for the purpose of mineral production and associated activities. The project is located approximately 11 kilometres south east of Southern Cross, in the Shire of Yilgarn.

Vegetation Condition 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).

Comment The vegetation condition was derived from a report prepared by Read (2014). Weather conditions preceding the survey were less than ideal, resulting in limited amounts of ephemerals and grasses and a lack of flowering material on perennials.

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 is located within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) region and the Southern Cross subregion (GIS Database). The Southern Cross subregion comprises of gently undulating uplands separated by broad valleys and bands of low greenstone hills (CALM, 2002).

A flora and vegetation survey conducted by Read (2014) in 2007 covered an area of approximately 1955 hectares. The surveyed area has a number of existing mine sites (all currently closed), old mining areas (shafts and old workings) and a haul road extending from the Cornishman mine site to Hanking Gold Mining's Southern Cross Operations base, at the Marvel Loch mine site (Read, 2014).

A total of 123 flora taxa from 61 genera and 26 families were recorded in the survey area. A desktop survey identified 57 species of conservation significance that could potentially occur (Read, 2014). However, it must be noted that the application area resides only within the southern third of the survey area, where a total of 148.93 hectares is proposed to be cleared. Two dominant vegetation types were identified within the application area and are considered to range from 'Very Good' to 'Excellent' condition (Read 2014). The vegetation under application contributes to a 4,700 hectare area of tall eucalypt woodlands and some tall shrubland, and is well represented throughout the local area.

None of the vegetation communities were identified as a Threatened Ecological Community (TEC) or Priority Ecological Community (PEC) (GIS Database). During a flora and vegetation survey of the application area and surrounding areas, no TECs or PECs were recorded within the application area (Read, 2014).

No Threatened Flora species have been recorded within the application area (Read, 2014). Two Priority 1 annual flora species, *Goodenia heatheriana* and *Millotia newbeyi* are known to occur within 5 kilometres of the application area (DPaW, 2014). Both species have been previously recorded within the same vegetation types as those present within the application area and may potentially occur within areas proposed to be cleared (Read 2014). Neither species was recorded during the flora and vegetation survey, however, it was noted that weather conditions preceding the survey were less than ideal in determining the presence of ephemerals, grasses and flowering material on perennials. It is also possible that some annual flora species may not have been present at the time of the survey. Given that extensive areas of suitable habitat exist within the local area, outside of the application area, the proposed clearing is unlikely to impact on Priority 1 flora species known from the local area.

Two Priority flora species were identified within the application area during the flora and vegetation survey conducted by Read (2014); *Calamphoreus inflatus* (Priority 4) and *Microcorys* sp. Forrestania (Priority 4). Two individuals of each species were counted within the application area but further work is required to comprehensively map their distribution and abundance (Read 2014). However, the removal of such low numbers of these species, when there is extensive amounts of similar habitat in the local area, is unlikely to significantly impact on local populations.

The fauna habitat present is well represented throughout the local area (Western Wildlife, 2008), as the application area contributes to a strip of remnant vegetation that extends from Southern Cross to Marvel Loch and then extends south into the Parker Ranges (Read, 2014). Therefore the application area is not likely to have a higher level of faunal diversity than surrounding areas.

Eight introduced (weed) species were encountered within previously disturbed areas, indicating a medium level of disturbance within the survey area; however they were not recorded in the surrounding bushland. One Declared Plant pursuant to Section 22 of the *Biosecurity and Agriculture Management Act 2007*, was observed within the survey area: *Carthamus lanatus* (Saffron thistle). In the Yilgarn area *Carthamus lanatus* is categorised as C3 (Management) (DAFWA, 2014a,b). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

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

Methodology CALM (2002)
DAFWA (2014a)
DAFWA (2014b)
DPaW (2014)
Read (2014)
Western Wildlife (2008)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European vegetation
- 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 2 fauna survey was carried out over the application area and surrounding area. The survey was conducted during spring from 6 to 14 November 2007 and during autumn from 28 April to 6 May 2008.

Out of the 14 trapping sites, two sites were in the vicinity of the application area. Site 1 was located 100 metres outside of the southern section of the application area and site 4 was situated 500 metres north of the northern part of the application area. The application area resides within a 4,700 hectare area of tall eucalypt woodlands and some tall shrublands, referred to as the Cornishman Belt (Western Wildlife, 2008). Within the Cornishman

Belt two amphibian, 22 reptile, 57 bird, and eight native mammal species were recorded (Western Wildlife, 2008).

The two dominant habitat types present within the application area described by Read (2014) are comprised of:

- 1) *Eucalyptus longicornis* Woodland on broad Flats; and
- 2) *Eucalyptus salubris* & *E. salmonophloia* Woodland on broad Flats.

Whilst there are parts of the area surveyed that show signs of disturbance, the dominant vegetation types present within the application area are considered to range from 'Very Good' to 'Excellent' condition (Read, 2014; Keighery, 1994). The vegetation types and associated habitats of the application area extend throughout the strip of vegetation that runs between Southern Cross and Marvel Loch (Cornishman Belt) and commonly occur across a widespread area (Read, 2014).

Based on habitat type and fauna surveys in the local area, the following species of conservation significance listed as either threatened species under the *Environment Protection and Biodiversity Conservation Act* (EPBC) 1999 or protected under Western Australian legislation (*Wildlife Conservation Act 1950* (WC)) are likely to occur in the local area (DPaW 2014; Read 2014):

- Carpet Python (*Morelia spilota* – WC Act Schedule 4,)
- Woma Python (*Aspidites ramsayi* – WC Act Schedule 4)
- Major Mitchell's Cockatoo (*Cacatua leadbeateri* – WC Act Schedule 4)
- Fork-tailed Swift – (*Apus pacificus* – Migratory); and
- Chuditch (*Dasyurus geoffroii* – EPBC Act Threatened (Vulnerable), WC Act Threatened)

The Woma Python is unlikely to be recorded within the application area, given that the application area is on the very eastern edge of its known range and this species is only known from a few records. The Woma Python is likely to be locally extinct (Western Wildlife, 2008).

Major Mitchell's Cockatoo was not recorded during fauna surveys but could be present within the application area. This species may forage throughout the area and requires large hollows in eucalypts, mainly Salmon Gums (*Eucalyptus salmonophloia*) for breeding, which are common to the application area and surrounds. An area would be significant for Major Mitchell's Cockatoo if breeding were taking place (Western Wildlife, 2008). Given the amount of suitable habitat remaining within the local area, in the form of the Cornishman Belt and vast conservation areas to the east, the proposed clearing is not likely to significantly impact Major Mitchell's Cockatoo.

The Fork-tailed Swift is a largely aerial species, and its ecology in Western Australia is poorly known (Western Wildlife, 2008). The Fork-tailed Swift is a non-breeding visitor to all states and territories of Australia (DoE, 2015a). This species may overfly the local area, but the proposed clearing is not likely to have a significant impact on this species (Western Wildlife, 2008).

The Chuditch is a highly mobile species that is known to travel considerable distances. They are capable of utilizing a wide variety of habitats including dry sclerophyll forests, beaches and deserts (DoE, 2015b). While this species may occur within the application area on occasion (Western Wildlife, 2008), outside the south-west forest, Chuditch are rarely trapped and most records are from roadkill (DoE, 2015b). Given the mobile nature of this species and the large amount of suitable habitat that remains in the local area, the proposed clearing is unlikely to adversely impact this species.

The Carpet Python may be present anywhere there is dense vegetation (Western Wildlife 2008) and is often found in eucalypt woodlands (DPaW, 2015a). None were observed during the fauna survey and as previously mentioned, there is large amounts of suitable habitat remaining in the local area.

The following species of conservation significance listed as either threatened species under the *Environment Protection and Biodiversity Conservation Act* (EPBC) 1999 or protected under Western Australian legislation (*Wildlife Conservation Act 1950* (WC)) were recorded within close proximity to the application area (in the Cornishman Belt):

- Malleefowl (*Leipoa ocellata* – WC Act Schedule 1, EPBC Act Vulnerable);
- Peregrine Falcon (*Falco peregrinus* – WC Act Schedule 4);
- Western Rosella (*Platycercus icterotis xanthogenys* – WC Act Priority 4); and
- Rainbow Bee-eater (*Merops ornatus* - Migratory).

Malleefowl have been observed in the general area but are likely to occur and breed in the areas of shrubland to the south of the area under application where mallee woodland habitat is present (Western Wildlife 2008; DPaW, 2015b).

The application area provides suitable foraging habitat for the Peregrine Falcon. This species may also nest on ledges in old open pits, such as those found at Edwards Find, to the south of the application area (Western Wildlife, 2008). The Inland Western Rosella was recorded at sites close to the application area. This species is likely to utilise the local vegetation as foraging habitat and breed in Salmon Gums hollows. Given the amount of suitable habitat remaining within the local area, in the form of the Cornishman Belt and vast conservation areas to the east, the proposed clearing is not likely to significantly impact the Peregrine Falcon or Inland

Western Rosella.

The Rainbow Bee-eater is a common migrant that moves southwards during summer to breed. It breeds in burrows dug into sandy banks, including sand pushed up along tracks. This species is likely to forage in all study areas, and may breed in areas of sandy soil, such as along creek-lines (Western Wildlife, 2008). Given that the soils present within the application areas are predominately red-brown clay and clay/loam soils (Read 2014; Western Wildlife 2008) the application area is unlikely to provide suitable breeding habitat. Further to this, there are vast amounts of suitable foraging habitat in the local area.

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

Methodology DoE (2015a)
DoE (2015b)
DPaW (2014)
DPaW (2015a)
DPaW (2015b)
Keighery (1994)
Read (2014)
Western Wildlife (2008)

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

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

According to available databases, there are no known records of Threatened Flora within the application area (GIS Database). A search of the Department of Parks and Wildlife's Threatened and Priority Flora databases identified no Threatened Flora species as occurring within a 5 kilometre radius of the application area (DPaW, 2014). A flora survey by Read (2014) found no Threatened Flora species.

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

Methodology DPaW (2014)
Read (2014)
GIS Database
- Threatened 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 at variance to this Principle

According to available datasets, there are no Threatened Ecological Communities (TECs) within the application area. No TECs were identified during a flora and vegetation survey of the local area, which also included the application area (Read 2014). There are no TECs within 50 kilometres of application area (GIS Database).

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

Methodology Read (2014)
GIS Database:
- Threatened Ecological Sites Buffered
- Threatened and Priority Ecological Communities Buffers
- Threatened and Priority Ecological Communities Boundaries

(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 occurs within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 98% of the pre-European vegetation remains (see table below) (GIS Database; Government of Western Australia, 2013).

The vegetation within the application area has been mapped as Beard vegetation association 1068 (GIS Database). Approximately 52.8% and 54.0% of Beard vegetation association 1068 remains at a state and bioregional level respectively (Government of Western Australia, 2013). The vegetation under application contributes to a 4,700 hectare area of tall eucalypt woodlands and some tall shrublands. This vegetation is a continuous corridor of native vegetation about 24 kilometres long and 3.5 kilometres wide and is likely to facilitate fauna movement at a landscape level. Given the amount of vegetation remaining in the local area, the 148.93 hectares of vegetation under application is not considered to be significant as a remnant within an extensively cleared area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Coolgardie	12,912,204	12,648,491	~98.0	Least Concern	~15.8
Beard veg assoc. – State					
1068	268,899.68	142,087.65	~52.8	Least Concern	~11.8
Beard veg assoc. – Bioregion					
1068	193,988.20	104,804.17	~54.0	Least Concern	~13.5

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

There is one mapped watercourse that intersects the application area (GIS Database). This minor, non-perennial watercourse runs east/west through the western part of the application area. However, a flora and vegetation survey conducted by Read (2014) did not identify any vegetation growing in association with a watercourse or wetland. Therefore, vegetation within the application area is not considered to be riparian in nature.

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

Methodology Read (2014)
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 may be at variance to this Principle

The application area lies within the Coolgardie bioregion (GIS Database). Landforms of the Coolgardie bioregion include granite rocky outcrops, low greenstone hills, laterite uplands and broad plains (Bastin and the ACRIS Management Committee, 2008).

According to available databases, the soils of the application area are mapped as undulating plains with some low dunes, seasonal lakes, and clay pans: chief soils seem to be brown and greybrown calcareous earths (GIS Database). Flora and fauna surveys have noted that red-brown clay and clay/loam soils persist within the application area (Read 2014; Western Wildlife 2008). However, given the size of the proposed clearing and the likelihood of varied soil types, the application area may still be prone to erosion, therefore it is important to minimise the amount of time the land is left open. Potential degradation 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 Bastin and the ACRIS Management Committee (2008)
Read (2014)
Western Wildlife (2008)
GIS Database:
- IBRA WA (Regions – Sub Regions)
- Soils, statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

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

The application area is not located within any conservation area (GIS Database). The nearest conservation area is an un-named nature reserve located approximately 15 kilometres northwest of the application area.

Given the distance of the application area from the nearest nature reserve, the proposed clearing is not likely to provide a significant ecological linkage or fauna movement corridor and is not likely to impact the environmental values of the 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 is not located within a Public Drinking Water Source Area (PDWSA), however it is located within the proclaimed Goldfields 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 purposes other than domestic and/or stock watering is subject to licence by the Department of Water. The application area is intersected by one minor, non-perennial watercourse (GIS Database).

The clearing of native vegetation has the potential to destabilise soils and cause temporary sedimentation to watercourses. HGM (2015) has advised that in flood conditions, runoff report to Lake Polaris (located 9 kilometres north) via a poorly defined drainage line north east of the Axehandle project heading west initially then northwards to Lake Polaris. The proposed clearing is unlikely to have any significant impact on surface water quality.

The application area has a groundwater salinity that is saline to hypersaline (14000 – 35000 milligrams/Litre Total Dissolved solids) (GIS Database), however groundwater salinity in nearby open pits has been recorded at 100,000 milligrams/Litre Total Dissolved solids (HGM 2015).

With the annual evaporation rate exceeding the low annual rainfall, there is little recharge into regional groundwater. The proposed clearing is unlikely to further deteriorate the quality of underground water (GIS Database).

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

Methodology HGM (2015)
GIS Database:
- Groundwater Salinity, Satewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- RIWI Act, Groundwater Areas

(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 Southern Cross is approximately 298.6 mm (BoM, 2015). The Coolgardie region has an arid to semi-arid warm Mediterranean climate, receiving a majority of its rainfall during winter months (CALM, 2002). However, rainfall data for Southern Cross indicates that rainfall is spread throughout the year (BoM, 2015), and rainfall events are unlikely to result in localised flooding. Therefore the proposed clearing is not likely to increase the incidence or intensity of flooding within the application area or surrounding region.

The application area is located within the Swan Avon - Yilgarn catchment area (GIS Database). Given the size of the area to be cleared (148.5 hectares) in relation to the size of the catchment area (5,838,600 hectares), the proposed clearing is not likely to increase the potential for flooding in this region (GIS Database).

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

Methodology BoM (2015)
CALM (2002)
GIS Database:
- Hydrographic Catchments – Catchments

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

Comments

There are no native title claims over the application area (GIS Database; DAA, 2015). 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 Sites of Aboriginal Significance located in the area applied to clear (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 Regulation, the Department of Parks and Wildlife 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.

It is noted that the proposed clearing may impact on a protected matter under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Federal) Department of the Environment for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of the Environment for further information regarding notification and referral responsibilities under the EPBC Act.

The clearing permit application was advertised on 2 March 2015 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

Methodology DAA (2015)
GIS Database:
- Aboriginal Sites of Significance

4. References

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- BoM (2015) Climate Statistics for Australian Locations. A Search for Climate Statistics for Southern Cross, Australian Government Bureau of Meteorology, Viewed 6 March 2015
<http://www.bom.gov.au/climate/averages/tables/cw_012320.shtml>.
<<http://www.bom.gov.au/watl/evaporation/>>.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management
- DAFWA (2014a) Declared pest in Western Australia Saffron thistle (*Carthamus lanatus*), Department of Agriculture and Food Western Australia, Viewed 4 March 2015 <<https://www.agric.wa.gov.au/declared-plants/saffron-thistle-declared-pest>>
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- DAA (2015) Aboriginal Heritage Inquiry System, Department of Aboriginal Affairs, Perth, viewed 6 March 2015
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- DoE (2015b) *Dasyurus geoffroii* in Species Profile and Threats Database, Department of the Environment, Canberra, Viewed 4 March 2015 <<http://www.environment.gov.au/sprat>>.
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- DPaW (2014) NatureMap, Department of Parks and Wildlife, viewed 24 October 2014 <<http://naturemap.dec.wa.gov.au>>.
- DPaW (2015a) Carpet Python *Morelia spilota* Fauna Profile, Department of Parks and Wildlife, viewed 4 March 2015
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- DPaW (2015b) Malleefowl *Leipoa ocellata* Fauna Profile, Department of Parks and Wildlife, viewed 4 March 2015
<http://www.dpaw.wa.gov.au/images/documents/plantsanimals/animals/animal_profiles/malleefowl_2012.pdf>.
- 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.
- HGM (2015) Application for an Area Clearing Permit: Supporting Information. Hanking Gold Mining Pty Ltd, Southern Cross, 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.
- Read, T.J. (2014) Flora & Vegetation Survey: Cornishman to Axehandle. Unpublished Report prepared for Hanking Gold Mining Pty Ltd by Recon Environmental. Report No. HGSX01.
- Western Wildlife (2008) St Barbara Limited, Southern Cross Operations: Baseline Fauna Survey; Spring 2007 & Autumn 2008. Western Wildlife, Mahogany Creek, W.A.

5. Glossary

Acronyms:

BoM Bureau of Meteorology, Australian Government
DAA Department of Aboriginal Affairs, Western Australia
DAFWA Department of Agriculture and Food, Western Australia

DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
s.17	Section 17 of <i>the Environment Protection Act 1986</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

- T** **Threatened species:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened Fauna and Flora are further recognised by the Department according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorhynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.

Rankings:
CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild.
EN: Endangered - considered to be facing a very high risk of extinction in the wild.
VU: Vulnerable - considered to be facing a high risk of extinction in the wild.
- X** **Presumed Extinct species:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).
- IA** **Migratory birds protected under an international agreement:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice.
Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.
- S** **Other specially protected fauna:**
Specially protected under the *Wildlife Conservation Act 1950*, listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P1** **Priority One - Poorly-known species:**
Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
- P2** **Priority Two - Poorly-known species:**
Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.
- P3** **Priority Three - Poorly-known species:**
Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and

known threatening processes exist that could affect them.

P4

Priority Four - Rare, Near Threatened and other species in need of monitoring:

- (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
- (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

P5

Priority Five - Conservation Dependent species:

Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.