



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6461/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: RCG Pty Ltd

1.3. Property details

Property: Miscellaneous Licence 70/172
Local Government Area: City of Wanneroo
Colloquial name: Quinns Quarry Access Road

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.51		Mechanical Removal	Access Road

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 25 June 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 and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area (Government of Western Australia, 2013; GIS Database):

- 949: Low woodland; Banksia

Hedde *et al* (1980) mapping has identified the following vegetation complex within the application area:

- Cottesloe complex – central and south: mosaic of woodland of *Eucalyptus gomphocephala* and open forest of *E. gomphocephala* – *E. marginata* – *E. calophylla* (now *Corymbia calophylla*); closed heath on the Limestone complex.

A site investigation was undertaken over the application area by GHD in April 2014 (GHD, 2014a). The following vegetation type was recorded:

Banksia Woodland – dominated by *Banksia attenuata* and *B. menziesii*, with scattered *Eucalyptus marginata* and *Allocasuarina fraseriana* trees over shrubland of *Xanthorrhoea preissii*, *Hibbertia hypericoides* and *Acacia pulchella* over an understory of *Mesomelaena pseudostygia*, *Desmocladius flexuosus* and *Scaevola canescens*.

Clearing Description Quinns Quarry Access Road
RCG Pty Ltd (RCG) proposes to clear 0.51 hectares of native vegetation within a total boundary of approximately 0.51 hectares for the purpose of an access road. The project is located approximately 33 kilometres north north-west of Perth, in the City of Wanneroo.

Vegetation Condition Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).
To
Degraded; Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

Comment This application is related to the Mitchell Freeway Extension, which is a Main Roads Western Australia project to extend the Mitchell Freeway from Burns Beach Road in Joondalup to Hester Avenue in Clarkson. Miscellaneous Licence 70/77, which was owned by RCG and covered the existing access road to the quarry, fell within the project area for the Hester Avenue interchange. RCG has been granted a new miscellaneous licence (L70/172) to facilitate the relocation of the access road to outside of the Mitchell Freeway project area.

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**

The application area occurs within the Perth subregion of the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Swan Coastal Plain is dominated by Banksia or Tuart on sandy soils, *Casuarina obesa* on outwash plains, and paperbark in swampy areas (CALM, 2002). The Perth subregion is composed of colluvial and Aeolian sands, alluvial river flats and coastal limestone (CALM, 2002). Heath and/or Tuart woodlands occur on limestone, Banksia and Jarrah-Banksia woodlands on Quarternary marine dunes of various ages and Marri on colluvial and alluvials (CALM, 2002).

A site reconnaissance survey has been undertaken over the application area by GHD (2014a). The vegetation within the application area has been mapped as Banksia woodland in very good to degraded condition (GHD, 2014a). A total of 47 flora taxa have been recorded within the application area consisting of 36 native taxa (GHD, 2014a). The most common plant families were Fabaceae and Proteaceae (GHD, 2014a). Considering the small size of the application area, the level of species diversity is considered to be high. It is important to note that this does not represent a comprehensive list of all taxa occurring with the application area as flora taxa were recorded opportunistically.

Eleven introduced plant taxa were recorded within the application area (GHD, 2014a). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. The application area may also be susceptible to Phytophthora dieback given that the subject vegetation consists of highly susceptible species (GHD, 2014a). The introduction and/or spread of weeds and dieback is also a potential threat to the biodiversity of the adjoining Neerabup National Park. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed and dieback management condition.

No Threatened flora species have been recorded within the application area however two Priority flora species were recorded; *Acacia benthamii* (P2) and *Jacksonia sericea* (P4) (GHD, 2014a). These two species will be directly impacted by the proposed clearing. Both of these species are represented by numerous populations across the Swan Coastal Plain, including in the adjoining Neerabup National Park, and the proposed clearing is not likely to impact on the conservation of these species (DPaW, 2015).

According to GHD (2014a), the 'Banksia dominated woodlands on the Swan Coastal Plain IBRA region' Priority 3 PEC may occur within the application area. This PEC is characterised by *Banksia attenuata* and/or *B. menziesii* occurring on deep sands. Both of these species of Banksia, as well as deep sands (specifically the Spearwood Dune System), have been recorded within the application area (GHD, 2014a). This association of Banksia on Spearwood dunes is not restricted to the application area and can be found in the adjacent Neerabup National Park (GIS Database). The proposed clearing of 0.51 hectares is not considered to be a significant impact on this PEC considering the scale of the clearing and the presence of similar vegetation adjacent to the application area, which is in better condition. The proposed clearing may potentially impact on the PEC outside of the application area through the introduction and spread of weeds and Phytophthora dieback. Potential impacts to this PEC may be minimised by the implementation of a weed and dieback management condition.

A search of NatureMap (DPaW, 2015) identified 318 fauna species as previously recorded within 10 km of the project area, including 305 native and 13 introduced species. These results consist of 169 bird, 57 reptile, 40 invertebrate, 29 mammal, 16 fish and seven amphibian species (DPaW, 2015). A total of 20 fauna species were recorded in the project area during the reconnaissance survey by GHD (2014a). This total consists of 18 birds and two mammals, of which 17 are native species and three are introduced (GHD, 2014a). It is worth noting that fauna were recorded opportunistically, and may not represent all the fauna taxa occurring within the application area. It is not likely that the application area represents an area of relatively higher faunal diversity; the number of fauna recorded in the area can most likely be attributed to the adjacent Neerabup National Park and large areas of native vegetation in the greater Neerabup area (GIS Database). Furthermore, of the 20 fauna species recorded in the application area, 18 species are birds which are considered to be highly mobile.

The application area is located within Bush Forever site no. 383: "Neerabup National Park, Lake Nowergup Nature Reserve and Adjacent Bushland, Neerabup", which covers an area of approximately 1736.1 hectares (Government of Western Australia, 2000). The vegetation within this portion of Bush Forever Site No. 383 has been mapped as Cottesloe – Central and Southern vegetation complex (GIS Database). The vegetation condition ranges from "Excellent" to "Degraded", with some areas of severe localised disturbance (Government of Western Australia, 2000).

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

Methodology CALM (2002)
DPaW (2015)
GHD (2014a)
Government of Western Australia (2000)
GIS Database:
- DEC Tenure

- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments Proposal is at variance to this Principle

A fauna reconnaissance survey of the application area was undertaken by GHD (2014a) in April 2014. Two broad fauna habitat types were identified within the survey area, which include:

- Banksia woodland
- Revegetation

The application area primarily consists of the Banksia woodland habitat type (GHD, 2014a). The majority of the Banksia woodland is in very good condition and has high species and structural diversity (GHD, 2014a). As a result, the woodland provides high habitat value for fauna species due to various microhabitats and habitat resources available (GHD, 2014a).

There are 19 conservation significant fauna species which may potentially occur within 10 kilometres of the application area (DPaW, 2015). Based on the habitat type and vegetation mapping associated with the application area, GHD (2014a) has identified the following conservation significant fauna species likely to occur within the application area:

- Baudin's Black Cockatoo (*Calyptorhynchus baudinii*) (Schedule 1 under the *Wildlife Protection Act 1950* (WC Act), Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act))
- Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) (Schedule 1 under WC Act, Endangered under EPBC Act)
- Rainbow Bee-eater (*Merops ornatus*) (Schedule 3 under WC Act, Migratory under EPBC Act)
- Western Brush Wallaby (*Macropus irma*) (DPaW – Priority 4)
- Carpet Python (*Morelia spilota imbricata*) (Schedule 4 under WC Act)
- Black-striped snake (*Neelaps calonotos*) (DPaW – Priority 3)
- Native Bee (*Hylaeus globuliferus*) (DPaW – Priority 3)
- Graceful Sun Moth (*Synemon gratiosa*) (DPaW – Priority 4)

Both Baudin's Black Cockatoo and Carnaby's Black Cockatoo are endemic to the south-west of Western Australia and have experienced a dramatic population decline due to land clearing for both agriculture and urban development (DPaW, 2013; Department of the Environment (DotE), 2015a). Surveys of Carnaby's Black Cockatoo populations and their feeding and roosting habits show that the Northern Region of the Swan Coastal Plain appears to be an important area throughout the feeding and roosting season (DPaW, 2013). The range of Baudin's Black Cockatoo varies substantially between breeding and non-breeding seasons, extending from the great southern of WA to the southern Swan Coastal Plain (DotE, 2015a). Although there are records of Baudin's Black Cockatoo as far north as Wanneroo, the application area is considered to fall outside of the modelled distribution for this species (DotE, 2015a) and is unlikely to be reliant on the application area for habitat.

The vegetation within the application area is dominated by *Banksia attenuata* and *B. menziesii* with some scattered *Hakea lissocarpha* and other Proteaceae species (GHD, 2014a). These flora species are a known food source for Carnaby's Black Cockatoo (DotE, 2015b), which makes the application area suitable foraging habitat. There are recent records of Carnaby's Black Cockatoo in very close proximity to the application area (along Hester Avenue), and the Carnaby's Black Cockatoo assessment undertaken by GHD (2013a) over the greater Mitchell Freeway extension project area recorded bird numbers ranging from pairs to flocks of over 100 individuals.

GHD (2013a) advises that much of the remaining bushland on the Swan Coastal Plain portion of the Perth metropolitan region is in the north-west corridor, which is under increasing threat from urban development (DPaW, 2013). The progressive loss of small areas of foraging habitat is an ongoing concern (DotE, 2015b), with Saunders and Ingram (1998) arguing that the loss of foraging habitat poses the greatest risk to the Carnaby's Black Cockatoo species. The loss of approximately 0.51 hectares of foraging habitat within Neerabup National Park is therefore considered to be a significant impact. The potential impact to Carnaby's Black Cockatoo foraging habitat may be mitigated by the implementation of an offset condition.

No breeding habitat was recorded in the application area for either Carnaby's Black Cockatoo or Baudin's Black Cockatoo (GHD, 2014a).

The Rainbow Bee-eater may utilise the application area for foraging as there is suitable sand dune habitat (GHD, 2014a). The Rainbow Bee-Eater is a highly mobile species with a wide distribution and is not likely to be significantly impacted by the proposed clearing.

The Western Brush Wallaby's optimum habitat is open forest or woodland, particularly favouring open, seasonally-wet flats with low grasses and open scrubby thickets (DEC, 2012). It is also found in some areas of mallee and heath-land (DEC, 2012). This species has been recorded in close proximity to the application area

in Neerabup National Park (GHD, 2014a). The distribution of this species is wide ranging (DPaW, 2015) and considering its preference for multiple habitat types, the clearing of 0.51 hectares of Banksia woodland is not likely to significantly impact this species.

The Carpet Python and Black Striped Snake have been recorded along the Swan Coastal Plain in woodlands and heath vegetation, and are known to occur in Neerabup National Park (GHD, 2014a). There is suitable Banksia woodland habitat for these species within the application area and given its connectivity to Neerabup National Park, it is considered likely they occur (GHD, 2014a). The clearing of 0.51 hectares of native vegetation may result in some loss of habitat for these species; however there are large areas of suitable habitat located adjacent to the application area.

Hylaeus globuliferus (which is a species of bee) is thought to favour flowers of *Adenanthos cygnorum* for feeding but has also been recorded on *Banksia attenuata* (GHD, 2014a). *Hylaeus globuliferus* has been recorded in the locality of Neerabup and given *B. attenuata* is present within the application area, the proposed clearing may result in the loss of some foraging habitat. *Hylaeus globuliferus* is considered to be highly mobile and will have access to suitable habitat adjacent to the application area.

The Graceful Sun Moth (GSM) is a small day-flying moth endemic to south-west WA, known from Leeman in the north to Preston Beach in the south (DEC, 2010). The GSM is known to occur in Banksia/woolly bush woodland on deep sands, in the northern suburbs of Perth on the Swan Coastal Plain (DEC, 2010). The soil and vegetation complexes within the application area have the potential to represent suitable habitat for this species. A targeted GSM survey has not been undertaken over the application area however one was undertaken over 216 hectares of native vegetation in the local area as part of the Mitchell Freeway extension project (GHD, 2013b). Although suitable habitat was recorded in the study area, no adult GSM were recorded (GHD, 2013b).

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

Methodology DEC (2010)
DEC (2012)
DotE (2015a)
DotE (2015b)
DPaW (2013)
DPaW (2015)
GHD (2013a)
GHD (2013b)
GHD (2014a)
Saunders and Ingram (1998)

(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 datasets there are no known records of Threatened flora within the application area (GIS Database). The nearest record of Threatened Flora is located approximately 2.7 kilometres west of the application area (GIS Database).

The flora reconnaissance survey undertaken by GHD (2014a) did not identify any Threatened flora within the application area.

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

Methodology GHD (2014a)
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 located approximately 1.4 kilometres north-east of the application area.

GHD (2014a) did not identify any TECs in their flora reconnaissance survey of the application area.

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

Methodology GHD (2014a)
GIS Database:

(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 Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database) in which approximately 39.15% of pre-European vegetation remains (Government of Western Australia, 2013). This gives it a conservation status of 'Depleted' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation within the application area is recorded as Beard vegetation association:

- 949: Low woodland; Banksia

Beard vegetation association 949 retains approximately 56.88% of its pre-European extent at the state level and 57.74% at the bio-region level (Government of Western Australia, 2013).

The area proposed to be cleared is within Bush Forever Site No. 383, which is considered a significant remnant of native vegetation (Government of Western Australia, 2000; GIS Database). Bush Forever aims to retain a minimum of 10% of each vegetation complex in the Perth Metropolitan Region (Government of Western Australia, 2000). The vegetation complex for this portion of Bush Forever Site No. 383 has been mapped as Heddle Vegetation Complex Cottesloe – Central and South (GIS Database). Approximately 39% of Heddle Vegetation Complex Cottesloe – Central and South remains (Government of Western Australia, 2000).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Land
IBRA Bioregion - Swan Coastal Plain	1,501,221	587,708	~39	Depleted	16.17
IBRA Subregion - Perth	1,117,757	473,909	~42	Depleted	19.51
Local Government - Wanneroo	67,698	31,541	~47	Depleted	47.41
Beard vegetation associations - State					
949	218,193	124,117	~57	Least Concern	40.06
Beard vegetation associations - Bioregion					
949	209,983	121,247	~58	Least Concern	41.22
Beard vegetation associations - Subregion					
949	184,476	105,108	~57	Least Concern	44.87
Heddle Vegetation Complex					
Cottesloe Complex – Central and South	44,818	17,528	~39	Depleted	22.53

* 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 (2000)
 Government of Western Australia (2013)
 GIS Database:
 - Heddle Vegetation Complex
 - IBRA WA (Regions - Sub Regions)
 - Pre-European Vegetation

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

Comments Proposal is not at variance to this Principle

Available databases show that there are no watercourses or wetlands within the application area (GIS Database).

GHD (2014a) did not record any watercourses or riparian vegetation within the application area.

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

Methodology GHD (2014a)
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 soils within the application area have been mapped as the following (GHD, 2014b):

- Karrakatta shallow soils – rocky low hills and ridges on limestone in the Swan Coastal Plain with bare rock yellow/brown shallow sands and stony soils.

- Karrakatta sand yellow – undulating dunes on aeolian sand over limestone in the Swan Coastal Plain with yellow deeps sands.

The soils within the project area are relatively porous and well-draining and therefore there is little risk of water erosion (GHD, 2014b).

The application area has been mapped as having a wind erosion risk of '30-49% high to extreme hazard' (GHD, 2014b). The high sand content of the soils and ease with which these materials can be transported by the wind means there is a high risk of wind erosion (GHD, 2014b). Potential impacts of this risk may be minimised through the implementation of a staged clearing condition.

The acid sulphate soil (ASS) Swan Coastal Plain mapping did not identify any known ASS within the application area (GIS Database).

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

Methodology GHD (2014b)
GIS Database:
- Acid Sulphate Soil Risk Map – Swan Coastal Plain

(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 at variance to this Principle

The application area is located within Neerabup National Park, which is a Class A national park vested in the Conservation Commission of WA (GIS Database). Neerabup National Park is approximately 937 hectares in area and is recognised as having the following natural values (DEC, 2012):

- Diverse and relatively undisturbed remnant vegetation contributing to a relatively large and continuous wildlife corridor,

- A diversity of native fauna and habitats including habitat important for the protection of species and ecological communities of conservation significance (threatened species, for example Carnaby's Black Cockatoo)

- Unique and threatened fauna including relictual endemic species.

The application area also falls within Bush Forever Site No. 383 which covers an area of approximately 1736 hectares (Government of Western Australia, 2000). This site forms part of a regionally significant contiguous bushland/wetland linkage, connecting Neerabup National Park to Bush Forever Sites 129 and 130 and Yanchep National Park.

The proposed clearing will result in the direct loss of native vegetation from the park, as well as potential indirect impacts from weed introduction and the spread of dieback. The proposed clearing will also impact on Carnaby's Black Cockatoo foraging habitat. The potential impacts to Neerabup National Park may be mitigated by the implementation of an offset condition and a weed and dieback management condition.

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

Methodology Government of Western Australia (2000)
GIS Database:
- DEC Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

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

According to available databases, the application area is located within the Perth Coastal and Gwelup Underground Water Pollution Control Area, which is managed for Priority 3 water source protection (GIS Database). The application area is also located within the Perth *Rights in Water and Irrigation Act 1914* (RIWI Act) Groundwater Area (GIS Database).

No rivers or surface water bodies were identified within the application area (GHD, 2014b). Given the free-draining nature of the soils (GHD, 2014b), the proposed clearing is unlikely to disrupt surface run-off. Although the proposed clearing may lead to an increase in the level of groundwater recharge, the small scale of the clearing means any potential impacts to the groundwater resource will be negligible.

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

Methodology GHD (2014b)
GIS Database:
- 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**

There are no watercourses or wetlands within the application area (GIS Database).

The soils within the application area are sandy and porous and the area is generally well-draining (GHD, 2014b). The proposed clearing of 0.51 hectares is considered to be a small amount compared to the size of the catchment zone (11,664 hectares) (GIS Database).

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

Methodology GHD (2014b)
GIS Database:
- Hydrographic Catchments – Catchments
- Hydrography, linear

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

There are three Native Title Claims (WC2011/009, WC2003/006, WC2011/002) over the area under application (GIS Database). WC2011/009 has been registered with the National Native Title Tribunal on behalf of the claimant group and WC2003/006 and WC2011/022 have been filed at the Federal Court of Australia. 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 is one 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, the Department of Water, and the Department of Parks and Wildlife, 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 23 February 2015 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received raising no objections.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims – File at the Federal Court
- Native Title Claims – Registered with the NNTT

4. References

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- DotE (2015a). *Calyptorhynchus baudinii* in Species Profile and Threats Database, Department of the Environment, Canberra. <http://www.environment.gov.au/sprat>. Accessed 13 Apr 2015.
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- GHD (2014b) RCG Quarry Access Realignment – Preliminary Clearing Impact Assessment. Unpublished report prepared for Main Roads Western Australia.
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- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Saunders, D.A. & J.A. Ingram (1998). Twenty-eight years of monitoring a breeding population of Carnaby's Cockatoo. *Pacific Conservation Biology*. 4:261-70.

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 the <i>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 DPaW 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.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare 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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.