



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6705/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Western Areas Limited

1.3. Property details

Property: Mining Lease 77/545
Mining Lease 77/582
Mining Lease 77/912
Local Government Area: Shire of Kondinin
Colloquial name: Sibelius Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 8 October 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description One Beard vegetation association is located within the application area (Government of Western Australia, 2014; GIS Database):

- 511: Medium woodland; salmon gum & morel.

A flora and vegetation survey was undertaken over the Sibelius Project area by Botanica Consulting (Botanica) in 2010 (Botanica, 2010) which covered the application area. The following vegetation communities were identified within the application area:

1. Mallee woodland

The flora recorded in this vegetation group was representative of Mallee Woodland. The over-storey contained *Eucalyptus eremophila* subsp. *eremophila* with some occurrences of *Eucalyptus gracilis*, *Eucalyptus polita* and *Eucalyptus calycogona*. The mid-storey consisted of *Melaleuca hamata*, *Melaleuca adnata*, *Acacia assimilis*, *Santalum acuminatum* and *Hakea multiligneata*. The understorey was represented by *Dodonaea bursariifolia*, *Acacia deficiens*, *Daviesia lancifolia*, *Dianella revoluta*, *Westringia cephalantha* var. *caterva*, *Wilsonia humilis*, *Daviesia nematophylla* and *Baeckea crispiflora*.

2. Mallee woodland over Allocasuarina/Acacia shrubland

The flora recorded in this vegetation group was representative of Mallee Woodland over *Acacia* shrubland. The upper canopy species included *Eucalyptus eremophila* subsp. *eremophila* and *Eucalyptus flocktonia* subsp. *flocktonia*. The mid-storey consisted of *Acacia steedmanii* subsp. *steedmanii*, *Allocasuarina campestris*, *Acacia hemiteles*, *Acacia intricate* and *Acacia fragilis*. The understorey species included *Gompholobium gompholobioides* and *Drosera andersoniana* and *Lepidosperma drummondii*.

3. Allocasuarina shrubland

The flora recorded in this vegetation group was representative of an *Allocasuarina* shrubland. The upper storey contained *Eucalyptus eremophila* subsp. *eremophila* and *Eucalyptus gracilis*. The mid storey contained *Allocasuarina campestris*, *Santalum acuminatum*, *Melaleuca pauperiflora* subsp. *pauperiflora* and *Melaleuca hamata*. The understorey contained *Acacia acanthoclada* subsp. *acanthoclada*, *Phebalium filifolium*, *Dodonaea bursariifolia*, and *Dodonaea stenozyga*.

4. Mallee Woodland over Melaleuca

The flora recorded in this vegetation group was representative of Mallee Woodland over *Melaleuca*. The over-storey contained *Eucalyptus eremophila* subsp. *eremophila* with some occurrences of *Eucalyptus polita*. The mid storey contained *Melaleuca hamata*, *Melaleuca adnata*, *Melaleuca eleuterostachya*, *Melaleuca lateriflora* subsp. *lateriflora*, *Melaleuca pungens* var. *pungens* and *Santalum acuminatum*. The lower storey contained *Lepidosperma drummondii* and *Dodonaea bursariifolia*.

Clearing Description	Sibelius Project Western Areas Limited (Western Areas) proposes to clear up to 10 hectares of native vegetation within a total boundary of approximately 228.4 hectares for the purpose of mineral exploration. The project is located approximately 77 kilometres east of Hyden, in the Shire of Kondinin.
Vegetation Condition	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).
Comment	The vegetation condition was determined by Botanica (2010). Although the timing of the field survey was not ideal for the identification of flowing ephemeral flora species, Botanica (2010) advise that they have undertaken extensive survey work across the local area during Spring which has aided this survey. For the purposes of this report, the Sibelius project area refers to the 345 hectare area on Mining Leases 77/545, 77/585 and 77/912 that was surveyed by Botanica (2010). The Forrestiana Nickel Operations project area refers to the collection of projects forming Western Areas operations in the Lake Cronin 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	<p>Proposal may be at variance to this Principle</p> <p>The application area occurs within the Southern Cross (COO2) subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by gently undulating uplands dissected by broad valleys with bands of low greenstone hills (CALM, 2002). Diverse Eucalyptus woodlands rich in endemic Eucalyptus occur around salt lakes, low greenstone hills, valley alluvials and broad plains of calcareous earths (CALM, 2002). Mallees and scrub-heaths occur on uplands as well as sand lunettes associated with playas along the broad valley floors and sand sheets around the granite outcrops. The scrubs are rich in endemic acacias and Myrtaceae (CALM, 2002).</p> <p>The application area also occurs within the Lake Cronin Area which is listed on the Register of National Estate due to its high level of flora and fauna diversity and endemism (Australian Heritage Database, 2015). According to the Environmental Protection Authority (EPA) (2009), the region supports extensive shrubland, sandplain and woodland environments including an excellent representation of a range of vegetation types that are now extensively cleared in the Wheatbelt. Based on its high biodiversity conservation significance and competing land use interests, various forms of conservation reservation and management are proposed for the area (EPA, 2009). The application area is located within an area proposed to be managed under section 33(2) of the <i>Conservation and Land Management Act 1984</i> (EPA, 2009).</p> <p>A flora and vegetation survey undertaken over the Sibelius project area by Botanica (2010) identified four vegetation communities occurring in the application area and surrounding bushland. None of these vegetation communities were identified as a Threatened or Priority Ecological Community (Botanica, 2010). A database search (GIS Database) has also confirmed there are no Threatened or Priority Ecological Communities within the application area.</p> <p>A total of 78 flora species were identified in the survey area, forming 21 families and 41 genera (Botanica, 2010). Botanica (2010) has identified two Priority flora species occurring within the application area; <i>Eremophila racemosa</i> (P4) and <i>Microcorys</i> sp. Forrestiana (V. English 2004) (P4).</p> <p><i>Eremophila racemosa</i> (P4) is a small, erect shrub occurring on sandy or stony loam, or clay loam soils and preferably on undulating plains and roadsides (Western Australian Herbarium, 2015). NatureMap shows a record of this species occurring within the application area (DPaW, 2015), and that location was confirmed by Botanica (2010). In total, Botanica (2010) recorded six populations of <i>Eremophila racemosa</i> within the application area, totalling approximately 40 individual plants.</p> <p><i>Microcorys</i> sp. Forrestiana (V. English 2004) (P4) is also a small erect shrub occurring within open woodlands and cleared areas (Western Australian Herbarium, 2015). It was recorded in seven locations within the application area totalling approximately 636 individuals (Botanica, 2010). Botanica (2010) recorded three other populations in the surrounding area.</p> <p>The preferred habitat for these two Priority flora species is abundant in the local area. Furthermore, there are numerous populations located outside of the application area (Botanica, 2010). Therefore, the proposed clearing is not likely to significantly impact on the conservation of <i>Eremophila racemosa</i> and <i>Microcorys</i> sp. Forrestiana (V. English 2004). However, Botanica (2010) did identify 24 other conservation significant flora species that may potentially occur within the survey area. Western Areas (2015) advises that extensive survey work has been undertaken over the entire Forrestiana Nickel Operations project area and the locations of conservation significant flora species have been well documented. Western Areas (2015) has developed an internal environmental management procedure for limiting the impacts to conservation significant flora, including inspecting areas proposed to be cleared and consulting with DMP and Department of Parks and Wildlife (DPaW) if conservation significant flora species are encountered. Potential impacts to conservation significant flora may be minimised by the implementation of a flora management condition.</p> <p>The application area is located within the boundary of the Priority Ecological Community (PEC) "Ironcap Hill Vegetation Complexes", which includes Mt Holland, Middle Ironcap Hill, North and South Ironcap Hills, Digger Rock and Hatter Hill. (Botanica, 2013; GIS Database). An 'A' Class reserve is proposed for the North Ironcap Hill to protect the core area of highest conservation significance being the North Ironcap Banded Iron</p>
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Formation (BIF) (EPA, 2009). The proposed 'A' class reserve is located approximately 9 kilometres to the north-west of the application area (EPA, 2009; GIS Database). The application area is not located on a BIF range or any other significant landform (GIS Database). The proposed clearing of 10 hectares of native vegetation for exploration activities is not likely to significantly impact on this PEC.

No weed species were identified in the survey of the Sibelius project area (Botanica, 2010). Clearing activities, particularly associated with exploration activities, has the potential to introduce weeds into the area. Potential impacts from weeds as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

The application area is located within the Great Western Woodlands, which is known to support a diverse fauna community by providing various foraging, nesting and roosting habitats (Western Areas, 2015). A search of NatureMap (DPaW, 2015) has identified a total of 362 fauna species records within 20 kilometres of the application area, consisting of 179 invertebrate, 109 bird, 47 reptile, 19 mammal and eight amphibian species. The application area falls within an extensive area of native vegetation, and the fauna habitats located within the application area are not likely to be restricted to that area. Therefore, it is considered that the application area does not contain relatively higher fauna diversity than the surrounding areas.

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

Methodology Australian Heritage Database (2014)
Botanica (2010)
Botanica (2013)
CALM (2002)
DPaW (2015)
EPA (2009)
Western Areas (2015)
Western Australian Herbarium, 2015
GIS Database:
- IBRA WA (Regions - Subregions)
- 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 may be at variance to this Principle

A fauna survey has not been undertaken over the application area however, several fauna surveys have been undertaken over the Forrestianna Nickel Operations project area (Western Areas, 2015).

A total of six conservation significant species were recorded in these surveys:

- Carnaby's Cockatoo (*Calyptorhynchus latirostris* – Endangered under *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Schedule 1 under *Wildlife Conservation Act 1950* (WC Act));
- Chuditch (*Dasyurus geoffroii* – Vulnerable under EPBC Act and Schedule 1 under WC Act);
- Malleefowl (*Leipoa ocellata* – Vulnerable under EPBC Act and Schedule 1 under WC Act);
- Western Brush Wallaby (*Macropus irma* – DPaW Priority 4) ;
- Rufous Fieldwren (*Calamanthus campestris montanellus* – DPaW Priority 4);
- Shy Heathwren (*Hylacola cauta whitlocki* – DPaW Priority 4).

An additional six conservation species have been recorded within 20 kilometres of the application area (DPaW, 2015):

- Sharp-tailed Sandpiper (*Calidris acuminata* – Migratory under EPBC Act and Schedule 3 of WC Act);
- Rainbow Bee-eater (*Merops ornatus* – Migratory under EPBC Act and Schedule 3 of WC Act);
- Australian Peregrine Falcon (*Falco peregrinus* subsp. *macropus* – Schedule 4 under WC Act);
- Carpet Python (*Morelia spilota* subsp. *imbricata* - Schedule 4 under WC Act);
- Lake Cronin Snake (*Paroplocephalus atriceps* – DPaW Priority 3);
- Western Rosella (*Platycercus icterotis* subsp. *xanthogenys* – DPaW Priority 4).

Carnaby's Cockatoo forage in woodland and heath that is dominated by proteaceous species and nest in hollows of large eucalypts, usually Salmon Gum and Wandoo (DEC, 2012a). None of the vegetation communities mapped by Botanica (2010) contain these Eucalypt species. The vegetation within the application area is predominantly mallee woodland, which comprises Eucalypt species that are not suitable Carnaby's Cockatoo habitat. The application area may provide foraging habitat for Carnaby's Cockatoo, however there are extensive areas of similar vegetation in the surrounding area (Botanica, 2010). The Western Rosella (Priority 4) also nests within hollows of Eucalypts and other large trees (DEC, 2009). For similar reasons the application area would not provide suitable habitat for the Western Rosella.

The Chuditch occupies a wide range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts (DEC, 2012b). Chuditch den in hollow logs and burrows and have also been

recorded in tree hollows and cavities (DEC, 2012b). The application area consists of mallee Eucalypt species that would not produce adequate hollow logs for Chuditch.

Malleefowl are largely confined to arid and semi-arid woodland that is dominated by mallee eucalypts on sandy soils, with less than 430 millimetres of rainfall annually (DEC, 2012c). The application area is considered to fall within this range given the vegetation communities identified by Botanica (2010). A targeted Malleefowl survey identified one active mound within the application area (Australasian Ecological Services, 2015). Western Areas has also identified two inactive mounds within the application area (pers. comm Western Areas, 2015). Potential impacts to Malleefowl as a result of the proposed clearing may be minimised by the implementation of a restrictive clearing condition.

The Western Brush Wallaby is now confined to the South-west of Australia and favours open forest or woodland, particularly open, seasonally-wet flats with low grasses and open scrubby thickets (DEC, 2012d). It is also found in some areas of mallee and heathland (DEC, 2012d). The application area may contain suitable habitat for the Western Brush Wallaby but considering there are extensive areas of similar vegetation in the local area, the application area is not likely to form core habitat for this species.

The Carpet Python and Lake Cronin Snake are the least mobile species identified and potential impacts may arise from the proposed clearing. The proponent has developed and will implement fauna management measures to reduce the potential impact to local fauna species (Western Areas, 2015). The proposed clearing is not likely to significantly reduce the availability of preferred habitat for these species.

The remaining conservation significant fauna are considered highly mobile and are not likely to be significantly impacted by the proposed clearing.

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

Methodology Australasian Ecological Services (2015)
Botanica (2010)
DEC (2009)
DEC (2012a)
DEC (2012b)
DEC (2012c)
DEC (2012d)
DPaW (2015)
Western Areas (2015)

(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 700 metres south-west of the application area (GIS Database).

Botanica (2010) did not record any Threatened flora species in their survey of the application area. Western Areas (2015) advise that they are aware of populations of Threatened flora species within their project areas and have developed internal procedures to reduce any potential impacts to these species.

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

Methodology Botanica (2010)
Western Areas (2015)
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 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 120 kilometres south-west of the application area.

No TECs were identified during the Botanica (2010) survey of the Sibelius project area.

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

Methodology Botanica (2010)
GIS Database:
- Threatened Ecological Sites Buffered

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

Comments Proposal is not at variance to this Principle

The application area falls within the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database) in which approximately 97.96% of pre-European vegetation remains (Government of Western Australia, 2014; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the application area has been mapped as the following Beard vegetation associations (GIS Database):

- 511: Medium woodland; salmon gum & morel

Approximately 74.30% of vegetation association 511 remains at a state level (Government of Western Australia, 2014). On a bioregional level, 93.70% of vegetation association 511 remains within the Coolgardie bioregion (Government of Western Australia, 2014). Therefore, the vegetation under application is not a remnant of vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Coolgardie	12,912,204	12,648,491	~98	Least Concern	15.53
Beard vegetation associations - State					
511	700,692	520,668	~74	Least Concern	14.57
Beard vegetation associations - Bioregion					
511	464,424	435,177	~94	Least Concern	18.14

* Government of Western Australia (2014)

** 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 (2014)
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 at variance to this Principle

Available datasets do not show the application area intersecting within any watercourses or wetlands (GIS Database).

Vegetation surveys undertaken by Botanica (2010) did not identify any vegetation growing in, or in association with, a watercourse or wetland.

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

Methodology Botanica (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

According to available databases, there are three soil types (Ms8, X17 and Ya28) within the application area (GIS Database). Northcote et al (1960-68) describes these soil types as:

Ms8 - Gently undulating plains with broad shallow drainage depressions: a wide range of loamy yellow earths

and related soils occurs. All of these soils commonly contain a horizon of ironstone nodules at 30 - 36 inches and occasionally at shallower depths. In the broad shallow drainage depressions loamy duplex soils occur, together with some grey leached earths;

X17 - Slopes and valleys: chief soils are sandy neutral and alkaline yellow mottled soils;

Ya28 - Sandy plains with some clay pans and small salt lakes, dunes, and lunettes: chief soils are sandy alkaline yellow mottled soils).

Sandy soils have the potential to be impacted by wind erosion. Western Areas has advised they will employ the raised blade clearing technique to allow for rapid regrowth following the clearing (Western Areas, 2015). Given the proposed clearing activities will not disturb the surface vegetation and topsoil, the likelihood of significant erosion being caused by the proposed clearing is considered low.

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

Methodology Northcote et al (1960-68)
Western Areas (2015)
GIS Database:
- 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 may be at variance to this Principle

The application area is located within the Lake Cronin Area which is listed on the Register of National Estate (GIS Database). At over 31,000 hectares, the Lake Cronin Area is a significant area in maintaining existing processes at a regional scale and therefore is potentially important contemporary refugia for many species (Australia Heritage Database, 2015). At its closest point, the application area is approximately 7 kilometres south-west of Lake Cronin and 4 kilometres south-west of Lake Cronin Nature Reserve (GIS Database). Given the distance between the application area and Lake Cronin Nature Reserve and the low impact nature of the clearing, the proposed clearing is not considered likely to significantly impact on the conservation values of Lake Cronin Nature Reserve.

The application area is also located within an area proposed to be managed under section 33 (2) of the *Conservation and Land Management Act 1984* (EPA, 2009). DPaW has previously commented on similar applications in the area given their location within a proposed conservation area. DPaW advised that the area has known high biodiversity conservation significance and recommended targeted surveys of conservation significant flora and fauna species be undertaken prior to clearing (DPaW, 2014). Potential impacts to conservation significant flora and fauna species may be minimised by the implementation of relevant management conditions.

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

Methodology Australia Heritage Database (2015)
DPaW (2014)
EPA (2009)
GIS Database:
- DPaW Tenure
- Hydrography, Linear
- Register of National Estate

(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) (GIS Database). The nearest PDWSA is Ravensthorpe Catchment Area, which is approximately 140 kilometres to the south (GIS Database).

The application area is located within a semi-arid, warm Mediterranean environment with an average annual rainfall of 313 millimetres recorded at Lake Carmody approximately 40 kilometres south-west of the application area (CALM, 2002; BoM, 2015). The small size of the proposed clearing within this climate is unlikely to result in significant changes to surface flows.

The groundwater salinity within the application area is approximately 14,000 - 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be hyper saline. Given the size of the area to be cleared (10 hectares) and low the impact nature of the clearing, the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

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

Methodology BoM (2015)
CALM (2002)
GIS Database:
- Groundwater Salinity, Statewide
- Public Drinking Water Source Area (PDWSAs)

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

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

The application area is located within a semi-arid, warm Mediterranean environment with an average annual rainfall of 313 millimetres recorded at Lake Carmody approximately 40 kilometres south-west of the application area (BoM, 2015; CALM, 2002). Rainfall is usually experienced during winter months and it is likely that during times of intense rainfall there may be some localised flooding in the area (CALM, 2002). However, given the size of the Swan-Avon Yilgarn catchment (5,836,045 hectares) (GIS Database), the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

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 two Native Title Claims (WC2003/006 and WC2000/007) over the area under application (GIS Database). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DAA, 2015). 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 24 August 2015 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

Methodology DAA (2015)

4. References

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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>Environmental 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 <i>Wildlife Conservation Act 1950</i> , 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 <i>Calyptorhynchus latirostris</i> is specially protected under the <i>Wildlife Conservation Act 1950</i> 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.
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X	Presumed Extinct species: Specially protected under the <i>Wildlife Conservation Act 1950</i> , 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).
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- 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.