



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 8069/1  
Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Edna May Operations Pty Ltd

### 1.3. Property details

Property: Mining Lease 77/88  
Mining Lease 77/124  
Local Government Area: Shire of Westonia  
Colloquial name: Greenfinch Project

### 1.4. Application

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

### 1.5. Decision on application

Decision on Permit Application: Refuse

Decision Date: 1 November 2018

Reasons for Decision

The clearing permit application was received on 11 May 2018 and has been assessed against the clearing principles, planning instruments, and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. The initial assessment of this application determined that the proposed clearing would result in significant environmental impacts and was unlikely to be considered acceptable. The applicant was given the opportunity to provide additional information and modify their clearing proposal in order to reduce the environmental impacts. In response, Edna May Operations Pty Ltd (2018a) provided additional information and mitigation measures. These included: reducing the size of the application area from 62.3 hectares to 48.8 hectares; and an additional offset of revegetating cleared farmland south of the application area to reinstate a vegetation linkage. The additional information and suggested mitigation measures were taken into consideration when making the decision on this application.

It has been concluded that the proposed clearing is seriously at variance to Principle (c), at variance to Principles (b), (d), and (e), may be at variance to Principles (a) and (h), is not likely to be at variance to Principles (g), (i) and (j) and not at variance to Principle (f).

The Delegated Officer determined that the application area contains vegetation that is important for the survival of the Threatened Flora species *Eremophila resinosa*. In addition, the application area is within a significant large remnant of native vegetation in the extensively cleared landscape of the Avon Wheatbelt. The proposed clearing would effectively sever the remnant and significantly reduce its function as fauna habitat and a wildlife corridor. The proposed clearing would also clear up to 39.1 hectares of a Critically Endangered Threatened Ecological Community (TEC), the 'Eucalypt woodlands of the Western Australian Wheatbelt'. The Delegated Officer had consideration of the offsets proposed by the applicant. However, the impact of the proposed clearing is significant enough where an offset cannot be justified and therefore the proposed clearing is refused.

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** The vegetation of the application area is broadly mapped as the following Beard vegetation association: 536: Medium woodland; morrell and rough fruited mallee (*Eucalyptus corrugata*) (GIS Database).

A flora and vegetation survey was conducted over the application area by Botanica Consulting during April 2018. The following vegetation types were recorded within the application area (Botanica Consulting, 2018b):

CLP-EW1 (Eucalypt Woodland) – Mid woodland of *Eucalyptus longicornis* over isolated tall *Melaleuca pauperiflora* subsp. *fastigata* shrubs and low open chenopod shrubland of *Atriplex* spp. and open low forbland of

*Sclerolaena diacantha* on clay-loam plain.

CLP-EW2 (Eucalypt Woodland) – Mid woodland of *Eucalyptus salubris* over open mid shrubland of *Santalum acuminatum* and open low shrubland of *Acacia hemiteles/Grevillea acuaria* on clay-loam plain.

CLP-MWS1 (Mallee Woodland and Shrublands) – Tall mallee woodland of *Eucalyptus corrugata* over sparse shrubland *Senna artemisioides* and low forbland of *Sclerolaena diacantha* on clay-loam plain.

CLP-RMNV1 (Regrowth, Modified Native Vegetation) – Mid woodland/mallee woodland of mixed Eucalypts over open chenopod shrubland of *Atriplex* spp./*Maireana* spp. on clay-loam plain.

CV – Disturbed area.

**Clearing Description**

Greenfinch Project.

Edna May Operations Pty Ltd proposes to clear up to 62.3 hectares of native vegetation within a boundary of 62.3 hectares, for the purpose of mineral production. The project is located approximately 600 metres north of Westonia, within the Shire of Westonia.

**Vegetation Condition**

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994);

To:

Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).

**Comment**

The vegetation condition was derived from a vegetation survey conducted by Botanica Consulting (2018a).

The proposed clearing is for an open pit and mining related infrastructure, as an extension of existing operations at the Edna May minesite.



### 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 clearing permit application area is located within the Merredin subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Avon Wheatbelt Bioregion (GIS Database). The Avon Wheatbelt bioregion contains proteaceous scrub-heaths with numerous endemic flora on residual lateritic uplands and derived sandplains; and mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands (CALM, 2002). Due to the extensive clearing for agriculture, the remaining remnants of vegetation in the agricultural zone are considered important for biodiversity conservation (CALM, 2002).

The application area and Edna May Gold Project are located within the Westonia Town Common Reserve (Westonia Common), a remnant of native vegetation within the largely cleared Avon Wheatbelt bioregion. The Westonia Common is very rich in biological diversity and considered regionally important as it contains one of the largest 'reserved' red morrell woodlands within the intensive land use zone (McLellan, 2008).

A flora and vegetation survey of the application area was undertaken by Botanica Consulting in April 2018. Previous surveys that included part of the application area included surveys by MWH (2014) and Phoenix Environmental Services (2016; 2017). Approximately 70.4% of the application area is native vegetation, with the remainder comprising of disturbed areas (24.5%) and revegetation (5.1%) (Botanica Consulting, 2018a). The disturbed areas are generally adjacent to the current minesite operations, and include disturbances from current and historic mining, an existing road or are on the edge of these activities (Botanica Consulting, 2018a; Edna May Operations Pty Ltd, 2018a). The majority (62.7%) of the application area is in good condition with some vegetation (7.7%) in very good condition (Botanica Consulting, 2018a).

The Botanica Consulting (2018b) survey recorded 72 vascular plant taxa comprising 21 families and 34 genera. Four plants of Threatened Flora species, *Eremophila resinosa*, were recorded within the application area (Botanica Consulting, 2018b). No Priority Flora were recorded within the application area (Botanica Consulting, 2018b).

Two introduced plant species were recorded within the application area, Maltese Cockspur (*Centaurea melitensis*) and Wards Weed (*Carrichtera annua*) (Botanica Consulting, 2018b). Clearing activities may spread or introduce weed species to non-infested areas, and reduce the biodiversity of an area.

The Botanica Consulting (2018b) flora and vegetation survey mapped the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) listed Threatened Ecological Community (TEC) 'Eucalypt woodlands of the Western Australian Wheatbelt' within the application area. The EPBC listed TEC corresponds with the State listed Priority Ecological Communities (PEC) 'Eucalypt woodlands of the Western Australia Wheatbelt' (P3) and 'Red Morrell Woodland of the Wheatbelt' (P1) (DBCA, 2017; Botanica Consulting, 2018b). There is approximately 39.1 hectares of the TEC within the application area (Botanica Consulting, 2018a).

A Level 1 fauna assessment of the application area, and other areas around the Edna May project, was undertaken by MWH in October 2013 and June 2014. MWH (2014) considers that the larger remnant of vegetation, within which the application area is located, is significant to conserving vertebrate fauna diversity in the IBRA subregion due to the size of the remnant habitat in a highly cleared landscape.

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

**Methodology**      Botanica Consulting (2018a)  
Botanica Consulting (2018b)  
CALM (2002)  
DBCA (2017)  
Edna May Operations Pty Ltd (2018a)  
McLellan (2008)  
MWH (2014)  
Phoenix Environmental Services (2016)  
Phoenix Environmental Services (2017)

GIS Database:  
- IBRA Australia

#### (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 Level 1 fauna assessment of the application area, and other areas around the Edna May project, was undertaken by MWH in October 2013 and June 2014. The fauna assessment collected information on terrestrial vertebrate fauna, short-range endemics (SRE) invertebrate fauna and fauna habitats. Four broad

fauna habitats were recorded in the larger survey area and three of these were mapped within the application area (MWH, 2014):

- Mixed Woodland dominated by Red Morrel (*Eucalyptus longicornis*)
- Mixed Woodland dominated by Gimlet (*Eucalyptus salubris*)
- Disturbed

MWH (2014) considers the larger remnant of vegetation that the application area is located in as significant to vertebrate fauna. The application area lies within a 2,418 hectare remnant of vegetation in an IBRA subregion that has been extensively cleared. MWH (2014, p. 23) highlighted research by How and Dell that “showed a positive correlation between the size of native remnant vegetation and vertebrate species diversity, emphasising the importance of remnant vegetation to vertebrate diversity in the subregion.” Reducing the size of fauna habitats may reduce the quality of the habitat due to fragmentation and edge effects (MWH, 2014).

The application area includes areas with a large amount of leaf litter accumulation, which is a micro-habitat known to support SRE invertebrate species (MWH, 2014). Due to the large scale clearing in the IBRA subregion, remnant vegetation blocks provide habitat isolates for any SRE invertebrate fauna present (MWH, 2014).

A total of 37 fauna species were recorded during the MWH (2014) assessment comprising of 23 native birds, eight native mammal, three reptiles and three introduced species. The desktop analysis determined 12 fauna species of conservation significance were considered possible, likely or very likely to occur in the survey area. Since the desktop analysis, several species are no longer listed and this reduced the number of potential conservation significant species to seven. These species are:

- Carnaby’s Cockatoo (*Calyptorhynchus latirostris*)
- Malleefowl (*Leipoa ocellata*)
- Chuditch (*Dasyurus geoffroi*)
- Red-tailed Phascogale (*Phascogale calura*)
- Western Spiny-tailed Skink (*Egernia stokesii badia*)
- Shield-backed Trapdoor Spider (*Idiosoma nigrum*)
- Tree-stem Trapdoor Spider (*Aganippe castellum*)

No conservation significant fauna species were recorded during the field assessment (MWH, 2014).

A targeted Carnaby’s Cockatoo (*Calyptorhynchus latirostris*) habitat assessment was conducted by zoologist Greg Harewood in April 2018. The application area contains only a small number of potential breeding habitat trees, none of which were observed to contain hollows of a size likely to be suitable for Carnaby’s Cockatoo nesting purposes. The potential cockatoo foraging habitat present appears to be limited in quality and extent with little variety in species composition. No evidence of roosting activity was observed and no individual Carnaby’s Cockatoos were observed. The results of the habitat assessment suggest the application area is unlikely to represent an area of specific significance to the species (Harewood, 2018b).

Advice was provided by the Department of Biodiversity, Conservation and Attractions (DBCA). DBCA (2018a) advised the Level 1 fauna assessment did not appear to consider the potential for the threatened (ranked critically endangered) Arid Bronze Azure Butterfly (*Ogyris subterrestris petrina*) to be present in the proposal area. Following the DBCA advice, a desktop review was conducted by Harewood (2018a) which determined that it is unlikely that the arid bronze azure butterfly would occupy the clearing permit area. This conclusion was based on the absence of the favoured habitat for the host ant (*Camponotus terebrans*) and supported by no records of the butterfly within 50 kilometres (Harewood, 2018a).

The fauna habitat provided in the application area, as an important part of the remnant vegetation patch, is considered a significant habitat for fauna indigenous to Western Australia. Clearing can have ongoing effects, with habitat fragmentation resulting in reduced habitat area and connectivity, along with edge effects including increased weeds (Prober and Smith, 2009). In the Wheatbelt, eight mammal species have become regionally extinct, and since 1900 nearly half of all bird species have declined in range and/or abundance, with clearing being a major cause (Prober and Smith, 2009). The application area provides important habitat for vertebrate fauna (MWH, 2014) and if the proposed clearing were to occur, it would directly impact this habitat and there would be ongoing impacts from habitat fragmentation. The proposed clearing in the southern section of the application area would break the fauna linkages within the larger Westonia Common. A biological survey of the Westonia Common recorded a high proportion of bird species that are declining or remnant dependent (32 species or 63% of species recorded) (McLellan, 2008). This indicates the Westonia Common has high conservation value for birds. The application area is considered to be necessary for the maintenance of a significant habitat for fauna.

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

**Methodology** DBCA (2018a)  
Harewood (2018a)  
Harewood (2018b)  
McLellan (2008)

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

**Comments Proposal is seriously at variance to this Principle**

A flora and vegetation survey of the application area was undertaken by Botanica Consulting in April 2018. Previous surveys of parts of the application area included surveys by MWH (2014) and Phoenix Environmental Services (2016; 2017).

One Threatened Flora species, *Eremophila resinosa*, was recorded within the application area and four plants are proposed to be cleared (Botanica Consulting, 2018a). There are 26 natural populations of *E. resinosa* in the region and 16 populations of these are within a 20 kilometre radius of the clearing permit. The majority of known populations are within road reserves (DEC, 2008). There are 514 plants recorded within a 20 kilometre radius and the clearing of four plants would reduce the plants by 0.8% (Botanica Consulting, 2018a). Over 4,000 plants have been translocated as part of the Edna May Gold Mine rehabilitation program (Botanica Consulting, 2018a).

The population within the Westonia Common is important as it is one of the largest populations (DEC, 2008). *E. resinosa* was recorded in the application area within the CLP-EW1 (Eucalypt Woodlands) vegetation type (Botanica Consulting, 2018b).

Critical habitat for *E. resinosa* includes the area of occupancy for extant populations, areas of similar habitat surrounding important populations and potential habitat (DEC, 2008). Similar habitat surrounding the plants is important because it is necessary to allow access for pollinators and population expansion (DEC, 2008). The clearing of the southern section would reduce the critical habitat for *E. resinosa* and also fragment the distribution by clearing the vegetation linkage between three populations. This could have impacts to the species through reduced cross-pollination between populations. Habitat fragmentation and reduced opportunity for pollinators was a possible explanation for the low levels of healthy seed in *E. resinosa* locules (Cochrane et al., 2002 in DEC, 2008).

Advice was provided by the Department of Biodiversity, Conservation and Attractions (DBCA). DBCA (2018a) advised that impacting up to four *E. resinosa* plants is unlikely to be significant to the conservation of the species. However, as there are a number of dead plants and historical records of plants occurring in the southern disturbance footprint prior to the 2016 survey, a soil seed bank likely still remains at this site (DBCA, 2018a). Although records at the mine show there has been no new seedlings recorded in the application area for over 15 years (Edna May Operations Pty Ltd, 2018a), a significant soil seed bank is likely to remain (DBCA, 2018b). Research by the Botanical Gardens and Parks Authority established that while seed viability is low for older *E. resinosa* seeds collected from the soil seed bank, older seeds that are viable have relatively high germination rates when treated with smoke water. Therefore, this subpopulation is likely to have capacity to regenerate if a natural disturbance event, such as fire, was to occur (DBCA, 2018b). DBCA (2018a) concluded that impacts to the soil seed bank need to be considered as impact to the threatened species.

DBCA reiterated the advice in the Interim Recovery Plan and advised that clearing of the southern footprint will result in further fragmentation of *E. resinosa* habitat which is currently providing direct connectivity between subpopulations. Populations adjacent to the proposed development may be at risk of indirect and secondary impacts. Although Edna May has shown success in translocation of *E. resinosa*, translocations are not an adequate replacement for maintaining the habitat and survival of existing natural populations (DBCA, 2018a). The long term sustainability of translocated populations into non-natural areas is uncertain with regard to maintaining other supporting ecosystem processes, including pollinators. Edna May Operations Pty Ltd proposed revegetating farmland to native vegetation to offset the loss of *E. resinosa* habitat and restore a vegetated linkage between subpopulations. Although the early stages of establishment of self-sustaining populations of the species has been demonstrated on disturbed natural areas, it is yet to be demonstrated on ex-farmland (DBCA, 2018b).

Although parts of the clearing permit area have previously been disturbed by historic mining (Edna May Operations Pty Ltd, 2018a), the area is considered to contain habitat important to the survival of the species (DBCA, 2018b). Based on available information, the proposed clearing is of native vegetation that is necessary for the continued existence of rare flora.

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

**Methodology** Botanica Consulting (2018a)  
Botanica Consulting (2018b)  
DBCA (2018a)  
DEC (2008)  
Edna May Operations Pty Ltd (2018a)  
MWH (2014)  
Phoenix Environmental Services (2016)

**(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 at variance to this Principle**

A Threatened Ecological Community (TEC), the 'Eucalypt woodlands of the Western Australian Wheatbelt', has been broadly mapped as likely to occur within the application area (Botanica Consulting, 2018a; Department of the Environment, 2016). This TEC is listed as Critically Endangered under the (Federal) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act listed TEC corresponds with the State-listed Priority Ecological Communities (PEC) 'Eucalypt woodlands of the Western Australia Wheatbelt' (P3) and 'Red Morrel Woodland of the Wheatbelt' (P1) (Botanica Consulting, 2018b; DBCA, 2017).

Flora and vegetation surveys of the application area were undertaken by Botanica Consulting and Phoenix Environmental. An assessment of the vegetation types identified within the application area against the TEC diagnostic criteria resulted in two vegetation types representing the TEC (Botanica Consulting, 2018b):

- CLP-EW1 (Eucalypt Woodland) – Mid woodland of *Eucalyptus longicornis* over isolated tall *Melaleuca pauperiflora* subsp. *fastigata* shrubs and low open chenopod shrubland of *Atriplex* spp. and open low forbland of *Sclerolaena diacantha* on clay-loam plain.
- CLP-EW2 (Eucalypt Woodland) – Mid woodland of *Eucalyptus salubris* over open mid shrubland of *Santalum acuminatum* and open low shrubland of *Acacia hemiteles/Grevillea acuarria* on clay-loam plain.

There is approximately 39.1 hectares of the TEC within the application area (Botanica Consulting, 2018a). This represents approximately 1.77% of the extent of the TEC within the Westonia Common, a group of vegetated reserves in the locality. To further mitigate the impact to the TEC, Edna May Operations Pty Ltd proposed to reduce the amount of woodland to be cleared to 33 hectares, approximately 1.5% of the TEC vegetation in the local area (Edna May Operations Pty Ltd, 2018a).

The listing of the TEC under the EPBC Act highlights that the landscape in which the TEC occurs is heavily damaged and retaining native vegetation is important for conservation (Department of the Environment, 2015). The approved conservation advice for the EPBC Act listing considers all patches that meet the criteria for the TEC, along with buffer zones, as critical to the survival of the community. This is due to the TEC occurring in a highly cleared and modified landscape (Department of the Environment, 2015).

The TEC occurs mostly in small and highly fragmented patches. Remnants that are larger and spatially linked and act as wildlife corridors are even more important (Department of the Environment, 2015). The clearing permit application area is part of a larger remnant which is considered highly significant in the context of the EPBC Act conservation advice (DBCA, 2018b).

The EPBC Act conservation advice also highlights the significance of a vegetation buffer, a minimum of 40 metres, around the TEC (Department of the Environment, 2015). This means that some of the application area that is not mapped as the TEC, still contains vegetation that is important for the protection of the TEC, acting as a buffer from inadvertent disturbance, edge effects or weed invasion.

Edna May Operations Pty Ltd (2018a) proposed to revegetate cleared farmland, with species corresponding to the TEC, to re-establish connections between remaining remnants to offset the impact of the clearing of the TEC. DBCA (2018b) questioned the effectiveness of the proposed northern revegetation areas in increasing connectivity between occurrences of the TEC. Some of the complications that could lead to a high risk of failure for revegetating pastoral land include high weed load, nutrient enrichment from fertiliser and edge effects (DBCA, 2018b).

The proposed clearing does include a critical occurrence of the TEC.

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

**Methodology** Botanica Consulting (2018a)  
Botanica Consulting (2018b)  
DBCA (2017)  
DBCA (2018b)  
Department of the Environment (2015)  
Department of the Environment (2016)  
Edna May Operations Pty Ltd (2018a)

**(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 at variance to this Principle**

The application area falls within the Avon Wheatbelt Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). This region has been extensively cleared as only approximately 18.51% of the pre-European vegetation still exists in the IBRA Avon Wheatbelt Bioregion (Government of Western Australia, 2018). This has a conservation status of Vulnerable (Department of Natural Resources and Environment, 2002). The application area is broadly mapped as Beard vegetation association 536: Medium woodland; morrell and rough fruited mallee (*Eucalyptus corrugata*) (GIS Database). Approximately 41.23% and 35.54% of the pre-European extent of this vegetation association remains uncleared at the state and bioregional level, respectively (see table below; Government of Western Australia, 2018).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands (and post clearing %)
IBRA Bioregion – Avon Wheatbelt	9,517,110	1,761,227	~18.51	Vulnerable	2.42 (9.93)
IBRA Subregion - Merredin	6,524,181	1,367,582	~20.96	Vulnerable	2.54 (9.27)
Local Government - Westonia	331,939	130,984	~39.46	Depleted	8.10 (18.76)
Beard vegetation associations – WA					
536	13,178	5,433	~41.23	Depleted	9.82 (23.51)
Beard vegetation associations – Avon Wheatbelt bioregion					
536	11,171	3,970	~35.54	Depleted	11.58 (32.18)
Beard vegetation associations – Merredin subregion					
536	11,171	3,970	~35.54	Depleted	11.58 (32.18)

\* Government of Western Australia (2018)

\*\* Department of Natural Resources and Environment (2002)

The application area falls within a large remnant of native vegetation made up of several Crown Reserves and Unallocated Crown Land, collectively known as the Westonia Common. The Westonia Common represents one of the largest remnants of native vegetation in the region, which has been extensively cleared for agricultural purposes (McLellan, 2008).

The proposed clearing will sever vegetation linkages between the northern and southern halves of the reserve (GIS Database). This will create two smaller remnant vegetation blocks, at least temporarily. The northern portion is proposed to be revegetated while the southern section will be partly revegetated and part permanent disturbance (Edna May Operations Pty Ltd, 2018b). To minimise the loss of connectivity, Edna May Operations Pty Ltd (2018a) proposed to reduce the clearing permit boundary from 62.3 hectares to 48.8 hectares. This would reduce the severing of the vegetation corridor to the north of the application area, however, the southern linkage would still be severed. Edna May Operations Pty Ltd further proposed to revegetate cleared farmland to the south of the application area. However, the proposed measures were considered insufficient to offset the loss of remnant vegetation.

The fragmentation of a large remnant of vegetation could reduce connectivity for fauna and increase edge effects. This would reduce the ecological value of the remnant vegetation in a region which is already highly fragmented. Fragmentation and isolating populations of flora and vegetation from each other can impact the survival of populations, species and even ecosystems (Environmental Protection Authority, 2016).

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

**Methodology**

Department of Natural Resources and Environment (2002)  
 Edna May Operations Pty Ltd (2018a)  
 Edna May Operations Pty Ltd (2018b)  
 Environmental Protection Authority (2016)  
 Government of Western Australia (2018)  
 McLellan (2008)

GIS Database:  
- IBRA Australia  
- Imagery  
- 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**

There are no watercourses or wetlands within the area proposed to clear (GIS Database). Four broad vegetation types were mapped within the application area during a flora and vegetation survey, and none of these were associated with a watercourse or wetland (Botanica Consulting, 2018b).

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

**Methodology Botanica Consulting (2018b)**

GIS Database:  
- Hydrography, Lakes  
- 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**

At a broad scale, the application area contains the Oc33 soil type: undulating plains with some low gilgais; chief soils seem to be hard alkaline red soils in intimate and complex association with calcareous earths (GIS Database). These soil types are said to be slowly permeable and have low wind erodability (Schoknecht, 2002). Therefore, the likelihood of erosion occurring during normal rainfall events is low.

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

**Methodology Schoknecht (2002)**

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 within Crown Reserve R14983 (GIS Database). This reserve, along with fourteen other remnant vegetation reserves, constitute the Westonia Common. The Westonia Common covers approximately 2,500 hectares of Crown Reserves and Unallocated Crown Land vested in the Shire of Westonia. The purposes of the reserves includes conservation/timber, common, gravel/sand, airstrip and former watering places (Eco Logical, 2016). Although much of the tenure is not for the purpose of conservation, the Shire of Westonia is considering a holistic approach to managing the Westonia Common through the preparation of the Westonia Common Conservation Management Plan (Eco Logical, 2016).

The Westonia Common is important for maintaining unique biodiversity of the region and is a refuge for native fauna (McLellan, 2008; Eco Logical, 2016). The Conservation Management Plan recommended that vegetation clearing be kept to a minimum within the Westonia Common (Eco Logical, 2016).

The WWF organised a Bioblitz of the Westonia Common in September 2007. This was a biological survey bringing together environmental experts with community members to capture a snapshot of the biological diversity in the area. The number of species recorded during the survey were 225 plant, nine mammal, five reptile and amphibian, 51 bird, 44 invertebrate, and 18 fungi and lichen species (McLellan, 2008). The total of 352 species was higher than all of the previous Bioblitzes conducted in the Wheatbelt (McLellan, 2008).

Edna May Operations Pty Ltd (2018a) proposed to reduce the clearing permit boundary from 62.3 hectares to 48.8 hectares, part of which would reduce the impact on the Westonia Common and its surrounds.

The nearest DBCA (formerly DPaW) managed land is the Sandford Rocks Nature Reserve which is located approximately 6 kilometres north-east of the application area (GIS Database). The proposed clearing will not impact on any ecological linkages to the Nature Reserve.

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



**Methodology** Eco Logical (2016)  
Edna May Operations Pty Ltd (2018a)  
McLellan (2008)

GIS Database:  
- DPaW Tenure  
- Reserves - Small

**(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**

There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. Any surface water within the application area is likely to occur as sheet flow. The proposed clearing is unlikely to result in significant changes to surface water flows.

There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). The groundwater salinity within the application area is between 14,000 and 35,000 milligrams per litre of Total Dissolved Solids (GIS Database). This is considered to be saline. The clearing of native vegetation within the Wheatbelt has resulted in increased salinity and further clearing may cause groundwater levels and quality to deteriorate further. However, part of the application area will be revegetated and Edna May are proposing an offset of revegetating up to 70 hectares of former cleared agricultural land immediately north of the Edna May mine site (Edna May Operations Pty Ltd, 2018b). Therefore any impact on groundwater is likely to be temporary.

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

**Methodology** Edna May Operations Pty Ltd (2018b)

GIS Database:  
- Groundwater Salinity, Statewide  
- Hydrography, Linear  
- Public Drinking Water Source 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**

The climate of the region is semi-arid Mediterranean, with an average rainfall of approximately 332 millimetres per year (CALM, 2002; BoM, 2018). The annual pan evaporation rate is estimated at more than 2,000 millimetres and average monthly evaporation is higher than average monthly rainfall throughout the year (BoM, 2018 in Botanica, 2018a).

There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.

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

**Methodology** BoM (2018)  
Botanica Consulting (2018a)  
CALM (2002)

GIS Database:  
- Hydrography, linear

## Planning Instrument, Native Title, previous EPA decision or other matter.

### Comments

The clearing permit application was advertised on 28 May 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. Three submissions were received in relation to this application. Two submissions raised concerns about potential impacts to biodiversity, vegetation, flora, fauna and the reserve. These issues are addressed under Principles (a), (b), (c), (d), (e) and (h). The second submission raised concerns about all ten clearing principles. The issues are addressed under each of the ten principles.

There is one native title claim (WC2017/007) over the area under application (DPLH, 2018). This claim has been lodged with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2018). 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 Water and Environmental Regulation and the Department of Biodiversity Conservation and Attractions, 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 proposal was referred to the Environmental Protection Authority under Part IV of the *Environmental Protection Act 1986* (the EP Act). On 24 April 2018 the EPA made a decision not to assess the proposal, allowing it to be dealt with under Part V (Clearing) of the EP Act.

It is noted that the proposed clearing impacts on protected matters under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent referred the project to the (Federal) Department of the Environment and Energy for environmental impact assessment under the EPBC Act. On 6 August 2018, the proposal was deemed a controlled action. The proposal is currently under assessment for the following matters of national environmental significance: Eucalyptus Woodlands of the Western Australian Wheatbelt Threatened Ecological Community (Critically Endangered); *Eremophila resinosa* (Resinous eremophila) (Endangered); and Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*) (Endangered) (Department of the Environment and Energy, 2018).

**Methodology** Department of the Environment and Energy (2018)  
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## 5. Glossary

### Acronyms:

<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DBCA</b>	Department of Biodiversity Conservation and Attractions, Western Australia
<b>DEC</b>	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
<b>DEE</b>	Department of the Environment and Energy, Australian Government
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DMIRS)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora
<b>DoE</b>	Department of the Environment, Australian Government (now DEE)
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DSEWPaC</b>	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

### Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

- T**            **Threatened species:**  
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).  
**Threatened fauna** is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the *Wildlife Conservation Act 1950*.  
**Threatened flora** is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the *Wildlife Conservation Act 1950*.  
The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.
- CR**            **Critically endangered species**  
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN**            **Endangered species**  
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU**            **Vulnerable species**  
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX**            **Presumed extinct species**  
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.
- IA**            **Migratory birds protected under an international agreement**  
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD**            **Conservation dependent fauna**  
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS**            **Other specially protected fauna**  
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P**                **Priority species**  
Species which are poorly known; or  
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1**            **Priority One - Poorly-known species:**  
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

**P2**

**Priority Two - Poorly-known species:**

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

**P3**

**Priority Three - Poorly-known species:**

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations 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 locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

**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 are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.