



## 1. Application details

### 1.1. Permit application details

Permit application No.: 7071/1  
Permit type: Area Permit

### 1.2. Applicant details

Applicant's name: V and E Vulin

### 1.3. Property details

Property: LOT 43 ON PLAN 6292, WANNEROO  
Local Government Area: City of Wanneroo

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4	-	Mechanical Removal	Agriculture

### 1.5. Decision on application

Decision on Permit Application: Refusal

Decision Date: 27 October 2016

Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act), and it has been concluded that the proposed clearing is at variance to clearing principles (a), (b) and (e), may be at variance to principles (c), (g) and (h), and is not likely to be at variance to the remaining clearing principles.

The Delegated Officer determined that the application area contains significant habitat for indigenous fauna, is a significant remnant within a highly cleared landscape, comprises a high level of biological diversity, and may contain rare flora and that the proposed clearing may impact on the movement of fauna between conservation reserves.

In making the decision to refuse the application, the Delegated Officer had regard to the advice of the City of Wanneroo that planning approval is required for the proposed activity and that, at the date of decision, a copy of this has not been provided.

State and other relevant policies have been taken into consideration in the decision to refuse to grant a clearing permit.

## 2. Site Information

### 2.1. Existing environment and information

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

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The vegetation within the application area has been mapped as:	The applicant proposes to clear four hectares of native vegetation within Lot 43 on Plan 6292, Wanneroo, for the purpose of establishing a market garden.	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).	The condition and description of the vegetation was determined by a site inspection undertaken by DER officers on 26 May 2016 (DER, 2016).
<ul style="list-style-type: none"> <li>Beard vegetation association 6: described as a medium woodland, <i>Eucalyptus gomphocephala</i> (tuart) and <i>Eucalyptus marginata</i> (jarrah) (Shepherd et al., 2001); and</li> <li>Heddle vegetation Karrakatta complex - Central and South: described as an open forest of <i>Eucalyptus gomphocephala</i> (tuart) - <i>Eucalyptus marginata</i> (jarrah) - <i>Corymbia calophylla</i> (marri) and woodland of <i>Eucalyptus marginata</i> (jarrah) - <i>Banksia</i> species (Hedde et al., 1980).</li> </ul>		To  Good; Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	

A site inspection undertaken by Department of Environment Regulation (DER) officers identified that the vegetation is a low open woodland of *Banksia menziesii*, *Allocasuarina fraseriana* with sparse *Eucalyptus marginata* and *Eucalyptus todtiana* (pricklybark) (DER, 2016).



Given the species and soil type observed on site, the vegetation within the application area may be representative of Heddle vegetation Bassendean Complex-Central and South, and not the mapped Heddle vegetation complex. This complex is described as ranging from woodland of *Eucalyptus marginata* (jarrah) - *Allocasuarina fraseriana* (sheoak) - *Banksia* species to low woodland of *Melaleuca* species and sedgelands on the moister sites. This area includes the transition of *E. marginata* to *E. tottiana* in the vicinity of Perth.

### 3. Assessment of application against Clearing Principles

#### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

##### Comments Proposed clearing is at variance to this Principle

The application is to clear up to four hectares of native vegetation within Lot 43 on Plan 6292, Wanneroo, for the purpose of establishing a market garden. A site inspection of the application area undertaken by Department of Environment Regulation (DER) officers identified that the application area contains a low open woodland of *Banksia menziesii* (firewood banksia) and *Allocasuarina fraseriana* (sheoak) with sparse *Eucalyptus marginata* (jarrah) and *Eucalyptus tottiana* (pricklybark) in a very good to good (Keighery, 1994) condition (DER, 2016). Given this, the vegetation may be representative of the adjoining mapped Heddle vegetation complex Bassendean Complex-Central and South (Heddle et al., 1980) rather than the mapped Heddle vegetation complex (Heddle et al., 1980).

The application area forms part of a north-south ecological linkage defined in the Gngangara Sustainability Strategy (2009). This linkage connects the application area to Bush Forever site 471, located 270 metres north, and Bush Forever site 327, located 500 metres south-east. Ecological linkages are defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape" (Molloy et al., 2009). The proposed clearing will fragment and impact on approximately half of the vegetation within the linkage at this location and is considered to have a significant impact on the linkage function.

Three rare flora species have been recorded within the local area (10 kilometre radius). As the application area does not contain limestone outcrops or riparian vegetation, it is considered that the application area is unlikely to contain suitable habitat for two of these species (Western Australian Herbarium, 1998-; DER, 2016).

The third species of rare flora is found within grey or brown sand, clay loam and has been mapped within Bassendean Complex-Central and South. Given this, it is considered that the application area contains potential habitat for this species and that this species may be present within the application area (Western Australian Herbarium, 1998-; DER, 2016; Brown et al., 1998). A flora survey would determine whether this species is present and the potential impacts of the proposed clearing.

Sixteen flora species listed as Priority by the Department of Parks and Wildlife (Parks and Wildlife) have been recorded within the local area. Given the observed soil and vegetation type, two of these may be present within the application area. Both of these species are listed as Priority 4. Priority 4 species are defined as 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. Given this, the proposed clearing of suitable habitat for these species is not likely to significantly impact on their conservation status.

One threatened ecological community (TEC) and six priority ecological communities (PEC) have been mapped within the local area. As the characteristics of these communities were not recorded within the application area (Gibson et al., 1994; DER, 2016), it is considered that the application area is not likely to comprise, or be necessary for the maintenance of, a TEC or PEC.

Four fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act) have been recorded within the local area (Parks and Wildlife, 2007-) and may utilise the vegetation within the application area; Carnaby's cockatoo (*Calyptorhynchus latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and chuditch (*Dasyurus geoffroii*).

Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo nest in large hollows of eucalyptus trees and forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea*, *Grevillea*), *Eucalyptus*, *Corymbia* species and a range of introduced species (Shah, 2006; Valentine and Stock, 2008). A site inspection of the application area identified good quality foraging habitat, however no trees of an age and size as to be considered potential nesting habitat were present.

The application area is located at the extent of the distribution range for forest red-tailed black cockatoos and Baudin's cockatoo, therefore although the application area contains potential foraging habitat, it is considered that the application area is unlikely to comprise significant habitat for these species.



As the vegetation within the application area contains suitable foraging habitat, is within the known breeding range and the local area is highly cleared, it contains vegetation defined as critical to the survival of Carnaby's cockatoo. Therefore, it is considered that the application area contains significant habitat for this species.

The preferred habitats of the chuditch include forest, mallee shrublands and woodland with an adequate number of refuge sites. Given the species large home range, the retention of vegetation corridors is noted as an important requirement of the species (DEC, 2012). As suitable habitat within the application area is in good to very good (Keighery, 1994) condition and given the linkage value of the vegetation, it is considered that the application area may comprise significant habitat for this species.

A DER Delegated Officer wrote to the applicant, advising (among other things) that the application area contains feeding habitat for Carnaby's cockatoo, is located within an ecological linkage and within an extensively cleared area, and may contain suitable habitat for rare flora. In response the applicant provided the following information relevant to this Principle:

- In respect to habitat for Carnaby's cockatoo, the applicant submitted that the nesting habitat is not present and foraging habitat is available in adjoining vegetation.
- In respect to fauna linkage values the applicant submitted that the linkage will not be severed given the presence of vegetation adjoining the application area.
- In respect to habitat for rare flora, the applicant submitted that relocation of rare flora to crown land can occur if required.

Taking into account the applicant's response, the condition of the vegetation, potential for rare flora, ecological linkage values and suitable habitat for conservation significant fauna, it is considered that the application area comprises a high level of biological diversity.

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

#### Methodology

##### References:

Brown et al. (1998)  
DEC (2012)  
DER (2016)  
Gibson et al. (1994)  
Gnangara Sustainability Strategy (2009)  
Heddle et al. (1980)  
Keighery (1994)  
Molloy et al. (2009)  
Parks and Wildlife (2007-)  
Shah (2006)  
Valentine and Stock (2008)  
Western Australian Herbarium (1998-)

##### GIS Datasets:

SAC Bio Datasets - accessed May 2016

### **(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

##### **Proposed clearing is at variance to this Principle**

A site inspection of the application area undertaken by DER officers identified that the application area contains a low open woodland of *Banksia menziesii* (firewood banksia) and *Allocasuarina fraseriana* (sheoak) with sparse *Eucalyptus marginata* (jarrah) and *Eucalyptus todtiana* (pricklybark) in a very good to good (Keighery, 1994) condition (DER, 2016).

The application area is part of a north-south ecological linkage defined in the Gnangara Sustainability Strategy (2009). This linkage connects the application area to Bush Forever site 471, located 270 metres north, and Bush Forever site 327, located 500 metres south-east. Ecological linkages are defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape" (Molloy et al., 2009). The proposed clearing will fragment and impact on approximately half of the vegetation within the linkage at this location and is considered to have a significant impact on the linkage function.

The local area (10 kilometre radius) surrounding the application area retains approximately 15 per cent native vegetation. Given this, it is considered that the application area is located within a highly cleared landscape.

Four fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act) have been recorded within the local area (Parks and Wildlife, 2007-) and may utilise the application area; Carnaby's cockatoo (*Calyptorhynchus latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and chuditch (*Dasyurus geoffroyi*).

Carnaby's cockatoo, Baudin's cockatoo and forest red-tailed black cockatoo nest in large hollows of eucalyptus trees and forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea*, *Grevillea*), *Eucalyptus*, *Corymbia* species and a range of introduced species (Shah, 2006; Valentine and Stock, 2008).

Carnaby's cockatoo was once abundant in Western Australia. Since the late 1940s the species has suffered a 30 per cent contraction in range, a 50 per cent decline in population, and between 1968 and 1990 disappeared from more than a third of its breeding range (Saunders and Ingram, 1998; Johnstone and Storr, 1998).

The Carnaby's cockatoo recovery plan (Parks and Wildlife, 2013) summarises habitat critical to the survival of Carnaby's cockatoos as:

- The eucalypt woodlands that provides nest hollows used for breeding, together with nearby vegetation that provides feeding, roosting and watering habitat that supports successful breeding;
- Woodland sites known to have supported breeding in the past and which could be used in the future, provided adequate nearby food and/or water resources are available or are re-established; and
- In the non-breeding season the vegetation that provides food resources as well as the sites for nearby watering and night roosting that enable the cockatoos to effectively utilise the available food resources.

The recovery plan also states, "success in breeding is dependent on the quality and proximity of feeding habitat within 12 kilometres of nesting sites. Along with the trees that provide nest hollows, the protection, management and increase of this feeding habitat that supports the breeding of Carnaby's cockatoo is a critical requirement for the conservation of the species" (Parks and Wildlife, 2013).

A site inspection undertaken by DER officers found that the application area represents good quality black cockatoo foraging habitat (DER, 2016). No *Eucalyptus* species of a suitable age and size that could be potential nesting habitat are present within the application area (DER, 2016). Eighteen Carnaby's cockatoo roost sites have been recorded within the local area.

As the application area contains four hectares of good quality foraging habitat, is within a known breeding area, is within close proximity to a number of roost sites and the local area is highly cleared, it contains vegetation defined as critical to the survival of Carnaby's cockatoo (Parks and Wildlife, 2013). Therefore, it is considered that the application area contains significant habitat for this species.

The application area is located at the extent of the distribution range for forest red-tailed black cockatoos and Baudin's cockatoo therefore, it is considered that although the application area contains potential foraging habitat, the application area is unlikely to comprise significant habitat for these species.

The preferred habitat of the chuditch includes forest, mallee shrublands and woodland with an adequate number of refuge sites. Given the species large home range the retention of vegetated corridors is noted as an important requirement of the species (DEC, 2012). Given this, the linkage value of the vegetation and the vegetation types present, it is considered that the application area may comprise significant habitat for this species.

A DER Delegated Officer wrote to the applicant, advising (among other things) that the application area contains feeding habitat for Carnaby's cockatoo and is located within an ecological linkage. In response the applicant provided the following information relevant to this Principle:

- In respect to habitat for Carnaby's cockatoo, the applicant submitted that the nesting habitat is not present and foraging habitat is available in adjoining vegetation.
- In respect to fauna linkage values the applicant submitted that the linkage will not be severed given the presence of vegetation adjoining the application area.

Taking into account the applicant's response, the presence of ecological linkage values and significant habitat for Carnaby's cockatoo, it is considered that the application area comprises significant habitat for indigenous fauna.

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

#### Methodology

##### References:

DEC (2012)  
DER (2016)  
Gnangara Sustainability Strategy (2009)  
Johnstone and Storr (1998)  
Keighery (1994)  
Molloy et al. (2009)  
Parks and Wildlife (2007-)  
Parks and Wildlife (2013)  
Saunders and Ingram (1998)  
Shah (2006)  
Valentine and Stock (2008)

##### GIS Datasets:

Carnaby cockatoo breeding sites  
Carnaby cockatoo roost sites



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

**Comments Proposed clearing may be at variance to this Principle**

A site inspection of the application area undertaken by DER officers identified that the application area contains a low open woodland of *Banksia menziesii* (firewood banksia) and *Allocasuarina fraseriana* (sheoak) with sparse *Eucalyptus marginata* (jarrah) and *Eucalyptus todtiana* (pricklybark) in a very good to good (Keighery, 1994) condition (DER, 2016). Given this, the vegetation may be representative of the adjoining Heddle vegetation complex, 'Bassendean Complex-Central and South' (Heddle et al., 1980).

Three rare flora species have been recorded within the local area (10 kilometre radius). As the vegetation within the application area does not contain limestone outcrops or riparian vegetation, it does not contain suitable habitat for two of these (Western Australian Herbarium, 1998-; DER, 2016).

The third species is currently known from 33 extant populations containing approximately 1,614 mature plants. Populations are distributed from just north of Perth down to the Busselton area, usually within 20 kilometres of the coast. Many populations are very small, occur in small disjunct remnants of natural vegetation on the Swan Coastal Plain and are subject to development pressures. Threats to this species include urban development, degraded habitat, poor recruitment, weed invasion, roadworks, firebreak maintenance, inappropriate fire regimes, recreational activities and dumping of rubbish (DEC, 2009).

This species occurs in areas of mixed woodland of jarrah, candlestick banksia (*B. attenuata*), holly banksia (*B. ilicifolia*) and firewood banksia with scattered sheoak and marri (*Corymbia calophylla*) over dense shrubs of blueboy (*Stirlingia latifolia*), swan river myrtle (*Hypocalymma robustum*), yellow buttercups (*Hibbertia hypericoides*), buttercups (*H. subvaginata*), balga (*Xanthorrhoea preissii*), coastal jugflower (*Adenanthos cuneatus*) and *Conostylis* species (DEC, 2009). Throughout its range the species tends to favour areas of dense undergrowth. Soil is usually deep grey-white sand usually associated with the Bassendean sand-dune system (DEC, 2009). Given this, it is considered that the application area contains potential habitat for this species.

A DER Delegated Officer wrote to the applicant, advising (among other things) that the application area may contain suitable habitat for rare flora. In response the applicant provided the following information relevant to this Principle:

- In respect to habitat for rare flora, the applicant submitted that relocation of rare flora to crown land can occur if required.

Taking into account the applicant's response, and the presence of suitable habitat for rare flora, it is considered that the application area may include, or be necessary for the existence of, rare flora.

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

A flora survey would determine whether this species is present within the application area and the potential impacts of the proposed clearing.

**Methodology References:**

Brown et al. (1998)  
DEC (2009)  
DER (2016)  
Heddle et al. (1980)  
Keighery (1994)  
Western Australian Herbarium (1998-)

**GIS Datasets:**

SAC Bio Datasets - accessed May 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 Proposed clearing is not likely to be at variance to this Principle**

One threatened ecological community (TEC) has been mapped within the local area (10 kilometre radius), 'Banksia attenuata woodland over species rich dense shrublands'. This community was recorded 2.6 kilometres from the application area. The characteristics of this community (Gibson et al., 1994) were not recorded within the application area during a site inspection (DER, 2016), therefore it is considered that the application area is unlikely to comprise of, or be necessary for the maintenance of, this TEC.

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

**Methodology Reference:**

DER (2016)  
Gibson et al. (1994)

**GIS Datasets:**

SAC Bio Datasets - accessed June 2016

**(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 Proposed clearing is at variance to this Principle**

The application area is located within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion retains approximately 39 per cent of its pre-European vegetation extent (Government of Western Australia, 2015).

The application area is located within the City of Wanneroo, within which there is approximately 45 per cent pre-European vegetation extent remaining (Government of Western Australia, 2015).

The vegetation within the application area is mapped as Beard vegetation association 6 and as Heddle Karrakatta Complex-Central and South complex, which retain approximately 24 per cent and 23 per cent respectively of their pre-European vegetation extents (Government of Western Australia, 2015).

A site inspection of the application area undertaken by DER officers identified that the application area contains a low open woodland of *Banksia menziesii* (firewood banksia) and *Allocasuarina fraseriana* (sheoak) with sparse *Eucalyptus marginata* (jarrah) and *Eucalyptus tottiana* (pricklybark) in a very good to good (Keighery, 1994) condition (DER, 2016). Given this, the vegetation may be representative of the adjoining Heddle Bassendean Complex-Central and South rather than the mapped Heddle vegetation complex (Heddle et al., 1980), which retains approximately 26 per cent of its pre-European extent (Parks and Wildlife, 2015).

Both Heddle vegetation complexes have less than 10 per cent of the remaining vegetation in conservation estate and are therefore, highly susceptible to further degradation.

The local area (10 kilometre radius) is highly cleared with approximately 15 per cent vegetation remaining.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The property is currently zoned rural under the Town Planning Scheme zoning, consistent with the Metropolitan Region Scheme zoning. Although located within the boundary of the Metropolitan Region Scheme, the property is not considered to be located within a constrained area as it is zoned rural.

The application area contains significant habitat for black cockatoos, may contain rare flora and forms part of an ecological linkage, facilitating the movement of biological material through the landscape, therefore it is considered that the application area is significant as a remnant.

A DER Delegated Officer wrote to the applicant, advising (among other things) that the application area is a significant remnant within a highly cleared landscape. In response the applicant submitted that as the property is to be rezoned to residential and urban deferred in the future, it would be inequitable to not allow clearing.

Taking into account the applicant's response, it is considered that the application area is significant as a remnant of native vegetation in a highly cleared area.

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

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
<b>IBRA Bioregion*</b>				
Swan Coastal Plain	1 501 222	579 162	39	37
<b>Shire*</b>				
City of Wanneroo	67 517	29 885	45	53
<b>Beard Vegetation Association in Bioregion*</b>				
6	56 343	13 411	24	37
<b>Heddle Vegetation Complex**</b>				
Karrakatta Complex-Central and South	49 912	11 374	23	6
Bassendean Complex-Central and South	87 476	22 869	26	5



**Methodology** References:  
Commonwealth of Australia (2001)  
\*Government of Western Australia (2015)  
Keighery (1994)  
\*\*Parks and Wildlife (2015)

GIS Datasets:  
SAC Bio datasets - accessed June 2016

**(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 Proposed clearing is not likely to be at variance to this Principle**

No watercourses or wetlands have been mapped within the application area. The closest (a minor sumpland) occurs approximately one kilometre from the application area and is separated by agricultural land uses and roads.

A site inspection of the application area undertaken by DER officers did not identify wetland vegetation on site (DER, 2016).

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

**Methodology** References:  
DER (2016)

GIS Datasets:  
Hydrography linear

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments Proposed clearing may be at variance to this Principle**

Soil within the application area was observed as white/grey sand (DER, 2016). No watercourses or wetlands have been mapped within the application area.

The application area has been mapped within the following land degradation risk categories (Schoknecht et al., 2004):

- 30-50 per cent of map unit has a moderate to high salinity risk or is presently saline;
- greater than 70 per cent of map unit has a high to extreme wind erosion risk;
- 3-10 per cent of map unit has a high phosphorus export risk; and
- 3-10 per cent of map unit has a high to extreme water erosion risk.

The Commissioner of Soil and Land Conservation advised that the soils within this location are susceptible to wind erosion and eutrophication however, given the distance to watercourses nutrients are likely to be attenuated with no adverse effects and wind erosion can be managed through appropriate management (Commissioner of Soil and Land Conservation, 2016).

Given the above, the proposed clearing is not likely to cause appreciable land degradation in the form of water erosion, eutrophication or water logging. Given the lack of surface water expressions and mapped salinity risk, it is considered that the proposed clearing is unlikely to cause or exacerbate salinity.

Given the sandy nature of the soils and mapped high wind erosion risk, the proposed clearing may lead to land degradation through wind erosion. The risk of wind erosion may be reduced with good management practices and retention of permanent groundcover when not in production of horticultural crops.

A DER Delegated Officer wrote to the applicant, advising (among other things) that the application area may cause appreciable land degradation. In response the applicant submitted that following clearing, grass grows on the land, the property will be irrigated and vegetables grown.

Taking into account the applicant's response, and noting the potential for wind erosion between clearing and crop establishment, it is considered that the proposed clearing may cause appreciable land degradation.

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

**Methodology** References:  
Commissioner of Soil and Land Conservation (2016)  
Schoknecht et al. (2004)

GIS Datasets:  
Land degradation risk  
Hydrography linear  
Soil subsystem

**(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 Proposed clearing may be at variance to this Principle**

The application area is part of a north-south ecological linkage defined in the Gngangara Sustainability Strategy (2009). This linkage connects the application area to Bush Forever site 471, 270 metres north, and Bush Forever site 327, 500 metres south-east. The proposed clearing will fragment and impact on approximately half of the vegetation within the linkage at this location and is considered to have a significant impact on the linkage function.

The retention of ecological linkages between conservation areas is important for enabling fauna to continue to move through the landscape and between reserves. This is vital both for species that are nomadic and for maintaining populations of less mobile species that may otherwise become locally extinct in individual reserves. Remnant patches within the vicinity of large contiguous areas of native vegetation (outliers) are more likely to support wildlife than more isolated patches – with greater separation distances fewer species will have the mobility necessary to maintain access (DER, 2014).

When core habitat reserves are isolated from one another by human land uses, the diversity of native species generally declines and the probability of species extinction increases. Ecological linkages and buffers contribute to the functioning and viability of existing conservation estate by establishing connectivity between conservation areas and other areas of native vegetation, contributing to the maintenance or restorability of one or more key ecological processes required to sustain the conservation areas (DER, 2014).

A DER Delegated Officer wrote to the applicant, advising (among other things) that the application area may contain significant fauna habitat, may contain significant flora habitat, may contain a high degree of biodiversity and forms part of an ecological linkage connecting conservation reserves. In response the applicant submitted that in respect to fauna linkage values, the linkage will not be severed given the presence of vegetation adjoining the application area.

Taking into account the applicant's response, and the presence of ecological linkage values and significant habitat for Carnaby's cockatoo, it is considered that the application area comprises significant habitat for indigenous fauna.

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

**Methodology** References:  
DER (2014)  
Gngangara Suitability Strategy (2009)

GIS Datasets:  
Bushforever  
Parks and Wildlife 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 Proposed clearing is not likely to be at variance to this Principle**

No watercourses or wetlands have been mapped within the application area. The closest wetland (a minor sumpland) occurs approximately one kilometre from the application area and is separated by agricultural land uses and roads.

The application area has been mapped within the following land degradation risk categories (Schoknecht et al., 2004):

- 30-50 per cent of map unit has a moderate to high salinity risk or is presently saline;
- 3-10 per cent of map unit has a high phosphorus export risk; and
- 3-10 per cent of map unit has a high to extreme water erosion risk.

Given the mapped risk categories and as no watercourses or wetlands are present on site, it is considered that the proposed clearing is unlikely to deteriorate the quality of surface or groundwater through eutrophication, salinity, acidification or water erosion.

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

**Methodology** References:  
Schoknecht et al. (2004)

GIS Datasets:  
Land degradation risk  
Hydrography linear  
Soil subsystem



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

**Comments Proposed clearing is not likely to be at variance to this Principle**

No watercourses or wetlands have been mapped within the application area. The closest (a minor sumpland) occurs approximately one kilometre from the application area and is separated by agricultural land uses and roads.

The application area has been mapped within the following land degradation risk categories (Schoknecht et al., 2004):

- less than three per cent of the map unit has a moderate to high flood risk; and
- less than three per cent of map unit has a moderate to very high waterlogging risk.

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

**Methodology** References:  
Schoknecht et al. (2004)

GIS Datasets:  
Hydrography linear

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

**Comments** The applicant's current market garden in Wangara has been rezoned from Rural to Industrial. Given this the applicant intends to move operations from its current location to the application area. The application area is zoned rural under the town planning scheme zone.

The City of Wanneroo has advised that (City of Wanneroo, 2016):

- as the mapped Hedde vegetation complex, Karrakatta Complex-Central and South, has less than 10 per cent vegetation protected within the City of Wanneroo, it is a high priority for further protection under the City's Local Biodiversity Strategy 2011-2016;
- establishing a market garden would require a development application for intensive agriculture under the City's District Planning Scheme No.2, which has not been received; and
- as a development application has not been received the City does not support the clearing at this time.

The application area is located within the Wanneroo Groundwater Area proclaimed under the *Rights in Water and Irrigation Act 1914*. The Department of Water (DoW) has advised that a licence to take groundwater has not been applied for on this property and the Perth superficial aquifer in the Wanneroo Groundwater area currently has no water available for licensing (Department of Water, 2016). The applicant has advised that he intends to transfer the water licence from his current property to the area applied to clear. DoW advised that this is a possibility, however no application to amend the current groundwater licence to include the new property has been received (DoW, 2016).

The Draft Perth and Peel Green Growth Plan for 3.5 million (Western Australian Planning Commission, 2015) has identified the vegetation within the application area for retention as a Broad Commitment Area.

No Aboriginal Sites of Significance have been mapped within the application area.

The application was advertised in *The West Australian* newspaper on 23 May 2016 with a 21 day submission period. No submissions from the public have been received.

On 16 August 2016 the applicant was sent a letter advising that given the significant environmental impacts identified, the application is likely to be refused. On 15 September 2016 DER received a response from the applicant that states:

- "The co-existence of flora and fauna should not be a borne burden on the individual land owner but should be shared by the government and community";
- "We believe we have shown ways to mitigate if there is any material impact to flora and fauna from this property";
- "Our business is green environmentally reducing the carbon footprint and recycling of water";
- "It is replacement of other properties (market garden) to maintain income";
- "Our affiliation with land and primary production will be lost as a result";
- "The property may/will be cleared anyway due to urbanisation and road infrastructure";
- "We have a water licence for this zone and have acquired the necessary quantity to service this property. The current policy for water allocation is if you don't use it you lose it";
- "The zoning of the property is rural in line with market gardening";
- "All necessary approvals to COW and Dept. of Water are currently being applied for and as indicated will be granted";
- "All infrastructures are already in place and are ready to go once clearing approval is given";
- "It is in community interest providing goods and services, jobs and innovation"; and
- "Alleviate the need for challenging the decision through the legal process".



The applicant's response in respect to biodiversity, fauna, flora, extent of clearing in the landscape, conservation areas and land degradation is considered under Principles (a), (b), (c), (e), (h) and (g). The other matters in the applicant's response are acknowledged, however are considered to be largely beyond the scope of the assessment of the application.

**Methodology**   References:  
City of Wanneroo (2016)  
Department of Water (2016)  
Western Australian Planning Commission (2015)

GIS Datasets:  
Aboriginal Sites of Significance

#### 4. References

- Brown, A., Thomson-Dans, C. and Marchant, N. (1998) Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- City of Wanneroo (2016) Advice received in relation to clearing permit application CPS 7071/1. Received 14 June 2016. DER ref: A1114047.
- Commissioner of Soil and Land Conservation (2016) Land degradation advice received in relation to CPS 7071/1. Received 25 July 2016. DER ref: A1137498.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Department of Environment and Conservation (DEC) (2009) Threatened Species Recovery Plan. Commonwealth Department of the Environment, Water, Heritage and the Arts, Canberra.
- Department of Environment and Conservation (DEC) (2012) Chuditch (*Dasyurus geoffroii*) Recovery Plan. Wildlife Management Program No. 54. Department of Environment and Conservation, Perth, Western Australia.
- Department of Environment Regulation (DER) (2014) A guide to the assessment of applications to clear native vegetation Under Part V Division 2 of the Environmental Protection Act 1986. December 2014
- Department of Environment Regulation (DER) (2016) Site Inspection Report for clearing permit application CPS 7071/1. Inspection undertaken 26 May 2016. DER ref: A1108541.
- Department of Parks and Wildlife (Parks and Wildlife) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed January 2016.
- Department of Parks and Wildlife (Parks and Wildlife) (2013) Carnaby's cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Department of Environment and Conservation, Perth, Western Australia.
- Department of Parks and Wildlife (Parks and Wildlife) (2015) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
- Department of Water (DoW) (2016) Advice received in relation to CPS 7071/1. Received 31 May 2016. DER ref: A1107062.
- Gibson, N., Keighery, B., Keighery, G., Burbidge, A. and Lyons, M. (1994) A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management and the Western Australian Conservation Council.
- Government of Western Australia (2015) 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2015. WA Department of Parks and Wildlife, Perth.
- Gnangara Suitability Strategy (2009) Ecological Linkages Proposed for the Gnangara Groundwater System. May 2009.
- Hedde, E.M., Loneragan, O.W., and Havel, J.J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Johnstone, R.E. and Storr, G.M. (1998) Handbook of Western Australian Birds, Volume I, Non-passerines (Emu to Dollarbird). Western Australian Museum, Perth.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Molloy, S, Wood, J, Hall, S, Wallrodt, S and Whisson G (2009) South Western Regional Ecological Linkages Technical report, Western Australian Local Government Association and Department of Environment and Conservation, Perth.
- Saunders, D.A., Smith, G.T., Ingram, J.A. and Forrester, R.I. (2003) Changes in a remnant of salmon gum *Eucalyptus salmonophloia* and York gum *E. loxophleba* woodland, 1978 to 1997. Implications for woodland conservation in the wheat-sheep regions of Australia. *Biological Conservation* 110: 245-256.
- Saunders, D.A. and Ingram, J.A. (1998) Twenty-eight years of monitoring a breeding population of Carnaby's cockatoo. *Pacific Conservation Biology*. 4: 261-270.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Valentine, L.E. and Stock, W. (2008) Food Resources of Carnaby's Black-Cockatoo (*Calyptorhynchus latirostris*) in the Gnangara Sustainability Strategy study area. Unpublished report to the Forests Products Commission. Available online: <http://ro.ecu.edu.au/ecuworks/6147>.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed February 2016).
- Western Australian Planning Commission (2015) Draft Central Planning Framework, Towards Perth and Peel @ 3.5 million. Draft for Public Comment. May 2015.