



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7982/1
Permit Holder:	City of Wanneroo
Duration of Permit:	1 July 2019 – 1 July 2024

ADVICE NOTE

Monetary contributions to a fund maintained for the purpose of establishing or maintaining native vegetation (offset).

As part of approval 2008/4601 under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Northern Corridor Developments Ltd (previous landowner of what is now Lot 9051) provided a total of \$614,111 to the former Department of Environment and Conservation for the purchase of 459 hectares of land containing Carnaby's cockatoo (*Calyptorhynchus latirostris*) foraging habitat north of Gingin and 477 hectares of Carnaby's cockatoo foraging habitat east of Badgingarra.

As part of approval 2009/5155 under the EPBC Act Satterley Property Group (previous landowner of what is now Lot 8210) provided a total of \$650,000 to the former Department of Environment and Conservation for the purchase of 1250 hectares of land containing Carnaby's cockatoo foraging habitat within the Regan's Ford or Badgingarra Regions.

Through assessment the Department of Water and Environmental Regulation has determined that 4.675 hectares of the current project has not been offset under either of the above EPBC Act approvals.

In regards to condition 9, it is noted that the Permit Holder has allocated 28.85 hectares of its banked offset site at Lot 901 Brennan Road, Bindoon to this project. The nominated 28.85 hectare area contains similar environmental values to the application area, being; habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*) and forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*), and vegetation commensurate with the *Banksia* Woodlands of the Swan Coastal Plain threatened ecological community.

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of constructing playing fields and associated infrastructure.

2. Land on which clearing is to be done

Lot 8210 on Deposited Plan 73880, Butler

Lot 9051 on Deposited Plan 413867, Alkimos

3. Area of clearing

The Permit Holder must not clear more than 8.801 hectares of native vegetation within the area hatched yellow on attached Plan 7982/1(a).

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 3 of this Permit to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

PART II –MANAGEMENT CONDITIONS

6. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

7. Dieback and Weed management

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the areas hatched yellow on attached Plan 7982/1(a);
- (b) ensure that no known *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

8. Wind erosion management

The Permit Holder shall not clear native vegetation unless development commence within three months of the clearing being undertaken.

9. Offset – Land Transfer

- (a) The Permit Holder must fund the purchase of the area cross hatched red on attached Plan 7982/1(b) to be ceded to the Department of Biodiversity Conservation and Attractions for conservation.
- (b) The Permit Holder shall provide documentary evidence to the CEO that the area cross hatched red on attached Plan 7982/1(b) has been ceded to the Department of Biodiversity Conservation and Attractions within three months of executing the land transfer.

PART III - RECORD KEEPING AND REPORTING

10. Record keeping

The Permit Holder must maintain the following records for activities done in pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).

- (b) Actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 6 of the Permit;
- (c) Actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 7 of the Permit; and
- (d) The date development commenced in accordance with condition 8 of the Permit;

11. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
 - (i) of records required under condition 10 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 28 March 2024, the Permit Holder must provide to the *CEO* a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

Definitions

The following meanings are given to terms used in this Permit:

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*;

dieback means the effect of *Phytophthora* species on native vegetation;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Samara Rogers
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under section 20
of the *Environmental Protection Act 1986*

5 June 2019

Plan 7982/1(a)

115°41'42"

115°42'0"



-31°37'48"




-31°37'48"

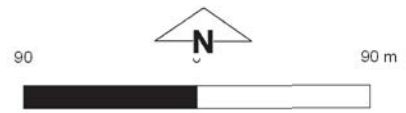
-31°38'6"

115°41'42"

115°42'0"

Legend

-  CPS areas approved to clear base layers
-  Cadastre
-  Road Centrelines
-  Local Government Authorities
- Image



MGA 94
Geocentric Datum of Australia 1994

Samara Rogers

Samara Rogers
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Officer delegated under Section 20 of the Environmental Protection Act 1986









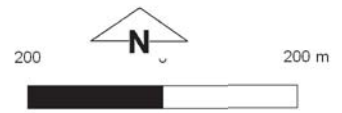
GOVERNMENT OF WESTERN AUSTRALIA

Plan 7982/1(b)



Legend

-  CPS subject to conditions
-  base layers
-  Cadastre
-  Road Centrelines
-  Local Government Authorities
-  Image



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Officer delegated under Section 20 of the Environmental Protection Act 1986



GOVERNMENT OF
WESTERN AUSTRALIA



This report has been prepared to fulfil the requirements of an accredited environmental assessment process between the Commonwealth and State governments, pursuant to a bilateral agreement established under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This report is set out in three parts:

- Part 1: Application and site details;
- Part 2: Assessment against matters of national environmental significance (pursuant to the EPBC Act); and
- Part 3: Assessment against the clearing principles (pursuant to the Western Australian *Environmental Protection Act 1986* (EP Act)). Appeal rights pursuant to section 101A of the EP Act are relevant to this section of the report.

Part 1: Application and site details

1. Application details

1.1. Permit application details

Permit application No.:	7982/1
Permit type:	Purpose Permit
EPBC Referral no.:	EPBS 2017/8053

1.2. Applicant details

Applicant's name:	City of Wanneroo
Application received date:	9 February 2018

1.3. Property details

Property:	Lot 8210 on Plan 73880 Lot 9043 on Plan 411744
Local Government Authority:	City of Wanneroo
Localities:	Butler and Alkimos

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
8.801		Mechanical Removal	Building or structure

1.5. Decision on application

Decision on Permit	Grant
Decision Date:	18 June 2019
Reason for Decision:	<p>The clearing permit application received on 9 February 2018 has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the <i>Environmental Protection Act 1986</i>. It has been concluded that the proposed clearing is at variance to clearing principles (a), (b) and (d), may be at variance to principle (g) and is not likely to be at variance to the remaining clearing principles.</p> <p>Through assessment it has been determined that the application area contains 8.801 hectares of foraging habitat for black cockatoos, of which approximately 7.9752 hectares is synonymous with the <i>Banksia</i> Woodlands of the Swan Coastal Plain threatened ecological community.</p> <p>To mitigate the significant environment impacts identified above, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines, the following offset measures have been implemented or are required as a condition of this permit.</p> <p>As part of approval 2008/4601 under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act), Northern Corridor Developments Ltd (previous landowner of what is now Lot 9043) provided a total of \$614,111 to the former Department of Environment and Conservation for the purchase of 459 hectares of land containing Carnaby's cockatoo (<i>Calyptorhynchus latirostris</i>) foraging habitat north of Gingin and 477 hectares of Carnaby's cockatoo foraging habitat east of Badgingarra.</p> <p>As part of approval 2009/5155 under the EPBC Act, Satterley Property Group (previous landowner of what is now Lot 8210) provided a total of \$650,000 to the former Department of Environment and Conservation for the purchase of 1,250 hectares of land containing Carnaby's cockatoo foraging habitat within the Regan's Ford or Badgingarra regions.</p> <p>Through assessment, the Delegated Officer determined that 4.675 hectares of the current project has not been offset under either of the above EPBC Act approvals. To offset this, the</p>

Permit Holder has committed to allocating 28.85 hectares of its banked offset site at Lot 901 Brennan Road, Bindoon to this project. The nominated 28.85 hectare area contains similar environmental values to the application area, being; habitat for black cockatoos, and vegetation commensurate with the *Banksia* Woodlands of the Swan Coastal Plain threatened ecological community.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent retained vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures.

It was also determined that the proposed clearing may cause appreciable land degradation in the form of wind erosion. To minimise the impacts of wind erosion a condition has been placed on the permit requiring development to commence within three months of clearing.

Given the above, the Delegated Officer decided to grant a clearing permit subject to weed and dieback management, wind erosion and offset conditions.

2. Site Information

Clearing Description

The application is for the clearing of 8.801 hectares of native vegetation within Lot 8210 on Deposited Plan 73880, Butler and Lot 9043 on Deposited Plan 411744, Alkimos, for the purpose of constructing playing fields and associated infrastructure within the Butler North District Open Space.

Vegetation Description

One vegetation complex has been mapped over the application area, being Swan Coastal Plain Vegetation complex - Cottesloe Complex-Central and South, which is described as a mosaic of woodland of *Eucalyptus gomphocephala* (tuart), and open forest of *Eucalyptus gomphocephala* (tuart), *Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri) and closed heath on the Limestone outcrops (Heddlie et al., 1980).

A Level 2 flora survey (the Flora Survey) which included the application area was undertaken by Eco Logical Australia (ELA) on 3 November 2016. The survey identified two vegetation types within the application area, being:

- Vegetation type BaBmLW, which comprises *Banksia attenuata* and *Banksia menziesii* low woodland over *Xanthorrhoea preissii*, *Hibbertia hypericoides* subsp. *hypericoides* and *Leucopogon polymorphus* open low heath over *Mesomelaena pseudostygia* very open sedgeland and (where * denotes an exotic species) **Briza maxima* and **Ehrharta calycina* very open grassland over *Burchardia congesta*, *Waitzia suaveolens* var. *suaveolens* and *Podotrochea gnaphalioides* very open herbland; and
- Vegetation type BsXpHtTOS, which comprises *Banksia sessilis* var. *cygnorum*, *Xanthorrhoea preissii* and *Hakea trifurcata* tall open scrub over *Acacia pulchella* var. *glaberrima*, *Calothamnus quadrifidus*, *Acacia pulchella* var. *glaberrima* and *Hibbertia hypericoides* open low heath with *Mesomelaena pseudostygia* and *Desmocladius fasciculatus* very open sedgeland and **Briza maxima* and *Microlaena stipoides* very open grassland over *Podotrochea chrysantha*, *Acanthocarpus preissii* and *Waitzia suaveolens* var. *suaveolens* very open herbland (ELA, 2017).

The Flora Survey identified that the condition of the vegetation within the larger survey area comprised of the following (ELA, 2017):

Table 1. Vegetation Condition within the Larger Survey area

Vegetation Condition

Vegetation Condition	Total area (hectares)	Portion of Development Area (per cent)
Excellent	5.51	42.09
Very Good	3.61	27.58
Good	0.86	6.57
Degraded	1.02	7.79
Completely Degraded	1.20	9.17
Tracks, infrastructure etc.	0.89	6.80
TOTAL	13.09	100

Soil type

The condition and description of the vegetation as identified within the Flora Survey was confirmed as accurate during a site inspection undertaken by officers of the Department of Water and Environmental Regulation (DWER, 2018).

The application area has been mapped as the following subsystem landform types:

- Karakatta Sand Yellow Phase, comprising low hilly to gently undulating terrain, with yellow sand over limestone at 1-2 metres (comprises approximately 65 per cent of the application area); and
- Karakatta shallow soils phase, comprising bare limestone or shallow siliceous or calcareous sand over limestone (comprises approximately 35 per cent of the application area).

The site inspection identified that the soils within the application area largely comprise of white and grey sands (DWER, 2018).



Figure 1: Application Area



Figure 2: Vegetation Communities within the Application Area (ELA, 2017)

Part 2: Assessment against matters of national environmental significance

3. Assessment of application against Matters of National Environmental Significance

Background

The proposed development involves the clearing of 8.801 hectares of native vegetation for the construction of playing fields and sporting facilities within the Butler North District Open Space (ELA, 2017).

The application area is situated within the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, City of Wanneroo, which is approximately 38 kilometres northwest of the Perth Central Business District and 16.5 kilometres northwest of the Wanneroo City centre.

The development area (comprising a northern and southern portion as shown in Figure 2) is bound by Halesworth Parade to the south, Santorini Promenade to the north, the Butler train line and Chardbury Drive to the east and the John Butler Primary College to the west.

The applicant has advised that the proposed development will be undertaken in accordance with the Lot 3 Romeo Road, Alkimos Local Structure Plan (encompasses the northern portion of the application area) and Lot 9049 Marmion Avenue, Butler Structure Plan (encompasses the southern portion of the application area). The application area was planned for future use as District Open Space under these Structure Plans. Two historical EPBC Act approvals (EPBC 2008/4601 which encompassed the northern portion of the application area and EPBC 2009/5155 which encompassed the southern portion of the application area respectively) exist over the areas encompassed by these Structure Plans.

EPBC 2008/4601 was initially referred to the former Department of the Environment, Water, Heritage and the Arts (DEWHA) in November 2008 by the then landowner Northern Corridor Developments. On 18 December 2008, the project was deemed to be a controlled action under the controlling provision 'Listed threatened species and communities' (section 18 and 18A). The action was approved subject to conditions on 29 September 2009 (approval effective until 11 September 2034). These conditions included a monetary contribution offset comprising \$614,111 for the purchase of 936 hectares of native vegetation to be conserved long term (as discussed further under the Avoidance, Mitigation and Offset section). The approval conditions were varied in September 2011 (Conditions 4, 5 and 7) and on 2 August 2016 (updating of the figure in Attachment A of the conditions). It is considered that the proposed clearing of the northern portion of the application area was not considered as part of the offset finalised under EPBC 2008/4601.

EPBC 2009/5155 was initially referred to the former DEWHA in October 2009 by the then landowner Satterley. On 11 November 2009, the project was deemed to be a controlled action under the controlling provision 'Listed threatened species and communities' (section 18 and 18A). The action was approved subject to conditions on 8 December 2009 (approval effective until 31 December 2020). These conditions included a monetary contribution offset comprising \$650,000 for the purchase of 1,250 hectares of native vegetation to be conserved long term (as discussed further under the Avoidance, Mitigation and Offset section). It is considered that the proposed clearing of the southern portion of the application area was considered as part of the offset finalised under EPBC 2009/5155.

As the City of Wanneroo was not a proponent of either approval, it decided to seek standalone approval under the EPBC Act for the current proposed development.

The northern portion of the application area is immediately adjacent to a site proposed for the construction of the Butler North Secondary School, which was also historically approved under the aforementioned EPBC 2008/4601. The Department of Education recently received a Clearing Permit from DWER as part of that development, being Clearing Permit CPS 7897/1. The development of the school was not referred to DotEE as the applicant considered that the historical approval covered the scope of the proposed development.

The application area was surveyed by Eco Logical Australia (ELA), which involved a Level 2 flora (the Flora Survey) and Level 1 fauna survey (the Fauna Survey) carried out on 3 November 2016.

The Flora Survey incorporated a flora species inventory and vegetation community and condition mapping. Conservation listed flora were recorded and mapped through systematic traverses and floristic community type analysis was also undertaken to determine the presence of threatened or priority ecological communities (ELA, 2017). The flora survey methodology aligned with the Environmental Protection Authority's (EPA) Guidance Statement No. 51: 'Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia', and the EPA's 'Technical Guidance – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment'.

The Fauna Survey incorporated opportunistic observations and fauna habitat mapping via traverses. The Fauna survey also included an assessment of Carnaby's cockatoo habitat in accordance with the *Environment Protection and Biodiversity Conservation Act 1999* referral guidelines (ELA, 2017). The fauna survey methodology was aligned with the EPA's Guidance Statement No. 56: 'Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia', and the 'Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment'.

The Flora Survey identified two vegetation types within the application area being;

- BaBmLW (approximately eight hectares of the application area), comprising *Banksia attenuata* and *Banksia menziesii* low woodland over *Xanthorrhoea preissii*, *Hibbertia hypericoides* subsp. *hypericoides* and *Leucopogon polymorphus* open low heath over *Mesomelaena pseudostygia* very open sedgeland and **Briza maxima* and **Ehrharta calycina* very open grassland over *Burchardia congesta*, *Waitzia suaveolens* var. *suaveolens* and *Podotheca gnaphalioides* very open herbland; and
- BsXpHtTOS comprising *Banksia sessilis* var. *cygnorum*, *Xanthorrhoea preissii* and *Hakea trifurcata* tall open scrub over *Acacia pulchella* var. *glaberrima*, *Calothamnus quadrifidus*, *Acacia pulchella* var. *glaberrima* and *Hibbertia hypericoides* open low heath *Mesomelaena pseudostygia* and *Desmocladius fasciculatus* very open sedgeland and **Briza maxima* and *Microlaena stipoides* very open grassland over *Podotheca chrysantha*, *Acanthocarpus preissii* and *Waitzia suaveolens* var. *suaveolens* very open herbland.

Description of controlling provisions

On 6 December 2017, the project was determined to be a controlled action under the EPBC Act for the following controlling provisions: Listed Threatened Species and Communities. The proposed action is considered likely to have a significant impact on Carnaby's cockatoo (*Calyptorhynchus latirostris*) listed as endangered under the EPBC Act, and on the Banksia woodlands of the Swan Coastal Plain threatened ecological community (TEC) listed as endangered under the EPBC Act.

Carnaby's cockatoo

Currently, the overall population trend for the Carnaby's cockatoo is one of decline due to the loss and fragmentation of habitat as a result of clearing of native vegetation (Saunders 1990; Johnstone and Storr 1998; Saunders and Ingram, 1998; Garnett et al. 2011). Carnaby's cockatoo is endemic to the south-west of Western Australia. Breeding takes place between late July and December and occurs mostly in the inland wheatbelt region of its distribution, in areas receiving between 300 and 750 millimetres of annual average rainfall (Saunders, 1990). During the non-breeding season (January to July) the majority of the birds move to the higher rainfall coastal regions of their range including the midwest coast, Swan Coastal Plain and south coast (Saunders, 1980, 1990; Johnstone et al. 2011). There has been an apparent expansion in the breeding range to include areas further west and south since the middle of last century with a more rapid increase into the jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) forests of the south west (Johnstone and Storr 1998; Johnstone et al. 2011). This expansion in breeding range is due to threatening processes such as clearing of breeding habitat and competition for suitable breeding hollows.

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, 1990; Johnstone and Storr, 1998; Saunders and Ingram 1998; Garnett et al. 2011). Basic ecological theory, expert opinion and recent evidence, suggests that the remaining native and pine plantation foraging habitat on the Swan Coastal Plain is just sufficient to support the current population of Carnaby's cockatoo. Therefore, any reduction in the amount of food source will result in a reduction in the carrying capacity of the region and therefore, a decline in the population of Carnaby's cockatoo.

Carnaby's cockatoo preferred habitat is remnant native eucalypt woodlands, especially those of salmon gum (*Eucalyptus salmonophloia*) and wandoo (*Eucalyptus wandoo*), and in shrubland or kwongan heathland dominated by plants of the Proteaceae family. It also occurs in forests containing marri, jarrah, karri (*Eucalyptus diversicolor*) and tuart (*Eucalyptus gomphocephala*) (Parks and Wildlife, 2013).

Carnaby's Cockatoo forages on the seeds, flowers and nectar of native proteaceous plant species (e.g. *Banksia*, *Hakea* and *Grevillea* species), *Eucalyptus* and *Callistemon* species. The species also forages on seeds of introduced species (e.g. *Pinus* and *Erodium* species, canola and almonds), insects and insect larvae. Carnaby's Cockatoo generally forages within six kilometres of a night roost site and, while nesting, within a 12 kilometre radius of their nest site (Commonwealth of Australia, 2012).

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 provide 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 that success in breeding is dependent on the quality and proximity of feeding habitat within 12 kilometres of nesting sites (Parks and Wildlife, 2013). 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). It is considered that approval of the proposed action would not be inconsistent with the recovery plan.

Banksia woodlands of the Swan Coastal Plain ecological community

On 16 September 2016, the Commonwealth Department of the Environment and Energy (DotEE) listed the Banksia Woodlands of the Swan Coastal Plain ecological community as endangered under the EPBC Act.

The Banksia Woodlands of the Swan Coastal Plain TEC is located in the southwest of Western Australia and is largely restricted to the Perth and Dandaragan subregions of the Swan Coastal Plain IBRA bioregion, from around Jurien Bay in the north to Dunsborough in the south. The TEC also extends into immediately adjacent areas on the Whicher and Darling escarpments (which lie within the Jarrah Forest IBRA bioregion), to the south and east, where pockets of banksia woodlands may also occur (Threatened Species Scientific Committee (TSSC), 2016).

The approved conservation advice for this community states that the canopy of the ecological community is most commonly dominated or co-dominated by *Banksia attenuata* and/or *Banksia menziesii*. Other *Banksia* species that may dominate include *Banksia prionotes* or *Banksia ilicifolia* (Threatened Species Scientific Committee, 2016). If present, the emergent tree layer often includes *Corymbia calophylla*, *Eucalyptus marginata*, or *Eucalyptus gomphocephala*. Other trees that may be present include *Eucalyptus todtiana*, *Nuytsia floribunda*, *Allocasuarina fraseriana*, *Callitris arenaria*, *Callitris pyramidalis* and *Xylomelum occidentale* (Threatened Species Scientific Committee, 2016). The understorey of the community typically contains a high to very high diversity of shrub and herb species that often vary from patch to patch (TSSC, 2016).

The areas considered critical to the survival of the TEC cover all patches that meet the key diagnostic characteristics and condition thresholds, plus the buffer zones, particularly where this comprises surrounding native vegetation. Additional areas that do not meet the minimum condition thresholds may also be critical to the survival of the TEC depending on factors such as size and shape, landscape linkages to other patches and landscape position, because they could retain some biodiversity or habitat values (TSSC, 2016).

The estimated pre-European extent of the TEC is 706,000 to 708,000 hectares. The estimated extent remaining in 2015 was approximately 336,000 to 337,000 hectares indicating an overall decline of about 52 per cent. Approximately 81,800 hectares or 24 per cent of the remaining extent of the TEC is estimated to be protected in reserves. Based on available mapping, over 12,000 patches of the TEC occur with the median patch size being 1.6 hectares. Approximately 22 per cent of the extent remaining is comprised of patches less than 100 hectares in size (TSSC, 2016).

The ecological community provides habitat for many native plants and animals that rely on *Banksia* Woodlands for their homes and food. Remaining patches of the ecological community provide important wildlife corridors and refuges in a mostly fragmented landscape (TSSC, 2016).

Summary of Impacts

Carnaby's cockatoo

The application area occurs within the modelled distribution of Carnaby's cockatoo, including within the modelled breeding range of the species (Commonwealth of Australia, 2012).

Based on the results of a Carnaby's cockatoo habitat assessment undertaken as part of the fauna survey, the entirety of the application area represents suitable foraging habitat for Carnaby's cockatoo (ELA, 2017). The Fauna Survey noted that both of the mapped vegetation communities contained high densities of suitable foraging species for Carnaby's cockatoo and evidence of foraging by Carnaby's cockatoo was identified within the application area (ELA, 2017). It is therefore considered that the application area provides high quality foraging habitat for Carnaby's cockatoo. No trees of a suitable size to provide breeding habitat for Carnaby's cockatoo were identified during the fauna survey.

The application area occurs approximately 9.5 kilometres from a confirmed breeding record. Noting that the Carnaby's cockatoo Recovery Plan describes foraging habitat within 12 kilometres of nesting sites as necessary to support breeding (Parks and Wildlife, 2013), the application area is considered to provide critical habitat for this species, and it is considered that the loss of this habitat would increase the risk of further declines in breeding success and population size.

The disturbance caused by the proposed clearing may impact adjacent native vegetation through an increase weeds and Phytophthora dieback. Phytophthora dieback is a key threatening process under the EPBC Act due to its actual and potential impacts on threatened species and ecological communities, which are matters of national environmental significance under the Act. The habitat of Carnaby's cockatoo is listed as under threat from Phytophthora dieback in the Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* (Commonwealth of Australia, 2018). This source of impact has been addressed by adding weed and dieback management condition on the Permit.

Banksia woodlands of the Swan Coastal Plain ecological community

The floristic analysis undertaken as part of the flora survey identified that vegetation type BaBmLW, which comprises 7.9752 hectares of the application area, is representative of Floristic Community Type (FCT) FCT 28, known as 'Spearwood *Banksia attenuata* or *Banksia attenuata* – Eucalyptus woodlands'. This Floristic Community Type aligns with the 'Banksia Woodlands of the Swan Coastal Plain ecological community' (Banksia Woodlands TEC).

Specifically, based on the key diagnostic characteristics set out under the approved conservation advice for this community, vegetation community BaBmLW has been determined to represent the Banksia Woodlands TEC as it meets the following criteria:

- Located on the Swan Coastal Plain, on the Spearwood Dune system, and consists of a low woodland dominated by the key diagnostic species, being *Banksia attenuata* and *Banksia menziesii*;
- Represents vegetation in an excellent to good condition, with an intact vegetation structure, presence of non-aggressive weed species, high density of native plant species, and disturbance only affecting individual species;
- Represents a minimum patch size of 0.5 hectares of vegetation in excellent condition (must be a minimum of two hectares in good condition) when considered in isolation from surrounding vegetation. The total patch size for vegetation community BaBmLW within the application area in a good or better condition is approximately 7.9752 hectares.

Therefore, it is considered that the proposed clearing will impact on approximately 7.9752 hectares of the Banksia Woodland TEC. The proposed clearing would remove all but 0.6792 hectares of this community at this location, and while the proposed clearing represents a relatively small proportion of the community's current extent, cumulative impacts to the TEC are considered significant, incremental and ongoing.

The disturbance caused by the proposed clearing may impact adjacent native vegetation through an increase weeds and Phytophthora dieback. According to Threat abatement plan for disease in natural ecosystems caused by *Phytophthora cinnamomi* (Commonwealth of Australia, 2018), Banksia woodland of the Swan Coastal Plain ecological community is susceptible to Phytophthora dieback. This issue has been addressed by adding weed and dieback management condition on the Permit.

Public consultation

The clearing application was advertised for public comment online on 3 April 2018. The public comment period ended on 24 April 2018. The application was re-advertised on 6 June 2018 to reflect a change in the size of the application area, with the comment period ending on 13 June 2018. One public submission was received in relation to this application.

The submission advised that the application area contains critical foraging habitat for Carnaby's cockatoo, noting that the application area is in the feeding range of a large part of the Perth-Peel non-breeding population. The submission noted that the 2017 Great Cocky Count survey report estimates an 11 per cent decline per year in this species, most likely due to habitat loss, and noted that the State and Commonwealth endorsed Carnaby's Cockatoo Recovery Plan (Parks and Wildlife, 2013) requires the protection of non-breeding habitat through preventing clearing.

The submission notes that the Banksia Woodland TEC within the application area is mostly in excellent and very good condition and that there has been no attempt to avoid or minimise impacts to the high conservation value Banksia Woodland community by reducing the amount of open space required by the City of Wanneroo. The submission notes that the small fragmented areas proposed for retention are of low value and will suffer further degradation, concluding that the proposed clearing of 7.98 (initial application area) hectares of high conservation value native vegetation for open space needs to be reconsidered.

On 28 September 2018, DWER wrote to the applicant requesting a response to the public submission. On 4 October 2018, the applicant provided a response to the public submission, which is available to view online at <ftp://ftp.dwer.wa.gov.au/permit/> (reference 7982).

The clearing permit application was re-advertised for public comment on 1 February 2019 due to an increase in area. One public submission was received within the seven day comment period. The submission objected to the proposed clearing on the basis that it is at variance to clearing principles (b), (d) and (e). It was also noted that proposals like this do not take into account the cumulative loss of highly significant vegetation patches such as this one.

On 20 February 2019, DWER wrote to the applicant requesting a response to the public submission. On 12 March 2019, the applicant provided a response to the public submission, which is also available to view online at <ftp://ftp.dwer.wa.gov.au/permit/> (reference 7982).

Avoidance, mitigation and offset

Avoidance and Mitigation

The applicant has advised that environmental values, including the retention of specific vegetation complexes and key fauna habitat, have been considered at each of the stages of development, including during the development of the approved Structure Plans for the development (see Part 2, Section 3).

The applicant advised that (City of Wanneroo, 2018) "the impact of clearing and earthworks required for the Development will be minimised by undertaking standard avoidance and mitigation measures applicable to construction activities. These measures include:

- Fencing of conservation areas prior to clearing commencing;
- Clearly delineating clearing boundaries;
- Suspending clearing if Carnaby's Black-Cockatoos are sighted within the Development Area and not recommencing until the birds have left the area; and
- Undertaking management works in conservation areas to address indirect impacts of weed invasion".

As part of these considerations, the applicant proposes to retain approximately 0.954 hectares of vegetation. Figure 3 shows the areas designated for retention.

The applicant has advised that there are no feasible alternatives for the proposed clearing as the application area has been proposed for the development of District Open Space since it was zoned Urban as part of Structure Plans for the broader area post-2005, and was included in plans supporting EPBC Act approvals EPBC2008/4601 and EPBC 2009/5155.



Figure 3. Retention areas

Offset

A portion of the vegetation within the application area, being the majority of the southern portion of the application area, has been historically offset as part of the requirement of EPBC Act approval EPBC 2009/5155, which required Satterley Property Group (previous landowner of what is now Lot 8210) to provide a total of \$650,000 to the former DEC for the purchase of 1,250 hectares of land within the Regan's Ford or Badgingarra regions. The offset was based upon the clearing of 55 hectares. This offset has been finalised.

The southern lot is 5.5 hectares in size and of this 1.375 hectares was supposed to be retained in accordance with EPBC 2009/515. The lot area minus the 1.375 equals is 4.125 hectares, which is the area that was offset under EPBC 2009/5155. The City is now proposing to clear 4.2 hectares of the southern area which means that 0.075 hectares requires offsetting (4.2 - 4.125 ha).

The offset for EPBC 2008/4601 did not account for the proposed clearing of the northern application area, as the entirety of this area was at the time, designated for retention. Therefore, an offset for the entire northern portion (4.6 hectares) of the application area is required.

In total an area of 4.675 hectares (0.075 + 4.6 ha) hectares requires offsetting under this clearing permit application.

To mitigate the significant environment impacts identified in the above assessment, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines, the Permit Holder has allocated 28.85 hectares of its banked offset site at Lot 901 Brennan Road, Bindoon to this project.

In assessing whether the proposed offset is adequately proportionate to the significance of the habitat being impacted, DWER undertook a calculation using the Commonwealth Offsets Assessment Guide. The calculations determined that the allocation of 28.5 hectares of the banked offset is adequate to counterbalance the significant residual impacts associated with this project.

Given the above, the proposed offset is considered adequate to counterbalance the significant residual impacts to black cockatoo foraging habitat and the *Banksia* woodland TEC consistent with the *Environment Protection and Biodiversity Conservation Act 1999*, Environmental Offsets Policy October 2012 and *WA Environmental Offsets Policy September 2011*.

Economic and Social Matters

The applicant has advised that this project is a significant part of the proposed ongoing development in the Butler region, and considers that the proposed development will activate this area by creating playing fields, netball courts, a sports pavilion and associated infrastructure for public use, whereby it is considered necessary to support the surrounding community. The proposed development is consistent with the Lot 3 Romeo Road, Alkimos Local Structure Plan and Lot 9049 Marmion Avenue, Butler Structure Plan, which included the northern and southern portion of the application area respectively, whereby these areas were designated as District Open Space. To summarize, the applicant advised that the social and economic cost/benefit of this project include:

- Capital investment and ongoing value, including:
 - Social benefits of public open space and sporting facilities e.g. improved physical and mental health and wellbeing, reduced healthcare costs, enhances and develops local community; and
 - Providing shared use facilities with the Department of Education has reduced the need for the duplication of ovals and the extent of clearing required
- Basis for an estimation of cost and/or benefits;
- Potential employment opportunities expected to be generated at each phase of the projects including
 - City of Wanneroo staff
 - Quantity Surveyor Consultant (BRA)
 - Architects (Bollig)
 - Engineers (JDSi)
 - Builders and Contractors
 - Maintenance and cleaners
 - Caretaker; and
- Details on any public and stakeholder consultation activities, including the outcomes.

It is expected that the total cost of the project is estimated at \$22,100,400.

Applicant's Environmental History

The City of Wanneroo has previously been granted 75 clearing permits. No instances of non-compliance with permit conditions have been noted.

Part 3: Assessment against the clearing principles

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 area was surveyed by Eco Logical Australia (ELA), which incorporated a Level 2 flora survey (the Flora Survey), carried out on 3 November 2016. The flora survey included a flora species inventory and vegetation community and condition mapping. Conservation listed flora were recorded and mapped through systematic traverses and Floristic Community Type analysis was undertaken to determine the presence of threatened or priority ecological communities.

The flora survey identified a total of 98 flora taxa (73 native and 25 introduced) within the application area. The flora survey identified two vegetation communities, being, *Banksia attenuata* and *Banksia menziesii* low woodland (BaBmLW) and mixed *Banksia sessilis* open shrubland (BsXpHtTOS), the latter comprising approximately 0.17 hectares of the application area (ELA, 2017).

The vegetation within the application area was largely in excellent (Keighery, 1994) and very good (Keighery, 1994) condition, with some smaller areas in a good (Keighery, 1994) and degraded (Keighery, 1994) condition (see Section 2). Several cleared tracks and paths occur within the application area, largely in the northern portion of the application area. The greatest density of weeds occurred around the roads, adjacent clearing and developed areas and tracks (ELA, 2017; DWER, 2018).

According to available databases, three threatened flora species and 18 priority flora species have been recorded within the local area (10 kilometre radius). The flora survey did not identify any threatened or priority flora species within the application area (ELA, 2017). Following the flora survey, ELA conducted an assessment on the likelihood of occurrence for all conservation significant flora species initially determined to have the potential to occur. It was determined that no conservation significant flora species are likely to occur within the application

area, based on the lack of suitable habitat for these species and the application area being well surveyed (ELA, 2017)

The Department of Biodiversity, Conservation and Attractions (DBCA) provided comment on the proposed clearing and advised that “survey effort and timing would appear appropriate to identify the majority of conservation significant taxa with the potential to occur within the study area” (DBCA, 2018). Noting this advice, it is considered that the survey would have identified any conservation significant flora species should they have occurred, therefore the proposed clearing is not likely to impact on any threatened or priority flora species.

The Floristic Community Type analysis identified two Floristic Community Types occur within the application area, being (ELA, 2017):

- FCT 28 – ‘Spearwood *Banksia attenuata* or *B. attenuata* – *Eucalyptus* woodlands’, which is represented by BaBmLW; and
- FCT 24 – ‘Northern Spearwood shrublands and woodlands’, which is represented by BsXpHTOS.

FCT 28 is listed as a Threatened Ecological Community (TEC) (Endangered) under the Commonwealth EPBC Act, whereby it is known as the ‘Banksia woodlands of the Swan Coastal Plain ecological community’ and is also recognised as a Priority 3 ecological community by the Department of Biodiversity, Conservation and Attractions. As discussed under Principle (d), the proposed clearing will impact on 7.9752 hectares of native vegetation that is representative of this TEC.

As discussed under Principle (b), the application area provides 8.801 hectares of significant foraging habitat for Carnaby’s cockatoo (*Calyptorhynchus latirostris*), which is endangered under the EPBC Act and classified as ‘fauna that is rare or is likely to become extinct as endangered fauna’ under the under the *Biodiversity Conservation Act 2018* (BC Act) within the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* (WC Fauna Notice). The application area does not provide suitable breeding habitat for this species, and the proposed clearing is not expected to impact on significant habitat for any other fauna species.

Noting that the application area includes vegetation in an excellent (Keighery, 1994) condition, provides significant foraging habitat for Carnaby’s cockatoo, and is representative of a federally listed threatened ecological community, it is considered to comprise a high level of biological diversity.

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

Taking into account the applicant’s avoidance and minimisation measures (outlined in Part 2 of this assessment), it is considered that a suitable offset will counterbalance impacts to biodiversity.

(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 Level 1 fauna survey (the Fauna Survey) was undertaken within the application area on 3 November 2016. The Fauna Survey incorporated opportunistic observations, fauna habitat mapping via traverses and an assessment of Carnaby’s cockatoo habitat. The fauna survey noted that the two vegetation communities within the application area represent one broad fauna habitat type, being mixed *Banksia* woodland and shrubland (ELA, 2017).

The fauna survey noted that one conservation significant fauna species was highly likely to occur within the application area, being Carnaby’s cockatoo, and determined that a further four conservation listed fauna species have the potential to occur within the application area, being (ELA, 2017):

- Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*) (Vulnerable under the WC Fauna Notice and EPBC Act);
- Fork-tailed swift (*Apus pacificus*) (Migratory under the WC Fauna Notice and EPBC Act);
- Grey wagtail (*Motacilla cinerea*) (Migratory under the WC Fauna Notice and EPBC Act); and
- Black-striped snake (*Neelaps calonotus*) (listed as Priority 3 by DBCA).

Noting the large home range and highly mobile nature of the fork-tailed swift and grey wagtail, the application area, which is largely surrounded by a housing development, is unlikely to provide significant habitat for these species.

The fauna survey noted that the forest red-tailed black cockatoo could potentially occur in the application area on a transient basis given its recent expansion onto the Swan Coastal Plain (ELA, 2017). However, noting that this species prefers to forage on the seeds of jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) (Commonwealth of Australia 2012), the vegetation within the application area is not considered to be the preferred foraging habitat for the species and is unlikely to constitute significant foraging habitat for this species.

The fauna survey noted that the black-striped snake and carpet python may be transient visitors to the application area (ELA, 2017). However, noting the nearby presence of larger high quality areas of native vegetation, including the Yanchep National Park (comprises 2,876 hectares) and Neerabup National Park (comprises 943 hectares) located 4.2 kilometres north and one kilometre west respectively, the application area is unlikely to comprise significant habitat for these species. Slow, progressive directional clearing methods would allow these species to disperse ahead of clearing should they occur.

Proteaceous plants such as *Banksia* and *Hakea* species represent primary foraging species for Carnaby's cockatoo and occur through the majority of the application area. Consequently, the fauna survey noted that both of the recorded vegetation communities contained high densities of suitable foraging species and identified that the entire 8.801 hectares of the vegetation within the application area provides suitable foraging habitat for Carnaby's cockatoo (ELA, 2017). The fauna survey recorded Carnaby's cockatoo foraging evidence in the form of chewed *Banksia* cones throughout the application area, and concluded that the application area provides high quality foraging habitat for this species (ELA, 2017).

The recovery plan for Carnaby's cockatoo defines breeding habitat as including nesting sites, and the foraging habitat and water sources within foraging distance of nesting sites (Parks and Wildlife, 2013). These areas are considered to be habitat critical to the survival of this species (Parks and Wildlife, 2013). The loss or degradation of foraging habitat within 12 kilometres of nesting sites is considered to pose the greatest risk to Carnaby's cockatoo (Parks and Wildlife, 2013). Given the presence of a confirmed breeding site approximately 9.5 kilometres from the application area, and presence of several wetlands mapped within the local area, it is considered that the proposed clearing of 8.801 hectares of high value foraging habitat, is significant for Carnaby's cockatoo.

While the proposed clearing will not sever any known ecological linkages, it is considered that the application area provides values as a stepping stone between existing landscape remnants for avian fauna, and specifically Carnaby's cockatoo, within a highly developed urban area.

The application area does not contain any large trees that would be suitable breeding or roosting habitat for Carnaby's cockatoo (ELA, 2017).

Noting that the application area contains significant foraging habitat for Carnaby's cockatoo, the proposed clearing is at variance to this Principle.

Taking into account the applicant's avoidance and minimisation measures (outlined in Part 2 of this assessment), it is considered that a suitable offset will counterbalance impacts to black cockatoos.

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

Comments

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

According to available databases, three threatened flora species have been recorded within the local area.

The flora survey incorporated a flora species inventory and vegetation community and condition mapping, with conservation listed flora targeted and mapped through systematic traverses. The flora survey did not identify any threatened flora species within the application area, and none were considered likely to occur based on the suitability of available habitat (ELA, 2017).

DBCA provided comment on the survey and advised that "survey effort and timing would appear appropriate to identify the majority of conservation significant taxa with the potential to occur within the study area" (DBCA, 2018).

Noting this advice and the flora survey findings, it is considered that the application area is unlikely to include or be necessary for the continued existence of threatened flora.

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

(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 at variance to this Principle

There are no threatened ecological communities mapped within the application area, however, the flora survey notes that the BaBmLW vegetation type represents the '*Banksia Woodlands of the Swan Coastal Plain ecological community*' (Banksia Woodlands TEC), which is listed as Endangered under the EPBC Act, as it meets the key diagnostic characteristics set out under the approved listing conservation advice for this community, including the following criteria:

- Located on the Swan Coastal Plain, on the Spearwood Dune system, and consists of a low woodland dominated by the key diagnostic species, being *Banksia attenuata* and *Banksia menziesii*.
- Represents vegetation in an excellent to good condition, including the following characteristics:
 - Vegetation structure intact;
 - Disturbance only affecting individual species;
 - Weeds are non-aggressive species; and
 - High density native plant species.
- Represents a minimum patch size of 0.5 hectares of vegetation in excellent condition (note: must be at least two hectares in Good condition) when considered in isolation from surrounding vegetation. The total patch for vegetation community BaBmLW in the application area is approximately 7.9752 hectares.

Additional floristic analysis was undertaken as part of the flora survey and identified that vegetation type BaBmLW, aligns with Floristic Community Type (FCT) 28, known as 'Spearwood *Banksia attenuata* or *B. attenuata* – *Eucalyptus* woodlands'. The Banksia Woodlands TEC comprises this FCT.

Given the above, the proposed clearing would result in the loss of 7.9752 hectares of native vegetation that is considered to be representative of the Banksia Woodland TEC.

The portion of the application area mapped as vegetation community BsXpHtTOS (0.17 hectares) lacks the key indicator species of the Banksia Woodlands TEC, being *Banksia attenuata* and *Banksia menziesii* (ELA, 2017) and is not considered to be representative of the TEC.

DBCA provided comment on the proposed impacts to the Banksia Woodlands TEC and advised that "although the clearing of [approximately] 7ha [hectares] of Banksia woodlands of the Swan Coastal Plain IBRA Region TEC may not be significant at a regional scale, it is likely to be significant locally given that that 7ha of clearing is a reasonably substantial area. Banksia woodland vegetation remaining in the surrounding area in good condition or better is not well represented or reserved for conservation" (DBCA, 2018).

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

Taking into account the applicant's avoidance and minimisation measures (outlined in Part 2 of this assessment), it is considered that a suitable offset will counterbalance impacts to the *Banksia* Woodlands of the Swan Coastal Plain TEC.

(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 not likely to be at variance to this Principle

The National Objectives and Targets for Biodiversity Conservation include a target that prevents the clearance of ecological communities with an extent below 30 per cent of that present pre-European settlement (Commonwealth of Australia, 2001). Within constrained areas (areas of urban development in cities and major

	Pre-European (ha)	Current Extent (ha)	Extent Remaining (%)	Current Extent in all DBCA Managed Lands (ha)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA Bioregion					
Swan Coastal Plain	1,501,222	578,997	39	222,766	18
Swan Coastal Plain Vegetation Complex					
Cottesloe Complex-Central and South	45,300	14,571	32	6,591	14.5

towns) on the Swan Coastal Plain, the threshold for representation of the pre-clearing extent of a particular native vegetation complex is 10 per cent (EPA, 2008). The application area is classified as a constrained area.

As indicated in Table 2, the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Heddle vegetation complex mapped within the application area both retain greater than the abovementioned 10 per cent vegetation threshold for constrained areas (Government of Western Australia, 2018a; Government of Western Australia, 2018b).

The local area (taking into account the coastal watermark) retains approximately 56 per cent native vegetation cover (13,399 hectares). The application area represents approximately 0.034 per cent of the remaining native vegetation within the local area and the proposed clearing would reduce the extent of native vegetation within the local area to 13,390.2 hectares.

Noting that the application area includes vegetation in an excellent (Keighery, 1994) condition that contains significant foraging habitat for Carnaby's cockatoo, and is representative of a TEC, the application area is considered to be a significant remnant. Noting the remaining vegetation extents of the mapped vegetation type, IBRA Bioregion and local area are all greater than 10 per cent, the application area is not considered to be within an extensively cleared area.

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

Table 3. Remnant Vegetation Extents (Government of Western Australia, 2018a; Government of Western Australia, 2018b).

(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

According to available datasets, there are no watercourses or wetlands located within the application area. The closest wetland to the application area is Carabooda Lake, located approximately 2.3 kilometres east.

The flora survey and a site inspection did not identify any wetlands, watercourses, or riparian vegetation within the application area (ELA, 2017; DWER, 2018).

Given the separation distance of the application area to the nearest watercourse or wetland, and the absence of riparian vegetation within the application area, the application area is not likely to include vegetation that is growing in association with a watercourse or wetland.

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

(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

The application area has been mapped as the following subsystem landform types:

- Karakatta Sand Yellow Phase: Low hilly to gently undulating terrain. Yellow sand over limestone at 1-2 metres (comprises approximately 65 per cent of the application area); and
- Karakatta Shallow Soils Phase: Bare limestone or shallow siliceous or calcareous sand over limestone (comprises approximately 35 per cent of the application area).

A site inspection identified that the soils within the application area are predominately comprised of white and grey sands (DWER, 2018).

The former Department of Agriculture and Food Western Australia developed land degradation risk potentials for mapped subsystems, as shown within Table 3 below for the Karakatta Sand Yellow Phase and Karakatta Shallow Soils Phase respectively.

Table 3. Land Degradation Risk

Risk categories	Karrakatta shallow soils Phase	Karrakatta Sand Yellow Phase
Wind erosion	30-50% of map unit has a high to extreme wind erosion risk	>70% of map unit has a high to extreme wind erosion risk
Water erosion	3-10% of map unit has a high to extreme water erosion risk	3-10% of map unit has a high to extreme water erosion risk
Salinity	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	10-30% of map unit has a high subsurface acidification risk or is presently acid	10-30% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	<3% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk
Water logging	<3% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	3-10% of map unit has a high to extreme phosphorus export risk	3-10% of map unit has a high to extreme phosphorus export risk

Based on the above, the greatest risk of land degradation is from wind erosion and salinity.

Noting that no signs of salinity were observed on site, despite being surrounded by historical cleared residential developments, the proposed clearing is not likely to lead to surface water salinity expression and subsequent land degradation.

With regard to the potential for wind erosion, noting that approximately 65 per cent of the application area is mapped as Karakatta Sands Yellow Phase, whereby greater than 70 per cent of this subsystem has a high to extreme wind erosion risk, it is considered that the proposed clearing may result in appreciable land degradation should the site remain bare of vegetation for a lengthy period of time. Therefore, the proposed clearing may be at variance to this Principle.

The applicant advised that potential impacts of clearing will be managed by undertaking avoidance and mitigation measures applicable to construction activities, including the installation of wind fencing around the site to minimise impacts on adjacent vegetation. Commencing the construction within three months of clearing would also help to prevent the long term exposure of the site to wind erosion.

(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 is not likely to be at variance to this Principle

There are no conservation areas within or adjacent to the application area. The closest conservation areas are Bush Forever Site 383 (Neerabup National Park) located 1.2 kilometres east and Bush Forever Site 397 (Coastal Strip from Wilbinga to Mindarie) located 1.8 kilometres west of the application area.

It is acknowledged that the application area may act as a stepping stone for avian fauna moving north to south close to the coast, however, noting the separation distance of the application area to the abovementioned conservation areas, which are further inland and well connected north to south, the proposed clearing is not likely to impact on the movement of fauna or ecological processes between these areas.

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

(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

As discussed under Principle (f), according to available datasets, there are no watercourses or wetlands located within the application area. The closest wetland to the application area is Carabooda Lake, located approximately 2.3 kilometres east of the application area. Noting this distance, and the lack of connectivity between the application area and Carabooda Lake, or any other watercourse in the local area, the proposed clearing is not likely to result in the deterioration of surface water.

The Perth Groundwater Atlas shows groundwater at between 48 and 50 metres depth within the application area. Noting this depth, and that groundwater salinity levels are considered marginal, at between 500 to 1000 milligrams per litre total dissolved solids, the proposed clearing is not likely to result in a rise in groundwater levels, increased salinisation or result in the surface expression of salinity.

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

(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

Noting the lack of wetlands or watercourses within close proximity to the application area, that the application area contains highly permeable sandy soils, and the land degradation risk mapping which identifies that the mapped landforms over the application area have less than a three per cent risk of flooding, the proposed clearing is not expected to cause or exacerbate the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

Comments The applicant has advised that the proposed development will be undertaken in accordance with the Lot 3 Romeo Road, Alkimos Local Structure Plan (encompasses the northern portion of the application area) and Lot 9049 Marmion Avenue, Butler Structure Plan (encompasses the southern portion of the application area). The application area was planned for future use as District Open Space under these Structure Plans. Two historical EPBC Act approvals (EPBC 2008/4601 and EPBC 2009/5155 respectively) exist over the areas encompassed by these Structure Plans.

The application area is zoned 'Urban' in the Western Australian Planning Commissions Metropolitan Region Scheme and 'Urban Development' under the City of Wanneroo District Planning Scheme.

The applicant has a licence to take groundwater that is sufficient to irrigate the proposed playing fields (DWER, 2018).

The application area occurs within an Aboriginal Site of Significance. It is the responsibility of the applicant to ensure that no Aboriginal Sites of Significance are damaged through the clearing process. The applicant is encouraged to contact the Department of Aboriginal Affairs regarding its obligations under the *Aboriginal Heritage Act 1972*.

The clearing application was advertised for public comment on 3 April 2018. The public comment period ended on 24 April 2018. The application was readvertised on 6 June 2018 to reflect a change in the size of the application area, with the comment period ending on 13 June 2018. One public submission was received in relation to this application. On 4 October 2018, the applicant provided a response to the public submission, which is available to view online at <ftp://ftp.dwer.wa.gov.au/permit/> (reference 7982/1).

The submission raised concerns regarding impacts to black cockatoos and the Banksia Woodlands TEC. These concerns have been addressed under principles (a), (b) and (d).

4. References

- City of Wanneroo (2018) Additional Information provided in support of Clearing Permit Application CPS 7982/1 (DWER Ref A1726501).
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012). EPBC Act referral guidelines for three threatened black cockatoo species. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.
- Commonwealth of Australia. (2018). Threat abatement plan for disease in natural ecosystem caused by *Phytophthora cinnamomi*.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2018) Advice for Clearing Permit Application CPS 7982/1 received 16 May 2018 (DWER Ref A1674892).
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