



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	7860/1
Permit Holder:	City of Wanneroo
Duration of Permit:	11 January 2019 to 11 January 2025

ADVICE NOTE

In regards to condition 9, it is noted that the Permit Holder has allocated 0.53 hectares of its banked offset site at Lot 901 Brennan Road, Bindoon to this project. The nominated 0.53 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 banksii 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 developing a nature and community playground.

2. Land on which clearing is to be done

Lot 3000 on Deposited Plan 72117, Landsdale

3. Area of Clearing

The Permit Holder must not clear more than 0.198 hectares of native vegetation within the area hatched yellow on attached Plan 7860/1a.

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 1 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:

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

7. Dieback and weed control

When undertaking any clearing or other activity 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 area to be cleared;
- (b) ensure that no *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 commences within three months of the authorised clearing being undertaken.

9. Offset 1 – Land Transfer

- (a) The Permit Holder must fund the purchase of the area cross hatched red on attached Plan 7860/1b 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 7860/1b has been ceded to the Department of Biodiversity Conservation and Attractions within three months of executing the land transfer.

10. Offset 2 – Management Order

The Permit Holder shall:

- (a) prior to undertaking any clearing authorised under this Permit, provide evidence from the Department of Planning, Lands and Heritage that the purpose of the management order for the area cross hatched red on attached Plan 7860/1a, will be amended to include ‘Conservation’; and
- (b) provide to the CEO a copy of the amended management order no later than 31 December 2019.

11. Offset 3 - Revegetation

The Permit Holder shall implement and adhere to the Hardcastle Park Revegetation Plan CPS 7860 and the Specification and Scope of Works – Revegetation Plan, including but not limited to the following actions;

- (a) establish two 10x10 metre quadrat reference sites within adjacent vegetation;
- (b) retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared;
- (c) prior to August 2020 commence *revegetating* and *rehabilitating* the areas hatched red on Plan 7860/1a by;
 - (i) laying the vegetative material and topsoil retained under condition 11(b);
 - (ii) deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to the reference sites; and
 - (iii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.
- (d) water planted vegetation between November and March for the first two years post planting;
- (e) install signage to educate reserve users of the revegetation activities being undertaken;
- (f) fence the *rehabilitated* areas if there is signs of vandalism;
- (g) implement hygiene protocols by cleaning earth-moving machinery of soil and vegetation prior to entering and leaving the site;
- (h) undertake weed control activities on an ‘as needs’ basis to maintain a minimum 90 per cent weed free state by the end of the project maintenance period;
- (i) achieve the following completion criteria after the five year monitoring period for areas *revegetated* and *rehabilitated* under this Permit;

Criterion	Baseline floristic data	Completion targets	Completion criteria	Monitoring
1	Structure of the two 10m x 10m quadrats (reference sites) is consistent with the <i>Banksia</i> Woodlands of the Swan Coastal Plain threatened ecological community (TEC).	The revegetation areas must be returned to the <i>Banksia</i> Woodlands of the Swan Coastal Plain TEC.	The revegetation areas must be returned to the <i>Banksia</i> Woodlands of the Swan Coastal Plain TEC.	Structure in the revegetation areas will be assessed in years 2, 3 and 5.
2	Species richness is the average number of species between the two reference sites.	Maintain species richness of existing bushland.	The revegetation areas must contain the same, or more, number of species than the average between the two reference sites.	Monitoring species richness of reference sites biennially.
3	Species richness is the average number of species between the two reference sites.	Minimum of 50% of native vegetation species returned based on propagation capacity of species. Therefore revegetation areas shall have a minimum of 50% native species per quadrat, as obtained by the average recorded at the reference sites.	Species richness and number of plants / m2 in the revegetation areas is 50% of that obtained by the average recorded at the reference sites.	The species and number of plants / m2 in the revegetation areas will be counted in years 2, 3 and 5.
4	% cover of weeds in reference sites are less <1%	Weeds are mostly absent from the reference sites. Considering external pressures (adjacent to turf and urban location) a target of ≤10% has been established for the revegetation.	The revegetation areas must have % cover of ≤10% weeds.	Monitor revegetation areas in years 2, 3 and 5.
5	No declared weeds are present	Declared Weeds are managed in accordance with the Biosecurity and Agriculture Management Regulations 2013	Declared weeds are absent from the rehabilitation areas and existing bushland.	Monitor the existing bushland and revegetation sites for declared weeds by traversing the areas in years 2, 3 and 5.
6	Survival rate to be achieved	If after year 2 and year 4 of planting, a survival rate of at least 80% is not achieved, all planted tubestock that have not survived must be replanted within 12 months and monitored for a further 2 years.	The revegetation site needs to ensure a survival rate of at least 80% of the species planted is achieved after five years, and replant any plants within 12 months of dying.	The number of surviving plants in the revegetation areas will be counted in years 3 and 5.
7	Green waste / rubbish are present in bushland.	Green waste and rubbish are absent from the revegetation site.	The revegetation site must be free of green waste and rubbish.	6 monthly during asset inspections and biennially during flora and vegetation monitoring.
8	Vegetation is in Very Good to Excellent Condition	Existing bushland to be maintained in Very Good to Excellent Condition.	Vegetation is in Good to Very Good Condition	Vegetation condition to be assessed in Years 1, 2 and 4.

- (j) undertake remedial actions for areas *revegetated* and *rehabilitated* where monitoring indicates that revegetation has not met the completion criteria, outlined in 11(i), including;
 - (i) *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in the minimum target in 11(i) and ensuring only *local provenance* seeds and propagating material are used;
 - (ii) undertake further weed control activities; and
 - (iii) annual monitoring of each *revegetated* and *rehabilitated* site, until the completion criteria, outlined in 11(i) are met.

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

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.
- (d) The date development commenced in accordance with condition 8 of the Permit;
- (e) The date the management order was amended to include 'Conservation' in accordance with condition 10 of the Permit;
- (f) In relation to the revegetation of areas pursuant to condition 11 of this Permit:
 - (i) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (ii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
 - (iii) the date that the area was *revegetated* and *rehabilitated*.

13. 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 12 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 was undertaken between 1 January to 31 December of the preceding calendar, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.
- (c) Prior to 11 October 2024, the Permit Holder must provide to the *CEO* a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

DEFINITIONS

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

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

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

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

local provenance means native vegetation seeds and propagating material from natural sources within 100 kilometres and the same Interim Biogeographic Regionalisation for Australia (IBRA) subregion of the area cleared;

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;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area; 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 Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

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

12 December 2018

Plan 7860/1a

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Legend

- Clearing Instruments Conditions
- Imagery
- Cadastre
- Clearing Instruments Activities
- Local Government Authority
- Roads
- Clearing Instruments Offsets



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GDA 94 (Lat/Long)

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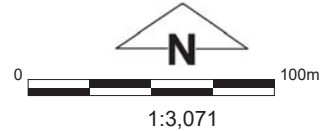
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Plan 7860/1b



Legend

-  Clearing Instruments Conditions
-  Imagery
-  Cadastre
-  Local Government Authority
-  Roads



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Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7860/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: City of Wanneroo
Application received date: 09 November 2017

1.3. Property details

Property: LOT 3000 ON PLAN 72117, LANDSDALE (HARDCASTLE PARK)
Local Government Authority: CITY OF WANNEROO
Localities: LANDSDALE

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
0.198 (revised down from 0.3)		Mechanical Removal	Nature and community playground

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 12 December 2018
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). It has been concluded that the proposed clearing is at variance to principles (a), (b) and (d), may be at variance to principle (g), is not at variance to principle (f) and is not likely to be at variance to the remaining principles.

Through assessment it was determined that the application area contains 0.198 hectares of foraging habitat for black cockatoos and vegetation synonymous with the *Banksia* Woodlands of the Swan Coastal Plain Threatened Ecological Community (TEC).

To mitigate the significant environment impacts identified above, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines the applicant has made the following offset commitments:

- Revegetate 0.177 hectares of Hardcastle Park;
- Amend the Management Order for Hardcastle Park to include the purpose of conservation; and
- Allocate 0.53 hectares of the City of Wanneroo's banked offset site at Lot 901 Brennan Road, Bindoon.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent 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 of the playground 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 to clear 0.198 hectares of native vegetation within Lot 3000 on Deposited Plan 72117, Landsdale, for the purpose of constructing a nature and community playground. The application area is depicted in Figure 1 below.

4. Assessment of application against clearing principles

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

Proposed clearing is at variance to this Principle

The application is to clear 0.198 hectares of native vegetation within Lot 3000 on Deposited Plan 72117 (Hardcastle Park), Landsdale, for the purpose of constructing a nature and community playground.

The City of Wanneroo commissioned Ecoscape (Australia) Pty Ltd to undertake a Level 2 Flora and Vegetation Survey of Hardcastle Park (the study area). This survey was undertaken on 8 October 2015. A total of 88 vascular flora species from 70 genera and 33 families were recorded within the study area from the floristic quadrats and opportunistic observations (Ecoscape, 2015). One vegetation community was recorded within the study area, that being; low *Banksia attenuata* and *Allocasuarina humilis* open woodland (Ecoscape, 2015).

Fifteen priority flora species have been recorded within the local area (10 kilometre radius), however, none were observed within the application area during the Level 2 survey (Ecoscape, 2015).

On 16 September 2016, the Commonwealth Department of the Environment and Energy (DotEE) listed *Banksia* Woodlands of the Swan Coastal Plain TEC as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). As discussed in Principle (d) the application area is representative of this ecological community.

Five terrestrial fauna species listed as specially protected under the *Wildlife Conservation Act 1950* (WC Act) have been recorded within the local area, those being; Carnaby's cockatoo (*Calyptorhynchus latirostris*), Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Chuditch (*Dasyurus geoffroyi*) and Woylie (*Bettongia penicillata subsp. ogilbyi*) (DBCA, 2007-). As discussed under principle (b), the application area contains suitable foraging habitat for Carnaby's cockatoo and Forest red-tailed black cockatoo.

The application area contains vegetation that is in excellent (Keighery, 1994) condition, representative of a TEC and significant habitat for black cockatoos. Therefore, the application area contains a high level of biodiversity and is at variance to this Principle.

Taking into account the applicant's avoidance and minimisation measures (outlined in Section 3 of this report), it is considered that a suitable offset (outlined in Section 5 of this report) 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.

Proposed clearing is at variance to this Principle

Five terrestrial fauna species listed as specially protected under the WC Act have been recorded within the local area, being; Carnaby's cockatoo (*Calyptorhynchus latirostris*), Forest red-tailed black cockatoo (*Calyptorhynchus banksii naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Chuditch (*Dasyurus geoffroyi*) and Woylie (*Bettongia penicillata subsp. ogilbyi*) (DBCA, 2007-).

The Ecoscape survey identified one fauna habitat within the application area, that being; Banksia Woodland: dominated by a moderate layer of *Banksia attenuata* with occasional *Allocasuarina humilis* and a small patch of *Eucalyptus marginata* (Jarrah) over a moderate to dense layer of shrubs *Hibbertia hypericoides* and *Eremaea pauciflora* over dense ground cover of *Amphipogon turbinatus* and *Mesomelaena pseudostygia* (Ecoscape, 2015).

Carnaby's cockatoo and Baudin's cockatoo are listed as endangered and Forest red-tailed cockatoo are listed as vulnerable under the EPBC Act. Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, york gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012).

No potential breeding trees were identified within the application area (Ecoscape, 2015).

Black cockatoos have a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceous plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012).

The entire application area consists of suitable foraging habitat for black cockatoos and foraging evidence, in the form of chewed cones, was observed during the site inspection conducted by DWER Officers (DWER, 2018).

The application area is not likely to contain significant habitat for Baudin's cockatoo because it is not within the modelled distribution of this species.

The chuditch is listed as vulnerable under the EPBC Act. Chuditch are now only present in approximately five per cent of their pre-European range. Most chuditch are now found in varying densities throughout the jarrah forest and south coast of Western Australia. Chuditch use a range of habitats including forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest (DEC, 2012). Given the preferred habitat of this species, the application area is not likely to contain favourable habitat for this species.

Woylies were known to inhabit a variety of habitats including semi-arid scrub, mallee, woodland and open forest, however currently the woylie is only known from two areas, Upper Warren and Dryandra Woodlands. Given the present range of this species it is unlikely to be present within the application area.

Multiple Bush Forever sites have been recorded within five kilometres of the application area. These sites form ecological linkages across the landscape. The Bush Forever sites and the application area are separated by urban development which poses a physical barrier for ground dwelling fauna, however the application area does have linkage value for avian fauna. Although the application area supports this linkage, the proposed clearing is not likely to reduce the long term viability of the linkage as approximately 0.58 hectares of native vegetation will remain post-clearing.

Given the above, the application area contains significant foraging habitat for black cockatoos and therefore the proposed clearing is at variance to this Principle.

Taking into account the applicant's avoidance and minimisation measures (outlined in Section 3 of this report), it is considered that a suitable offset (outlined in Section 5 of this report) will counterbalance impacts to black cockatoos.

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

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

Two rare flora species have been recorded within the local area.

Ecoscape Pty Ltd, on behalf of the applicant, undertook a Level 2 Flora and Vegetation Survey on 8 October 2015. This survey was conducted at an appropriate time of year to identify the two species recorded within the local area, however no rare flora was observed (Ecoscape, 2015).

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.

Proposed clearing is at variance to this Principle

As discussed in Principle (a), the *Banksia* Woodlands of the Swan Coastal Plain TEC is listed as endangered under the EPBC Act.

The *Banksia* Woodlands ecological community is restricted to areas in and immediately adjacent to the Swan Coastal Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, including the Dandaragan plateau. This coastal plain stretches from around Jurien Bay in the north, to Dunsborough in the south (DotEE, 2016).

This ecological community has undergone a decline of about 60 per cent in its original extent and almost all of the ecological community that remains, occurs as highly fragmented patches less than 10 hectares in size (DotEE, 2016).

This ecological community has a dominant *Banksia* component, which includes at least one of four key species—*Banksia attenuata* (candlestick banksia), *B. menziesii* (firewood banksia), *B. prionotes* (acorn banksia) and/or *B. ilicifolia* (holly-leaved banksia) (DotEE, 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 (DotEE, 2016).

The City of Wanneroo commissioned Ecoscape (Australia) Pty Ltd to undertake a Level 2 Flora and Vegetation Survey of Hardcastle Park (the study area). This survey identified one vegetation type within the study area, being; low *Banksia attenuata* and *Allocasuarina humilis* open woodland (Ecoscape, 2015). Statistical analysis undertaken by Ecoedge identified this vegetation type as having affiliation with floristic community types (FCT) 20a and 28. The FCT has to meet key diagnostic characteristics to be considered a TEC. In regards to the presence of the Banksia Woodlands TEC, the Approved Conservation Advice for the thresholds state (DotEE, 2016):

- Vegetation in Excellent Condition should have a minimum patch size of 0.5 hectares;
- Vegetation in Very Good condition should be a minimum of 1 hectares; and
- Vegetation in Good conditions should be a minimum of 2 hectares.

If a patch occurs within 30 metres of another patch in the same condition class, then the patch areas are combined. Based on this information and the survey results, the application area forms part of a 0.78 hectare patch of the Banksia Woodlands TEC. The applicant has amended the application area to ensure that this 'patch' (Hardcastle Park) does not drop below the minimum patch size for this TEC.

The Department of Biodiversity, Conservation and Attractions (DBCA) advised that the *Banksia attenuata* woodlands over species rich dense shrublands TEC is known from quite a narrow range, and is under consistent, ongoing and cumulative proposals to clear vegetation, particularly for essential infrastructure, and therefore areas of the TEC in good condition (Bush Forever scales) or better should then be identified for retention (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 Section 3 of this report), it is considered that a suitable offset (outlined in Section 5 of this report) 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.

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

The application area is located within the Swan Coastal Plain IBRA bioregion. This bioregion has approximately 38.5 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2018a).

The application area is also mapped as Heddle Karrakatta central and south complex which retains approximately 24 per cent pre-European extent (Government of Western Australia, 2018a).

The application area is located within the City of Wanneroo, within which there is approximately 44 per cent pre-European extent remaining (Government of Western Australia, 2018b).

The National Objectives and Targets for Biodiversity Conservation 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (Commonwealth of Australia 2001). In the Perth Metropolitan and Bunbury regions, the Environmental Protection Authority (EPA) has a modified objective to retain at least 10 per cent of the pre-clearing extent of vegetation complexes for defined constrained areas (intensely developed) (EPA, 2015; EPA, 2003; Government of Western Australia, 2000). The application area is located within a constrained area given that it occurs within the Bush Forever Study Area Boundary.

The application area contains significant habitat for black cockatoos and a TEC and is therefore a significant remnant. Although the application area constitutes a significant remnant it is not located in an area that has been extensively cleared. Therefore, the proposed clearing is not likely to be at variance to this Principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DBCA lands (%)
IBRA Bioregion				
Swan Coastal Plain	1,501,222	578,432	~ 38.5	~ 37.8
Shire				
City of Wanneroo	67,517	29,805	~ 44	~ 53.7
Vegetation Complex – Swan Coastal Plain*				
Karrakatta Complex – Central and South	53,081	12,532	~ 24	~ 7.4

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

Proposed clearing is not at variance to this Principle

No watercourses or wetlands have been mapped within the application area. The closest wetland to the application area is mapped approximately one kilometre east and is located with Alexander Park.

Given the above, the application area is not growing in, or in association with a watercourse or wetland and is not 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.

Proposed clearing may be at variance to this Principle

The Department of Primary Industries and Regional Development (DPIRD) has mapped the soil within the application area as 'Karrakatta Sand Yellow Phase'. This map unit is described as 'Undulating dunes on aeolian sand over limestone in the Swan Coastal Plain between Wanneroo and Lancelin. Yellow deep sands (DPIRD, 2018).

The sandy soils associated with this area are prone to wind erosion and therefore the proposed clearing may lead to appreciable land degradation in the form of wind erosion. Limiting the time between clearing and development of the site may assist in limiting the risk of wind erosion.

Sandy soils are highly permeable and therefore the proposed clearing is not likely to cause water erosion.

The degradation risk summary of the application area indicates that the application area has no risk of salinity (DPIRD, 2018).

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

(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.

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

The closest conservation area to the application area is Bush Forever Site 493 which is located approximately 870 meters south. Bush Forever Site 199 is located 1.1 kilometres west and Bush Forever Site 196 is 1.5 kilometres west.

Given the distance to the nearest conservation reserve the proposed clearing is unlikely to impact on the conservation values of these reserves through the spread of weeds or dieback.

The Bush Forever sites within the local area form ecological linkages across the landscape. The Bush Forever sites and the application area are separated by urban development which poses a physical barrier for ground dwelling fauna, however the application area does have linkage value for avian fauna. Although the application area supports this linkage, the proposed clearing is not likely to reduce the long term viability of the linkage as 0.58 hectares of native vegetation will remain post-clearing.

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.

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

No watercourses or wetlands have been mapped within the application area. Therefore the proposed clearing is not likely to cause deterioration of surface water quality.

The degradation risk summary of the application area indicates that the application area has no risk of salinity (DPIRD, 2018).

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.

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

The soil within the application area is mapped as comprising of yellow sand.

Given the relatively small application area and the permeable nature of soil, the proposed clearing is not likely to cause or exacerbate the incidence, or intensity of flooding. The proposed clearing is not likely to be at variance to this principle.

Planning instruments and other relevant matters.

This project was referred to the Commonwealth Department of the Environment and Energy (DotEE) due to its potential impacts to black cockatoos and Banksia Woodland TEC. On 5 January 2018, DotEE determined that the proposed action was not a controlled action (DotEE Reference: EPBC 2017/8100).

The application area falls within the Mirrabooka Groundwater Area which is a proclaimed area under the *Rights in Water and Irrigation Act 1914*. The Swan Avon Land Use Planning section of DWER advised that this project had been assessed and no comments were provided (DWER, 2017).

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 13 December 2017 with a 21 day submission period. No public submissions have been received in relation to this application.

5. Suitability of Proposed Offset

To mitigate the significant environment impacts identified above, and in accordance with the WA Environmental Offset Policy and Environmental Offsets Guidelines, the Permit Holder has made the following offset commitments:

- Revegetate 0.25 hectares of Hardcastle Park (0.177 hectares of which accounts towards offsetting the proposed clearing);
- Amend the Management Order for Hardcastle Park to include the purpose of conservation; and
- Allocate 0.53 hectares of the City of Waneroo's banked offset site at Lot 901 Brennan Road, Bindoon.

In regards to the revegetation aspect of the proposed offset, it was identified that 0.073 hectares was proposed to be revegetated within a Western Power easement and that a vegetation height restriction of one metre applies within that area.

This height restriction would mean that the area could not be returned to the same vegetation type that was being cleared and

therefore would not be included as an offset for this project. In accordance with this, 0.177 hectares of revegetation will be considered as an offset for 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 revegetation aspect of the offset equated to 31.3 per cent of the offset requirement, the management order component equated to 31.3 per cent and the remaining 37.4 per cent was covered by the land acquisition component.

Given the above, the combination of the three offsets 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*.

6. References

- 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.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed June 2017.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2018) Threatened Ecological Community advice for Clearing Permit Application CPS 7860/1 (DWER Ref: A1583489).
- 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 the Environment and Energy (DotEE) (2016) *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (s 266B). Approved Conservation Advice (incorporating listing advice) for the *Banksia* Woodlands of the Swan Coastal Plain ecological community.
- Department of Primary Industries and Regional Development (2018). NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (accessed January 2018).
- Ecoscape Australia Pty Ltd (2015) Hardcastle Park Biological Survey, City of Wanneroo.
- Department of Water and Environmental Regulation (DWER) (2017) *Rights in Water and Irrigation Act 1914* advice for clearing permit application CPS 7860/1. Received on 15 December 2017 (DWER Ref: A1580439).
- Department of Water and Environmental Regulation (DWER) (2018) Site Inspection Report for Clearing Permit Application CPS 7860/1. Site inspection undertaken 16 January 2018 (DWER Ref: A1598681).
- Environmental Protection Authority (EPA) (2003) Bulletin 1108 – Greater Bunbury Region Scheme, Report and recommendations of the Environmental Protection Authority, Environmental Protection Authority, Perth.
- Environmental Protection Authority (EPA) (2015) Perth and Peel @ 3.5 million - Environmental impacts, risks and remedies, Interim strategic advice of the Environmental Protection Authority to the Minister for Environment under section 16(e) of the Environmental Protection Act 1986. Office of the Environmental Protection Authority, Perth.
- Government of Western Australia (2000) Bush Forever Volume 2: Directory of Bush Forever Sites. Department of Environmental Protection, Perth.
- Government of Western Australia (2018a) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Government of Western Australia (2018b) 2017 South West Vegetation Complex Statistics. Current as of October 2017. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

7. GIS Datasets

- Aboriginal Sites of Significance
- Clearing Regulations - Environmentally Sensitive Areas
- Carnaby's cockatoo: breeding, roosting, feeding
- Department of Biodiversity Conservation and Attractions, Tenure
- Geomorphic Wetlands, Swan Coastal Plain
- Groundwater salinity, statewide
- Hydrology, linear
- IBRA Australia
- Land for Wildlife
- PDWSA, CAWSA, RIWI Act Areas
- Remnant vegetation
- SAC Biodatasets (accessed October 2018)
- Soils, statewide
- South West Forest Vegetation
- Swan Coastal Plain Vegetation