



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 5981/1
Permit Holder:	ABN Developments Pty Ltd
Duration of Permit:	22 January 2015 – 22 January 2020

ADVICE NOTE:

The funds referred to in condition 2 of this permit are intended for contributing towards purchasing 233 hectares of black cockatoo foraging habitat within the Swan Coastal Plain to be added into conservation estate.

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 pasture and grazing.

2. Land on which clearing is to be done

Lot 5889 on Deposited Plan 208236 (Bullsbrook 6084)

Lot 1808 on Deposited Plan 108469 (Bullsbrook 6084)

Lot 2294 on Deposited Plan 124824 (Bullsbrook 6084)

Lot 1876 on Deposited Plan 131371 (Bullsbrook 6084)

3. Area of Clearing

The Permit Holder must not clear more than 73.05 hectares of native vegetation within the areas hatched yellow on attached Plan 5981/1.

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.

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise etc 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.

6. 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.

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

Prior to undertaking any clearing authorised under this permit and no later than 23 June 2015, the Permit Holder shall provide documentary evidence to the CEO that funding of \$110, 861 has been transferred to the Department of Environment Regulation for the purpose of establishing or maintaining vegetation.

8. Vegetation management

The Permit Holder shall not clear native vegetation within 10 metres of the *riparian vegetation* of any *watercourse* within and/or adjacent to the area cross hatched yellow on Plan 5981/1.

DEFINITIONS

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

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;

riparian vegetation has the meaning given to it in Regulation 3 of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

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 Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



M Warnock
SENIOR MANAGER
CLEARING REGULATION

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

23 December 2014

Plan 5981/1



LEGEND

<p>Clearing Instruments</p> <ul style="list-style-type: none"> Areas Approved to Clear Road Centrelines Cadastre for labelling Local Government Authorities 	<p>Perth Metropolitan Area Central 15cm Orthomosaic - Landgate 2012</p>	<p style="text-align: center;">N</p> <p>0 375 m</p> <p>Scale 1:15934 (Approximate when reproduced at A4)</p> <p>Geocentric Datum Australia 1994</p> <p>Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.</p> <p><i>M Warnock</i> Date <u>23/12/14</u></p> <p>M Warnock Officer with delegated authority under Section 20 of the Environmental Protection Act 1986</p> <p>Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.</p> <p> Government of Western Australia Department of Environment Regulation</p> <p>WA Crown Copyright 2002</p>
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Clearing Permit Decision Report

Government of Western Australia
Department of Environment Regulation

1. Application details

1.1. Permit application details

Permit application No.: 5981/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: ABN Developments Pty Ltd

1.3. Property details

Property: LOT 5889 ON PLAN 208236 (Lot No. 5889 DELLA SOUTH BULLSBROOK 6084)
LOT 1808 ON PLAN 108469 (House No. 651 WARBROOK BULLSBROOK 6084)
LOT 2294 ON PLAN 124824 (House No. 88 DELLA SOUTH BULLSBROOK 6084)
LOT 1876 ON PLAN 131371 (House No. 712 WARBROOK BULLSBROOK 6084)
Local Government Area: City of Swan
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
73.05		Mechanical Removal	Grazing & Pasture

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 23 December 2014

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Mapped Beard vegetation association 949 is described as low woodland; banksia (Shepherd et al 2001).	The proposed clearing of 73.05 hectares of native vegetation is for the purpose of grazing and pasture.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation condition and description was determined by a flora and vegetation survey undertaken by 360 Environmental (2012) and a site inspection undertaken by the Department of Environment Regulation (2014)
Mapped Heddle vegetation association Yanga Complex is described as closed scrub and low open forest (Heddle et al 1980).		To	Eight vegetation communities have been recorded within the application area including;
Mapped Heddle vegetation association Complex - North is described as low open forest and low woodland and sedgelands (Heddle et al 1980).		Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	BaBmEt: Banksia attenuata, Banksia menziesii, Eucalyptus todtiana low woodland over Scholtzia involucreta and Beaufortia elegans high shrublands over Eremaea pauciflora var. pauciflora, Astroloma xerophyllum, Croninia kingiana and Leucopogon conostephioides low shrublands. BaBmBi: Banksia attenuata, Banksia ilicifolia, Banksia menziesii low woodland over Xanthorrhoea preissii, Xanthorrhoea brunonis subsp. brunonis shrubland over Calytrix flavescens, Conostephium pendulum, Adenanthos obovatus, Eremaea pauciflora var. pauciflora low open shrublands over Phlebocarya ciliata, Patersonia occidentalis, Dasyopogon bromeliifolius low herblands. EmBiXp: Eucalyptus marginata subsp. marginata scattered trees over Banksia attenuata, Banksia ilicifolia, Nuytsia floribunda scattered low trees over Xanthorrhoea preissii shrubland over Dielsia stenostachya, Pentaschistis airoides very open grassland/sedgeland. Dampland Vegetation.

Cc: *Corymbia calophylla* woodland over *Xanthorrhoea preissii* scattered shrubs to open shrubland.

MpRi: *Melaleuca preissiana* scattered low trees over *Regelia inops*, (*Xanthorrhoea preissii*) open to closed heath.

BiXp: *Banksia ilicifolia* scattered low trees over *Xanthorrhoea preissii* shrubland over *Eremaea pauciflora* var. *pauciflora*, *Melaleuca seriata* low shrublands over *Lyginia barbata*, *Alexgeorgea nitens* open sedgeland.

CcEm: *Eucalyptus marginata* subsp. *marginata*, *Corymbia calophylla* scattered trees over *Banksia ilicifolia*, *Banksia attenuata* scattered low trees to low open woodland (patches) over *Xanthorrhoea preissii* shrublands over *Hypocalymma angustifolium* scattered low shrubs to low shrublands over *Hypolaena exsulca* open sedgeland.

and

Scattered paddock trees.

(360 Environmental 2012)

3. Assessment of application against clearing principles

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

Comments

Proposal is at variance to this Principle

The clearing consists of 73.05 hectares of native vegetation of varying quality within a larger footprint of 164.5 hectares (360 Environmental 2014).

The vegetation under application ranges from a completely degraded to excellent (Keighery 1994) condition (360 Environmental 2014).

One hundred and eighty one native plant species were recorded in the North Ellenbrook survey area (360 Environmental 2014).

One Priority 3 species was recorded within Lot 2294, however it was identified outside the application area within the 50 metre buffer to the nearby Conservation Category wetland (360 Environmental 2012). Priority 3 taxa are generally known from collections from several different localities not under imminent threat. Given the above, the proposed clearing is not likely to have a significant impact on the conservation status of priority flora species.

A Level 2 Flora and Vegetation Survey undertaken between 5 November and 4 December 2010 did not identify any rare flora species (360 Environmental 2012). Therefore the area under application is not likely to contain rare flora species.

Nine regionally significant plant species were recorded within the survey area of a Level 2 Flora and Vegetation Survey undertaken by 360 Environmental (2012) which included areas under application. These flora species have been identified as being regionally significant as they are either endemic to the Perth Metropolitan area or are located at the limit of their geographic range.

Two priority ecological communities (PEC) 'Swan Coastal Plain *Banksia attenuata*-*Banksia menziesii* woodlands (P3)' and 'Low lying *Banksia attenuata* woodlands or shrublands' (P3) have been recorded within the application area (360 Environmental 2012). Priority 3 PEC's are poorly known ecological communities that are known from several to many occurrences, a significant number or area which are not under threat of habitat destruction or degradation. Priority 3 PEC's also include communities known from a few widespread occurrences which are either large or with significant remaining areas of habitat much of it not under imminent threat or communities made up of large, and/or widespread occurrences that may or may not be represented in the reserve system. Given this the clearing proposed is not likely to have an impact on the conservation status of these PEC's.

Numerous fauna species listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within the local area (10 kilometre radius) including: Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), Chuditch (*Dasyurus geoffroii*), bee (*Leioproctus douglasiellus*), Bilby (*Macrotis lagotis*), Southern Brush-tailed Phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*), Western Swamp Turtle (*Pseudemydura umbrina*), Australian Painted Snipe (*Rostratula australis*)

(DEC 2007-). The native vegetation subject to this application contains foraging and possible breeding habitat for Carnaby's cockatoo. Given the large size of the area under application the clearing as proposed is likely to have a significant impact on fauna habitat for Carnaby's Cockatoo.

Given the large area (73.05 hectares) under application which contains vegetation in an excellent to completely degraded (Keighery 1994) condition, regionally significant flora and significant habitat for fauna, the vegetation proposed to be cleared contains high biological diversity.

Therefore the clearing as proposed is at variance to this principle.

To offset residual impacts outlined above, the proponent will be required to contribute funds towards the purchase of 233 hectares of native vegetation within the Swan Coastal Plain to be secured in conservation estate.

Methodology

References:

- 360 Environmental (2012)
- 360 Environmental (2014)
- DEC (2007-)
- Keighery (1994)

GIS Datasets:

- SAC Datasets accessed - February 2014

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments

Proposal is at variance to this Principle

Numerous fauna species listed as rare or likely to become extinct under the Wildlife Conservation Act 1950 have been recorded within the local area (10 kilometre radius) including: Baudin's cockatoo (*Calyptorhynchus baudinii*), Carnaby's cockatoo (*Calyptorhynchus latirostris*), Chuditch (*Dasyurus geoffroii*), bee (*Leioproctus douglasiellus*), Bilby (*Macrotis lagotis*), Southern Brush-tailed Phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*), Western Swamp Turtle (*Pseudemydura umbrina*), Australian Painted Snipe (*Rostratula australis*) (DEC 2007-).

A Black Cockatoo Foraging and Breeding Habitat Survey undertaken by 360 Environmental (2013) identified 14 potential breeding trees (more than 50 centimetre diameter at breast height (DBT)) for the black cockatoo species. No hollows were observed within any of the 14 trees identified (360 Environmental 2013).

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 application area consists of *Banksia* woodland in an excellent to degraded (Keighery 1994) condition. Some degraded areas within the application area contain a number of *Banksia* sp. and therefore contain suitable habitat for the black cockatoo species (DER 2014).

The application area contains suitable foraging habitat for the Carnaby's cockatoo and Baudin's cockatoo, however the application area is found outside the general distribution for the Baudin's cockatoo (Commonwealth of Australia 2012). No evidence of foraging by the black cockatoo species was observed during the fauna survey undertaken by 360 Environmental (2014).

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, it is considered that any reduction in foraging habitat will result in a reduction in the carrying capacity of the region and therefore a decline in the population of Carnaby's cockatoo. A recent study involving population analysis modelling suggests that if clearing continues to occur at its current rate without effective habitat restoration, the species is likely to decline to extinction in less than 20 years (Cockerill et al, 2013).

Given the application area contains vegetation in an excellent to good (Keighery 1994) condition, the vegetation proposed to be cleared may also provide habitat for ground dwelling and arboreal fauna. The applicant has advised that (if approved) clearing will be undertaken slowly towards the conservation areas to the north and west of the site to enable small fauna to relocate off the site (360 Environmental 2014).

The application area contains 70.6 hectares of significant foraging habitat and potential breeding habitat for the Carnaby's cockatoo. The proposed clearing is likely to have a significant impact on this species.

The clearing as proposed is at variance to this principle.

To offset residual impacts outlined above, the proponent will be required to contribute funds towards the purchase of 233 hectares of native vegetation within the Swan Coastal Plain to be secured in conservation estate.

Methodology References:
- DEC (2007-)
- Commonwealth of Australia (2012)
- Cockerill et al (2013)
- 360 Environmental (2013)
- 360 Environmental (2014)
- DER (2014)

GIS Datasets:
- SAC Datasets accessed - February 2014

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

Comments **Proposal is not likely to be at variance to this Principle**
Six rare flora species have been recorded within the local area (10 kilometre radius), the closest being recorded approximately 1.7 kilometres south east of the application area. This species grows in deep sandy soil in mixed woodland of jarrah and banksia (Brown et al 1998). Therefore suitable habitat may be located within the area under application.

The remaining five rare flora species are known to occur within winter wet soils, wetlands, swamps, seasonally undated areas or low lying depressions (WA Herbarium 1998-, Brown et al 1998 and DotE 2014). The area under application avoids the wetland and watercourse areas located within the vicinity of the area under application and therefore suitable habitat for these species are not likely to be located within the application area.

A Level 2 Flora and Vegetation Survey undertaken between 5 November and 4 December 2010 did not identify any rare flora species (360 Environmental 2012). The rare flora species located within close proximity of the application area flowers between July and November (Brown et al 1998) and therefore if this species was present on site then it would have been detected.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
- Brown et al (1998)
-DotE (2014)
-WA herbarium (1998-)
-360 Environmental (2012)

GIS Datasets:
- SAC Datasets accessed - February 2014

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments **Proposal is not likely to be at variance to this Principle**
A number of threatened ecological communities (TEC) have been recorded within the local area (10 kilometre radius). The closest record is 'Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain' which is located approximately 3.5 kilometres east of the application area.

A Level 2 Flora and Vegetation Survey undertaken over the area under application did not identify vegetation representative of this TEC (360 Environmental 2012).

Therefore the clearing as proposed is not likely to comprise of or be necessary for the maintenance of a TEC and is not likely to be at variance to this principle.

Methodology References:
- 360 Environmental (2012)

GIS Datasets:
- SAC Datasets accessed - February 2014

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

Comments **Proposal is at variance to this Principle**
The vegetation under application is within the Swan Coastal Plain IBRA Bioregion and has been mapped as comprising of Beard vegetation association 949 and Heddle vegetation complexes Yanga Complex and Bassendean Complex North. The mapped Beard and Heddle vegetation complexes under application have

approximately 58, 20 and 72 per cent respectively of their pre-European vegetation remaining (Government of Western Australia, 2013).

The local area (10 kilometre radius) surrounding the application has approximately 25 per cent of its pre-European vegetation remaining.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). The mapped Heddle vegetation complex 'Yanga Complex' is below the 30 per cent threshold.

Yanga Complex retains less than the 30 per cent threshold, approximately 80 hectares of the footprint area is mapped within this vegetation complex with the majority in a completely degraded (Keighery 1994) condition. The remaining area (approximately 23 hectares) is in a degraded to good (Keighery 1994) condition.

The application area contains vegetation in completely degraded to excellent (Keighery 1994) condition, comprises a high biological diversity, regionally significant flora, contains significant fauna habitat and is therefore considered to be significant as a remnant.

The local area (10 kilometre radius) retains approximately 25 per cent and Heddle vegetation complex 'Yanga' retains less than the recommended 30 per cent of its Pre European vegetation. Therefore the vegetation proposed to be cleared is considered to be located within an extensively cleared landscape.

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

To offset residual impacts outlined above, the proponent will be required to contribute funds towards the purchase of 233 hectares of native vegetation within the Swan Coastal Plain to be secured in conservation estate.

	Pre-European (ha)	Current Extent Remaining (ha)	Remaining (%)	Extent in DPaW Managed Lands (%)
IBRA Bioregion				
Swan Coastal Plain	1,501,209	587,889	39	33
Shire				
City of Swan	104,435	45,657	44	29
Beard Vegetation Association in Bioregion				
949	209,983	121,216	58	55
Heddle Vegetation Complex in Bioregion				
Yanga Complex	26,176	5,163	20	2
Bassendean Complex - North	79,057	57,050	72	39

*Government of Western Australia (2013)

** Heddle (1998)

Methodology

References:

- Commonwealth of Australia (2001)
- Government of Western Australia (2013)
- Heddle et al (1998)
- Keighery (1994)

GIS Databases:

- Perth Metropolitan Area Central 15cm Orthomosaic - Landgate 2012
- Local Government Authorities - Landgate
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

Two minor perennial watercourses have been mapped within the application area and there is a small area subject to inundation along the northern boundary.

The Department of Water (DoW 2014) has advised that the proposed clearing is located over a minor waterway. The DoW does not support the clearing of waterways. Ideally a foreshore reserve should be proclaimed over the waterway and vested with the local government for conservation and protection.

360 Environmental (2014) has advised that the vegetation associated with the northern watercourse is completely degraded and therefore does not require further clearing. It is also advised that the vegetation associated with the mapped watercourse in the south of the application area is largely degraded to completely degraded (360 Environmental 2014). The applicant has committed to retaining vegetation associated with the southern watercourse as a foreshore reserve. The applicant will be required to maintain vegetation within 10 metres of the riparian vegetation of the identified watercourses.

A Multiple Use wetland is mapped within the area under application. A Conservation Category wetland and Resource Enhancement wetland are mapped approximately 50 metres north and west from the application area respectively.

The 50 metre buffers to the Conservation Category and Resource Enhancement wetlands will help mitigate impacts to these wetlands. The clearing proposed may indirectly impact the two wetlands through the spread of weeds and dieback. Weed and dieback management practices will help mitigate this risk.

Clearing is proposed within a Multiple Use wetland and therefore the proposed clearing is at variance to this principle.

The area mapped within the Multiple Use wetland is in completely degraded to degraded (Keighery 1994) condition and Multiple Use wetlands area described as wetlands with few important ecological attributes and functions remaining (Water and Rivers Commission 2001). Therefore the clearing as proposed is not likely to impact upon the environmental values of this wetland.

Methodology

References:

- 360 Environmental (2014)
- DoW (2014)
- Keighery (1994)
- Water and Rivers Commission (2001)

GIS Databases:

- Geomorphic Wetlands, (Mgt Categories), Swan Coastal Plain
- Hydrology, linear

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

Comments

Proposal may be at variance to this Principle

The application area is mapped within soil type Cb39: subdued dune-swale terrain: chief soils are leached sands. Associated are small areas of other sand soils (Northcote et al. 1960 - 1968).

Wind erosion is likely on the area proposed to be cleared due to soil types present and the extent of the proposed clearing. A progressive clearing plan with suitable wind erosion minimisation techniques may reduce the risk of wind erosion (Commissioner of Soil and Land Conservation 2014).

In addition water erosion may occur within parts of the application area due to the soil types present. Suitable preventative measures could be employed to reduce this risk (Commissioner of Soil and Land Conservation 2014).

The Commissioner of Soil and Land Conservation (2014) has advised that eutrophication is possible on the soil types present and is likely to increase with the clearing of significant native vegetation on this site. The majority of the application is on higher ground and unlikely to be inundated. However some areas are in lower slope positions which may promote eutrophication.

The property is located approximately 6.5 kilometres west of Ellen Brook, although there is no defined natural drainage lines through the application area, the hydraulic gradient is toward Ellen Brook. A minor tributary drainage line flows through the southern end of Lot 1808 into Ellen Brook.

Ellen Brook has been recognised as a major source of phosphate flowing in the Swan River. The eutrophication risk is offset by the separation distance from the area of proposed clearing and subsequently more intensive land use from the nearest drainage line and the length of drainage line between the application area and Ellen Brook.

The removal of native vegetation cover will expose the sandy soils to erosion. This risk is manageable by the timing of the clearing operation and careful management during the pasture establishment grazing phases. The water erosion risk identified can be similarly managed.

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

The applicant has advised that the clearing will be undertaken on an as needed basis to ensure cleared areas are not left exposed for significant periods. Any clearing will be immediately accompanied by sowing of grass for cattle or cropping (360 Environmental 2014).

Methodology **References:**
- 360 Environmental (2014)
- Commissioner of Soil and Land Conservation (2014)
- Northcote et al (1960 - 1968)

GIS Databases:
- Soils, statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments **Proposal may be at variance to this Principle**

The north western portion of the application area is located adjacent to the A Class Reserve, Gngangara-Moore River State Forest and Bush Forever site 399.

Bush Forever sites 298 and 13 are located approximately 25 metres north and 650 metres east of the application area respectively.

A Resource Enhancement wetland is located within Bush Forever site 399 approximately 50 metres west of the application area.

The clearing as proposed may directly impact the Gngangara-Moore River State Forest and Bush Forever site 399 by removing a protective buffer and therefore increasing edge effects within the adjacent conservation areas. A firebreak is located between the application area and the conservation areas located adjacent to Lot 5889 and Lot 2294 and therefore the proposed clearing will not occur immediately adjacent to the conservation areas. The clearing as proposed may indirectly impact the adjacent conservation areas through the spread of weeds and dieback. Weed and dieback management practices would help mitigate these risks. In addition the applicant has committed to fencing off the adjacent conservation areas to mitigate the identified impacts.

The application area is part of a larger remnant that forms a north to south linkage. The clearing as proposed may contribute to the degradation and disruption of this linkage. However the majority of vegetation within this linkage is protected within conservation areas and in better condition than the application area and therefore the clearing of native vegetation within the application area is not likely to have a significant impact on the environmental values of this ecological linkage.

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

Methodology **GIS Databases:**
- Bush Forever
- Parks and Wildlife, Tenure

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments **Proposal may be at variance to this Principle**

Two minor perennial watercourses have been mapped within the application area and there is a small area subject to inundation along the northern boundary.

DoW (2014) advised that the proposed clearing is located over a minor waterway. The proposed clearing is likely to deteriorate surface water quality through increased runoff and sedimentation. DoW (2014) has advised that it does not support the clearing of waterways and ideally a foreshore reserve should be proclaimed over the waterway and vested with the local government for conservation and protection.

360 Environmental (2014) has advised that the vegetation associated with the northern watercourse is completely degraded and therefore does not require further clearing. It is also advised that the vegetation associated with the mapped watercourse in the south of the application area is largely degraded to completely degraded (360 Environmental 2014). The applicant has committed to retaining vegetation associated with the southern watercourse as a foreshore reserve. The applicant will be required to maintain vegetation within 10 metres of the riparian vegetation of the identified watercourses.

A Multiple Use wetland is mapped within the area under application. A Conservation Category wetland and Resource Enhancement wetland are mapped approximately 50 metres north and west from the application area respectively.

Given the distance to the Conservation Category and Resource Enhancement wetlands the clearing as proposed is not likely to impact upon the water quality of these wetlands. Multiple use wetlands area described as wetlands with few important ecological attributes and functions remaining (Water and Rivers Commission 2001). Therefore the clearing as proposed is not likely to cause deterioration in the water quality for this wetland.

Groundwater salinity within the application area ranges between 500 - 1000 milligrams/Litre Total Dissolved Solids (TDS) which is considered to be marginal. The proposed clearing is not likely to have an impact on ground water salinity.

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

Methodology References:
- 360 Environmental (2014)
- DoW (2014)
- Keighery (1994)
- Water and Rivers Commission (2001)

GIS Databases:
- Geomorphic Wetlands, (Mgt Categories), Swan Coastal Plain
- Hydrography, linear

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

Comments **Proposal is not likely to be at variance to this Principle**
The Commissioner of Soil and Land Conservation (2014) has advised that the removal of native vegetation is not expected to contribute to flooding given the soil types present within the application area.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology References:
- Commissioner of Soil and Land Conservation (2014)

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The City of Swan (2014) has advised it does not support the proposal to clear native vegetation within the application for the following reasons:

- The area is mapped as Yanga Vegetation Complex of which only 12 per cent is remaining in the City of Swan and Bassendean Complex-North of which only 50 per cent is remaining in the City of Swan.
- The area contains environmentally sensitive areas.
- Contains a Bush Forever site.
- Abuts crown land to the north and west that is Bush Forever
- Contains Banksia Woodland, which is black cockatoo habitat and
- The soil is not suitable for agriculture.

The Department of Water (DoW 2014) has advised it is unable to support the clearing application. DoW (2014) has advised that the proposed clearing is located over a minor waterway. The DoW does not support the clearing of waterways and ideally a foreshore reserve should be proclaimed over the waterway and vested with the local government for conservation and protection.

The DoW (2014) requires a Biophysical Assessment to be undertaken in accordance with the DoW's Operational policy 4.3: Identifying and establishing waterways foreshore areas, to determine the appropriate buffer to the waterway, to ensure protection of stream bank stability and the retention of native vegetation. The DoW (2014) recommends the maintenance of a vegetated buffer adjacent to waterways to prevent erosion and to maintain habitat.

The Department of the Environment determined the proposed clearing to be a 'controlled action'.

The Department of the Environment has assessed the application in accordance with Part 9 of the Environment Protection and Biodiversity Conservation Act 1999 and made a decision to grant approval to ABN Developments Pty Ltd (EPBC 2014/7120).

The application area is located within the Swan River System Surface Water Area proclaimed under the Rights in Water and Irrigation Act 1914. A licence to interfere with bed and banks is required if interfering with a watercourse.

The North Swan Land Conservation District Committee (North Swan LCDC 2014) has advised they do not support the application. The North Swan LCDC (2014) raised a number of concerns including the soil type not being suitable for agricultural purposes, impacts on significant feeding habitat for the Carnaby's cockatoo and Baudin's cockatoos and impacts to water quality of the Ellen Brook and Swan River. These issues have been addressed in the above assessment in principle (b), (g) and (i).

The Ellen Brockman Integrated Catchment Group Inc (2014) has raised concerns related to land degradation, impacts to significant fauna habitat, surface water quality and conservation areas. These issues have been addressed in the above assessment in principle (b), (g) (h) and (i).

Two Aboriginal sites of significance are located within the application area. The applicant will be notified of their obligations under the Aboriginal Heritage Act 1972.

The applicant has advised the following management actions will be undertaken to minimise any direct or indirect impacts to native vegetation:

- Install or update fencing to ensure cattle cannot access the conservation reserves.
- Undertake clearing on as needed basis to ensure cleared areas are not left exposed for significant periods.
- Undertake clearing slowly towards the conservation areas to the north and west of the site to enable small fauna to relocate off the site.

To offset residual impacts outlined above, the proponent will be required to contribute funds towards the purchase of 233 hectares of native vegetation within the Swan Coastal Plain to be secured in conservation estate.

Methodology References:

- City of Swan (2014)
- DoW (2014)
- Ellen Brockman Integrated Catchment Group Inc (2014)
- North Swan Land Conservation District Committee (2014)

GIS Databases:

- Aboriginal Sites of Significance

4. References

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