GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose permit number:	CPS 3044/1
Permit holder:	City of Swan
Duration of permit:	07 June 2009 – 07 June 2014

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 road construction

2. Land on which clearing is to be done

Hepburn Avenue road reserve

3. Area of Clearing

The permit holder must not clear more than 5.7 hectares of native vegetation within the area shaded yellow on attached Plan 3044/1.

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.

5. Type of clearing authorised

This Permit authorises the permit holder to clear native vegetation for activities to the extent that the permit holder has the power to clear native vegetation for those activities under the *Local Government Act 1995* or any other written law.

6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the permit holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. 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:
(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.

8. Fauna management

(a) Prior to undertaking any clearing authorised under this Permit, the area(s) shall be inspected by a *fauna specialist* who shall identify habitat/*habitat tree(s)* suitable to be utilised by fauna species listed below:
   (i) Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*);
   (ii) Quenda (*Isoodon obesulus fusciventer*);
   (iii) Black Striped Snake (*Neelaps calamitous*).

(b) Prior to clearing, any habitat/*habitat tree(s)* identified by condition 8(a) shall be inspected by a *fauna specialist* for the presence of fauna listed in condition 8(a).

(c) Prior to clearing, the Permit Holder shall ensure that any fauna identified by condition 8(b) shall be removed and relocated by a *fauna clearing person*, in accordance with a licence issued by the Department.

9. Revegetation and Rehabilitation

(a) The Permit Holder shall 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.

(b) Within 12 months of the area no longer being required for road construction, the Permit Holder must *revegetate* and *rehabilitate* a minimum of 5.7 hectares within the area shaded red on attached Plan 3044/1 by:
   (i) laying the vegetative material and topsoil retained under condition 9a on the cleared area;
   (ii) deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area; and
   (iii) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.

(c) Within twelve months of undertaking *revegetation* and *rehabilitation* in accordance with condition 9(b) of this Permit, the Permit Holder must:
   (i) determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
   (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 9(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, the Permit Holder must undertake additional *planting* or *direct seeding* of native vegetation in accordance with the requirements of condition 9(b)(ii) and (iii) of this Permit.

PART III - RECORD KEEPING AND REPORTING

10. Records must be kept

(a) The Permit Holder must maintain the following records for activities done pursuant to this Permit in relation to the clearing of native vegetation authorised under this Permit:
   (i) the species composition, structure and density of the cleared area;
   (ii) 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;
   (iii) the date that the area was cleared; and
   (iv) the size of the area cleared (in hectares).

(b) In relation to fauna management pursuant to condition 8 of this Permit:
   (i) the location of each habitat/habitat tree identified 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 species of fauna reasonably likely to utilise, or that have been observed utilising, the habitat/habitat tree(s); and
   (iii) the location and date where relocated fauna was released, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings.

(c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 9 of this Permit:
   (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
   (ii) a description of the *revegetation* and *rehabilitation* activities undertaken; and
   (iii) the size of the areas *revegetated* and *rehabilitated* (in hectares) and
   (iv) the species composition, structure and density of the areas *revegetated* and *rehabilitated*.

11. Reporting

(a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 10 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 07 March 2014, 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:

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;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

fauna clearing person means a person who has obtained a licence from the *Department*, issued pursuant to the *Wildlife Conservation Regulations 1970* authorising them to take fauna;

fauna specialist means a person with training and specific work experience in fauna identification or faunal assemblage surveys of Western Australian fauna;

habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

local provenance means native vegetation seeds and propagating material from natural sources within 10 kilometres of the area cleared.

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

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

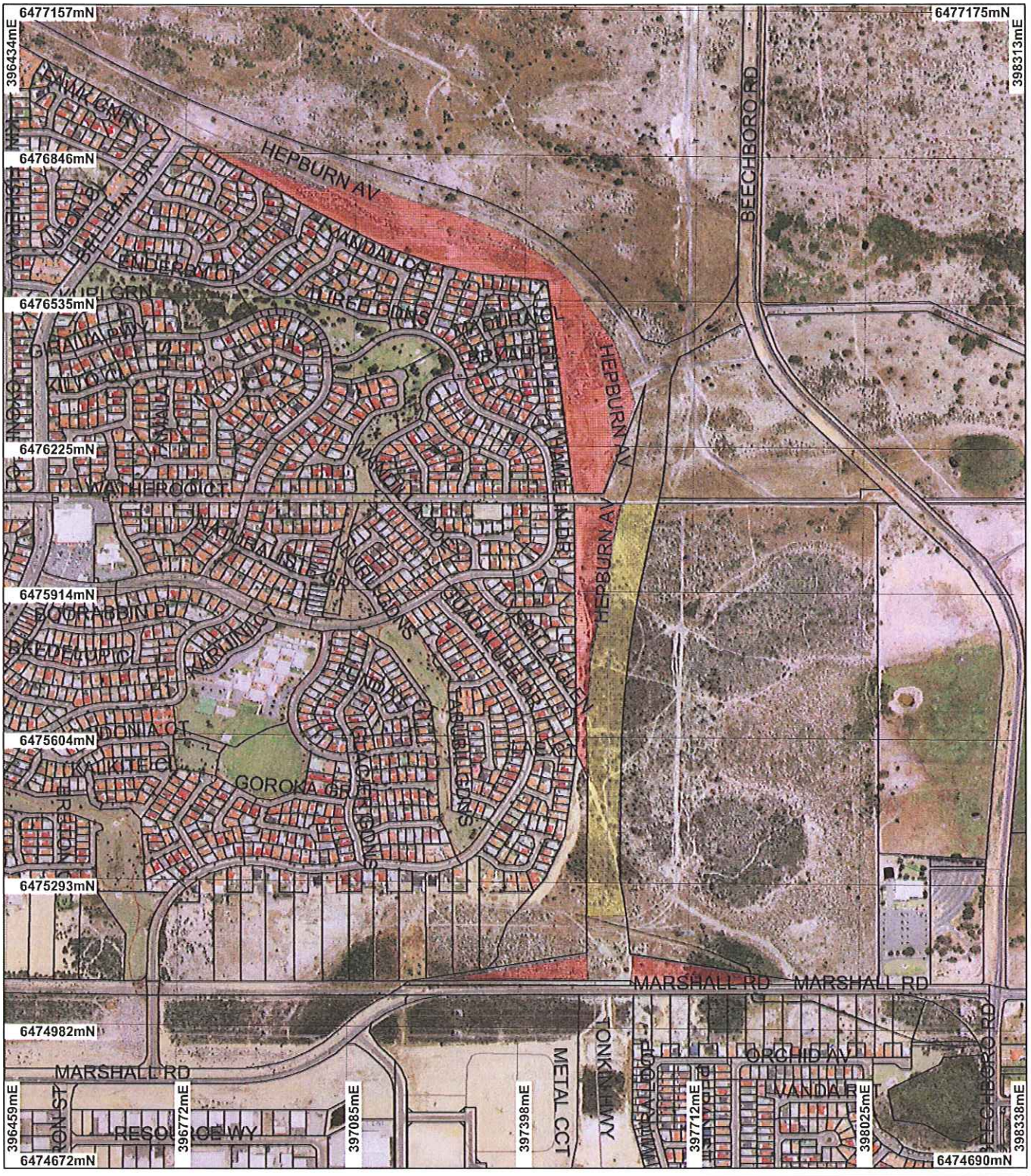
revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

07 May 2009

Plan 3044/1



LEGEND

Clearing Instruments

- Areas Subject to Conditions
- Areas Approved to Clear
- Road Centrelines

- Cadastre

Swan Coastal Plain North
20cm Orthomosaic - Landgate
2006

N

0 ~300 m

Scale 1:11000
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

K Faulkner ..... Date 7/5/07

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowleged by the agency acronym in the legend.

Department of Environment and Conservation

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3044/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: City of Swan

1.3. Property details

Property: ROAD RESERVE (BALLAJURA 6066)

Local Government Area: City Of Swan

Colloquial name: Hepburn Avenue - Road Reserve

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
5.7		Mechanical Removal	Road construction or maintenance

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
Heddle Vegetation Complex: Southern River Complex - Open woodland of E. calophylla - E. marginata - Banksia species with fringing woodland of E. rudis - M. rhaphiophylla along creek beds. Beard Vegetation Association 1001: Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina (Shepherd 2007, SAC Bio Datasets 08/04/2009).	The proposal is to clear 5.7 ha within Hepburn Ave road reserve for the purpose of road construction. The vegetation under application comprises of four communities including: Open woodland of Corymbia calophylla, Melaleuca preissiana and Nuytsia floribunda over thicket of xanthorrhoea preissii. This area is in a good to very good condition (~1ha). Low woodland of Eucalyptus todtiana, Banksia attenuata and Banksia menziesii over mixed heath including Xanthorrhoea preissii, Stirlingia latifolia, Jacksonia floribunda, Macrozamia riedlei over Alexgeorgea nitens in a good to very good condition (~2.7 ha). Low forest of Banksia attenuata and Banksia menziesii over health land dominated by Eremaea pauciflora and Xanthorrhoea preissii and including the species Hakea spp., Dasypogon bromeliifolius, Verticordia spp., Hibbertia spp., Mesomelaena spp., Dryandra sessilis, Acacia	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation clearing description based on a site Vegetation survey under taken during spring and summer of 2008 (Bennett Environmental Consulting 2008) and site visit conducted by DEC officers on 25 March 2008.

pulchella, Jacksonia floribunda and Patersonia occidentalis in a very good to excellent condition (~1 ha).

Low woodland of Melaleuca preissiana over low dense health of Hypocalymma angustifolium in a very good condition (~1ha).

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 vegetation under application comprises of four communities including, Open woodland of Corymbia calophylla, Melaleuca preissiana and Nuytsia floribunda over thicket of xanthorrhoea preissii in a good to very good condition (~1ha), Low woodland of Eucalyptus todtiana, Banksia attenuata and Banksia menziesii over mixed heath including Xanthorrhoea preissii, Stirlingia latifolia, Jacksonia floribunda, Macrozamia riedlei over Alexgeorgea nitens in a good to very good condition (~2.7 ha), Low forest of Banksia attenuata and Banksia menziesii over health land dominated by Eremaea pauciflora and Xanthorrhoea preissii and including the species Hakea spp., Dasypogon bromeliifolius, Verticordia spp., Hibbertia spp., Mesomelaena spp., Dryandra sessilis, Acacia pulchella, Jacksonia floribunda and Patersonia occidentalis in a very good to excellent condition (~1 ha) and Low woodland of Melaleuca preissiana over low dense health of Hypocalymma angustifolium in a very good condition (~1ha) (DEC 2008a).

A flora and vegetation survey identified 88 native and 18 exotic flora species within the area under application during September and October 2008 (Bennett Environmental Consulting 2008). No rare flora were recoded during the survey.

The flora survey states that the Priority Ecological Community (PEC) Floristic Community Type (FCT): 23b: Northern Banksia attenuata - Banksia. Menziesii woodlands occurs within the central portion of the area under application (1 ha) in a very good condition (Bennett Environmental Consulting 2008). The PEC 23b mostly occurs in the Bassendean system on the northern Swan Costal Plain between Jandabup and Gingin. Its current extent is not known however it is considered quite rare with the closest known location to the area under application being 8.3 km (2009c).

In addition, the area provides foraging and nesting habitat for conservation significant fauna species including the Carnaby's Black Cockatoo (Calyptorhynchus latirostris, the Quenda (Isoodon obesulus fusciventer) and the Black-striped Snake (Neelaps calamitous).

Given that the area under application may contain a portion of a PEC, contains a high number of flora species, contains wetland dependent vegetation, provides habitat for conservation significant fauna and consists of four different vegetation community types it is considered likely for this proposed clearing to be at variance to this Principle. A revegetation condition will be placed on the permit to offset the lost of biodiversity.

Methodology

References
- Bennett Environmental Consulting (2008)
- DEC (2008a)
- DEC (2009c)

GIS Databases
-SAC Bio Datasets 09/04/2009

(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

Within the local area (~ 5 km radius) 7 species of conservation significant fauna have been recorded including the Quenda, Carnaby?s Black Cockatoo, Western Brush Wallaby, Water Rat and the Peregrine Falcon.

The majority of the vegetation under application is in very good to excellent condition and includes an understorey that would provide suitable habitat for ground-dwelling fauna such as snakes and lizards, the conservation significant Quenda (Isoodon obesulus fusciventer) and the Black-striped snake (Neelaps calamitous). The wetland area is also considered to provide suitable habitat for the Quenda, which prefers habitat with dense understorey vegetation, particularly around swamps and along watercourses (DEC 2007).

The Carnaby's Black-Cockatoo (Calyptorhynchus latirostris) is known to feed on a large variety of plants including Proteaceous species (e.g. banksia, dryandra and grevillea) and marri nuts (Corymbia calophylla) and

a range of introduced species, (Shah 2006). The area under application contains Banksia woodland in very good to excellent condition and marri trees and therefore it is likely for this area to provide feeding habitat for Carnaby?s Black Cockatoo (Bennet Environmental Consulting 2008, DEC 2008a).

Given the relatively large area to be cleared (5.7 ha), the very good condition of the vegetation and the potential for the vegetation under application to provide suitable habitat for a range of fauna species, including species of conservation significance, it is considered that the proposed clearing is at variance to this Principle. A revegetation condition will be placed on the permit to offset the lost of fauna habitat.

Methodology References
-Bennett Environmental Consulting (2008)
-DEC (2007)
-DEC (2008a)
-Shah (2006)
GIS Databases
-SAC Bio Datasets 09/04/2009

(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**
There are two rare flora species, Caladenia huegelli and Epiblema grandiflorum var. cyaneum recorded in the local area (~ 5 km radius) being 1.5km southwest and 700m east of the area under application.

Caladenia huegelli is a tuberous perennial herb that grows between 0.25 to 0.6 m high and has green, cream and red flowers between September and October. It grows in grey or brown sand and clay loam (Western Australian Herbarium 1998-).

Epiblema grandiflorum var. cyanea is a tuberous perennial herb that grows between 0.25-0.8 m high and has blue flowers during late October to November. It grows in winter-wet swampy areas (DEC, 2009; Western Australian Herbarium 1998-). It is known from only one location despite intensive surveys and is known as a colour morph of the more common Epiblema grandiflorum, which is more commonly found in the Manjimup to Walpole region (DEC, 2009).

The vegetation under application comprises a mixture of Banksia woodland and wetland areas located on Bassendean sands (Northcote et al. 1960-68). A vegetation survey under taken in September and October 2008 did not identify any rare flora within the area under application (Bennett Environmental Consulting 2008). Therefore, it is considered not likely for Caladenia huegelli or Epiblema grandiflorum var. cyaneum to occur within the area under application. Therefore, the proposed clearing may be at variance to this Principle.

Methodology References
-Bennett Environmental Consulting (2008)
- DEC (2009)
-Northcote et al. (1960-68)
-Western Australian Herbarium (1998-)
GIS Database
-SAC Bio Datasets 09/04/2009

(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**
Seven recordings of the Threatened Ecological Community (TEC) 20a: Banksia attenuata woodlands over species rich dense shrublands was recorded in the local area (~5km radius). The nearest occurrence is 3.5 km southwest of the area under application.

The area under application contains Banksia woodlands in a very good to excellent condition (DEC 2008a).

A flora and vegetation survey undertaken during September and October of 2008 identified no TECs occurring within the area under application, however a Priority Ecological Community, Floristic Community Type (FCT) 23b: Northern Banksia attenuata and Banksia menziesii woodlands occur within the area under application (Bennett Environmental Consulting 2008).

Therefore, it is not considered likely for the proposed clearing to be at variance to this Principle.

Methodology References:
- Bennett Environmental Consulting (2008)
- DEC (2008a)
GIS Databases

-SAC Databases 9/04/2009

(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 not likely to be at variance to this Principle

Heddle et al. (1980) defines the vegetation under application as consisting off the Southern River Complex: Open Woodland, of which there is 19.8% of pre-European extent remaining (EPA 2006). The vegetation under application is also described as Beard vegetation association 1001: Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina of which there is 25.34% of pre-European extent remaining (Shepherd 2007).

The area under application is located within the City of Swan, within which there is 52.7% of pre-European vegetation extent remaining; however there is approximately 33.8% of pre-European vegetation remaining in the local area (~5km radius), which has been extensively cleared for agriculture and urban development.

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present Pre-European settlement (Commonwealth of Australia, 2001).

Although the vegetation complexes identified on site have less than the recommended 30% threshold remaining the applied area is considered to be within a constrained area. The EPA (2006a) recognises the Perth Metropolitan Region as a 'constrained area', providing for the variation of the minimum % of vegetation complexes remaining to 10% of the pre-European extent.

In addition, the area under application is not a significant remnant in the local area due to its relatively small linear size and shape (5.7 ha) and is connected to other bushland remnant to the east and north. Therefore, the proposal is not considered likely to be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)
Swan Coastal Plain**	1,501,208	583,141	38.8
City of Swan*	103,944	54,792	52.7
Local Area (~5km radius)	7,850	~2661	~33.8
Heddle vegetation complex***			
Southern River Complex	57,979	11,501	19.8
Beard vegetation association**			
1001	57,410	14,546	25.3

* (Shepherd et al. 2001)
** (Shepherd 2007)
***(EPA, 2006a)

Methodology

References
-Commonwealth of Australia (2001)
-EPA (2006a)
-Heddle et al. (1980)
-Shepherd et al. (2001)
-Shepherd (2007)
GIS Databases:
-Heddle Vegetation Complexes
-NLWRA, Current Extent of Native Vegetation
-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

There are numerous wetlands located in the local area (5km radius) of the area under application. Approximately 1.6ha of the area under application (southern portion) is mapped as a Resource Enhancement Wetland (REW) and 0.1 ha in the northern corner of the area under application is mapped as a Multiple Use Wetland (MUW). The closest watercourse is Bennett Brook located 2.21 km east of the area under application.

A MUW has few remaining important wetland attributes and functions. The protection of these wetlands is the lowest priority (DEC 2008c). However, the vegetation survey (Bennett Environmental Consulting 2008) identified wetland dependent vegetation occurring within this area in a good to very good condition.

Resource Enhancement Wetland (REW) are considered priority wetlands which may have been partially

modified but still retain attributes and functions, with potential for restoration towards Conservation Category. While they are not classed as critical assets REWs should be retained and management where possible (DEC 2008c).

The vegetation under application includes Melaleuca preissiana and sedges, which are species considered to be wetland dependent (Bennett Environmental Consulting 2008).

It is considered that the removal of vegetation from these wetlands may alter their hydrology and impact on the wetland processes and functions. DEC (2008d) advise that the proposed clearing itself is not likely to significantly impact the wetlands within and adjacent to the area under application if the existing landform is retained.

Given that the vegetation under application is located within mapped Resource Enhancement wetlands, which are a priority for restoration and protection, and that the vegetation under application includes wetland dependent vegetation and also occurs within a wetland buffer, it is considered likely for the proposed clearing to be at variance to this Principle. A revegetation condition will be placed on the permit to offset the direct loss of wetland dependent vegetation.

Methodology References
-Bennett Environmental Consulting (2008)
-DEC (2008c)
-DEC (2008d)
GIS Databases
-Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
-Hydrography, linear

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

Comments **Proposal is not likely to be at variance to this Principle**
The soils within the area under application are part of the Bassendean Dune System and comprise leached sands (Northcote et al. 1960-68), which are considered to have a high risk of wind erosion. It is considered that the removal of vegetation from site will further expose the soils and may result in wind erosion Department of Agriculture (2005).

There is a low salinity risk within the applied area except for portion to the centre of the applied area which has a high salinity risk (0.7 ha). Given this relatively small area, it is not considered likely that the proposed clearing would result in an increase in salinity.

The high wind erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation. However, given the thin, linear nature of the proposed clearing and the sealing of exposed surfaces, the risk of wind erosion will be reduced. Therefore, it is not considered likely for the proposed clearing to cause appreciable land degradation.

Methodology References
-Department of Agriculture (2005)
-Northcote et al. (1960-68)
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 is not likely to be at variance to this Principle**
The closest conservation area to the area under application is an unnamed Nature Reserve 600 m to the southeast and Bush Forever site 304 located 500 m east of the area under application.

Given the distance to these conservation areas and that the area under application is not connected to these areas through continuous vegetation, it is considered not likely for the proposed clearing to be at variance to this Principle.

Methodology GIS Databases
- Bushforever
- DEC Managed Lands and Waters

(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

There are numerous wetlands located in the local area (5km radius) of the area under application. Approximately 1.6ha of the area under application (southern portion) is mapped as a Resource Enhancement Wetland (REW) and 0.1 ha in the northern corner of the area under application is mapped as a Multiple Use Wetland (MUW). The closest watercourse is Bennett Brook located 2.21 km east of the area under application.

The majority of the area under application has low salinity risk, however there is a high risk of salinity in the wetland areas (0.7 ha). However, given the relatively small area that has a high risk it is not considered likely for the proposed clearing to cause salinity of groundwater in the local area.

Given that 1.7 ha of vegetation within the area under application is within a resource enhancement wetland, it may be considered that the proposed clearing may result in deterioration of the quality of surface water of this wetland. Therefore, it may be considered likely for the proposed clearing to be at variance to this Principle.

Methodology

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

(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 may be at variance to this Principle

There are numerous wetlands located in the local area (5km radius) of the area under application. Approximately 1.6ha of the area under application (southern portion) is mapped as a Resource Enhancement Wetland (REW) and 0.1 ha in the northern corner of the area under application is mapped as a Multiple Use Wetland (MUW). The closest watercourse is Bennett Brook located 2.21 km east of the area under application.

The 1.6 ha of wetland vegetation in the southern portion of the area under application is within a resource enhancement wetland that has only ~ 50% of vegetation remaining (26 ha out of 52 ha). The further removal of 1.6 ha of the remaining vegetation may cause or exacerbate the incidence or intensity of flooding. Therefore, it is may be considered likely for the Proposed Clearing to be at variance to this Principle.

Methodology

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

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

Comments

The proposal is for the southern portion of Hepburn Avenue extension from Alexander Drive to Marshall Road. The clearing permits for the rest of Hepburn Avenue extension was granted in July 2008 (CPS 2371/1) and January 09 (1914/1).

The area under application includes one Permanent Aboriginal Sites of Significance. In order to ensure compliance with the provisions of the Aboriginal Heritage Act the City of Swan commissioned ethnographic and archaeological surveys of the project area in 2000. As a result, the Aboriginal people have given their approval of the project on the grounds that it will not disturb any sites or areas of Aboriginal significance.

The majority of the road reserve under application (4.9 ha) has been identified as 'Primary regional road' with the northern portion (0.8 ha) being zoned Rural under the Metropolitan Region Scheme.

A direct interest Submission (2009) stated that the southern section of the area under application crosses a major drain and degraded wetlands with reasonable condition vegetation. The drain leads to the Swan River and it is recommended that a nutrient stripping structure is incorporated into the road design at construction stage. It is also recommended that best practise management is exercised for roadside vegetation during construction such as utilising seed collected from onsite. It is also recommended that all dieback free vegetation which is to be removed should be mulched and used for rehabilitation of the site.

DEC (2008d) considers that the proposed road construction in not likely to significantly impact the wetland areas within and adjacent to the area under application if the existing landform is retained (e.g. no evacuation or fill).

A portion of the area under application is located within a Priority 1 classification area. These areas are 'managed to ensure that there is no degradation of the drinking water source by preventing the development of potentially harmful activities in these areas' (Department of Environment 2004). Major transport infrastructure (ie. roads) is considered to be an 'incompatible' land use in Priority 1 areas. The Department of Water recognise that there may be special circumstances in which 'incompatible' land uses are approved. In this case 'project

proponents must demonstrate an overriding community benefit and that the land use will not increase the risk of contamination to the PDWSA' (Department of Environment 2004).

A portion of the area under application is also located within the Environmental Protection (Gnangara Mound Crown Land) Policy 1992 which states that 'person shall not clear, destroy or remove any vegetation on or from the policy area unless the person is authorised under the Act to do so and is acting in accordance with that authorisation'. No authorisation exists for clearing in accordance with section 51C of the Environmental Protection Act 1986 (EP Act). Accordingly, DEC formally referred this application to the Environmental Protection Authority. The EPA advised that they have previously decided to 'not assess' the proposal in 2001 and provided the following advice:

o Retention of as much vegetation as possible and revegetation, as set out in the Management plan (Not provided to the DEC)

o Maintenance of fencing adjacent to remnant vegetation to prevent movement of fauna onto the road

o Development of a wetland management plan to improve the ecological and hydrological values of the remaining wetlands, including a drainage and nutrient management plan for the protection of groundwater quality.

Methodology

References

-DEC (2008d)

-Department of Environment (2004)

-EPA (2006b)

-Submission (2009)

GIS Databases

-Metropolitian Regional Scheme Zones

4. Assessor's comments

Comment

The assessable criteria have been addressed and the clearing as proposed is at variance to Principles (a), (b), (f) and (g) and may be at variance to Principles (e), (i) and (j).

5. References

Bennett Environmental Consulting (2008) Flora and Vegetation of Remnant Bushland Proposed Extension Hepburn Avenue, Prepared for City of Swan. TRIM Ref DOC72014.

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6. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)