Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 922/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: LW Spiers

1.3. Property details

Property: LOT 6 ON DIAGRAM 26989 (Lot No. 6 PIPIDINNY EGLINTON 6034)

Local Government Area: City Of Wanneroo

Colloquial name:

1.4. Application

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

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
Beard Vegetation Association 1948: Low woodland; banksia on low sandhills, swamps in swales with tea-tree and paperbark. (Shepherd et al. 2001) Heddle Vegetation Complexes: Cottesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on Limestone outcrops. Herdsman Complex: Sedgelands and fringing woodland of E. rudis - Melaleuca species. (Heddle et al. 1980)	The proposal includes the clearing of 35ha to supplement cattle grazing operations within the existing cattle property (~162 ha). Vegetation under application is segmented into four distinct areas, and described by 360 Environmental Pty Ltd (2007) as: Area A (2 ha), zoned rural: The northern most area under application. This area is a grazing paddock that has been largely cleared of understorey species and ranges in condition between degraded and completely degraded. The northern portion of the area consists of pasture grassland / herbland, with areas of Eucalyptus gomphocephala open forest over pasture and Acacia saligna low woodland over pasture. The southern portion of this area contains a degraded Banksia menziesii, Eucalyptus todtiana, Banksia attenuata low open woodland, with scattered understorey remnants.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on a vegetation survey conducted by 360 Environmental Pty Ltd during November 2006 (TRIM Ref: DOC18811). Condition ratings of all areas have been converted from Trudgen (1988), used by 360 Environmental Pty Ltd, to Keighery (1994) as described within Bush Forever, throughout the report (Government of Western Australia, 2000).
Beard Vegetation Association 1948: Low woodland; banksia on low sandhills,	Area B (6 ha, zoned urban): The north-western portion of vegetation in the subject	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive	

swamps in swales with tea-tree and paperbark. (Shepherd et al. 2001) Heddle Vegetation Complexes: Cottesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on Limestone outcrops. (Heddle et al. 1980)	property. Vegetation is in Excellent to Pristine condition with some scattered weeds. Vegetation within this area is predominantly identified as Banksia menziesii, Eucalyptus todtiana, Banksia attenuata low open woodland to low woodland over Hakea ruscifolia scattered tall shrubs over Allocasuarina humilis shrubland over Hibbertia hypericoides low shrubland over Mesomelaena pseudostygia, (Lepidosperma pubisquameum, Desmocladus asper) open sedgeland. The vegetation community transitions on the western portion of this area to Dryandra sessilis var. cygnorum, (Hakea trifurcata) open scrub over Xanthorrhoea preissii scattered shrubs over Hibbertia hypericoides, (Calothamnus quadrifidus, Acacia pulchella var. glaberrima) low open heath over Lepidosperma pubisquameum, Mesomelaena pseudostygia very open sedgeland.	(Keighery 1994)
Beard Vegetation Association 1948: Low woodland; banksia on low sandhills, swamps in swales with tea-tree and paperbark. (Shepherd et al. 2001) Heddle Vegetation Complexes: Cottesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on Limestone outcrops. (Heddle et al. 1980)	Area C (14 ha, zoned urban): The area is the south-western portion of the subject property. While this area has been previously cleared in strips, vegetation between cleared strips is generally in Excellent condition, and can be divided into three main communities: - Banksia menziesii, Banksia attenuata low open woodland over Hakea trifurcata, Calothamnus quadrifidus high shrubland - Banksia menziesii, Banksia attenuata low open woodland to low woodland over Hakea ruscifolia scattered tall shrubs over Allocasuarina humilis shrublands over Hibbertia hypericoides low shrubland over Mesomelaena pseudostygia, (Lepidosperma pubisquameum, Desmocladus asper) open sedgeland. - Banksia menziesii, (Banksia attenuata) low open woodland over Calothamnus quadrifidus (open shrubland) to open heath over Acacia pulchella var. glaberrima, Hibbertia hypericoides, Jacksonia calcicola low open	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)

	shrubland over Mesomelaena pseudostygia scattered sedges.	
Beard Vegetation Association 1948: Low woodland; banksia on low sandhills, swamps in swales with tea-tree and paperbark. (Shepherd et al. 2001) Heddle Vegetation Complexes: Cottesloe Complex - Central and South: Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - E. calophylla; closed heath on Limestone outcrops. (Heddle et al. 1980)	Area D (14 ha, zoned rural): This area is in the eastern portion of the subject property. Vegetation within the parcel has signs of cattle grazing in the bush, however weed cover is low and the area has a high species richness which suggests a Excellent condition. Vegetation can primarily be classified into three communities: - Dryandra sessilis var. cygnorum, (Hakea trifurcata) open to closed scrub over Melaleuca systena, Calothamnus quadrifidus, Petrophile axillaris shrubland over Hibbertia hypericoides low shrubland over Lepidosperma pubisquameum, Mesomelaena pseudostygia very open sedgeland. - Jacksonia sternbergiana open scrub over Acacia pulchella var. glaberrima, Xanthorrhoea preissii open shrubland over Hibbertia hypericoides, Calothamnus quadrifidus low open shrubland over Mesomelaena pseudostygia, Desmocladus asper very open sedgeland with Briza maxima open annual grassland. - Banksia menziesii, Eucalyptus todtiana, Banksia attenuata low open woodland to low woodland over Hakea ruscifolia scattered tall shrubs over Allocasuarina humilis shrubland over Hibbertia hypericoides low shrubland over Mesomelaena pseudostygia, (Lepidosperma pubisquameum, Desmocladus asper) open sedgeland. In addition, portions of this parcel are mapped as containing Eucalyptus gomphocephala (tuart) woodland over Dryandra sessilis var. cygnorum, Melaleuca huegelii subsp. huegelii scattered tall shrubs.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)

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 may be at variance to this Principle

A vegetation survey of the applied areas, undertaken by 360 Environmental (2006), identified vegetation as degraded in Area A and being highly diverse and primarily in excellent condition in the remaining areas with Areas B and C consisting primarily of Banksia menziesii and Banksia attenuata woodlands, and Area D having extensive areas of Banksia menziesii / Banksia attenuata woodland and Dryandra sessilis / Hakea trifurcata scrubland, in addition to areas mapped as containing Eucalyptus gomphocephala (tuart) woodland over Dryandra sessilis var. cygnorum, Melaleuca huegelii subsp. Huegelii, and scattered tall shrubs.

This vegetation survey identified 186 species at the time of survey completion (360 Environmental 2006), although it is noted that due to the timing of the survey, it is likely that only 85% to 90% of the species were observable. Of the applied Areas, Area D was considered to have a high species richness and low weed cover and recognised as having high conservation value.

Overall, given the species richness of the applied area and the excellent condition of the majority of the vegetation, it is considered that the proposed clearing may be at variance to this Principle.

Methodology

References:
- 360 Environmental (2006) (TRIM Ref: DOC18811)

GIS Databases:
- Swan Coastal Plain North 20cm Orthomosaic - DLI06

(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 not likely to be at variance to this Principle

Vegetation with in the area under application is recognised as being highly diverse and in primarily excellent condition, with Areas B and C consisting primarily of Banksia menziesii and Banksia attenuata woodlands, and Area 4 having extensive areas of Banksia menziesii / Banksia attenuata woodland and Dryandra sessilis / Hakea trifurcata scrubland, in addition to areas mapped as containing Eucalyptus gomphocephala (tuart) woodland over Dryandra sessilis var. cygnorum, Melaleuca huegelii subsp. huegelii and scattered tall shrubs.

The Specially Protected Carnaby's Black-Cockatoo (Calyptorhynchus latirostris), Crystal Cave Crangonyctoid (Hurleya sp.), the South-west Carpet Python (Morelia spilota imbricata), and the Priority Listed Quenda (Isoodon obesulus fusciventer) are known to occur with the local area, defined as a 5km radius of the subject property (BCS 2006). BCS (2006) recognise that vegetation within Areas B and D appears to have regenerated significantly since historical clearing activities, and as such now provides suitable habitat for small fauna species.

Furthermore, during an inspection of the nearby Beonaddy Swamp (approximately 40m north-west of Area A) by BSC representatives, several flocks of Carnaby's Black Cockatoos were observed, and numerous calls were heard in close proximity to the applied areas (BCS 2006).

Carnaby's Black Cockatoo is listed as a Schedule 1 species under the Wildlife Conservation (Specially Protected Fauna) Notice 2006. Fauna listed as Schedule 1 fauna are rare or likely to become extinct and are declared to be fauna in need of special protection. This species is also listed as Endangered under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 as a matter of national environmental significance.

BCS (2006) advised that vegetation under application may provide feeding habitat for Carnaby's Black-Cockatoo if the vegetation contains species such as Eucalyptus gomphocephala and Banksia spp. In addition to these species, it is also noted that Acacia saligna and Dryandra sessilis are also utilised by Carnaby's as a food source (Birds Australia WA 2006). 360 Environmental Pty Ltd (2006) identified these species of flora within all of the areas under application, with Dryandra sessilis and Banksia species identified as major components of the mapped vegetation communities, in addition to areas containing Eucalyptus gomphocephala (tuart).

Extent of vegetation remaining on the property under application if clearing is approved will be approximately 32.7% plus scattered shrubs and trees. Additionally a corridor of 80 to 100m will remain on the eastern side of the property.

Given the area of vegetation within nearby National Parks, State Forest, Bush Forever sites and other vegetated, privately-owned lands, and the likelihood that the habitat and food source provided by the vegetation within the application area will occur within some of those areas, the significance of the habitat provided by the north western, northern, and south western areas under application is reduced (BCS 2006). In contrast, the eastern area under application may contribute towards maintaining an ecological linkage between Yanchep National Park and Bush Forever Site 130. BCS have indicated that there is potential for this impact to be mitigated by the negotiated retention of strategically located pockets of vegetation. If such a strategy is employed, the Biodiversity Coordination Section have confirmed that the proposal is not likely to be at variance

to this Principle.

Methodology Reference:
- 360 Environmental Pty Ltd (2006) (TRIM Ref: DOC18811)
- BCS (2006) (TRIM Ref: DOC5451)
- Birds Australia WA (2006)

GIS Databases:
- Swan Coastal Plain North 20cm Orthomosaic - DLI06
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 1/07/05

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

Comments **Proposal is not at variance to this Principle**

BCS (2006) advised that there is a cluster of the Declared Rare species Eucalyptus argutifolia situated approximately 7 kilometres south-east of the application area, occurring within the same vegetation community and similar soil conditions as those present on site.

A vegetation survey undertaken by 360 Environmental Pty Ltd (2006), in November 2006, did not identify any Declared Rare or Priority species within the areas under application.

Methodology References:
- 360 Environmental Pty Ltd (2006) (TRIM Ref: DOC18811)
- BCS (2006) (TRIM Ref: DOC5451)

(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**

BCS (2006) advise that there are nine occurrences of three Threatened Ecological Communities (TEC) within the local area. These include one occurrence of Floristic Community Type (FCT) 19b 'Woodlands over sedgelands in Holocene dune swales of the southern Swan Coastal Plain', five occurrences of 'Caves SCP01', described as 'Aquatic Root Mat Community Number 1 on the Swan Coastal Plain', and three occurrences of FCT 26a 'Melaleuca huegelii - Melaleuca systena shrublands on limestone ridges'. Of these TEC, both 'FCT 19b' and 'Caves SCP01' are listed as threatened under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

A Floristic Community Analysis undertaken by 360 Environment Pty Ltd (2006), identified vegetation within the areas under application as correlating most strongly with vegetation from FCT 24 'Northern Spearwood shrublands and woodlands' and FCT 28 'Spearwood Banksia attenuata or Banksia attenuata - Eucalyptus woodlands'. Neither of these FCT are identified as TEC.

In addition, impacts associated with vegetation clearing, and subsequent altered hydrology, on the known 'Caves SCP01' TEC is not considered likely due to the south-westerly flow of groundwater.

Further advice from DEC (2007), Species and Communities Branch, indicates that the Karst system extends thoughout the general area and their is potential for caves to occur and therefore it is possible that occurance of the threatened root mat community may be present. Further it is not expected clearing will have an adverse effect on the Auatic Root Mat community

Given the proposed clearing is not expected to impact on Auatic Root Mat communities within the area the area under application is not likely to be necessary for the maintenance of a threatened ecological comminity.

Methodology References:
- 360 Environmental Pty Ltd (2006)(TRIM Ref: DOC18811)
- BCS (2006) (TRIM Ref: DOC5451)
- DEC (2007)
- Yanchep Caves Recovery Team (2007) (TRIM Ref: DOC27742)

GIS Databases:
- Groundwater Contours, Minimum - DOW
- SAC Bio data 04072007

(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 representing both 'Cottesloe Complex - Central and South' and 'Herdsman Complex', which are mapped as having 41.1% and 34.5% of their pre-European extent remaining respectively. In addition, Shepherd et al. (2001) vegetation mapping identifies the vegetation association

as 1948, having 25.6% representation of the pre-Europeans extent remaining.

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment 2002).

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Conservation Status****	% In reserves / DEC managed land
IBRA Bioregion					
- Swan Coastal Plain **	1,501,456	571,758	38.1	Depleted	
City of Wanneroo *	78,809	45,361	57.6	Least Concern	
Beard Vegetation Association:					
- 1948*	132,958	34,012	25.6	Vulnerable	24.4
Heddle Vegetation Complexes:					
- Cottesloe Complex - Central and South ***	44,995	18,474	41.1	Least Concern	8.8
- Herdsman Complex ***	8,309	2,875	34.5	Depleted	11.5

* (Shepherd et al. 2001)
** (Shepherd 2006)
*** (EPA 2006)
**** (Department of Natural Resources and Environment, 2002)

Given the high percentage of vegetation remaining in the local government boundary, approximately 32.7% remaining on the property under application if clearing is approved and the varying condition of vegetation (completely degraded to excellent) the proposed clearing is not likely to be a significant remnant of vegetation within an extensively cleared area.

Methodology

References:
- 360 Environmental Pty Ltd (2006) (TRIM Ref: DOC18811)
- EPA (2006)
- Shepherd et al. (2001)
- Shepherd (2006)
- Department of Natural Resources and Environment (2002)
- Heddle et al. (1980)

GIS Databases:
- Heddle vegetation complexes - DEP 21/06/95
- Pre-European vegetation - DA 01/01
- Swan Coastal Plain North 20cm Orthomosaic - DLI 06

(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 not likely to be at variance to this Principle

The local area surrounding the areas of vegetation under application contains multiple examples of wetland systems, with the closest being Beonaddy Swamp, a Resource Enhancement Wetland and EPP Lake, located approximately 40m north-west of Area A. In addition to this, Pippidinny Swamp, a Conservation Category Wetland and EPP Lake is located approximately 850m north-west of the applied areas.

Resource Enhancement Wetlands are identified as priority wetlands, with the ultimate objective being management, restoration, and protection towards improving their conservation value (Water and Rivers Commission 2001). Wetlands buffers are therefore recommended, with the minimum distance being 50 metres from the outside edge of wetland dependent vegetation.

Despite this current categorisation level and area being within the recommended buffer distance, the vegetation under application within closest proximity to this wetland is identified as being in predominantly Completely Degraded condition and representing an Acacia saligna low woodland over pasture grass and herbland. It is considered unlikely that the proposed clearing will appreciably impact on the functions of nearby wetland systems.

Furthermore, the remaining areas of vegetation are not considered to contain vegetation growing in association with a watercourse or wetland; with areas predominantly representing Banksia woodland (Areas B and C) and Banksia woodland / Dryandra sessilis closed scrub (Area D) (360 Environmental Pty Ltd 2006).

Methodology

Reference:
- 360 Environmental Pty Ltd (2006) (TRIM Ref: DOC18811)
- Water and Rivers Commission (2001)

GIS Databases:

- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
- EPP, Lakes - DEP 1/12/92

(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

DAFWA (2006) advise that the property under application is mapped as containing three main soil landscape units; being:

- Karrakatta Sand Yellow Phase, described as undulating dunes on Aeolian sand over limestone, with having yellow deep sands,
- Karrakatta Shallow soils Phase, described as rocky low hills and ridges on limestone, having bare rock, yellow/brown shallow sands and stony soils; and
- Spearwood Sand Phase, described as undulating dunes with rocky crests on Aeolian sand over limestone, having brown deep sands and yellow deep sands.

Soils within the applied area were confirmed to comply with mapped units, consisting of deep sands with smaller areas of pale deep sands (DAFWA 2006). DAFWA (2006) has suggested that due to the sandy soils and the undulating landscape there is a risk of wind erosion and water erosion occurring on the sands if appropriate grazing management is not applied and the area is overgrazed. Thus DAFWA (2006) have identified a low potential for land degradation in the form of wind erosion, water erosion and eutrophication to occur as a result of the proposed land clearing.

Acid Sulphate Soil (ASS) mapping identifies the subject property as having a Class 3 risk of ASS or potential ASS occurring; being no known risk at depths less than 3 metres. It is considered unlikely that the proposed clearing would impact on any ASS or potential ASS present on site.

Given the low potential for appreciable land degradation identified by DAFWA and the low risk of ASS the proposed clearing is not likely to be at variance to this Principle.

Methodology

References:
- DAFWA (2006) (TRIM Ref: EI5808)

GIS Databases:
-Acid Sulphate Soil risk map - SCP DOE 01/02/04

(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 property under application is located directly adjacent to Bush Forever Site 288, which borders the northern portion of the proposed clearing (Area A). The local area (5 km radius surrounding the areas under application) contain numerous conservation areas, having Bush Forever Sites 129 & 130 located approximately 100 and 450 metres to the south-east, respectively. In addition, the DEC managed Yanchep National Park (directly adjacent, also Bush Forever 288) and State Forest 65 (Gnangara-Moore River State Forest, approximately 3km north-east) are located within close proximity.

Vegetation within the area under application is identified within Bush Forever (Government of Western Australia 2000) as a 'contiguous or largely contiguous corridor of bushland/wetland area'. Biodiversity Coordination Section (BCS) (2006) advises that vegetation of the eastern area under application (Area D) may contribute to ecological linkages between Yanchep National Park, to the north, and Bush Forever Site 130, located to the south-east. Further, 360 Environmental Pty Ltd (2006) recognise Area D as an area of high conservation value.

BCS (2006) also advise that the connectivity values of Yanchep National Park and Bush Forever Sites 129 and 130 (adjacent or nearby to the application area) may be adversely impacted if the northern and eastern areas under application (Areas A and D) are cleared.

Extent of vegetation remaining on the property under application if clearing is approved will be approximately 32.7% plus scattered shrubs and trees. Additionally a corridor of 80 to 100m will remain on the eastern side of the property.

The Biodiversity Coordination Section (2006) have concluded that as long as the impact is satisfactorily mitigated by the by the negotiated retention of strategically located pockets of vegetation, this proposal is unlikely to be at variance to this Principle.

Methodology

Reference:
- 360 Environmental Pty Ltd (2006) (TRIM Ref: DOC18811)
- Biodiversity Coordination Section (2006) (DEC TRIM ref: DOC 5451)

GIS Databases:
- Bushforever MFP 07/01

- CALM Managed Lands and Waters - CALM 01/08/04

(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 is not likely to be at variance to this Principle

The area under application is identified as being within a Priority 3 Underground Water Pollution Control Area. Groundwater salinity in the area surround that under application ranges from approximately 20,000 mg/L to 41,000 mg/L, which is considered to be of moderate to high salinity.

In assessing the proposed clearing, DAFWA (2006) have identified a low risk of eutrophication resulting from the proposed clearing over much of the applied areas, however it is noted that the Spearwood Sand Phase has a very high risk of eutrophication over 5% of the map unit. The area under application is also recognised as having no known risk of Acid Sulphate Soils (ASS) or potential ASS occurring in the areas.

As such, it is considered unlikely that the proposed clearing will appreciably impact on the quality of surface or groundwater

Methodology

References:
- DAFWA (2006) (TRIM Ref: EI5808)

GIS Databases:
- Acid Sulphate Soil risk map - SCP DOE 01/02/04
- WIN Groundwater Sites, Monitoring - DoW

(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

There are no wetlands of watercourses within the areas under application, and as such the area under application is considered unlikely to contain areas prone to flooding or inundation. However, topographic mapping of the applied areas indicates a general trend of sloping to the north, towards Beonaddy Swamp.

Given the amount of remaining vegetation in the surrounding area and the transmissive nature of the sands at the site, clearing is unlikely to cause or exacerbate the incidence of flooding.

Methodology

GIS databases:
- Topographic Contours, Statewide - DOLA 12/09/02.
- Soils, Statewide - DA 11/99

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

Comments

The area under application is identified as being within a Priority 3 Underground Water Pollution Control Area. Priority 3 (P3) classification areas are defined to manage the risk of pollution to the water source. P3 areas are declared over land where water supply sources need to coexist with other land uses such as residential, commercial and light industrial developments. Protection of P3 areas is achieved through management guidelines rather than restrictions on land use. The proposed land use of extensive stock grazing is recognised as a acceptable land use in a P3 area (Department of Environment 2004).

The subject property is zoned both Urban (Areas B and C) and Rural (Areas A and D) under the Metropolitan Regional Scheme. These land zonings are divided by land zoned 'Primary Regional Road'; mapped for the future extension of the Mitchell Freeway. Biodiversity Coordination Section (2006) advise that the ecological linkage between Yanchep and Neerabup National Parks and the Bush Forever Site 130 (including vegetation in Areas A and D) will have even greater value if the planned Mitchell Freeway is developed.

While the proposed clearing is not located within or directly adjacent to any Bush Forever Sites, the Bush Forever Officer recommends that should this application be approved, it should be subject to conditions relating to the preparation and implementation of an Environmental Management Plan for the site to address any indirect impacts from weed infestation into the nearby Bush Forever Site (TRIM Ref: EI5258). A condition addressing weed management will be imposed on a permit it clear.

DAFWA (2006) indicate that appropriate grazing and nutrient application management strategies may mitigate the potential for land degradation resulting from the proposed clearing.

There are no other Works Approvals or Licences required under the Environmental Protection Act 1986.

Methodology

References:
- Department of Environment (2004)
- Biodiversity Coordination Section (2006) (DEC TRIM ref: DOC 5451)

GIS Databases:
- Public Drinking Water Source Areas (PDWSAs) - DOW

- Metropolitan Regional Scheme - DPI 07/10/05
- Road Centrelines - DLI 1/5/04

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Grazing & Pasture	Mechanical Removal	35	The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing may be at variance to Principle (a), is not likely to be at variance to principles (b) ,(d), (e), (f), (g), (h), (i) and (j) and not at variance to Principle (c). A condition will be imposed to manage weeds.

5. References

360 Environmental (2006). Lot 6 Taronga Place, Eglinton. Flora and Vegetation Survey. TRIM Ref: DOC18811.

Birds Australia WA (2006). Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. Carnaby's Black-Cockatoo Recovery Project (http://www.hotgecko.com/carnabys/Carnabys.htm) . Accessed on Friday, 13 July 2007.

Clearing Assessment Unit's biodiverstiy advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM ref: DOC 5451

DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DEC TRIM ref: EI5808

Department of Environment (2004). Water Quality Protection Note: Land Use Compatibility in Public Drinking Water Source Areas. Department of Environment. Perth, Western Australia:

Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.

EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.

Heddle, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.

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)