Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2547/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: **MR Desmond Donnelly**

1.3. Property details

Property: LOT 5628 ON PLAN 115759 (House No. 1076 JULIMAR WEST TOODYAY 6566)

Local Government Area: Shire Of Toodyay

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
62		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 Associations: 4 - Medium woodland; marri & wandoo. 1006 - Medium woodland; jarrah, wandoo & powderbark. (SAC Bio Datasets 06/08/2008; Shepherd, 2006) Heddle Vegetation Complexes: - Coolakin Complex in Low Rainfall - Yalanbee Complex in Low Rainfall (Heddle et al, 1980) Mattiske Vegetation Complexes: Bindoon (Bi) - Woodland of Eucalyptus loxophleba on the slopes, flanked by woodlands of Eucalyptus wandoo-Eucalyptus accedens on the breakaways and upper slopes in the perarid zone. Yalenbee (Y6) - Woodland of Eucalyptus wandoo-Eucalyptus accedens, less consistently open forest of Eucalyptus marginata fs24 subsp. thalassica-Corymbia calophylla on lateritic uplands and breakaway landscapes in arid and perarid zones. (Mattiske Consulting 1998)	The area under application is 62ha on Lot 5628 Julimar Rd, West Toodyay, a 64.6ha property. The proposed clearing is for grazing and pasture. The vegetation is best described in three main sections: Northern section (~14ha): The vegetation in this section varies from degraded to very good condition and is best described as: - Wandoo woodland over the occasional Xanthorrhoea and Zamia palm with no understorey. (Degraded) - Wandoo, Marri and Jarrah Woodland over Xanthorrhoea and Banksia sp. (formally Dryandra) with a low shrub layer which is regenerating. (Good) - Very Open Marri, Wandoo Woodland over a very open shrub layer of Xanthorrhoea, Zamia, Hakea and Acacia pulchella with a diverse ground cover layer (Good) - Open Woodland to Woodland of Wandoo, Marri and Jarrah over Banksia sp. (formally Dryandra), Xanthorrhoea and Zamia with a diverse regenerating shrub layer (Very Good)	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation description was obtained from a site inspection (DEC, 2008). The condition of the vegetation ranged from Degraded to Very Good. The majority of the vegetation under application is considered to be in Good condition.
As Above	Mid section (~30ha): This section has been parkland cleared and is considered to be completely degraded. The area is very open with scattered stands of trees including Marri, Jarrah and Wandoo over a groundcover of weeds. There are some native shrubs including Hakea and Acacia growing at the base of the trees. There are also isolated Zamia palms and Xanthorrhoea in this area.	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	The vegetation description was obtained from a site inspection (DEC, 2008). The vegetation under application is considered to be Completely Degraded.

As Above	Southern section (~18ha): The vegetation in this section varies from degraded to very good condition and is best described as: - Open Wandoo woodland over the occasional Xanthorrhoea and Zamia palm with an understorey which is regenerating with small native shrubs. (Degraded) - Very Open Marri, Wandoo Woodland over Hakea, Xanthorrhoea and Zamia with a limited understorey. (Degraded) - Very Open Marri Woodland with the occasional Allocasuarina with an open shrub layer of Xanthorrhoea, Zamia and Jacksonia sp., over a diverse groundcover. (Good) - Open Marri Woodland with the occasional Allocasuarina over an open shrubland of Xanthorrhoea, Zamia, Hakea, Dryandra and Jacksonia with a diverse low shrub layer. (Very Good) Disturbances to the area under application include historical grazing, clearing for firebreaks and vehicle tracks and weed invasion (particularly in disturbed areas in the mid section and along fire breaks). There was evidence of a recent fire within the applied area and a high number of tree deaths in the northern section.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation description was obtained from a site inspection (DEC, 2008). The condition of the vegetation ranged from Degraded to Very Good. The majority of the vegetation under application is considered to be in Good condition.

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

The vegetation under application ranges from completely degraded to very good condition (DEC, 2008). Half of the vegetation under application has been parkland cleared and is completely degraded (DEC, 2008). The other half of the vegetation under application is generally described as Open Eucalypt Woodland with a sparse understorey in degraded to very good condition (DEC, 2008). The vegetation in very good condition comprises a diverse open shrub layer. Given the lack of dense understorey the vegetation under application may not provide suitable habitat for ground dwelling fauna, however; there are a large number of dead and mature trees with hollows in the area under application which may be suitable for nesting sites for Carnaby's Black Cockatoos and other fauna in the local area. In addition, it is considered the area under application may comprise suitable habitat for the vulnerable Shield-backed Trapdoor Spider.

Three rare flora species, Asterolasia nivea, Caladenia huegelii and Grevillea flexuosa, occur in the local area and may occur in the areas under application as they occur in similar soils and vegetation complexes. In addition, a further 14 priority flora species may occur in the area under application as they occur in similar soils and vegetation complexes.

Given the area under application may be necessary for the maintenance of rare and priority flora, may provide suitable habitat for fauna in the local area and that the vegetation in very good condition comprises a diverse shrub layer, it is considered the area under application may comprise a high level of biodiversity and the clearing may be at variance to this Principle.

Methodology

Reference:
- DEC (2008)

GIS Databases:
- SAC Bio datasets (accessed 27/06/2008)
- Soils, Statewide

(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 may be at variance to this Principle

There are six fauna species of conservation significance recorded in the local area (~10km radius). The Western Brush Wallaby occurs in forest and woodland supporting a dense shrub layer and the Chuditch is highly mobile and utilises bush remnants and corridors (DEC, 2007). The vegetation under application

comprises areas that are parkland cleared, ~50%, and areas of Open Eucalypt Woodland with a sparse understorey , ~50% (DEC, 2008); the vegetation is not considered to comprise significant habitat for these species.

Carnaby's Black Cockatoo has been recorded in the local area. Carnaby's move around seasonally in flocks and feed in areas of proteaceous scrubs and heaths and eucalypt woodlands as well as pine plantations and breed in mature hollow trees (DEC, 2007). There are a large number of dead and mature trees with hollows which may be suitable for nesting (DEC, 2008). It is considered that the area under application has the potential to provide suitable nesting sites for Carnaby's.

In addition, the vulnerable Shield-backed Trapdoor Spider is known to occur in the local area and is threatened by clearing for agriculture. This spider's nests are found in litter within acacia woodland, particularly in Acacia acuminata on granitic soils, but also in eucalyptus woodlands on heavy soils (Burbidge, A. 2004).

Given the area under application comprises mature hollow trees, which may be utilised by Carnaby's Black Cockatoos and Open Eucalypt woodlands on heavy soils, which may utilised by the Shield-backed Trapdoor Spider; it is considered the vegetation to be cleared may provide significant habitat for fauna and may be at variance to this Principle.

Methodology

References:
- Burbidge, A. (2004)
- DEC (2008)
- DEC (2007)

GIS Database:
- SAC Bio datasets (accessed 27/06/2008)

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

Comments

Proposal may be at variance to this Principle

There are 83 records of four rare flora species in the local area. Of these it is considered Asterolasia nivea, Caladenia huegelii and Grevillea flexuosa may occur in the area under application as they are known from the same soil and vegetation complexes.

Asterolasia nivea is known from sand or clay with lateritic gravel on breakaway slopes; Caladenia huegelii is generally found in grey or brown sand, clay loam; and Grevillea flexuosa grows in red-brown sand with laterite and gravel on ridgetop plateau and associated breakaways (Western Australia Herbarium, 1998). A site inspection (DEC, 2008) of the area under application observed breakaway slopes in the northern section, which may provide suitable habitat for Asterolasia nivea and Grevillea flexuosa; and sandy soils in the southern section, which may provide suitable habitat for Caladenia huegelii.

Given Asterolasia nivea, Caladenia huegelii and Grevillea flexuosa occur in the local area in the same soil and vegetation complexes, it is considered the area under application may include or be necessary for the continues existence of rare flora. Furthermore, DEC Perth Hills District (2008a) advised that it is highly likely that rare flora, which may include Thelymitra stellata, occurs within the area under application. Therefore, this proposal may be at variance to this Principle

In addition, there are 79 records of 18 priority species in the local area. Of these Grevillea candolleana is known to occur in the Julimar Road reserve adjacent to the area under application. In addition, it is considered following priority flora may occur in the area under application as they are known from the same soil and vegetation complexes:
- Grevillea corrugata (Priority 1)
- Leucopogon sp. Bindoon (Priority 2)
- Verticordia citrella (Priority 2)
- Brachyloma mogin (Priority 3)
- Tetratheca pilifera (Priority 3)
- Verticordia serrata var. linearis (Priority 3)
- Anigozanthos humilis subsp. chrysanthus (Priority 4)
- Asterolasia grandiflora (Priority 4)
- Calytrix sylvana (Priority 4)
- Chordifex chaunocoleus (Priority 4)
- Hibbertia miniata (Priority 4)
- Hibbertia montana (Priority 4)
- Wurmbea drummondii (Priority 4)

Given that the vegetation under application includes habitat suitable for rare and priority flora found in the local area, it is considered that the vegetation may include, or be necessary for the continued existence of, rare flora.

An appropriately timed flora survey in accordance with EPA Guidance Statement 51 is required to determine whether the vegetation under application includes rare flora or priority.

Methodology References:
- DEC (2008)
- DEC (2008a)
- Western Australia Herbarium (1998)

GIS Databases:
- Mattiske Vegetation
- SAC Bio datasets (accessed 27/06/2008)
- Soils, Statewide

(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**

There are no known Threatened Ecological Communities (TEC) within the local area. The closest known record of a TEC known as Floristic Community Type 20b - 'Banksia attenuata and/or Eucalyptus marginata woodlands of the eastern side of the Swan Coastal Plain' is located ~33km west to the area under application and occurs on different soils and in different vegetation complexes.

Given the distance to the nearest TEC and the different soil types and vegetation complexes, it is considered that the vegetation under application does not comprise or is necessary for the maintenance of any threatened ecology community. Therefore, the proposed clearing is not considered likely to be at variance to this Principle.

Methodology GIS Databases:
- Mattiske Vegetation
- SAC Bio datasets (accessed 27/06/2008)
- Soils, Statewide

(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 may be at variance to this Principle**

The Mattiske vegetation complexes identified in the area under application are Bindoon Complex and Yalanbee Complex which have pre-European representation levels of 29.6% and 51.4% remaining respectively (Mattiske Consulting, 1998). Beard Vegetation Associations 4 and 1006 were identified within the applied area with current representation levels of 23.3% and 50.4% respectively (Shepherd, 2006). Aerial imagery and vegetation mapping of the local area (5km radius) shows ~53.6% remnant vegetation to be remaining. In addition, there is 50.8% of native vegetation remaining within the Shire of Toodyay (Shepherd et al. 2001).

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Commonwealth of Australia, 2001).

Although there is over 50% vegetation remaining in the local area and the Shire of Toodyay, a portion of the vegetation in good to very good condition is associated with the Bindoon Complex and Beard Association 4 have current representation levels of 29.6% and 23.3% respectively.

Given a portion of the vegetation under application in good to very good condition is associated vegetation complexes which are below the recommended minimum of 30% representation levels, the clearing as proposed may be at variance to this Principle.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% In reserves DEC Managed Land
IBRA Bioregions*				
Jarrah Forest	4,506,674	2,426,079	53.8	70.0
LGA**				
Shire of Toodyay	173,440	88,082	50.8	N/A
Vegetation in the Local Area (~5km radius)	~7,854	~4,210	~53.6	N/A
Heddle Vegetation Complex***				

Coolakin Complex in Low Rainfall		N/A	N/A	N/A	N/A
Yalanbee Complex in Low Rainfall		N/A	N/A	N/A	N/A
Mattiske Vegetation Complex****					
Bindoon (Bi)	266,761	78,976	29.6	N/A	
Yalanbee (Y6)	1,583,884	814,609	51.4	N/A	
Beard Vegetation Type*					
4	1,054,316	245,361	23.3	26.3	
1006	44,909	22,624	50.4	44.1	

* Shepherd (2006)
** Shepherd et al. (2001)
*** EPA (2006)
**** Mattiske Consulting (1998)

Methodology

References:
- EPA (2006)
- Mattiske Consulting (1998)
- Commonwealth of Australia (2001)
- Shepherd (2006)
- Shepherd et al. (2001)

GIS Databases:
- Heddle Vegetation Complexes
- Interim Biogeographic Regionalisation of Australia
- Mattiske Vegetation
- NLWRA, Current Extent of Native Vegetation
- Northam 1m Orthomosaic - Landgate 2003
- SAC Bio datasets (13/06/2008)

(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 may be at variance to this Principle

There are no watercourses or wetlands within the area under application. There are four significant watercourses within the local area including Malkup Brook (~1km west), the Avon River (~4km south east), Toodyay Brook (~6.8km east) and Phillips Brook (~7.5km north east).

In addition, there are two minor non-perennial watercourses in close proximity to the applied area. One occurs just outside the northern edge of the area under application. A DEC site inspection (2008) did not identify any wetland dependant vegetation associated with this watercourse and determined that is was most likely a drainage line utilised during high rainfall events. The second non-perennial watercourse occurs ~250m east of the applied area.
Given the distance to the watercourses in the local area, it is not considered likely that the vegetation under application is growing in association with these watercourses.

However, there is a low lying area on the southern boundary of the property adjacent to Julimar Rd. This area is not mapped as a watercourse or wetland however a DEC site inspection (2008) identified thin stands of Eucalyptus rudis in this area. Eucalyptus rudis is generally found growing on watercourses or swampy ground (Brooker et al. 2001). This low lying area may be subject to inundation providing suitable habitat for Eucalyptus rudis; therefore, this portion of the area under application may be considered to comprise wetland dependant vegetation and the proposal may be at variance to this Principle.

Methodology

References:
- Brooker et al. (2001)
- DEC (2008)

GIS Databases:
- Hydrography, linear
- Hydrography, linear (hierarchy)

(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 soils identified within the areas under application include hard acidic yellow mottled soils along with sandy acidic yellow mottled soils which contain moderate to large amounts of ironstone gravels and hard alkaline red

soils (Northcote et al. 1960-68). These soils generally have a high risk of water erosion.

The majority of the area under application has a low risk of salinity however, the salinity risk increases in the low lying area on the southern edge of the property adjacent to Julimar Road. In addition, DAFWA (2008) advise that the clearing of deep rooted perennials may increase recharge which may increase the off-site salinity risk to medium.

The proposed clearing has a high risk of water erosion given the hard gravely soils. In addition, clearing of vegetation on lateritic ridges and upper slopes as proposed may contribute to an appreciable increase in water erosion, and without appropriate management for exposed surfaces the proposal may cause appreciable land degradation (DAFWA, 2008). DAFWA (2008) advised that to minimise the land degradation risk the flow lines and upper slopes of the property should remain vegetated.

Given the proposed clearing may increase the off-site salinity risk and clearing on lateritic ridges and upper slopes may contribute to an appreciable increase in water erosion, it is considered proposal may cause appreciable land degradation and the clearing may be at variance to this Principle.

Methodology References:
- DAFWA (2008)
- Northcote et al. (1960-68)

GIS Databases:
- Groundwater Salinity, Statewide
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide
- Topographic Contours, 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 northern boundary of the area under application adjoins the Julimar State Forest. In addition, three 'A' Class Nature Reserves including Rugged Hills Nature Reserve (~500m east), an un-named Nature Reserve (~3.5km east) and Mavis Jefferys Nature Reserve (~9.8km south east); and one 'C' Class Nature Reserve, Poison Gully Nature Reserve (~5km north east) occur in the local area.

Given the large area proposed to be cleared (62ha) and the connectivity to the nearby Julimar State Forest it is likely that the clearing as proposed will impact on the environmental values of this conservation areas. An appropriate buffer of undisturbed vegetation is required to protect this conservation area from deleterious impacts such as the spread or introduction of weed species or dieback by machinery. There are serious consequences associated with the spread of such exotic species into areas reserved for conservation, including the potential local extinction of species.

Given the area under application has the potential to impact on this conservation area through the spread of weeds and dieback it is considered the proposal may be at variance to this principle.

Methodology GIS Databases:
- CALM Managed Lands and Waters
- Northam 1m Orthomosaic - DLI 12/03

(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**

The area under application is not located within a Public Drinking Water Source Area. Groundwater salinity associated with the area under application ranges from 3,000 - 7,000mg/L. The area under application generally has a low risk of salinity however, the salinity risk increases in the low lying area on the southern edge of the property adjacent to Julimar Road.

There are no watercourses or wetlands within the area under application. There are four significant watercourses within the local area including Malkup Brook (~1km west), the Avon River (~4km south east), Toodyay Brook (~6.8km east) and Phillips Brook (~7.5km north east). There are two minor non-perennial watercourses in close proximity to the applied area. Minor non-perennial watercourses are generally utilised for drainage flow during significant rainfall events.

One non-perennial watercourse occurs just outside the northern edge of the area under application. The second non-perennial watercourse is a tributary to the Avon River and occurs ~250m east of the area under application. Topography suggests run-off from the area under application would contribute to the flow of this non-perennial watercourse. The area under application has a high risk of water erosion and it is therefore considered that during significant rainfall events, the proposed clearing of 62ha may contribute to the turbidity

and sedimentation of the nearby non-perennial watercourse and consequently the Avon River and may be at variance to this Principle.

Methodology GIS Databases:
- Groundwater Salinity, Statewide
- Hydrography, linear
- Hydrography, linear (hierarchy)
- Public Drinking Water Source Areas (PDWSAs)
- Salinity Risk LM 25m - DOLA 00
- Topographic Contours, Statewide

(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 four significant watercourses within the local area including Malkup Brook (~1km west), the Avon River (~4km south east), Toodyay Brook (~6.8km east) and Phillips Brook (~7.5km north east). There are two minor non-perennial watercourses in close proximity to the applied area.

Given the distance to the significant watercourses in the local area it is not considered likely that the proposed clearing would cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases:
- Hydrography, linear
- Hydrography, linear (hierarchy)

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

Comments

The property is zoned Rural under the Town Planning Scheme.

The Shire of Toodyay (2008) advised that the Shire does not have any objections to the application to clear native vegetation at Lot 5628 Julimar Road, Toodyay, subject to the following:
- That no native vegetation is removed within 50m of the property boundary abutting Julimar Road and Coondle West Road; and
- That the 1.8ha areas parcel of land in the northern portion of the site not be cleared.

There is no other RIWI Act Licence, Works Approval or EP Act Licence that affects the area under application.

A letter sent from the applicants on the 25 September, acknowledged the correspondence sent by the Department dated 11 September 2008 (Donnelly, 2008). No additional information was provided by the applicants.

Methodology References:
- Donnelly (2008)
- Shire of Toodyay (2008)

GIS Database:
- Town Planning Scheme Zones

4. Assessor's comments

Comment

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

5. References

Brooker M. I. H. and Kleinig D. A. (2001). Field guide to Eucalyptus. Vol 2, South-western and Southern Australia. 2nd edition. Blooming Books, Melbourne, Australia.

Burbidge, A. (2004) Threatened Animals of Western Australia, Department of Conservation and Land Management, Perth, Western Australia.

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DAFWA (2008) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. (TRIM Ref DOC59221).

DEC (2007) DEC Fauna habitat notes.xls February 2007, Department of Environment and Conservation, Western Australia.

DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2547/1, Lot 5628 julimar Road, West Toodyay. Site inspection undertaken 25/07/2008. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC59079).

DEC (2008a) DEC Perth Hills District: rare flora advice for Julimar Road, West Toodyay. Department of Environment and Conservation, Western Australia (TRIM Ref DOC63294).

Donnelly (2008) Response to 30 day letter, CPS 2547/1. TRIM Ref DOC63694

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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.

Shire of Toodyay (2008) Direct interest submission, Shire of Toodyay. TRIM Ref DOC61614

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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)