Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 981/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Statewest Surveying & Planning

1.3. Property details

Property: LOT 101 ON PLAN 42930 (BYFORD 6122)

Local Government Area: Shire Of Serpentine-Jarrahdale

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
6.06		Mechanical Removal	Extractive Industry

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 - 3 - Medium forest; jarrah-marri 4 - Medium woodland; marri and wandoo Mattiske vegetation complexes - Darling Scarp (DS) - Mosaic of open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla, with some admixtures with C. haematoxylon in the south on deeper soils adjacent to outcrops, woodland of E. wandoo (subhumid and semiarid zones), low woodland of Allocasuarina huegeliana on shallow soils over granite outcrops, closed heath of Myrtaceae-Proteaceae species and lithic complex on or near granite outcrops in all climate zones. Forrestfield (Fo) - Mosaic of open forest of C. calophylla-E. wandoo-E. marginata subsp. elegantella and open forest of E. marginata	The proposal includes the clearing of approximately 6.06ha of native vegetation for extractive industry purposes. The area under application is located to the north of a large excavation pit and a portion has been previously cleared and excavated. Vegetation in the southern portion of the applied area comprises woodland of Eucalyptus marginata - Corymbia calophylla - E. wandoo over mixed understorey including Xanthorrhoea preissii, Macrozamia riedlei, Melaleuca spp., Acacia pulchella, Dryandra spp. and Dasypogon spp. Vegetation in this area is in good condition, with some degraded areas. Vegetation in the northeast portion is as above with Hibbertia spp., Jacksonia spp., Hakea spp. and some sedges. Vegetation in this area is good to very good with some degraded areas. There is also a large erosion rill to the north that runs into the adjacent property. Vegetation in the northwest portion of the applied area lacks the presence of overstorey and includes	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The vegetation description was obtained during a site visit conducted by DEC officers on Friday the 28th of April 2006 and from a spring flora survey conducted by Bennett Environmental Consulting (2006). A fauna survey was conducted by Harewood (2007). Bennett Environmental Consulting (2006) described the vegetation condition as ranging from 'excellent to good with tracks degraded.' The majority of the vegetation is considered to be in very good condition.

mainly X. preissii, Banksia grandis, Xylomelum occidentale and Pinus spp. This vegetation is considered to be in degraded 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 is at variance to this Principle

The vegetation under application ranges in condition from excellent to degraded, with the majority being in a very good condition. During the spring flora survey 119 native flora species were recorded, however no significant flora species were identified (Bennett Environmental Consulting 2006). The vegetation is also reported to be part of the Floristic Community Type (FCT) 3b, which is listed as a Threatened Ecological Community (TEC) (Bennett Environmental Consulting 2006; Government of Western Australia 2000).

During a fauna survey Harewood (2007) reported that the vegetation under application is however likely to be utilised by a number of significant fauna species, including Quenda and the Rainbow Bee-eater, which were confirmed to be present on site during the fauna survey. The vegetation under application is therefore considered to comprise significant habitat for fauna.

The area under application has been previously logged and has been subject to impacts from the adjacent extractive industry and therefore the vegetation is likely to have a lower condition rating and biodiversity than the adjacent Bush Forever site and nearby reserves. However, given that the vegetation under application comprises a TEC and significant habitat for fauna, it is still considered to comprise a high level of biodiversity and therefore the proposal is at variance to this Principle.

If the permit is granted fencing, revegetation and conservation covenant conditions will be imposed.

Methodology

Bennett Environmental Consulting (2006)
DEC Site visit 28/4/06
Government of Western Australia (2006)

(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

During the DEC site visit a number of signs of fauna, especially Quenda, were observed including diggings, burrows and scats.

A desktop assessment undertaken by Harewood (2007) found 89 bird species, 35 reptile species, 21 mammal species and 4 amphibian species with the potential to occur in the applied area. 37 of the bird species potentially occurring within the applied area are Bush Forever Decreaser species, which are species with a reduced distribution or population on the Swan Coastal Plain. Harewood (2007) also identified 19 specially protected, priority or migratory species that possibly occur within the applied area, however most of these species have little if any potential to utilise the site due to the lack of suitable habitat. The majority of the potential significant species are transient and unlikely to rely solely on the area under application (Harewood 2007).

During a fauna survey 27 fauna species (2 introduced) were observed or positively identified from scats, tracks, skeletons or calls, including five Bush Forever Decreaser bird species, one migratory bird species, and one Priority fauna species (Harewood 2007). No potential habitat hollows were observed within trees, thus reducing the suitability of the site for hollow nesting species.

The DEC Priority 5 species Quenda (Isoodon obesulus fusciventer) is likely to be present within the area under application. Harewood (2007) advised that 'the amount of ground cover, understorey and leaf litter varies considerably and ranges from non-existent to dense', with Quenda diggings observed in the denser areas of the northern section. A significant portion of the site is reported not to contain sufficient ground cover for this species (Harewood 2007).

The EPBC listed migratory Rainbow Bee-eater (Merops ornatus) was sighted during the fauna survey and potentially breeds in the banks of abandoned sand pits, however no active burrows were observed (Harewood 2007).
Carnaby's Black Cockatoo (EPBC Act Endangered), Baudin's Black Cockatoo (EPBC Act Vulnerable) and the Fork-tailed Swift (EPBC Act Migratory) are also likely to visit the area during non-breeding season for foraging.

All of the species present, or with the potential to be present, within the area under application are also likely to be found in the adjoining Bush Forever site and other nearby reserves. These areas are likely to comprise

vegetation in better condition and with a higher habitat value in general, not having had the level of disturbance of the applied area. The vegetation under application is therefore not considered likely to comprise significant habitat in the general sense for indigenous fauna. The vegetation under application is however likely to be utilised by a number of significant fauna species, including Quenda and the Rainbow Bee-eater, which were confirmed to be present on site during the fauna survey.

All of the species present, or with the potential to be present, within the area under application are also likely to be found in the adjoining Bush Forever site and other nearby reserves. These areas are likely to comprise vegetation in better condition and with a higher habitat value in general, not having had the level of disturbance of the applied area. The vegetation under application is likely to be utilised by a number of significant fauna species, including Quenda and the Rainbow Bee-eater, which were confirmed to be present on site during the fauna survey.

Given that the vegetation under application is likely to be utilised by a number of fauna species, it is considered that it comprises significant habitat, and the proposal is considered to be at variance to this Principle.

To mitigate the impact of the clearing on fauna habitat, if the permit is granted fauna management, revegetation and conservation covenant conditions will be imposed.

Methodology DEC site visit 28/4/06
Harewood (2007)

(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 12 known occurrences of DRF within the local area, of which the following are found within the same vegetation complexes as the applied area:

- Trichocline sp. Treeton (P2)
- Schoenus pennisetis (P1)
- Drosera occidentalis (P4)
- Tetraria australiensis (R)
- Drakaea elastica (R)

A spring flora survey was conducted within the applied area and no DRF or Priority flora were identified (Bennett Environmental Consulting 2006).

Given that no DRF species were identified during the appropriately timed flora survey of the applied area, the vegetation under application is not considered likely to include, or be necessary for the continued existence of, rare flora.

Methodology Bennett Environmental Consulting (2006)
GIS Databases:
Declared Rare and Priority Flora List - CALM 01/07/05
Mattiske Vegetation - CALM 24/3/98

(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 at variance to this Principle

There are 35 known occurrences of Threatened Ecological Communities (TEC) within the local area of the application, the closest of which is located approximately 1km to the west. The TECs associated with the landform identified on site are:

- Southern wet shrublands (FCT - 2)
- Eucalyptus calophylla - Kingia australis woodlands on heavy soils (FCT - 3a)
- Eucalyptus calophylla - Eucalyptus marginata woodlands on sandy clay soils (FCT - 3b)
- Eucalyptus calophylla - Xanthorrhoea preissii woodlands and shrublands (FCT - 3c)

(Government of Western Australia 2000).

A PATN analysis undertaken by E.A. Griffin for Bennett Environmental Consulting (2006) determined that the Floristic Community Type (FCT) of the vegetation tended to join 3b, which is listed in the vulnerable category of TEC's. This is consistent with the fact that the adjacent Bush Forever site contains three TEC, including 3b (Government of Western Australia 2000).

Although the PATN analysis did conclude that the vegetation represented FCT 3b, it also suggested that the vegetation surveyed had probable similarity to FCT 20b, 3a and 3c. BSC (2007) advise indicated that although the PATN analysis was not conclusive, the four FCT that the vegetation had similarities to are all TEC's and therefore the proposal it its current form would be considered at variance to this Principle.

To minimise impact to mitigate the loss of significant vegetation, if the permit is granted fencing, revegetation, and conservation covenant condition will be imposed.

Methodology Bennett Environmental Consulting (2006)
DEC site visit 28/4/06
Government of Western Australia (2000)

(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

Mattiske (1998) defines the vegetation under application as 'Darling Scarp' and 'Forrestfield' complexes, which have representations of 43.3% and 30.6%, respectively, of pre-European extent remaining. The vegetation under application is also defined as vegetation associations 3 and 4, which have representations of 72.1% and 23.5% respectively, of the pre- European extent remaining (Shepherd 2006).

Although vegetation association 4 (Shepherd 2006) has a representation below the recommended minimum 30% of pre-European extent, Mattiske (1998) vegetation representations are generally accepted as being the preferential figures for the Darling Scarp Bioregion, based on the scale of vegetation mapping and the related accuracy. The identified Mattiske (1998) vegetation types both have representations above the recommended minimum level of 30%, as recognised by both the EPA and the State Government (Commonwealth of Australia 2001). The proposal is therefore not likely to be at variance to this Principle.

	Pre-European area (ha)	Current extent (ha)	Remaining %	% in reserves/CALM-managed land
Swan Coastal Plain	1,529,235	657,450	43.0%*	
Jarrah Forest	4,554,335	2,65,480	58.7%*	
Shire of Serpentine	90,478	53,038	58.6%*	
Beard vegetation associations				
3	3,046,385	2,197,837	72.1 %*	10.1 %*
4	1,247,834	292,993	23.5 %*	14.8 %*
Mattiske vegetation complex				
Darling Scarp (DS)	291,043	126,045	43.3%**	
Forestfield (Fo)	37,106	11,371	30.6%**	

* (Shepherd 2006)
** RFA Vegetation Complex Mapping (CALM 1998)

Methodology Commonwealth of Australia (2001)
DEC Site visit 28/4/06
EPA (2006)
Janis Forests Criteria 1997
Mattiske (1998)
Shepherd et al. (2001)
Shepherd (2006)

(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

A number of Conservation Category Wetlands (CCW) are located between 1km and 2km to the west of the area under application. A number of Resource Enhancement Category wetlands are also located approximately 4km to the east. The nearest watercourse is Beenyup Brook, which is located approximately 300m to the north.

Given the distance to the nearest wetland, and that no wetland dependent vegetation was observed during the site visit or during the flora survey (Bennett Environmental Consulting 2006), the proposed clearing is not considered likely to include vegetation growing in, or in association with, a watercourse or wetland.

Methodology DEC Site visit 28/4/06
Bennett Environmental Consulting (2006)
GIS Databases:
Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DOE
Swan Coastal Plain South 40cm Orthomosaic - DLI 05

(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 area under application is identified as comprising foot and low slopes of well-drained gravelly yellow or red duplex soils with sandy loam to loam topsoil. These soils have a very low risk of land degradation from eutrophication and waterlogging (State of Western Australia 2005). There is no risk of salinity in the area under application, however the western portion has a moderate to low risk of acid sulphate soils.

Within the area under application there is approximately a 4% gradient increasing to a 25% gradient near the northern boundary with the slope toward the north and north east. During the site visit signs of previous significant water erosion were observed on-site. This included an area within the Bush Forever site that had been smothered with sediment that appeared to be as a result of water erosion from the site.

The clearing of vegetation and associated extractive industry to remove shale will also expose the gravely to sandy loam soils, which if not managed adequately can produce dust due to the soils risk of wind erosion.

Methodology

State of Western Australia (2005)
DEC Site visit 28/4/06
GIS Databases:
Acid Sulfate Soil Risk Map, SCP - DOE 04/11/04
Salinity Risk LM 25m - DOLA 00
Topographic Contours, Statewide - DOLA 12/09/02

(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 area under application is directly adjacent on the western boundary to a Bush Forever site. Jarrahdale State Forest is also located approximately 1.2km to the east and Cardup Nature Reserve is approximately 2.5km to the southwest.

The removal of 6.06 hectares of vegetation from the applied area is has the potential to result in erosion caused by an increase in water run-off that was observed during the site visit to have previously smothered vegetation within the Bush Forever site.

Indirect impacts related to the proposal may include the spread or introduction of Phytophthora (dieback) and/or weed species which have the potential to threaten the environmental values of the Bush Forever site.

Biodiversity Coordination Section (BCS 2006) advises that the applied vegetation and the adjacent Bush Forever site are part of Greenway 77 and a regionally significant contiguous bushland/wetland linkage to the Jarrahdale State Forest. The vegetation under application also provides a linkage between the Bush Forever site and the remnant vegetation to the north.

Given the potential direct and indirect impacts on the Bush Forever site and the removal of vegetation within a regionally significant corridor the application in its current form may be variance to this principle.

If the permit is granted conditions will include offsets such as fencing, revegetation and a conservation covenant over the adjacent Bush Forever site. Conditions will also include weed control, and weed and dieback prevention measures.

Methodology

BCS (2006)
GIS Databases:
Bush Forever - MFP 07/01
CALM Managed Lands and Waters - CALM 1/07/05

(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 has a low risk of salinity and acid sulphate soils and is not located within a Public Drinking Water Source Area (PDWSA). The nearest watercourses are Beenyup Brook, which is located approximately 300m to the North and Cardup Brook that is located approximately 900m to the South.

During the DEC site visit (2006) signs of previous significant water erosion were observed on-site adjacent to the area currently under application. This included an area within the Bush Forever site that had been smothered with sediment that appeared to be as a result of water erosion from the site.

The clearing may also increase the run-off from the site, which as observed has the potential to carry substantial sediment load. Water from the existing pit is currently treated through a series of sediment basins

with the overflow water being directed into the Cardup Brook. On previous occasions the DEC has observed this turbid water being discharged to the Cardup Brook which would increase the particulate load within the brook. Additional cleared areas may increase the water catchment and therefore discharge to the brook. The additional cleared areas may also increase the turbidity of the water discharged. Any increase in discharge or turbidity to the local watercourse may cause a deterioration in the quality of surface water.

Methodology DEC site visit 28/4/06
GIS Database:
Hydrography, linear (hierarchy) - DOE 13/4/05
Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06
Swan Coastal Plain South 40cm Orthomosaic - DLI 05

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

Comments **Proposal is not likely to be at variance to this Principle**
The area under application is located approximately 300m from Beenyup Brook at an elevation of between 95 - 110 metres. The applied area is located on soils with a well-drained nature with a general relief to the northeast (State of Western Australia 2005). It is therefore not considered likely that the removal of vegetation from site would have an impact on peak flood height or duration.

Methodology DEC site visit 28/4/06
State of Western Australia (2005)
GIS Databases: Hydrography, linear (hierarchy)
topographic Contours, Statewide - DOLA 12/09/02

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

Comments

A submission was received from Bush Forever advising that the clearing permit should be restricted to the vegetation outside the Bush Forever boundary, which is located on the western edge of the applied area. They also advise that clearing should not be undertaken unless the boundary of the Bush Forever site has been surveyed and fenced.

The proponent has a current Planning Approval and Excavation Licence from the Shire of Serpentine-Jarrahdale.

Dust events from this site have been reported during times of strong easterly winds with the Department of Environment and Conservation and the local Shire having received multiple dust complaints from activities undertaken in the existing cleared areas.

Lot 101 Nettleton Road is part of a Native Title Claim however, since it is privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing as proposed should not fall under the future acts process of the Native Title Act 1993.

In response to DEC correspondence on 20 March 2007 a submission was received that highlight the following points:
Environmental and Geological Grounds
- Quenda population although present could be appropriately relocated;
- Vegetation on-site not significant habitat for Carnaby given the adjacent remnants and state forest;
- That although it acknowledged that the area under application contains a Threatened Ecological Community (TEC), this TEC is represented in the adjacent Bush Forever Site 271;
- The proponent plans to fence the portion of Bush Forever Site 271 on their property to afford it more protection;
- The proponent does not believe that the area under application is of high biological diversity;
- Shale being a marine deposit is limited in its extent and accessibility within the local area.

Planning and Economic Ground
- The subject land was not included into Bush Forever in the first place due to the awareness of this sites raw materials.
- The proponent believes that the Bush Forever document anticipates the issues of conflict between the natural values of Bush Forever sites and mining areas and promotes (through practice note 20) reasonable outcomes through negotiation and it is the view of the proponent that this principle be applied for this application;
- The area under application is identified in the Statement of Planning Policy 10 as a 'key extraction site'
- The shale located under the vegetation is a critical component of brick making;

- Preventing clearing would reduce the resource available by 490,000m3;
- The economics related to establishment of an alternative shale site, potential decrease in production efficiency and additional trucking costs would be considerable and add an additional cost of product sold to the public.

Methodology Bush Forever submission (2006)
GIS Database: Native Title Claims - DLI 7/11/05

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Extractive Industry	Mechanical Removal	6.06	The assessable criteria have been addressed, and the proposed clearing is at variance with Principles (a), (b) and (d), and may be at variance to Principles (g), (h) and (i).

5. References

Bennett Environmental Consulting Pty Ltd (2006) Flora and Vegetation of Lot 101 on DP 42930 Nettleton Road Byford. DEC TRIM ref. DOC13292

Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.

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.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth WA.

Harewood, G. (2007) Fauna Assessment Lot 101 Nettleton Road Byford. DEC TRIM ref. DOC13289

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.

Shepherd (2006) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

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.

Site Visit 28/4/2006, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC13388.

State of Western Australia (2005) Agmaps Land Manager CD Rom.

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)