Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 861/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: MS Kenneth Alan LLoyd

1.3. Property details

Property: LOT 2766 ON PLAN 210389 (LAKE BIDDY 6355)

Local Government Area: Shire Of Lake Grace

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
176		Burning	Cropping

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
Vegetation Association 516: Shrublands; mallee scrub, black marlock.	The total area of land applied to be cleared is 176ha which is split into 3 different land parcels within the property of 9 ha (Area A), 37 ha (Area B) and 130 ha (Area C).	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation condition ranged from Degraded to excellent with an average of very good DAWA (2005)

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 176 hectares under application provides significant habitat for native fauna and flora species of conservation significance. In the context of a landscape that has been extensively cleared for agriculture the clearing of the area under application will contribute towards reducing the biodiversity values of the local area (CALM 2006) and the applied area would be considered an area of high biological diversity in the local area.

Methodology CALM (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

CALM (2006) has advised that several fauna species of conservation significance have been recorded within the local area (10km radius). This includes Malleefowl sightings within the Mount Sheridan Road Reserve adjacent to the property and records of Malleefowl (*Leipoa ocellata*) and Western Brush Wallaby (*Macropus irma*) within the Rock View Nature Reserve 100m south of the area under application.

The National Recovery plan for Malleefowl describes their preferred habitat as: 'semi-arid to arid shrublands and low woodlands, especially those dominated by mallee and/or acacias. A sandy substrate and abundance of leaf litter are required for breeding' (Benshemesh 2000). Malleefowl therefore may reasonably be expected to utilise the notified area for foraging and possibly for breeding as the description above appears, from available information, to apply to the notified area (CALM, 2006).

CALM (2006) also advises that the Declared specially protected Heath Mouse (*Pseudomys shortridgei*) and the Priority 4 Western Mouse (*Pseudomys occidentalis*) are known to occur in the local area, while the Chuditch (*Dasyurus geoffroii*) and Carpet Python (*Morelia spilota*) imbricate although not recorded in the local area are considered likely to occur within the area under application.

Aerial photography indicates that the notified area may provide value to native fauna as a habitat linkage with

other vegetation and nature reserves in the local area. CALM (2006) advise that these bush fragments under application are 'likely to play an integral part in maintaining the connectivity between the two larger blocks of native vegetation'.

Given that Malleefowl and other species may utilise the habitat within the notified area and that the bush remnants have great value in maintaining connectivity between available habitat for native fauna in an otherwise fragmented landscape, this proposal is considered to be at variance with this Principle.

Methodology CALM (2006)
Benshemesh (2000)

(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

Within the local are there are 7 records of 3 species of Declared Rare Flora (DRF) and 15 records of 9 Priority flora species (CALM 2006). The DRF species that occur within the local area and are found in the same Beard Vegetation Association (No. 519) as the area under application include:

- *Caladenia graniticola* which is described on CALM's Florabase as a tuberous perennial herb, to 0.21 m high, usually single flowered. Flowers are green, yellow, Oct. It is found on gritty sandy clay, granite also near low exposed rock outcrops.

- *Tribonanthes purpurea* (Granite pink) described as a tuberous perennial herb, 0.03-0.04 m high. Flowers are pink, purple, and appear in August. Occurs on seasonally wet soils in moss swards & herbfields among granite rocks.

CALM (2006) advise these species 'appear to be more commonly associated with granite outcrops; however given their proximity to the notified area and given that the proponent intends to clear around what appears to be a granite outcrop in area C, it is possible that DRF may be present '

In addition to this a further 8 DRF species have been found within a 25km radius of the area under application and in same the Beard Vegetation Association No. 519, Hyden System (CALM, 2006). The soils within the area under application are 'coarse grey sands but mostly sandy surfaced gravels and loamy sands over clay' (DAWA, 2005). Of the 8 species of DRF found in this Beard Vegetation Association the DRF below are usually located in similar soils types to that within the area under application:

- *Acacia auratiflora* - Spreading shrub, 0.3-1 m high, to 2 m wide. Flowers yellow, Jul-Aug. Sandy clay, clay, clayey loam. Plains, wet depressions.

- *Acacia lanuginophylla* - Dense shrub, 0.5-1.2 m high. Flowers yellow, Jul-Oct. White/grey sand, clayey sand, gravelly soils. Flats, along drainage lines.

- *Allocasuarina tortiramula* - Dioecious shrub, ca 1.7 m high. Loam soil on granite.

- *Calectasia pignattiana* - Rhizomatous, prickly herb, to 0.5 m high. Flowers blue, purple, Aug-Oct. Sand to sandy clay over granite or laterite, gravel. Plains and gentle slopes.

- *Grevillea involucrata* - Prostrate to low-domed open shrub, 0.15 - 0.3 m high, up to 2 m wide. Flowers pink, red, Jun/Oct. Gravelly sand.

Given the number of DRF and priority species recorded in the local area on similar soil types, and the overall very good condition of the native vegetation it is considered that DRF and other flora of conservation significance may be present on site.

Methodology CALM (2006)
GIS databases:
Declared Rare and Priority Flora List - CALM 01/07/05

(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 within the area proposed for clearing, or within a 10km radius. The nearest TEC is Lake Bryde approximately 54km south of the notified area (CALM, 2006). The vegetation under application therefore is not considered likely to comprise vegetation necessary for the maintenance of a TEC.

Methodology CALM (2006)
GIS databases:

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

Comments

Proposal is at variance to this Principle

The vegetation under application is classified as vegetation association 519 (Hopkins et al. 2001). This association has a representation of 60.6% of the pre- European extent and is described as Shrublands: mallee scrub, Eucalyptus eremophila (Shepherd et al. 2001).

The extent of remnant vegetation remaining within the Shire of Lake Grace is only 21.9%. The vegetation within the Shire is therefore considered 'vulnerable' (Department of Natural Resources and Environment (2002) and the clearing of the area under application is likely to result in a significant remnant of vegetation being removed from an area that has been extensively cleared.

The area under application is also located within the agricultural area as defined by EPA Position Statement No. 2. Significant clearing has already occurred on agricultural land which has lead to a reduction of biodiversity and increase in salinity. The intent of the proposal is broad scale clearing for the extension of current agriculture activities which, from an environmental perspective, and as outlined in the EPA Position Statement No.2 can not be supported (EPA, 2000).

As a result of the level of clearing in the Shire and local area, and its size, it is considered that the area under application is significant as a remnant in an area that has been extensively cleared.

	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation status***	% in reserves
IBRA Bioregion - Mallee	7,404,398	4,081,089	55.1%*	Least Concern	
Shire of Lake Grace	1,031,972	225,891	21.9%*	Vulnerable	
Beard vegetation associations					
Unit 519	2,221,704	1,346,958	60.6*	Least concern	18.9%*

* (Shepherd et al. 2001)
**(EPA, 2003)
***(Department of Natural Resources and Environment 2002)

Methodology

Shepherd et al. 2001
EPA, 2003
Department of Natural Resources and Environment 2002
EPA, 2000
GIS databases:
- Pre-European Vegetation - DA 01/01
- Hyden 1.2m Orthomosaic - DOLA 98

(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 area under application has a minor non-perennial watercourse that runs through the middle of Area C in a south easterly direction. Area A is located within 300 metres of a non perennial watercourse and B is within 50m of the non perennial watercourse that runs through the middle of Area C. Given the distance of the nearest watercourse to areas A and B to and that these watercourses have been previously cleared these two areas are considered unlikely to be at variance

The area under application excludes clearing along the non-perennial watercourse within Area C by leaving a vegetated buffer of approximately 60m either side. If this vegetated buffer was left it would be unlikely the clearing as proposed would result in the removal of vegetation growing in association with a watercourse.

Methodology

GIS databases:
- Hydrography, linear - DOE 1/2/04

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

Comments

Proposal is seriously at variance to this Principle

The area under application was assessed by DAWA (2005) for the potential risk of land degradation. The risk of wind erosion in the area under application if managed poorly was considered significant, while the risk of eutrophication was considered low as the area under application is located in the upper catchment.

The salinity risk associated with the proposed clearing of areas A (9ha) and B (37ha) was not considered significant, however the proposed clearing of the 130 hectares in area C, located on the catchment divide at the head of the drainage line above Lake Stubbs, was considered likely to increase groundwater recharge and as a result cause off-site salinity issues in the medium to long term.

This increase in groundwater and resulting salinity off-site is likely to cause significant land degradation and is therefore seriously at variance to this principle.

Methodology DAWA (2005)

(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 at variance to this Principle

Areas A and C under application are adjacent to Rock View Nature Reserve 29167 which is vested in the Conservation Commission for the conservation of flora and fauna (CALM, 2006). A road reserve (with relatively intact vegetation on the shoulders), is situated between the nature reserve and area C. Clearing area C may have a detrimental impact on the environmental values of the nature reserve, as the area proposed to be cleared is relatively large i.e. 130ha and as such provides an ecological buffer to the nature reserve within an otherwise extensively cleared landscape (CALM, 2006).

If the areas under application were cleared the movement of displaced fauna from Areas A and C would most likely impact upon the Rock View Nature Reserve which is likely to already be nearing the maximum carrying capacity (CALM, 2006).

In addition the drainage lines that flow through Area C flow into the adjacent Rock View Nature Reserve to the south. The clearing of Area C and associated land degradation issues in respect to salinity as outlined above is likely to directly impact on the conservation values of Rock View Nature Reserve (CALM 2006).

Methodology CALM (2006) GIS databases:
Hydrography, linear - DOE 1/2/04
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 is seriously at variance to this Principle

Following the proposed clearing, it would be inevitable that groundwater rise as measured across all areas of the wheatbelt will occur. The majority of the surface hydrology flows from the property to the south east with some surface drainage to the north west (C McConnell 2005)

Clearing of Area C which sits at the head a drainage line and catchment divide is likely to contribute to recharge within the area under application and on adjacent properties. Offsite salinity may develop in the drainage lines and potentially impact upon streamline vegetation. The rate of the rise in the groundwater is expected to be slow and water tables deep, consequently a visual expression of salinity in the upper landscape areas may not result for sometime dependent on rainfall and evapotranspiration rates. (DAWA 2005)

Given the large area under application and the resulting increase in recharge of rainwater it is considered the proposed clearing of Area C poses a serious risk of significant increase in the salinity of underground water. This likely increase in salinity within the local area also poses a serous risk in an increase of salinity in the drainage lines, watercourses and lakes at the base of the catchment. The proposal is therefore considered likely to be seriously at variance to this principle.

Methodology DAWA (2005)
C McConnell (2005)

(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 property comprises gently undulating topography, yellow and white sands, gravels, laterites and silcretes.

The property is located on a catchment divide with the majority of surface water hydrology flowing from the south east and some surface drainage to the north west (McConnell 2005). Rainfall exits the property through this natural drainage system. Given this and that the proposed clearing will result in increased recharge rates is would be considered unlikely that clearing as proposed would increase peak flood height or duration.

Methodology DAWA (2005)

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

Comments

The lot under application 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.

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Cropping	Burning	176	**Refuse**	The assessable have been addressed and proposal is considered seriously at variance to Principles G and I due to the salinity risk posed by broad scale clearing. The proposed clearing of area under application is considered at variance to principle A, B and H because of: - the high biodiversity under application in relation local area that has been extensively cleared for agriculture; - the significant habitat for fauna indigenous to Western Australia the vegetation provides; and - the location of the proposal immediately adjacent to a Nature Reserve that would likely be impacted through the removal of a vegetated buffer to the reserve and resulting salinity impacts. The assessment also considered the proposed clearing may be at variance to principle C due to the DRF that are located within the local area, within similar soil types and the same vegetation complex. In addition the area under application is also located in the agricultural area as defined by EPA Position Statement No. 2 and therefore further clearing from an environmental prospective can not be supported. The assessing officer therefore recommends that the application for clearing permit be refused.

5. References

DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM ref: IN 25356.

Clearing Assessment Unit's biodiversity advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM ref: EI 6508.

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 (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.

EPA (2003) 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.

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, 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)
DAWA	Department of Agriculture
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)