Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2821/2

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Main Roads WA**

1.3. Property details

Property: ROAD RESERVE (KONDININ 6367)
ROAD RESERVE (KONDININ 6367)
ROAD RESERVE (KONDININ 6367)
ROAD RESERVE (KONDININ 6367)
ROAD RESERVE (KONDININ 6367)

Local Government Area: Shire Of Kondinin

Colloquial name: Brookton Hwy

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
959: Succulent steppe with sparse woodland & thicket; yorrell & Kondinin blackbutt over teatree & samphire 1023: Medium woodland; York gum, wandoo & salmon gum (Eucalyptus salmonophloia)	The proposal is to clear 1.4 hectares of native vegetation for the realignment of a dangerous section of the Brookton Highway in Kondinin. The area under application is located within a patch of remnant vegetation, and riparian fringing vegetation that is classified as an ESA. The vegetation under application comprises York and Salmon gum, Gilmet and black butt; with Hakea species present; Acacia and Lycium shrubs; samphires and numerous weed species. The vegetation under application ranges in condition from completely degraded to very good, with an overall condition of good. It is consistent with the beard vegetation association mapping.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The vegetation condition was assessed through site visits (DEC, 2008; Munsell, 2008) and aerial photography.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

The proposal is to clear 1.4 hectares of native vegetation for the realignment of a dangerous section of the

Brookton Highway in Kondinin.

The area under application is located a linear corridor of remnant vegetation, and along a 2km strip of riparian fringing vegetation that is classified as an ESA. The vegetation under application comprises York and Salmon gum, Gilmet and Black butt; with Hakea species present; Acacia and Lycium shrubs; samphires and numerous weed species. The vegetation under application ranges in condition from completely degraded to very good, with an overall condition of good (Keighery, 1994). The vegetation appears consistent with the Beard Vegetation Association mapping (DEC, 2008).

In close proximity to the application area priority flora species, Eucalyptus spathulata subsp. salina (P3), Acacia scherophylla var. teretiuscula (P1) and Davidsia purpurascens (P4) have been recorded. They all fall within the same soil and vegetation types as the application area, though none where identified during a site visit (Maunsell, 2008). Emex australis, a declared plant by Department of Agriculture and Food, was found within the application area. Control measures are to be implemented to minimise the spread of this weed (Maunsell, 2008).

The vegetation under application is also considered to potentially provide habitat for a range of fauna, especially given the extensive clearing within the region. Clearing of native vegetation especially the mature tree may impact on vegetative connectivity within the local area (20km radius) and its use as an important passage for fauna species.

Given the good condition of the vegetation under application, the vegetation diversity, and the location within an area that has been extensively cleared, it is considered that the vegetation under application comprises a high level of biological diversity, and may be at variance to this principle. To mitigate this loss of vegetation an offset condition will be placed on the permit. Avoid and minimise clearing as well as weed conditions will also be placed on the permit to control the spread of weeds.

Methodology

DEC, 2008
Keighery, 1994
Maunsell, 2008
Sac biodatasets (181108)

(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

The application area is part of a linear corridor of vegetation within an extensively cleared landscape. It is an important passage for fauna movement (Maunsell, 2008). No threatened fauna records have been recorded in the vicinity the application area. The vegetation under application also includes an understorey that has the potential to provide habitat for ground-dwelling fauna species.

There a two fauna species of conservation significance that may potentially occur within the vegetation under application:
- White-browed babbler (Pomatostomus superciliosus ashbyi),
- Western Mouse (Pseudomys occidentalis)

The white-browed babbler lives in eucalypt forests and woodlands, and forages on or near the ground for insects and seeds. The western mouse occurs most frequently in areas of long-unburnt vegetation on sandy clay or loam with a matrix of gravel. It is known to feed on the seeds of quandong (Santalum acuminatum) and various sedge species. They are found within Paperbark and Bendering Nature Reserves approximately 10km from the application area.

The vegetation under application forms part of a linear vegetative corridor for fauna species in a local area that has been extensively cleared for agriculture. It is therefore considered that the proposed clearing may be at variance to this Principle, and a fauna management condition will be placed on the permit.

Methodology

Maunsell (2008)
GIS Layer:
CALM Managed Lands and Waters - CALM 1/07/05
Corrigin North 1.4m Orthomosaic - DOLA 01
SAC biodatasets (181108)

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

Comments

There are two known records of rare flora species within the local area of the application (20km radius). They are Boronia capitata subsp. capitata and Symonanthus bancrofitii.

S. bancroftii is a small dioecious shrub known from only one location near the rural town of Bruce Rock in WA. It

is believed that habitat disturbance is one of S. bancrotiftii's most threatening processes. There are 2 secure planting sites within this section of the Wheatbelt consisting typically of remnant open wandoo woodland, and an understorey of Melaleuca, Acacia and Eremophila (Qigang et. al., 2007). Given the application area is within a already highly disturbed area, it is very unlikely that the secure planting sites are in the vicinity of the application area.

Boronia capitata subsp. capitata is a low to medium spreading shrub to 1.3 m high and 80 cm wide with pinkish-mauve to purple flowers (Brown et al. 1998: Durell & Buehrig 2001). It is restricted to Tutanning NR, east of Pingelly (Brown et al.1998; Durell & Buehrig 2001).

Given the already highly disturbed condition of the application area, and its distance between known populations of rare flora it is unlikely that the proposal is at variance to this principle.

Methodology Qigang et al. (2007)
Durell & Buehirg (2001)
Brown et al.,(1998)
Sac biodatasets (181108)

(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

There are no known records of threatened ecological communities within the local area (20km radius) therefore, it is unlikely that the application is at variance to this principle.

Methodology Sac biodatasets (171108)

(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

The vegetation proposed to be cleared is in degraded to very good (Keighery, 1994) condition with an overall rating of good (Keighery, 1994) condition. The majority of the vegetation under application has been identified as Beard vegetation association 1023, of which there is 3.97% (Shepherd, 2007) pre-European extent remaining within the Mallee IBRA bioregion, and which is considered to be of 'endangered' (EPA, 2000). A portion of the vegetation has also been identified as Beard association 959, of which there is 38.39% of pre-European extent remaining (Shepherd 2007).

The vegetation under application is located within the Mallee IBRA bioregion and Shire of Kondinin, which have 54.63% and 50.47% respectively of pre-European vegetation extent remaining (Shepherd 2007).

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 (EPA, 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity.

Furthermore, the area under application is located within the Intensive Land-use Zone (Shepherd et al. 2007) and located in the area defined in EPA Position Statement No. 2 (EPA 2000). The EPA Position Statement No. 2 (EPA 2000) states that all jurisdictions (States) have committed to the goal of no clearing of endangered ecological communities, which are those with less than 10% pre-European extent remaining.

The proposed clearing will reduce the integrity of the remaining vegetation through fragmentation and the likely spread of weeds. Given the above it is considered that the vegetation under application is significant as a remnant in an area that has been extensively cleared and the proposal is considered to be at variance to this Principle. Offset conditions will be placed on the permit to mitigate this clearing.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	%
IBRA Bioregions				
Mallee**	7,395,897	4,040,547	54.63	
Shire of Kondinin*	741,927	374,478		
Beard Vegetation Associations:				
1023**	63,990	2,542	3.97	
959**	8,228	3,159	38.39	

** (Shepherd et. al., 2007)

Methodology Shepherd et. al (2007)
Keighery (1994)
EPA (2000)

GIS Layer:
Pre-European Vegetation - DA 01/01
Interim Biogeographic Regionalisation of Australia - EA 18/10/00
EPA Position Paper No 2 Agricultural Region - DEP 12/00

(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

The application area is located on a salt marsh (an environmentally sensitive area - fringing vegetation). Culverts have been constructed under the road to enable water flow and prevent flooding over road in peak rainfall periods. Clearing of approximately 10-12 metres either side of the current single lane of tarmac for a distance of about 800m is to facilitate resurfacing (incorporating the upgrade of these culverts) to allow heavy haulage vehicles to pass (DEC, 2008).

The salt marsh system includes Lockhart River (passes through application area) and Lake Kondinin, which is located approximately 2km south east. This system is flowing north to south (DEC, 2008).

Given the above, the application is at variance to this principle. To mitigate the removal of vegetation within an environmentally sensitive area, if granted, offset conditions will be placed on the permit.

Methodology
DEC (2008)
Corrigin North 1.4m Orthomosaic - DOLA 01
Hydrography, linear - DOE 1/2/04
Rivers, DoW

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

Comments

The area under application lies within four soil units, consisting of hard alkaline red and yellow soils; gypseous and saline loams consistent with saline valleys and salt lakes; and brown and grey-brown calcareous earths (Northcote et al. 1960-68). The proposal may cause some short term land degradation issues in terms of flooding and soil erosion during works. However these issues should be minimal as the existing roads already have road side infrastructure in place to prevent land degradation associated with roads, ie; table drains and culverts.

The Department of Agriculture and Food states that (DOC67804) the 'Commissioner is satisfied that provided the proposed offset planting and rehabilitation is carried out and attention is paid to the surface water management then land degradation is unlikely to result'.

The area under application has a groundwater salinity of 14,000-35,000 and >35,000 TDS mg/L (saline) over the salt marsh, however it is unlikely that the clearing of the edges of an existing linear transport route will significantly exacerbate salinity.

Methodology
Northcote et al. (1960-68)
DAFWA (DOC67804)
GIS Layer:
Groundwater Salinity, Statewide - DOW
Salinity Risk LM 25m - DOLA 00
Soils, Statewide - DA 11/99

(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

A 2km strip of the application area consists of a environmentally sensitive area (fringing vegetation) and a lake system (salt marsh). Kondinin Lake Nature Reserve is 2km south of the application area.

Paperbark National Park, Stretton Road Nature Reserve and a C Class Nature Reserve are all just under 10kms from the application area. The vegetation within the application area facilitates fauna movement to and from nature reserves in a local area that has been extensively cleared.

Emex australis, a declared plant by Department of Agriculture and Food, was found within the application area. Control measures are to be implemented to minimise the spread of this weed (Maunsell, 2008).

Given the low topography of the region and the small, linear nature of the application area, the proposed clearing for roadworks is unlikely to significantly impact these conservation areas. However, weed conditions have been included in the permit to minimise the spread of identified weeds to uninfected areas.

Methodology Maunsell (2008)
GIS Layers:
CALM Managed Lands and Waters - CALM 1/07/05
Corrigin North 1.4m Orthomosaic - DOLA 01
Register of National Estate - EA 28/01/03
Cadastre - DLI

(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

The proposed clearing sites fall within the Lockhart catchment area. The region is of low relief with an annual rainfall of 400mm. Groundwater salinity is mapped at 14,000 to 35,000mg/L and >35,000mg/L TDS (Total Dissolved Solids) over the salt marsh.

The proposed clearing for roadworks may cause some short term water quality issues in terms of localised surface water sedimentation during works. However, these issues should be minimised as roadworks will include roadside infrastructure to prevent water quality issues associated with roads (ie table drains and culverts).

Due to the small and linear nature of the areas proposed to be cleared, it is unlikely that the clearing of native vegetation for roadworks will cause deterioration in the quality of surface water or groundwater within the local area.

Methodology GIS Layer:
Groundwater Salinity, Statewide - DOW
Salinity Risk LM 25m - DOLA 00
Soils, Statewide - DA 11/99

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

Comments

The purpose of clearing is for road upgrades. Part of the road under application crosses over an areas subject to inundation (Lockhart River). Clearing associated with road widening is within road reserves that already exist and as such, issues relating to flooding have been previously addressed by diverting water bodies through culverts or under bridges.

The vegetation under application is associated with a flat to undulating topography with hard and red yellow soils, along with soils consistent with salt lakes (Northcote et al. 1960-68) which are considered to have a low risk of localised flooding.

Given the above, the proposed clearing is not likely to cause, or exacerbate, the incidence or intensity of flooding.

Methodology Northcote et al. (1960-68)
GIS Layer:
Soils, Statewide - DA 11/99

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

Comments

During a site visit (DEC, 2008) it was noted that vegetation on the north side of the road (where Main Roads intends to revegetate) appears to be more salt affected than the vegetation on the south side of the road. This may indicate that water flowing from north to south is ponding behind the road, indicating inadequate drainage under the road and resulting in waterlogging, evaporation and increased plant deaths (DEC, 2008).

The project will require the clearing of Vegetation Association 1023, which is considered to be under represented with less than 3.97% pre-European extent remaining. Unfortunately this vegetation association can not be practically avoided, however, to mitigate the project's overall clearing of 1.4ha, Main Roads will have to submitted an offset proposal.

A submission states that (DOC67804) the clearing is likely to be at variance to three principles and has several suggestions to attempt to reduce any impacts. These include avoiding the removal of larger individuals of York gum, Salmon gum and Wandoo and revegetation of the area to provide habitat for ground dwelling fauna and enhance the buffer zone of a watercourse.

A submission states that (DOC67804) a worthwhile project would be to rehabilitate the triangle at the intersection with Kondinin Narembeen Road.

Submission from the Shire of Kondinin (DOC67804) supports the upgrade, due to safety concerns and increased road usage by tourists.

Submission from the Department of Water states that they have no objection to the works being carried out (DOC68560).

Methodology

4. Assessor's comments

Comment

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 is at variance to Principle (e) and (f), may be at variance to Principles (a), (b), and (h) and is not likely to be at variance to the remaining clearing Principles.

5. References

Brown, A., C. Thomson-Dans & N. Marchant, eds. (1998). Western Australia's Threatened Flora. Page(s) 1-220. Como: Department of Conservation and Land Management.

DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2821/1, Brookton Hwy, Kondinin. Site inspection undertaken 12/11/2008. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC68682).

Durell, G.S. & R.M. Buehrig (2001). Declared Rare and Poorly Known Flora in the Narrogin District. WA CALM. Perth, WA CALM.

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, 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.

Qigang Ye, Eric Bunn, Siegfried L. Krauss, and Kingsley W. Dixon,. (2007). Reproductive success in a reintroduced population of a critically endangered shrub, Symonanthus bancroftii (Solanaceae). Australian Journal of Botany 55(4) 425-432. CSIRO 2007

Shepherd, D.P. (2007). 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.

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)