Department of Environment
Government of Western Australia

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 214/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Robert Eric & Joan Frances Haywood**

1.3. Property details

Property: LOT 49 ON PLAN 33533 (Lot No. 49 BUSSELL FOREST GROVE 6286)
Local Government Area: Shire Of Augusta-Margaret River
Colloquial name: Lot 49, Bussell Highway, Forest Grove, 8km from Karridale

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard vegetation association: 1 - Tall forest; karri (Eucalyptus diverscolor); 3 - Medium forest; jarrah-marri (Hopkins et al. 2001, Shepherd et al. 2001). Mattiske vegetation complex T Treeton - Woodland of Eucalyptus marginata subsp. marginata-Corymbia calophylla with some Allocasuarina fraseriana on mild slopes in the perhumid zone. Tw Treeton - Open forest of Eucalyptus patens-Corymbia calophylla-Eucalyptus marginata subsp. marginata on lower slopes and on floors of minor valleys in the perhumid zone. W1 Wilyabrup - Tall open forest of Eucalyptus diversicolor-Corymbia calophylla-Allocasuarina decussata-Agonis flexuosa on deeply incised valleys in the hyperhumid zone. H Glenarty Hills - Open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla-Banksia grandis with some Eucalyptus diversicolor on upland and slopes in hyperhumid and perhumid zones.	The vegetation within the area under application consists of mainly marri trees with some jarrah, peppermint and karri trees. Some of the peppermint trees in the northern sections have inter-connecting canopies. There are several large hollow bearing trees remaining, however, the vegetation was clearfelled around 50 years ago and this regrowth consequently consists of smaller trees. Bracken fern dominates the understorey as a result of the extensive grazing history of the property. (DoE site visit 2004).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The property was inspected, separately by Department of Agriculture (2004), CALM (2004) and DoE (2004) representatives. DoE site visit confirmed the degraded state of the vegetation and enabled officers to select appropriate areas to fence and retained.

(Mattiske Consulting
1998).

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 not likely to be at variance to this Principle

Four Mattiske vegetation types occur within the area under application and two of these are under 30%. However, the area under application is quite degraded and of little biodiversity value. It has little understorey consisting of mainly bracken fern and is not representative of these vegetation types. The negotiated areas to be fenced and replanted have the potential to be of value in the future in terms of biological diversity.

The negotiated area to the east is intended to buffer the watercourse and to potentially provide habitat for the white bellied frog (known to occur in the area - CALM report 2004) in the future. This area has a much greater biological value now (and will continue to be in the future) than the area under application.

Methodology

CALM site visit report (2004).
DoE site visit (2004).
Keighery BJ (1994).

GIS databases:
- Mattiske Vegetation - CALM 24/3/98

(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

CALM report (2004):
'Six species of Threatened and Priority fauna have been recorded in the local area (10 km radius). These include:
S1 Baudin's Black-Cockatoo (Calyptorhynchus baudinii) and White-bellied Frog (Geocrinia alba);
Priority 3 fauna: Forest Red-tailed Black-Cockatoo (Calyptorhynchus banksii naso), Southern Brush-tailed Phascogale (Phascogale tapoatafa tapoatafa); and
Priority 4 fauna: Quenda (Isoodon obesulus fusciventer) and Crested Shrike-tit (south-western spp. Falcunculus frontatus leucogaster).'
'Given the topographic location and from interpretation of the air photo and hydrological data there is only a low to medium probability that G. alba will be found in the riparian habitat on this lot. However because of the general decline in survivorship of frog populations over the last 5 years, finding a new population no matter the size, is a significant event.'

CALM site visit report (2004):
'McLeod Creek and several of its tributaries (the area under application straddles one of its tributaries) are known to contain populations of the White-bellied frog (Geocrinia alba), which is protected not only under the Wildlife Conservation Act but also under the EPBC Act 1999 and listed as fauna that is Endangered. The nearest population of the White-bellied Frog is some 800m to the SSE of the proposed clearing. Geocrinia predominantly occur at the junction of creek lines or elsewhere where shallow 'swamp' type formations occur with the drainage system. These can be very small areas (a few square metres). The watercourse that transverses Lot 49 could be a potential habitat for the White-bellied Frog.'
'Upon inspection it was evident that past landuse, principally grazing, had severely modified the structure and floristic composition of the creek resulting in an open, dry and compacted soil waterway, dominated by introduced grasses. The absence of humus/litter layer significantly limited the likelihood that White-bellied frogs would be present.'
'There is potential that given sufficient time and in the absence of grazing, many of the habitat elements required for support a frog population in this creek could be recovered. Observation of the creekline in the property immediately east of Location 49, although in a highly modified state, did contain elements similar to that known to support some, albeit marginal populations of White-bellied frog. Measures to assist in this habitat recovery were discussed with the proponent.'
'The vegetation either side of the creek consisted mainly of Eucalypt species, including regrowth Karri admixed with older hollow bearing Jarrah/Marri and in some areas mature Peppermints (Agonis flexuosa) with inter-connecting canopies. The understorey was relatively sparse. This structure is indicative of the habitat capable of supporting the threatened Western Ringtail Possum. The owner confirmed that both Ringtail and Brushtail Possums were present elsewhere on the property. There is a likelihood that Ringtails are present within the proposed clearing area but in low densities.'

CALM recommendations included:
- That subject to the implementation of habitat recovery measures the clearing of 9.7 ha as proposed in the proposed clearing is not expected to have detrimental impacts on either White-bellied Frogs or known habitat.
- If successfully implemented the habitat recovery measures may create habitat capable of supporting a white-

bellied frog population.
- The clearing will result in the loss of potential habitat for Western Ringtail Possums, it is acknowledged that the retention and enhancement of the better quality habitat within a proposed fenced area will somewhat compensate for this loss.

See 'History' section for more information.

Methodology

CALM Report (2004).
CALM site visit report (2004).
DoE site visit (2004).

GIS database:
- Threatened and Priority fauna - CALM (CALM 2004)*.
*This citation signifies that we do not have access to this database and that our use of it is through the CALM advice provided.

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

Comments

Proposal is not likely to be at variance to this Principle

CALM's Rare Flora Database indicates that there are approximately 24 known Priority Flora populations in the local area (defined as a 10 km radius of the area under application).

These include:
- One population of Priority 1 flora being Synaphea macrophylla, 7.7km south east indirectly connected by vegetation via CALM managed land and private properties;
- Six populations of Priority 2 species, the closest being Acacia subracemosa, 4.6km north east connected directly via vegetation over CALM managed land and private properties;
- Nine populations of Priority 3 species, the closest being Actinotus spp. Walpole, 2km east not vegetatively connected and;
- Eight populations of Priority 4 species, the closest being Asroloma spp. Nannup, 940m east not vegetatively connected to the area under application.

CALM's Herbarium Specimen Collection Database indicates that there are fifty-eight known specimens of Priority flora collected in the local area (defined as a 10 km radius of the proposed clearing).

The area under application is degraded and has been grazed for some time. It is therefore unlikely to support any of the above mentioned species (DoE site visit 2004).

Methodology

CALM Report (2004).
Keighery (1994).

GIS databases:
- CALM's Threatened Flora Data Management System - DEFL
- Declared Rare and Priority Flora List - CALM 13/08/03
- Herbarium Specimen Collection Database - WA Herb.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant ecological community.

Comments

Proposal is not likely to be at variance to this Principle

CALM report (2004):
'CALM's Threatened Ecological Community (TEC) Database indicates that there are three known occurrences of Threatened Ecological Communities in the local area. These include two occurrences of 'Aquatic Root Mat Communities' (Category of Threat: Critically Endangered) and one occurrence of 'Reedia spathacea; Empodism' (Category of Threat: Critically Endangered).'

'The 'Reedia spathacea' community occurrence, associated with the floodplain of McLeod Creek, is 1.5 km SSE of the proposed clearing.'

'A watercourse that transverses Lot 49 is a tributary of McLeod Creek. CALM notes that the proponent proposes to retain the creekline vegetation. '

CALM site visit report (2004):
'During the field inspection it was noted that occurrences of the Reedia TEC have also been recorded along the McLeod Creek system, however, given the state of the riparian vegetation in the creekline no Reedia TEC or component species were observed.'

CALM recommended that subject to the implementation of the habitat recovery measures discussed with the

proponent and the clearing of 9.7 ha as proposed in the area under application is not expected to have detrimental impacts on Reedia TEC populations. The proponent has agreed to fence watercourses within the property.

Methodology CALM Report (2004).
CALM site visit report (2004).

GIS databases:
- Threatened Ecological Communities - CALM 15/7/03

(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

Havel and Mattiske (2002) have identified three Mattiske vegetation complexes in the area under application as 'Poorly Represented Vegetation Complexes'.

The property has approximately 18.3 hectares (25.3%) of native vegetation remaining, and if implemented, this clearing proposal will leave 13.9% remaining. This remaining percentage includes two vegetation belts that were originally applied for but the proponent never intended to clear.

		Pre - European (ha)	Current Extent (ha)	Remaining (%)	Conservation* status	% In reserves/CALM managed land
IBRA Bioregion						
-Warren***	ILZ	836 270	724 014	86.6	Least Concern	
Shire		222 718	159 679	71.7	Least Concern	
- Augusta-Margaret River						
Beard Unit 1		87 394	57 843	66.2	Least Concern	0
Beard Unit 3		3 046 385	2 197 837	72.1	Least Concern	67.9
Mattiske Consulting						
T Treeton		278 263	116 870	42	Depleted	11.3
W1 Wilyabrup		73 009	45 191	61.9	Least Concern	
H Glenarty Hills**		77 126	20 052	26	Vulnerable	8.6
Tw Treeton **		87 220	25 293	29	Vulnerable	8.1

* (Shepherd et al. 2001)
** (Department of Natural Resources and Environment 2002)
*** Within the Intensive Landuse Zone

The proponent agreed to fence and revegetate an area over a watercourse within the property. This area is 2.28 ha with 1.68 ha currently vegetated and may provide habitat for the white bellied frog in the future.

The area under application is not representative of the above mentioned vegetation types that have an occurrence of less that 30%. This area has been grazed for many years and largely consists of a single species understorey (being bracken fern).

Methodology DoE site visit (2004).
Hopkins et al. (2001).
Havel and Mattiske (2002).
Shepherd et al. (2001).
GIS databases:
- Mattiske Vegetation - CALM 24/3/98
- Interim Biogeographic Regionalisation of Australia - EM 18/10/00
- Pre European Vegetation - DA 01/01.

(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 at variance to this Principle

McLeod Creek (a minor perennial watercourse 1st order tributary) passes between the two northern proposed clearing sections and the two sections below. CALM and Department of Agriculture representatives discussed the retention and fencing of vegetation along this creek to prevent stock from further degrading this area.

Given the stated intended land use is cattle grazing, the creek requires fencing to prevent stock entry into the riparian habitat. The proponent was willing to fence the creek creating an east west vegetated link including

future rehabilitation of the already cleared section. A negotiated buffer width of 30m on each side of the creek (including a 5m firebreak) was agreed upon with the proponent during a site visit (DoE 2004).

There are a number of Geomorphic wetlands surrounding the clearing and in the local area (10km radius). These include:
~ thirty one Palusplain wetlands to the north, south and east (closest 34m east of the area under application);
~ thirteen Paluslope wetlands to the north, south and east (closest 400m east of the area under application);
~ fourteen Floodplain wetlands (closest 524m south of the area under application);
~ thirteen Sumpland wetlands (closest 1.9km south west of the area under application); and
~ thirty-two Dampland wetlands (closest 4.1km south east of the area under application).

Methodology CALM Report (2004).
CALM site visit report (2004).
DAWA Report (2004).
DoE site visit (2004).

GIS databases:
- Environmentally Sensitive Areas - DoE 22/10/04
- Geomorphic Wetlands, Augusta to Walpole - DoE 18/6/03
- 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 may be at variance to this Principle

DAWA report:
'Vegetation in the creek line to the north is to be retained. The slope of the landscape is around 2.5-5%. The catchment area above the area to be cleared is less than 10 ha. The published data suggests that this soil landscape unit is at moderate risk of soil erosion. There are no obvious signs of water erosion in other parts of the property. The maintenance of sufficient pasture cover will reduce the risk of water erosion, and this has been shown to be effective around the property. The creek line will be left vegetated, and fenced out. This will further reduce the risk of erosion.'

'The clearing of vegetation on this site may contribute to waterlogging in the valley floors, downslope of the clearing site. The landscape is moderately dissected, and the area affected by the increase in waterlogging should be minimal.'

'Most of the area to be cleared has a loamy gravel soil type, and this combined with proximity to retained windbreaks (20m wide between paddocks), and year round pasture cover, should minimise the chance of wind erosion of this soil type. The patch of bush to the south east has a sandy surface soil. This combined with landscape position results in a high risk of wind erosion. If sufficient pasture cover can be maintained, this risk will be reduced, however over stocking, inappropriate fertiliser application or a poor season in terms of rainfall would increase the risk of wind erosion. There are windbreaks scattered across the other areas of the property. Although 9.7 hectares was under application, the area to be cleared will be split into 4 or 5 bull paddocks. Twenty metre wide strips of vegetation are to be retained between these paddocks and will be fenced off, thereby negating the need to plant windbreaks.'

'This property is well managed, and other than the holes dug by the bulls, which are filled by the proponent every year, there were no obvious signs of land degradation elsewhere on the property. The clearing of the southern most patch of bush notified, has some risk of wind erosion (due to landscape position and gritty sandy soil), but maintenance of pasture cover will minimise this risk. There may also be some increase of runoff from the site, which may lead to a minor increase in waterlogging downstream.'

Methodology DAWA Report (2004).

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal is not likely to be at variance to this Principle

CALM report (2004):
'The remaining vegetation within Lot 49 has a limited value as a stepping stone to the Leeuwin-Naturalise National Park (650m to the west) and the 72/25 Timber Reserve.'

'The proposed clearing will further contribute to the reduction and fragmentation of remnant vegetation within the property. The proposed remaining pockets of vegetation due to its size and isolation are not likely to be viable in long term.'

An un-named National Park lies 2.9km to the east of the area under application and the landscape between is fragmented with no substantial vegetated linkages. There are two Registered National Estates within the local area (10km radius). These are the Leeuwin - Naturaliste Ridge Area (1.3km west of the proposed clearing) and

the Donnybrook Sunklands Area (8.9km north east of the proposed clearing). The area under application is in a degraded state (DoE site visit report 2004), and is unlikely to contribute to the values of nearby conservation areas.

Methodology CALM report (2004).
DoE site visit report (2004).

GIS database:
- CALM Managed Lands and Waters - CALM 1/06/04
- Register of National Estate - EA 28/01/03.

(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 within the RIWI groundwater area for Blackwood and within the Hardy Estuary _ Blackwood River Hydrographic Catchment. The quality of this groundwater resource is not likely to deteriorate as a result of the proposed clearing.

Hydrogeological advice:
'The slopes to be cleared are well drained to the east and this subcatchment has a relatively high proportion of remnant vegetation. Groundwater discharge appears to sustain a seasonal wetland just east of the property. Salinities here would be a good indication of salt store and its likely mobilisation after clearing. Offsite groundwater points have low salinities, so a low salt store is to be expected. Although these salinities should indicate groundwater is fresh the increase in groundwater discharge after clearing would lead to increased inundation and possible salt discharge to surface water.'

'Clearing will increase both runoff and groundwater recharge, possibly lowering of the groundwater salinity. Depending on the proportion of sand and clay at the surface this could increase the access for nutrients and pesticides to both groundwater and surface water. Increased runoff is likely to exacerbate erosion into the flat alluvial valleys that contain shallow groundwater and saltier soils. Due to the high rainfall dryland salinity will not become significant but waterlogging may be increased.'

'The proposed clearing is nor regarded as detrimental to salinity, but the slightly increased risk of both erosion and waterlogging should be manageable.'

The proponent intends to retain vegetation along the watercourse that may minimise any salinity impacts and affects on GDE (DoE site visit report 2004). This area will be fenced, allowing the vegetation to regenerate, after many years of stock grazing and damage.

Methodology DoE site visit report (2004).
Hydrogeogical advice, R. Smith, Supervising Hydrogeologist, DoE, pers. comm. 2004.

GIS database:
- RIWI Act Groundwater Areas WRC 13/06/00

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

Comments

Proposal is not likely to be at variance to this Principle

Due to scale, flooding impacts are unlikely to occur as a result of the proposed clearing, but additional surface water flow may exacerbate the impact of groundwater on wetlands immediately downstream.

Methodology Hydrogeological advice (R. Smith, Supervising Hydrogeologist, DoE, pers. comm. 2004)

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

Comments

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Grazing & Pasture	Mechanical Removal	9.7	**Grant**	Recommended the permit is Granted. The proposal is at variance to Principle (e). - Principle (e): Havel and Mattiske (2002) have identified three Mattiske vegetation complexes in the area under application as 'Poorly Represented Vegetation

Complexes'. However, the area under application is degraded and not representative of these vegetation complexes.

The proposal may be at variance with Principles (b), (g) and (i).

- Principle (b): The area retained and fenced over the watercourse may provide habitat for the white bellied frog in the future and other vegetation to the west will provide habitat for any ring tailed possums on the property. The proponent intends to retain many of the larger hollow bearing trees within the area under application.
- Principle (g): Waterlogging may be an issue, however, retaining vegetation along the watercourse should reduce this risk.
- Principle (i): The retention of vegetation along the watercourse and fencing this vegetation may reduce the impacts of salinity and affects on GDE by improving the watercourse, that was previously degraded by stock.

5. References

CALM Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref XXXXX.

DAWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref XXXXX.

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.

Havel, J.J. and Mattiske Consulting Pty Ltd (2002) Review of management options for poorly represented vegetation complexes, Conservation Commission.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.

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

Mattiske Consulting (1998) Mapping of vegetation complexes in the South West forest region of Western Australia, CALM.

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.