



1. Application details

1.1. Permit application details

Permit application No.: 2155/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Forest Hill Hall Committee

1.3. Property details

Property: HAY LOCATION 539 (DENBARKER 6324)
 Local Government Area: Shire Of Plantagenet
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.5		Mechanical Removal	Hazard reduction or fire control
		Mechanical Removal	Hazard reduction or fire control

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
Jarrah Forest : Open forest to woodland of <i>Corymbia calophylla</i> - <i>Eucalyptus marginata</i> subsp. <i>marginata</i> on low undulating hills and low woodland of <i>Melaleuca preissiana</i> on depressions in humid to semiarid zones. (Shepherd, 2006)	The applied area of 0.5ha is located within Reserve 13179. The purpose of the clearing is for a Hazard Reducation or Fire Control. Applied area is remnant bushland contiguous with road reserve along Muirs Hwy. The vegetation proposed to be cleared exists in small pockets within the Reserve and therefore suffers from increased edge effects and holds a high percentage of weeds, pasture invasive species.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The condition of the native vegetation under application was sourced from the Rare Flora Search (2007) and Site Visit (2008)

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

The area under application is a small patch of remnant vegetation in a mostly cleared landscape. Aerial photography suggests the vegetation is sparse and is not supporting the contiguous vegetation.

Rare Flora Survey (2007) conducted by DEC Frankland district staff indicated that there was a high occurrence of weed, pasture invasive species.

Given the relatively small size of the area and degraded condition of the applied area, there is a low likelihood of the area under application comprising a high level of biological diversity. This proposal is therefore not considered to be at variance to this Principle.

Methodology

References:

- Rare Flora Survey (2007)
 - Shepard et al. (2001)
- GIS Database:
- Imagery, Denmark 1m Orthomosaic DOLA 01

(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 not likely to be at variance to this Principle

Within the local area (10km radius) of the area under application, the following Vulnerable and Priority fauna species have been recorded:

Galaxiella munda (Western Mud Minnow), Vulnerable, 3.8km West North West
Charadrius rubicollis (Hooded Plover), Priority 4, 10km North

The Mud Minnow is a small freshwater fish, the species occurs in swift flowing streams within karri forests and is typically found near submerged vegetation, occasionally in the still water of ponds, swamps and roadside drains, and often inhabiting darkly tannin-stained and acidic water (Morgan et al. 1998, Allen et al. 2002). Using GIS database information it was determined that the record of the Mud Minnow existed in a major watercourse. Clearing of the applied area is therefore not likely to affect the presence of the Mud Minnow as the habitat of the applied area is not conducive to supporting Mud Minnow populations.

The Hooded Plover, Charadrius rubicollis (medium sized shorebird) is listed by DEC as a Priority 4 species. Priority 4 species are defined as Taxa in need of monitoring (Swan Region Strategy, 2003).

The Hooded Plover is known to inhabit salt lakes up to 100km inland in South West, Western Australia. (Blakers et al. 1984) Using GIS database information it was determined that the Hooded Plover occurred within open water with no terrestrial vegetation at Kwornicup Lake (non perennial). This lake has a low salinity risk however there are smaller lakes north of Kwornicup which have a higher salinity risk and may also be a suitable habitat for the Plover.

Clearing of the applied area is not likely to affect the presence of the Hooded Plover as the habitat of the applied area is not conducive to supporting Hooded Plover populations.

Given the relatively small size (0.5ha) of the applied area and the unlikely nature of the vulnerable or priority fauna being supported by the vegetation proposed to be cleared, this proposal is unlikely to be at variance to this Principle.

Methodology References:

- Morgan et al. (1998)
- Allen et al. (2002)
- Blakers et al. (1984)
- Swan Region Strategy (2003)

GIS Database:

- SAC Biodatasets
- Imagery, Denmark 1m Orthomosaic DOLA 01
- Hydrography, linear DoW 1994
- Salinity Risk LM 25m, DOLA 00
- Matiske vegetation, 1998
- Pre-European Vegetation 2002

(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

Within the local area (10km radius) of the area under application 3 Rare or Priority Flora records were identified. This includes two Declared Rare Flora (DRF), Caladenia christineae (36m NNE) and Conostylis misera (10km N) as well as one Priority 3 flora, Chrodifex gracilior (7km NNE).

The area under application is a small remnant area contiguous to a roadside remnant which runs alongside Muirs Hwy (approximately 45m wide). According to the Rare Flora Search (2007) conducted by DEC officers from the Frankland District, the area under application does not contain any DRF or Priority species. This report also notes the degraded condition of the applied area from weed, pasture invasion.

DRF species Conostylis misera and Priority Flora species Chrodifex gracilior both exist on the same vegetation and soil type as the applied area, however neither were recorded in the flora survey. (Rare Flora Survey, 2007). Of particular concern is the close proximity of the applied area to DRF species Caladenia christineae however it was noted in the flora survey (Rare Flora Survey, 2007) that there had been no records of the DRF since 1990.

Given the relatively small size (0.5ha) of the applied area and the unsuccessful nature of the Rare Flora Survey (2007) to find any DRF or Priority flora in the applied area, this proposal is considered unlikely to be at variance to this Principle.

Methodology References:

- Rare Flora Survey (2007)

GIS Database:

- SAC Biodatasets
- Soils, Statewide
- Mattiske vegetation, 1998
- Pre-European Vegetation 2002

(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 Threatened Ecological Communities (TECs) in the local area (10km radius).

The closest TEC is located 22km SW of the applied area.

It is therefore considered that the proposed clearing is not at variance to this Principle.

Methodology

References:

GIS Database:

- SAC BIODatasets
- Soils, Statewide
- Mattiske vegetation, 1998
- Pre-European Vegetation 2002

(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

The area under application is a small remnant area contiguous to a roadside remnant which runs alongside Muirs Hwy (approximately 45m wide). The Rare Flora Search (2007) report notes the degraded nature of the applied area from weed / pasture invasion.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)
IBRA Bioregions			
- Jarrah Forest*	2,390,590	1,642,606	68.7
Vegetation Type:			
-Mattiske:			
Perillup (PP)**:	219,882	63,738	29
-Beard 1001*	2,662,058	1,884,029	70.8

*(Shepherd 1968)

** (Mattiske Vegetation, 1998)

Given the relatively small (0.5ha) applied area and the high percentage of vegetation remaining and the degraded condition of the proposed area for clearing, this proposal is not likely to be at variance to this Principle.

Methodology

References:

- Rare Flora Search (2007)
- Shepherd (1968)

GIS Database:

- SAC Biodatasets
- Imagery, Denmark 1m Orthomosaic DOLA 01
- Hydrography, linear DoW 1994
- Salinity Risk LM 25m, DOLA 00
- Mattiske vegetation, 1998
- Pre-European Vegetation 2002

(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 is located within 10km of 4 watercourses and 1 lake/wetland.

Major Drain (470m NW)

Major Drain (360m E)
Minor Watercourse (1km NNW)
Major Watercourse (2.5km N)
Kwornicup Lake (10km N)

The area under application has no direct contact with any of the aforementioned watercourses or wetland. (GIS database)

Given the relatively small (0.5ha) applied area and the unlikely nature of the clearing of this vegetation to impact on any watercourse or wetland, this proposal is not likely to be at variance to this Principle.

Methodology References:
GIS Database:
- Imagery, Denmark 1m Orthomosaic DOLA 01
- Hydrography, linear DoW 1994
- Salinity Risk LM 25m, DOLA 00
- Mattiske vegetation, 1998
- Pre-European Vegetation 2002

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

Comments **Proposal is not likely to be at variance to this Principle**
The applied area is in a low salinity risk zone with groundwater salinity estimated at 3000-7000mg/L. The annual rainfall is approximately 800mm however the evapotranspiration rate is estimated at 700mm annually.

Soils in the applied area are characterised as acidic and hard or neutral yellow and mottled. (Northcote et al., 1968) While the area is located over a small local aquifer surface rocks of low permeability contribute to the evapotranspiration rate.

Given the relatively small (0.5ha) applied area and the soils and low salinity risk the proposed clearing is unlikely to cause appreciable land degradation, this proposal is not likely to be at variance to this Principle.

Methodology References:
- Northcote et al. (1968)
GIS Database:
- Rainfall, Mean Annual
- Evapotranspiration, Areal Acutal
- Groundwater Salinity, Statewide
- Soils, Statewide
- Hydrogeology, 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 is not likely to be at variance to this Principle**
The area under application is a small remnant area contiguous to a roadside remnant which runs alongside Muirs Hwy (approximately 45m wide). The Rare Flora Search (2007) report notes the degraded nature of the applied area from weed / pasture invasion.

According to the Rare Flora Search (2007) the area under application does not contain any DRF or Priority species. The Rare Flora Search (2007) also identified that the road reserve was in a degraded condition, having not been burnt is an estimated >10-12 years and having a notable presence of many weed species.

The closest CALM Managed Land/Water occurs 1.6km South West of the applied area. Due the the distance from the CALM managed land and the degraded nature of the applied area the clearing as proposed is unlikely to have any impact on the nearby conservation area.

Given the relatively small (0.5ha) area and the unlikely nature of the clearing to have an impact on the nearby conservation areas, this proposal is not likely to be at variance to this Principle.

Methodology References:
- Rare Flora Search (2007)
GIS Database:
- Imagery, Denmark 1m Orthomosaic DOLA 01
- SAC Biodatasets
- CALM Managed Lands and Waters

(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 not likely to be at variance to this Principle

The annual rainfall is approximately 800mm however the evapotranspiration rate is estimated at 700mm annually. While the area is located over a small local aquifer surface rocks of low permeability contribute to the evapotranspiration rate.

The area under application has no direct contact with any watercourses or wetland. (GIS database)

Given the limited extent of the applied area (0.5ha) and the low recharge value of the applied area, it is not considered likely that the clearing, as proposed, would cause the deterioration in the quality of surface or underground water. For this reason this proposal is not likely to be at variance to this Principle.

Methodology References:
GIS Database:

- Rainfall, Mean Annual
- Evapotranspiration, Areal Actual
- Hydrography, linear DoW 1994

(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 annual rainfall is approximately 800mm however the evapotranspiration rate is estimated at 700mm annually. While the area is located over a small local aquifer surface rocks of low permeability contribute to the evapotranspiration rate.

Given the limited extent of the applied area (0.5ha) and the low net gain of rainfall (Annual rainfall less evapotranspiration rate = 100mm per year), it is therefore considered that the clearing, as proposed, is unlikely to be at variance to this Principle.

Methodology References:
GIS Database:

- Rainfall, Mean Annual
- Evapotranspiration, Areal Actual
- Groundwater Salinity, Statewide
- Soils, Statewide
- Hydrogeology, Statewide

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

Comments

There are currently two Registered Native Title Claims encompassing the area under application. The applied area is currently designated as Crown Land Title: Reserve under Management Order, with the land being vested with the Minister for Works. The forest hill hall committee have access to the land for recreation and agricultural hall site, therefore the clearing permit is a secondary approval and does not trigger the future act regime under the Native Title Act 1993.

Methodology References:
GIS Database:

- Aboriginal Sites of Significance, DIA 28/02/03

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Hazard reduction or fire control	Mechanical Removal		Proposal has been assessed in relation to the 10 clearing Principles and is unlikely to be at variance to any Principle.
Hazard reduction or fire control	Mechanical Removal	0.5	Proposal has been assessed in relation to the 10 clearing Principles and is unlikely to be at variance to any Principle.

5. References

Allen, G.R., Midgley, S.H. and Allen, M. (2002). Field guide to the Freshwater Fishes of Australia. Western Australian Museum, Perth, Western Australia.
Blakers, M., Davies, S. J. J. F. & Reilly, P. N. (1984) The Atlas of Australian Birds. Melbourne University Press, Melbourne.

Certificate of Title (2008) Lot 539 on Deposited Plan 138757, Landgate, Western Australia, TRIM Ref DOC37959

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

Morgan, D.L., Gill, H.S. and Potter, I.C. (1998). Distribution, identification and biology of freshwater fishes in south-western Australia. Records of the Western Australian Museum. Supplement No 56, Perth, 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.

Rare Flora Search (2007) Inspection Report, Department of Environment and Conservation (DEC), Western Australia, TRIM Ref DOC46117

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 (2008) Site Inspection Report. Department of Environment and Conservation TRIM Ref DOC46285

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

Swan Region Strategy for Natural Resource Management Appendix 12 Biodiversity (BT)/Coastal and Marine (CM) Threatened and priority fauna species in Swan NRM Region (as at 30 June 2003)

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)