



1. Application details

1.1. Permit application details

Permit application No.: 1864/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Denmark

1.3. Property details

Property: LOT 1087 ON PLAN 193666 (House No. 45 BRAZIER DENMARK 6333)

LOT 1087 ON PLAN 193666 (House No. 45 BRAZIER DENMARK 6333)

Local Government Area: Shire Of Denmark

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.18		Mechanical Removal	Recreation

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 diversicolor)	DEC Site Visit Report (2007) found vegetation health of the area under application to be in Good to Very Good condition.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Vegetation condition was determined from DEC Site Visit Report (2007)
Beard Vegetation Association 14: Low forest; jarrah	Vegetation within the southern section of the application area was considered to be in good condition, where the basic structure of the vegetation had been compromised but retained the ability to regenerate. The understorey consisted predominantly of weeds and bracken, and the middle storey was absent. Leaf litter cover was substantial, and both new and decaying fallen logs were numerous.		
Mattiske Vegetation Complex -			
Trent (TR1) Woodland of Allocasuarina fraseriana-Eucalyptus marginata subsp. marginata-Banksia grandis with some Corymbia calophylla on low rises of sedimentary rocks in the perhumid zone.	Some of the native species observed during the site inspection include Acacia pentadenia, Eucalyptus patens, Leucopogon sp., Pteridium esculentum (Bracken), Kangaroo Paw (possibly Anigozanthos flavidus), Melaleuca and rushes.		
As above	DEC Site Visit Report (2007) found vegetation health of the area under application to be in Good to Very Good condition. Vegetation within the northern part of the proposed clearing was considered to be in very	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	As above

good condition with more complete understorey, middle storey and upper storey species, and much reduced weed invasion and edge effects.

Some of the native species observed during the site inspection include *Acacia pentadenia*, *Eucalyptus patens*, *Leucopogon* sp., *Pteridium esculentum* (Bracken), Kangaroo Paw (possibly *Anigozanthos flavidus*), *Melaleuca* and rushes.

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 proposal is to clear 0.18ha for recreational purposes within the Shire of Denmark. DEC Site Visit Report (2007) found that vegetation within the 0.18ha proposal site ranged from good to very good condition (Keighery, 1994). Areas proposed to be cleared that border roads or public open space suffer obvious edge effects, however vegetation structure within a few metres is relatively dense with few weed species (DEC, 2007). The proposed clearing is contiguous with a larger area of remnant vegetation to the north that extends to the Denmark River.

The native vegetation under application is well represented both regionally and locally, with percentages of current remnant vegetation remaining within the Warren Bioregion, Shire of Denmark, and vegetation associations under application all being greater than 65% and with a conservation status of 'least concern' (Department of Natural Resources and Environment, 2002). Additionally, surrounding vegetation appears to be in as good, or better, condition than that proposed to be cleared.

The proposed clearing of 0.18 hectares does not constitute a high level of biodiversity, and is therefore not likely to be at variance to this principle.

Dieback and weed conditions have been included in the permit to ameliorate the spread of dieback and weeds to uninfected areas.

Methodology Keighery (1994)
DEC Site Visit Report (2007)
Department of Natural Resources and Environment (2002)
GIS Database:
- Pre-European Vegetation - DA 10/01
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Matiske 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 is not likely to be at variance to this Principle**

The proposal is to clear a total of 0.18 hectares for recreational purposes within the Shire of Denmark. DEC Site Visit Report (2007) found the condition of vegetation within the application area to be good to very good (Keighery, 1994), with visible edge effects within areas of the proposed clearing that border roads or public open space. However, the vegetation structure within a few metres of these edges was relatively dense with few weed species (DEC, 2007).

Thirty-one known records of Threatened Fauna were identified within a 10km radius of the area under application. The closest record, Millipedes (classified as 'Endangered') is located approximately 480m west and on a different Matiske vegetation complex to that under application. Species mapped within 2kms of the application area include Quenda (P5), Forest Red-tailed Cockatoo (Vu), Carnaby's Black Cockatoo (En), Baudin's Black cockatoo (En), White-browed Babbler (P4), Crested Shrike-tit (P4), Brush-tailed Phascogale (Vu), Water Rat (P4) and Western Bristlebird (Vu).

Although the area may provide habitat for native fauna, the area proposed to be cleared is small (0.18ha) with obvious edge effects within areas of the proposed clearing that border roads or public open space. Aerial photography suggests that surrounding vegetation is reasonably extensive and appears to be in as good, or better, condition than that proposed to be cleared.

Relative to the above the above, the vegetation under application is unlikely to provide significant habitat for indigenous fauna.

Methodology DEC Site Visit Report (2007)
Keighery (1994)
GIS Database:
- FAUNA Sac Bio Datasets 090807
- Denmark 1m Orthomosaic - DOLA 01

(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 61 known records of Declared Rare and Priority Flora within a ten kilometre radius of the area under application. Three records of *Billardiera drummondii* (P4) occur within 800m of the application area. The closest record of *Billardiera drummondii* is located approximately 260m to the north-east within an area of vegetation contiguous with the vegetation proposed to be cleared, but on a different vegetation complex to that under application. One record of *Billardiera drummondii*, located approximately 750m north-west of the proposed clearing, occurs on the same Mattiske vegetation complex but different soil types to the vegetation under application. The other two records of *Billardiera drummondii*, including the closest to the proposal area referred to above, occur on a different vegetation complex but same soil types as the proposal area.

DEC (Frankland District) has advised that, while *Billardiera drummondii* may occur within the proposed clearing, it is widespread and responds favourably to disturbance.

Given the small area proposed to be cleared relative to the above information, the clearing as proposed is unlikely to be at variance to this principle.

Methodology GIS Database:
- Soils, Statewide - DA 11/99
- DEFL SAC Bio dataset 090807
- SC_Albany_WAHERB 090807
- Mattiske Vegetation - CALM 24/3/98
- Soils, Statewide - DA 11/99

(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

Mapping indicates there are no known Threatened Ecological Communities (TECs) within a ten kilometre radius of the area under application. The closest TEC is located approximately 15kms north-west of the application area, and occurs on a different Mattiske vegetation complex and soil type to the application area.

The native vegetation that is proposed to be cleared is not likely to be necessary for the maintenance of a threatened ecological community.

Methodology GIS Database:
- TEC_POINTS Sac Bio Datasets 90807
- PEC_POINTS Sac Bio Datasets 90807

(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 at variance to this Principle			Conservation Status**	% in Secure Tenure
	Pre-European (ha)	Current Extent Remaining (ha)	(%)		
IBRA Bioregion: Warren*	834,053	657,114	78.8	Least concern	56.8
Shire: Denmark***	191,156	159,071	83.2	Least concern	
Beard Unit 1*	72,413	56,799	78.4	Least concern	47.1
Beard Unit 14* (Regional)	94,611	70,679	74.7	Least concern	82.7
Beard Unit 1*	69,130	54,304	78.6	Least concern	46.0
Beard Unit 14* (within Warren IBRA Region)	5,655	3,747	66.3	Least concern	45.7
Mattiske Trent (TR1)	63,041	52,406	83.1	Least concern	

* (Shepherd, 2006)

** (Department of Natural Resources and Environment 2002)

*** (Shepherd et al, 2001)

The area under application is located in the Shire of Denmark and within the Warren Bioregion. The extent of pre-European vegetation within these areas is 83.2% and 78.8% respectively (Shepherd et al., 2001; Shepherd, 2006).

The vegetation proposed to be cleared is a component of Beard Vegetation Associations 1 and 14 (Hopkins et al., 2001) of which there is 78.4% and 74.7% respectively of the pre-European vegetation extent remaining regionally, and 78.6% and 66.3% respectively remaining within the Warren Bioregion (Shepherd, 2006). These vegetation types all have a conservation status of Least Concern (Department of Natural Resources and Environment, 2002).

The proposed clearing also forms a component of Mattiske vegetation complex Trent (TR1), of which there is 83.1% remaining (Mattiske Consulting, 1998).

Although the proposed clearing falls within EPA Position Paper No 2 where any further reduction in native vegetation through clearing for agriculture is not supported, the pre-European extent of the Warren Bioregion, Beard Vegetation Associations and Mattiske Vegetation Complex of the area under application meet the National Objectives Targets for Biodiversity Conservation 2001 - 2005 (being greater than 30% of that present pre-1750). The proposal is not at variance to this principle.

Methodology	Shepherd et al (2001) Shepherd (2006) Hopkins et al., 2001 Mattiske Consulting (1998) Department of Natural Resources and Environment (2002) GIS Database: - Pre-European Vegetation - DA 10/01 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00 - Mattiske Vegetation - CALM 24/3/98 - EPA Position Paper No 2 Agriculture Region DEP 12/00
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(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

Dec Site Visit Report (2007) noted that some species of native vegetation within the proposed clearing (Melaleuca sp. and rushes) were indicative of a wetland environment; however there are no wetlands, watercourses or areas subject to inundation mapped within or adjacent to the proposed clearing site.

The Denmark River lies approximately 450m to the north and east of the application site. A minor perennial watercourse flows from the Denmark River to a perennial lake located approximately 70m to the north of the proposal area.

Given the above, the proposed clearing is unlikely to be at variance with this principle.

Methodology DEC Site Visit Report (2007)
GIS Database:
- 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 Proposal is not likely to be at variance to this Principle

The proposal is to clear a total of 0.18 hectares for recreational purposes within the Shire of Denmark. The topography within the region is of low relief (15m AHD) with very shallow gradients. Mean annual rainfall is 1100mm, and groundwater salinity has been mapped at 500 - 1000mg/L TDS (Total Dissolved Solids).

Given the size of the application area, it is unlikely that the proposed clearing of native vegetation would cause appreciable land degradation.

The proposal is unlikely to be at variance to this principle.

Methodology GIS Database:
- Topographic Contours, Statewide - DOLA 12/09/02
- Groundwater Salinity, Statewide - DOW
- Rainfall, Mean Annual - BOM 30/09/01

(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 proposed to be cleared does not lie within or adjacent to areas set aside for conservation. The closest conservation areas are Redmond Road Nature Reserve, located approximately 2kms north-west of the area under application and Scotsdale Road Nature Reserve approximately 2.8km to the north. The vegetation types of these reserves are different from that of the application site.

Given the above, the proposed clearing is not likely to be at variance to this principle.

The proposed clearing site falls within a dieback risk area. Dieback conditions have been included in the permit to ameliorate the spread of dieback to uninfected areas.

Methodology GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05
- Matiske Vegetation - CALM 24/3/98

(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 proposed clearing site falls within the Wilson Inlet_Denmark River Catchment. The region is of low relief with an annual rainfall of 1100mm.

The proposal is to clear a total of 0.18 hectares for recreational purposes within the Shire of Denmark. It is unlikely that the clearing of 0.18ha of native vegetation will cause deterioration in the quality of surface water or groundwater within the local area.

Methodology GIS Database:
- Hydrographic Catchments - Catchments - DOE 23/03/05
- Rainfall, Mean Annual - BOM 30/09/01

(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**
 Due to the topography within the local area, and the scale and nature of the proposed clearing, the clearing of native vegetation as proposed is unlikely to exacerbate the incidence of flooding within the local area.

Methodology GIS Database:
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments
 Three submissions have been received for this proposal:

 One submission requested that only a limited amount of understorey be hand removed and that no mechanical vehicles enter the bushland, in order to retain the health and stability of remaining trees for local fauna populations and to prevent weed invasion; another submission argues that disturbance to the area under application contradicts the Shire of Denmark's management goals in the 'Strickland Street Reserve, Denmark, Management Plan' and requests that independent observers inspect the site prior to any approval to begin works; the third submission requests conditions including consultation with Indigenous elders and other stakeholders regarding work plan and implementation and that only hand-clearing be permitted.

The Shire of Denmark has advised that the 'Strickland Street Reserve, Denmark, Management Plan' has not been implemented, and its whereabouts is unknown.

There is a Native Title Claim over the area under application. The Department of Environment and Conservation's advertising of the application in the West Australian Newspaper constitutes legal notification of the Native Title representative body for the purpose of the future act procedures under the Native Title Act 1993. No response was received from the representative body.

Methodology GIS Database:
 - Native Title Claims - DLI 07/11/05

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Recreation	Mechanical Removal	0.18	The assessable criteria have been addressed and the proposal is not at variance to Principle (e); and is not likely to be at variance to Principles (a), (b), (c), (d), (f), (g), (h), (i) and (j).

5. References

Department of Environment and Conservation (2007). Site Visit Report. TRIM Ref DOC30850
 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.
 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, B.J. (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. (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.

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)