



1. Application details

1.1. Permit application details

Permit application No.: 1772/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: SA & F M Richardson & Thompson

1.3. Property details

Property: LOT 5519 ON PLAN 202480 (SCOTSDALE 6333)

Local Government Area: Shire Of Denmark

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3		Burning	Dam 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
Beard Vegetation Type 3: Medium forest; jarrah-marri	Area proposed to be cleared consists predominantly of tea tree species (<i>Melaleuca</i> sp.). These are interspersed with some banksia sp.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation condition was classified from site photo's taken by DAFWA (2007).
Mattiske Vegetation complex F (Fernley): Mixture of woodland of <i>Eucalyptus megacarpa</i> , woodland of <i>Eucalyptus patens</i> , tall shrubland of <i>Myrtaceae</i> spp. with some sedge/land of <i>Anarthria</i> spp. on broad plains in hyperhumid and perhumid zones.			

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 may be at variance to this Principle

The area proposed to be cleared is considered to be a dampland of tea-tree and *Casuarina* sp. Site photo's (DAFWA, 2007) indicate that the vegetation is reasonably dense and in 'very good' condition (Keighery, 1994).

The species richness of the application area appears to be relatively low, with tea-tree being the predominant species (DAFWA, 2007). However, as the area is a combination of dampland, fringing vegetation and some dryland area it is possible that there is high diversity of aquatic and terrestrial flora and fauna communities within the application area. The clearing is therefore maybe at variance to this principle.

Methodology Keighery, 1994
DAFWA, 2007
SAC Bio datasets, accessed 13 February 2008
GIS Databases:
- 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

The area proposed to be cleared is considered to be a dampland of tea-tree and *Casuarina*. Site photo's (DAFWA, 2007) indicate that the vegetation is reasonably dense and in 'very good' condition (Keighery, 1994)

The application area lies within a large vegetated corridor leading from the coast to the inland, and is likely to be a major area of fauna movement through the different habitats. Clearing within the application area is unlikely to impact on the effectiveness of this corridor.

As the area is considered to be a seasonally inundated dampland it is possible that some wetland species such as turtles and frogs, plus avifauna, will be utilising that habitat. However, considering the large amount of similar vegetation in the surrounding area, it is unlikely that the application area is providing significant habitat for native fauna.

Methodology Keighery, 1994
DAFWA, 2007
SAC Bio datasets
GIS Databases:
- 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 three known records of DRF within the local area (10km radius). *Drakea micrantha*, *Kennedia glabrata* and *Microtis globula* are all found locally, however the different characteristic habitat requirements of all these species is not found within the proposed clearing area. It is therefore unlikely that the proposed clearing is at variance with this principle.

Methodology DAFWA Report, 2007
SAC Biodatasets, accessed February 2008
GIS Databases:
- Denmark 1m Orthomosaic - DOLA 01

(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 is one recorded Threatened Ecological Community (TEC) within the local area (10km radius). This TEC, known as the Mt Lindesay community, is found only on the crest, sideslopes and gullies of the Mountain. Soil types are low nutrient with a granite base and outcropping. Given the specific characteristics of this TEC it will not occur within the proposed clearing area, and the distance (8.3km) and elevation from clearing will prevent any impacts upon the TEC.

Methodology SAC Biodatasets - accessed Feb 08
GIS Databases:
- Topographic Contours, Statewide
- Denmark 1m Orthomosaic - DOLA 01

(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**

Pre-European	Current extent (ha)	Remaining (ha)	% In reserves (%)	Land	DEC Managed
IBRA Bioregions**** Warren^	739,273	724,014	86.6	N/A	
Shire* Denmark	191,156	159,071	83.2	N/A	
Mattiske Vegetation Complex*** F	26128.393	17548.003	67.2	8.1	
Beard Vegetation Complex**** 3	2,661,403	1,846,588	69.4	26.4	

The area proposed to be cleared exceeds the targeted figure of 30% vegetation retention as outlined by the Environmental Protection Authority (2000). The local and greater area also have high levels of vegetation retention and, as such, the clearing as proposed is not considered to be at variance to this principle.

Methodology EPA, 2000

Shepherd et al, 2006
SAC Bio datasets, accessed 13th Feb 08
GIS Databases:
- Mattiske Vegetation
- Interim Biogeographic Regionalisation of Australia
- Denmark 1m Orthomosaic - DOLA 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 at variance to this Principle

Site photo's (DAFWA, 2007) of the area proposed to be cleared, and advice from the proponent indicate that the area is a seasonally inundated dampland. Aerial photography also clearly delineates a dampland area, with depressed topography and low, dense vegetation.

Vegetation, of tea tree and melaleuca sp, within the application area is consistent with species found in dampland areas. A DAFWA Report (2007) stated that soils were a combination of sandy duplex, duplex sandy gravel and wet to semi-wet soils. Given these factors the clearing is considered to be at variance to this principle.

Methodology DAFWA Report, 2007
GIS Databases:
- Denmark 1m Orthomosaic - DOLA 01

(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

The area proposed to be cleared consists of wet to semi-wet soils of grey deep sandy duplex (DAFWA, 2007). Given these soil types and surrounding vegetation the likelihood of wind erosion is low. The low gradient slopes and soil types also indicate that water erosion is unlikely to occur.

Salinity mapping identifies the proposed clearing area to have low levels of Total Dissolved Salts (TDS), and the regional area is well vegetated with a reasonable rainfall, indicating that the risk of salinity is low.

The soil is known to have a low phosphorous retention index, which, if combined with agricultural uses has the potential to create Eutrophication. However the clearing of native vegetation is unlikely to result in eutrophication.

Given the soil type and dampland nature of the proposed clearing area it is likely that waterlogging will be increased if native vegetation is cleared. A decrease in vegetation is likely to result in an increase recharge to subsurface and groundwater flows (DAFWA, 2007). Given this, the proposed clearing may be at variance to this principle.

Methodology DAFWA, 2007
GIS Databases:
- Mean Annual Rainfall Isohyets (1975-2003)
- Groundwater Salinity, Statewide
- Topographic Contours, Statewide
- Denmark 1m Orthomosaic - DOLA 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 following conservation areas have been recorded within the local area (10km radius):

Mt Roe National Park
Mt Lindesay National Park
Redmond Rd Nature Reserve
Mount Shadforth Nature Reserve
Korddabup Nature Reserve
William Bay National Park
Denmark Catchment State Forest

Additionally a conservation class wetland (CCW) identified through the south coast significant wetland dataset is mapped approximately 700m to the north west of the proposed clearing. Aerial photography indicates that factors resulting in classifying the area as CCW may no longer be present.

The area proposed to be cleared falls within a continuous link of vegetation connecting coastal habitats with upland habitats. This pathway also connects coastal conservation areas to those further inland. The proposed area to be cleared is 5.05ha which, although not insignificant in size, is not likely to affect this north-south link.

The closest known conservation area, Denmark Catchment State Forest, is located 2km to the north west. Clearing within the proposed area is unlikely to affect any corridor values, given the remaining surrounding vegetation. The area proposed to be cleared is not contributing significantly to any buffering of the conservation area and clearing within the application area should not have any adverse effects upon the conservation area.

Methodology GIS Databases:
- CALM Managed Lands and Waters - CALM 1/07/05
- SAC Bio datasets - DEC 26/09/07
- South Coast Significant Wetlands - DOE 4/8/03

(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 is not likely to be at variance to this Principle**
Advice from DAFWA states that clearing of native vegetation is unlikely to affect salinity levels for the area. Local readings give low levels for salinity however the date for the readings are unknown or relatively old. Statewide salinity levels within the area are mapped as between 500-1000 TDS mg/L.

The closest watercourse is approximately 190m to the south and down slope of the proposed clearing. A vegetated buffer of approximately 140m separates the proposed clearing area and nearby watercourses. Clearing of native vegetation is unlikely to contribute to eutrophication or turbidity in local watercourses or wetlands.

The DAFWA report (2007) stated that the removal of vegetation was likely to increase recharge to the subsurface and groundwater. This may have a resultant increase in surface water flows. Given the size of the proposed clearing (5ha) and the amount of surrounding vegetation it is considered that the any increase would be minimal.

Methodology DAFWA report, 2007
GIS Databases:
- Topographic Contours, Statewide - DOLA 12/09/02
- Hydrography, linear (hierarchy) - DOW
- Denmark 1m Orthomosaic - DOLA 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 may be at variance to this Principle**
A report by DAFWA (2007) advised that clearing of native vegetation was likely to contribute to waterlogging on the property. They state that the area is naturally semi-wet and recharge to subsurface and groundwater is likely to increase water flows.

The clearing is located approximately 190m from the nearest watercourse with vegetated areas between the clearing and the watercourse. Given the location and soil types the clearing is not likely to cause a flooding event, however, there is some possibility that heavy rain falls may contribute to small scale localised flooding.

Methodology DAFWA Report 2007
GIS Databases:
Mean Annual Rainfall Isohyets (1975-2003) - DOW
Hydrography, linear - DOE 1/2/04
Denmark 1m Orthomosaic - DOLA 01

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

Comments
A report by DAFWA (2007) implies some doubt as to the suitability of this type of land use given the local conditions.

The area lies within the Public Drinking Water Source Area of the Scotsdale Brook Water Reserve. The area is classified as 'not assigned'.

The Department of Water and the Shire of Denmark have advised that no licences are required for dam construction within the proposed clearing area.

The Shire of Denmark has advised that approval is required under Town Planning Scheme No.3 for 'Tree Felling' as this is a discretionary landuse in rural areas.

Methodology

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Dam construction o maintenance	Burning	3	

5. References

- DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DEC TRIM ref DOC 23744
- 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.
- 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., Beeston, G.R. and Hopkins, A.J.M. (2001a) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2005).

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)

