



1. Application details

1.1. Permit application details

Permit application No.: 2875/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Sun Land Pty Ltd

1.3. Property details

Property: LOT 349 ON PLAN 230731 (Lot No. 349 KEARSLEY 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:
7.8		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
<p>The vegetation under application is mapped as having 2 major vegetation complexes:-</p> <p>Mattiske (Kb) : Mosaic of tall open forest of Eucalyptus guilfoylei (Yellow Tingle) - Eucalyptus jacksonii - Eucalyptus diversicolor (Karri) on slopes of major hills rising above coastal plain with Allocasuarina decussata (Karri Sheoak) - Banksia grandis (Bull Banksia) - Agonis flexuosa (Peppermint) on slopes in hyperhumid and perhumid zones and tall open forest of Eucalyptus brevistylis (Rates Tingle) - Eucalyptus marginata subsp. marginata (Jarrah) - Corymbia calophylla (Marri) and the occasional Eucalyptus megacarpa (Bullich) near rock outcrops in hyperhumid and perhumid zones.</p> <p>Beard 1: Tall forest Karri (Eucalyptus diversicolor)</p>	<p>The vegetation under application is in excellent (Keighery 1994) condition, comprising a closed forest dominated by Karri and Yellow Tingle. The understory consists of Leucopogon sp. pteridium, Banksia, Agonis flexuosa and Casuarina. There is very little sign of disturbance, although occasional tree stumps remain from past logging activities. However, the vegetation has regenerated to the point where no obvious signs of disturbance remain (DEC 2008).</p>	<p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)</p>	<p>The condition and description of the vegetation under application was determined via the use of aerial mapping systems and images/notes recorded from DEC regional advice (2008).</p>

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 proposal is for the clearing of 7.8 hectares of native vegetation for the purpose of fire hazard reduction.

The vegetation under application is in excellent (Keighery 1994) condition, comprising a closed forest dominated by Karri and Yellow Tingle. There is very little sign of disturbance, although occasional tree stumps remain from past logging activities. However, the vegetation has regenerated to the point where no obvious signs of disturbance remain (DEC 2008).

The application area adjoins the Redmond and McLean Road Nature Reserves. The Scotsdale Road Nature Reserve and the Denmark State Forest are also located nearby. The vegetation under application has been identified as having high conservation value in the local area (10km radius), as it supports nearby conservation areas and may provide habitat for native fauna species. According to aerial imagery, there is approximately 50% remaining vegetation in the local area, of this an estimated 20% is retained in DEC managed lands.

The vegetation applied to be cleared is part of a larger area of remnant vegetation in the local area, providing a vegetated corridor which may aid in the dispersal of flora and fauna species.

There are several priority listed flora species that are within close proximity to the application area. The local area has a total of 84 priority flora species and 2 rare flora species, many of these being on the same or similar mapped vegetation and soils types.

Given the excellent condition of the vegetation under application, the environmental values of the vegetation as potential rare and priority and/or conservation significant fauna habitat, the proposed clearing may be at variance to this principle.

Methodology DEC (2008)
Keighery (1994)
GIS database:
- Denmark 1.4m Orthomosaic - Landgate 2001
- CALM Managed Lands and Waters - CALM 01/06/05
- SAC Biodatasets - accessed 3 Jan 09
- Mattiske Vegetation (01/03/1998)
- Pre European Vegetation - DA 01/01
- Clearing Regulations, Environmentally Sensitive Areas 30 May 2005

(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 at variance to this Principle

Within the local area (10km radius) there are 7 threatened, endangered or priority fauna species recorded. The Water rat (*Hydromys chrysogaster*) was recorded 600 metres east. The Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*) was recorded 1.4km north east. The Crested Strike-tit (*Falcunculus frontatus leucogaster*) was recorded 1.2km south east. Quenda (*Isodon obesulus fusciventer*) was recorded 1.5 km south east. Carnaby's Black Cockatoo, Baudin's Black Cockatoo, White Browed Babbler and the Brush-tailed Phascogale were all recorded 2km south east of the application area.

The vegetation under application appears to be in excellent (Keighery 1994) condition, with stands of karri/tingle trees present throughout (DEC, 2008). Karri trees are known to be habitat trees for the Baudin's Black Cockatoo and Carnaby's Black Cockatoo, and may also be utilized by the Forest Red-tailed Black Cockatoo and White Browed Babbler (DEC 2007).

The 7.8 hectares of native vegetation under application is part of a larger remnant of vegetation, which forms a linkage within the local area. The vegetation under application also acts as a buffer to adjacent conservation areas.

The proposed clearing will reduce the linkage potential of vegetation in the local area, which is necessary for the dispersal and movement of fauna species and removal of the vegetation under application will result in a loss of vegetation buffers, which is important for the maintenance of significant native fauna habitat.

It is therefore considered that the proposed clearing is at variance to this principle.

Methodology DEC (2007)
Keighery (1994)
GIS database:
- Denmark 1.4m Orthomosaic - Landgate 2001
- CALM Managed Lands and Waters - CALM 01/06/05
- Mattiske Vegetation (01/03/1998)

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

Comments Proposal may be at variance to this Principle

The vegetation under application is considered to be in excellent (Keighery, 1994) condition (DEC, 2008). There are two rare flora species that have been recorded within the local area (10km radius). *Drakea micrantha* was recorded 8.6km south west and *Grevillia fuscotutea* was recorded 5.6km east of the application area

Additionally, a total of eighty four priority listed flora species were recorded within the local area. Of these one is a priority one species, sixteen are priority two species, twenty five are priority three species and forty two are priority four listed species, many of which occur on the same or similar mapped vegetation and soils types as those within the application area.

The closest of the priority listed species were *Chorizema reticulatum* (P3) & *Mirianthus sylvaticus* (P3), recorded 300 metres north west of the application area. *Xanthosia eichleri* (P3) was recorded 600 metres east and the priority one species *Synaphea incurva* was recorded 1.4 km south east of the application area.

Due to the occurrence of rare and priority flora species within the local area, it is recommended that a flora survey be conducted to adequately determine whether rare or priority flora species occur within the application area (DEC 2008).

Methodology DEC (2008)

- GIS database:
- Denmark 1.4m Orthomosaic - Landgate 2001
 - Mattiske Vegetation (01/03/1998)
 - Pre European Vegetation - DA 01/01
 - SAC Biodatasets - accessed 3 Jan 09
 - 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

There are no known Threatened Ecological Communities (TECs) mapped within the local area (10km radius).

A site inspection of the applied area did not observe any TEC characteristics present within the application area (DEC 2008)

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

Methodology DEC (2008)

- GIS Database:
- SAC Biodatasets - accessed 3 Jan 09

(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

Aerial imagery suggests that the local area (10km radius) has approximately 50% remaining vegetation. While the applied area of vegetation is contributing to a significant area of remnant vegetation within the local area, the vegetation types under application within the Shire and bioregion are above the recommended 30% threshold for retaining native vegetation (EPA, 2000).

The proposed clearing is unlikely to be at variance to this principle.

	.Pre-European Veg (ha)	Current Extent (ha)	% Remaining
Warren bioregion			
- Beard 1	69119	56119	81.19
Shire of Denmark			
- Beard 1	12552	6942	55.31
Mattiske			
- Kb	238460	231926	81.8

Shepherd (2007)
Mattiske (1998)

Methodology EPA (2000)
DEC (2008)
Mattiske Consulting (1998)
Shepherd (2007)
GIS DataSets:
- Mattiske Vegetation (01/03/1998)
- Pre European Vegetation - DA 01/01
- SAC Biодatasets - accessed 3 Jan 09

(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 closest major watercourse is the Denmark River, situated 1.4km east of the application area. There is a minor non-perennial watercourse located 700 metres north. It is considered unlikely that either of these watercourses or the vegetation present in the direct vicinity of these watercourses will be adversely impacted by the proposed clearing

Methodology GIS DataSets:
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06
- South Coast Significant Wetlands - WRC 10/06/2003

(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 application area consists of 7.8 hectares of native vegetation that is adjacent to two well vegetated nature reserves. Topography is between 75 - 155 metres. The area shows no evidence of being subject to inundation or salinity, and no evidence of runoff into adjacent properties was observed (DEC 2008).

The applicant plans to parkland clear the application area; a number of mature trees will remain within the application area post clearing, therefore any land degradation associated with the clearing is not likely to be appreciable.

Methodology DEC (2008)
GIS DataSet:
- Hydrogeology, statewide - DOW 13/07/06
- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrographic catchments, subcatchments - DoW 01/06/07
- Hydrography, linear - DOW 13/7/06
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY 12/09/02
- Hydrogeology, Statewide 05 Feb 2002

(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 at variance to this Principle**

The vegetation under application has high conservation value in the local area (10 km radius). The application area is adjoining the Redmond and McLean Road Nature Reserves. The Shire of Denmark has committed to the retention of Tingle and Karri trees adjacent to these reserves (Trim Ref: DOC 73168). There is also State forest located 2.6km north of the application area.

The vegetation under application provides buffering protection to these nearby nature reserves. The proposed clearing may impact on the environmental values of these nearby conservation areas, by increasing edge effects and fragmenting the vegetation within the local area. The nearby conservation areas are also known to support communities of priority listed flora species (DEC 2008).

It is therefore considered that the proposal to clear 7.8 hectares of native vegetation is at variance to this principle.

Methodology DEC (2008)
TRIM Ref DOC73168

GIS database:
- Denmark 1.4m Orthomosaic - Landgate 2001
- CALM Managed Lands and Waters - CALM 01/06/05

(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 topography of the application area ranges from 75 metres to 155 metres. Rainfall in the local area is 1100mm annually. Salinity is low-very low and groundwater salinity is recorded as between 500 - 1000 mg/L.

The clearing of 7.8 hectares of native vegetation in an area with sloping topography, may cause some nutrient runoff and there are numerous perennial watercourse located within close proximity. However a site inspection observed no evidence to suggest that the area is subject to inundation or salinity and runoff into adjacent properties is unlikely (DEC 2008).

The minor perennial watercourse 400 metres to the south is the system most likely to be impacted by potential nutrient and sediment runoff. However due to the remaining vegetation located in the form of DEC managed lands adjacent to the application area, it is considered unlikely that the proposed clearing will cause a significant deterioration in the quality of surface or ground water.

Methodology DEC (2008)

GIS DataSets:

- Hydrography, linear - DOW 13/7/06
- Rainfall, Mean Annual - 30/09/01
- Salinity Risk LM 25m - DOLA 00
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY 12/09/02

(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

Rainfall in the local area (10km radius) is 1100mm annually and evaporation is 900mm annually. The elevation ranges from 75 metres in the south east corner to 155 metres in the north west. Due to the sloping topography and remaining vegetation adjacent to the application area, the proposed clearing is unlikely to cause or exacerbate flooding in the vicinity of the application area.

Methodology GIS DataSets:

- Evapotranspiration, Areal Actual - 30/09/01
- Rainfall, Mean Annual - 30/09/01
- Topographic contours statewide - DOLA and ARMY 12/09/02

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

Comments

The Shire of Denmark strongly objects to the proposed clearing as the vegetation within the area under application (and the vegetation under application for adjoining CPS 2872/1) because:

- it has been identified within the Shires draft Local Planning Strategy as 'remnant vegetation to be retained and protected';
- the Shire has commented on the proposal through a Scheme Amendment Request (SAR) and the Council resolved to support the SAR subject to the retention and protection of remnant vegetation;
- the proponents were instructed by the Shire to retain, free of disturbance and development, the area of Tingle and Karri forest via a Scheme Amendment (consideration deferred until the Structure Plan has been finalised);
- the extent of the area proposed for clearing is significantly over and above that currently supported by Council for bushfire protection of the existing building on the lots.
- the proposed Local Structure Plan has not been agreed to by Council and Council will not support the initiation of Amendment 106 until this agreement has been reached. The Council believes the application for clearing is premature as it precedes the statutory planning and environmental process.

Methodology DPI & FESA (2001)

Submission A (Trim Ref: DOC73172).
Submission B (Trim Ref: DOC73168)

4. Assessor's comments

Comment

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986 and has found:

- Principles (a) & (c) may be at variance
- Principles (b) & (h) to be at variance
- Principles (d), (e), (f), (g), (i) & (j) are not likely to be at variance

5. References

- Commonwealth of Australia (2001) National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DEC (2007) DEC Fauna Habitat Notes.xls. February 2007. Department of Environment and Conservation, Western Australia.
- DEC (2008) Warren Region Advice. Department of Environment and Conservation Trim Ref: DOC73524.
- Department for Planning and Infrastructure & Fire and Emergency Services Authority of Western Australia (2001) Planning for bush fire protection (final), Western Australian Planning Commission
- 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, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- 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)