



1. Application details

1.1. Permit application details

Permit application No.: 411/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: George & Debra Stratton

1.3. Property details

Property: LOT 8 ON DIAGRAM 31671 (House No. 15 FREEMAN FORRESTDAL E 6112)
 Local Government Area: City Of Armadale
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.85		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 1001: Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina (Hopkins et al. 2001, Shepherd et al. 2001).	The vegetation within the area under application is predominantly wetland dependent and consists primarily of Melaleuca and Astartea species (Site Visit 20/6/2005). The vegetation is significantly dense to the extent that access is difficult without damaging the vegetation. There are few weeds on the edges of the area under application however the remaining area is relatively undisturbed (Site Visit 20/6/2005).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The vegetation within the area is described as being excellent condition because even though the whole property has been grazed, the area under application would appear to be relatively untouched by stock due to the vegetation being significantly dense (Site Visit 20/6/2005).
Hedde Bassendean Complex Central & South: Woodland to low woodland & sedgelands (Hedde et al. 1980).			

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 at variance to this Principle
 The area under application is in excellent condition and consists of only a small number of native species (Site Visit 2005).
 The native vegetation is dense and difficult to access, therefore is likely to provide a protective habitat for fauna species, though in a limited capacity due to the small size of the proposed clearing.
 Therefore the proposed clearing is at variance to this principle.
Methodology Site Visit (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 not likely to be at variance to this Principle
 CALM (2005) advise that the limited records of Specially Protected and Priority fauna are now quite dated. Since the data was recorded the local area has been subject to significant urban development. Of the species listed it is likely that the Quenda (Isodon obesulus fusciventer), and possibly the Native Bee Leiproctus contrarius, are still present. The vegetation under application is considered suitable for Quendas however due

to its limited size (0.85ha) is considered unlikely to be significant habitat in the local area and CALM (2005) have advised it is not likely to be at variance to this principle.

Methodology CALM (2005) (DOE TRIM Ref GEO247/05)

(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

CALM (2005) advise that there is one record of *Caladenia huegellii* found within the area under application. In addition CALM have advised that the vegetation community and soil types are conducive to supporting a variety of species from the Orchidaceae family including declared rare species *Diuris purdiei*, *Caladenia huegellii* and *Drakaea elastica*.

Given the above there is a high likelihood of Declare Rare Flora occurring within the area under application. CALM (2005) recommends that a qualified botanist carry out a spring survey to determine whether the proposed clearing Declared Rare Flora.

Furthermore the location of *Caladenia huegellii* is in the middle of the area under application. Given that the vegetation is dense and difficult to access, any rare flora located within that area is likely to continue to exist subject to the protection of the surrounding native vegetation.

Methodology CALM (2005) (DOE TRIM Ref CEO 247/05)

GIS Databases:

- Declared Rare and Priority Flora List - CALM 01/07/05

(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

CALM (2005) advise that there are occurrences of Threatened Ecological Communities (TECs) Herb rich shrublands in clay plains are found 2 km to the north east of the area under application and with the Shrublands on dry clay flats occur in the local area (10km radius).

Due to disparate soil and vegetation types between the TECs in the local area and the site of the proposed clearing, there appears to be a low to medium probability of the proposed clearing to be at variance with this Principle.

Methodology CALM (2005) (DOE TRIM Ref GEO247/05)

GIS Databases:

- Threatened Ecological Community Database - CALM 12/04/05

(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

The vegetation under application is mapped as a component of Beard Vegetation Association 1001 (Hopkins et al. 2001) and also of Heddle's Bassendean Complex - Central and South, of which there is 27.6% (Shepherd et al. 2001) and 27.0% (Heddle et al. 1980) respectively of the pre-European extent remaining and therefore regarded as 'vulnerable' (10-30%) in terms of biodiversity conservation (Department of Natural Resources and Environment 2002).

reserves/CALM	Pre-European (ha)*	Current extent (ha)*	Remaining (%)*	Conservation**% status	In managed land
IBRA Bioregions -Swan Coastal Plain	1,529,235	626,512	41.80%	Depleted	
Vegetation type: Beard: Unit 1001	68 475	29 396	27.6	Vulnerable	4.2
Heddle: Bassendean Complex- Central And\South	87,477	23,624	27	Vulnerable	0.7

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

*** Within the Intensive Landuse Zone

The area under application is mapped within the Swan Coastal Plain IBRA Region of which 43% of native vegetation remains (Hopkins et al 2001).

The state government is committed to the National Objectives Targets for Biodiversity Conservation 2001-2005 (AGPS 2001) which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment 2002). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity. The proposed clearing is therefore at variance to this principle.

Methodology Shepherd et al. (2001)
Hopkins et al. (2001)
Hedde et al. (1980)
Department of Natural Resources and Environment (2002)
GIS Databases:
- Pre-European Vegetation - DA 01/01
- Hedde Vegetation Complexes - DEP 21/06/95
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00

(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

The area under application is located mainly within a multiple use wetland (sumpland) with the entire extent of the proposal registered as an ANCA wetland. The vegetation observed within the area under application is predominantly wetland dependent and consists primarily of Melaleuca and Astartea species. There are few weeds on the edges of the area under application however the remaining area is relatively undisturbed (Site Visit 20/6/2005).

As the area under application is growing in association with a wetland the area under application is at variance to the principle.

Methodology GIS Databases:
- Hydrography, linear - DOE 01/02/04
- Geomorphic Wetlands - Swan Coastal Plain - DOE 15/09/04
- EPP, Areas - DEP 06/95
- ANCA Wetlands - CALM 08/01
DEC Site Visit (2005)

(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 (2005) advise that the clearing of 0.85ha of vegetation within Lot 8 to plant pasture and to erect fencing for stock control is not likely to cause appreciable on site and off site land degradation.

A third (northern portion) of the area under application has been identified as having Class 1 Acid Sulphate Soils (ASS). There is a high to moderate risk of ASS occurring within 3 m of natural soil surface. Two-thirds (southern portion) of the area under application have Class 2 ASS there is a moderate to low risk of ASS occurring within 3 m of natural soil surface (activities disturbing soils at depths greater than 3m carry a high to moderate risk of disturbing ASS).

Therefore the proposal may be at variance to ASS occurring within 3 m of the natural soil surface as most land development activities will cause disturbance and movement of the soil profile.

Methodology DAWA (2005) (DOE TRIM Ref CEO99/05)
GIS Databases:
- Acid Sulphate Soil risk map, SCP DOE 01/02/04

(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 may be at variance to this Principle

There are a number of conservation reserves in close proximity to the area under application, including Forrestdale Lake Nature Reserve approximately 2km northeast, Piara Nature Reserve approximately 4.4km north, Wandii Nature Reserve 4.7km west-southwest and Modong Nature Reserve 5km south-southwest. CALM (2005) advise that the proposed clearing is unlikely to have a measurable impact on Forrestdale Lake which is a RAMSAR site, due to the surrounding area being predominantly urban development.

The benchmark of 15% representation in conservation reserves (JANIS Forests Criteria 1997) has not been

met for Beard Vegetation Association 1001 with only 5.5% of the current extent in secure tenure (Shepherd et al. 2001, Hopkins et al. 2001). Therefore the proposal may be at variance to the principle as the vegetation is in good condition.

Methodology CALM (2005) (DOE TRIM Ref CEO 247/05)
Shepherd et al. (2001)
Hopkins et al. (2001)
JANIS Forests Criteria (1997)
GIS Databases:
- CALM Managed Lands and Water - CALM 01/07/05

(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 may be at variance to this Principle

A Public Drinking Water Source (Priority 2) is located approximately 800m west of the area under application.

A third (northern portion) of the area under application has been identified as having a Class 1 Acid Sulphate Soil (ASS) risk and two-thirds (southern portion) of the area under application having a Class 2 ASS risk. Given this, there may be a localised risk of increased acidity of the surface water.

The area under application is located in an ANCA wetland and a multiple use wetland. The clearing of the area under application may cause an increase in surface water to the area and runoff into adjacent properties.

The clearing of the wetland dependent native vegetation within the area under application and a risk of ASS occurring may impact the surface water and groundwater quality in the local area.

Methodology GIS Databases:
- Acid Sulphate Soil risk map, SCP- DOE 01/02/04
- Public Drinking Water Source Areas (PDWSAs) - DOE 09/08/05
- ANCA Wetlands - CALM 08/01
- Geomorphic Wetlands - Swan Coastal Plain - DOE 15/09/04

(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 average annual rainfall of 900mm and an annual evaporation rate of 1,800mm there is little surface flow during normal seasonal rains.

The area under application is located in an ANCA wetland and multiple use area. The area under application may raise water levels within the cleared area and increase runoff from the area and into adjacent properties. Due to the small size of the area under application (0.85ha) the increase in water quantity and runoff into adjacent properties is likely to be minimal.

Given the small area to be cleared it is unlikely that the clearing of 0.85ha of native vegetation will increase the incidence or intensity of flooding.

Methodology GIS Databases:
- Evaporation Isopleths - BOM 09/98
- Isohyets - BOM 09/98
- Hydrography, linear - DOE 01/02/04
- ANCA Wetlands - CALM 08/01
- Geomorphic Wetlands - Swan Coastal Plain - DOE 15/09/04

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

Comments

There is no other RIWI Act Licence, Works Approval or EPA Act Licence that affects the area under application.

There are no native title issues as the land is Freehold Land.

No official submission was received from the City of Armadale. However, the assessing officer has contacted the City of Armadale and confirmed that local government approvals are required but the City of Armadale will support the DEC decision.

Methodology GIS databases:
- RIWI Act, Groundwater Areas - WRC 13/06/00
- RIWI Act, Surface Water Areas - WRC 18/10/02

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Grazing & Pasture	Mechanical Removal	0.85	<p>The proposal has been assessed and is at variance with Principle (e), (f) and (a) and may be at variance to Principles (c), (g), (h) and (i). In particular:</p> <ul style="list-style-type: none">-Principle (e): The area under application is a component of vegetation associations that have less than 30% of pre-European vegetation remaining.-Principle (f): The area under application is located within an area registered as an ANCA wetland.-Principle (a): The area under application is located within an ANCA wetland and is considered to be in excellent condition.- Principle (c): There is a high likelihood of rare and priority flora occurring within the area under application. The vegetation observed on site is predominantly wetland dependent and consists primarily of <i>Melaleuca</i> and <i>Astartea</i> species. There are few weeds on the edges of the area under application however the remaining area is relatively undisturbed.- Principle (g): A portion of the area under application has been identified as having a moderate to high risk of developing Acid Sulphate Soils at or near the surface.- Principle (h): The benchmark of 15% representation in conservation reserves (JANIS Forests Criteria 1997) has not been met for Beard Vegetation Association 1001 with only 5.5% of the current extent in secure tenure (Shepherd et al. 2001, Hopkins et al. 2001).-Principle (i): The clearing of the wetland dependent native vegetation within the area under application and a risk of ASS occurring may impact the surface water and groundwater quality in the local area.

Therefore the assessing officer recommends the clearing proposal of 0.85ha be refused.

5. References

- ANCA (1996) A Directory of Important Wetlands in Australia. Second Edition. Australian Nature Conservation Agency, Canberra
- CALM (2005) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM Ref CEO247/05.
- DAFWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM Ref CEO99/05.
- 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.
- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
- Hill, A.L., Semenuik, C. A, Semenuik, V. Del Marco, A. (1996) Wetlands of the Swan Coastal Plain. Volume 2b, Wetland mapping, classification and evaluation. Wetland Atlas. WRC and DEP. Perth WA.
- JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- 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)

