



1. Application details

1.1. Permit application details

Permit application No.: 2812/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Madeleine Nott**

1.3. Property details

Property: LOT 24 ON PLAN 18827 (House No. 37 BROCKWAY GELORUP 6230)
 Local Government Area: Shire Of Capel
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1		Grazing	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 6: Medium woodland; tuart & jarrah.	The application is for the clearing of 1ha of native vegetation for grazing horses. The vegetation condition ranges from degraded to good (Keighery 1994).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was determined from Site Visit Report (DEC 2008) and aerial mapping: Preston - Gelorup - Bunbury Townsite 20cm Orthomosaic (Landgate 2004).
Hedde Vegetation Complex: Karrakatta.			

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 application is for the clearing of 1ha of native vegetation for the purpose of grazing horses. The vegetation under application is mapped as Hedde Vegetation Complex Karrakatta of which 29.5% of the pre-European extent remains within the Swan Coastal Plain Bioregion. It is considered to be in a degraded to good (Keighery, 1994) condition with vegetation of best condition being on the western side of the applied clearing area (DEC, 2008).

The local area (10km radius) is highly cleared, with approximately 20-25% remaining vegetation. The vegetation under application is positioned within a significantly sized remnant, and clearing will contribute to degradation of this.

It is also part of an East-West ecological linkage identified under the Greater Bunbury Region Scheme. This links the nearby System 6 reserve, which is 130m west of the applied area, with other large remnants of native vegetation (EPA 2003). Bush block subdivisions extend to the north east and south west of the application area. Whilst the 1ha area under application does not necessarily comprise of a high level of biological diversity, clearing as proposed will cause further fragmentation of the ecological linkages in the landscape and contribute to biodiversity loss (Molloy, 2008).

This impact may be reduced slightly by the proposed 30m buffer of native vegetation proposed to be maintained surrounding the application area. The local landscape, however, is under stress with large subdivisions throughout and a planned highway construction neighbouring the application property. This will all incrementally contribute to broad scale biodiversity loss.

Additionally, the introduction of livestock into the application area for clearing may cause the spread of weeds and dieback into surrounding remnant native vegetation.

The clearing as proposed may therefore be at variance to this principle.

Methodology Molloy (2008)
 EPA (2003)

DEC (2008)
Keighery (1994)

GIS database:

- CALM Managed Lands and Waters - CALM 01/06/05
- Preston - Gelorup - Bunbury Townsite 20cm Orthomosaic - Landgate 2004
- SAC Biodatasets - accessed 28 Nov 08
- Declared Rare and Priority Flora List - CALM 13/08/03
- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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

Six rare and 3 priority fauna species have been recorded within the local (10km radius) area and may be utilising the application area. Some of these utilise tree species, and as the proposal is for the overstorey to be retained, are less likely to be impacted by the proposed clearing (DEC 2008).

Pseudocheirus occidentalis (Western Ringtail Possum) has been recorded 270m south west of the application area, within the same vegetation association. It is therefore likely this species exists within the application area.

Macropus irma (Western Brush Wallaby - P4) occur within open forest or woodland, particularly favouring open, seasonally wet flats with low grasses and open scrubby thickets (Naturebase 2008). This species was recorded as close as 2km from the proposal site, and therefore may exist within the application area.

Isodon obesulus fusciventer (Quenda - P5) prefer dense scrubby, often swampy, vegetation with dense cover up to one metre high, however, they often feed in adjacent forest and woodland that is burnt on a regular basis and in areas of pasture and cropland lying close to dense cover (Naturebase 2008). It is therefore possible nearby populations of quenda are utilising the area.

Whilst these species are likely to utilise the vegetation under application, the small size and degraded to good condition of the area, reduces the significance of the vegetation as a remnant of habitat. Additionally, there are areas of greater regional significance nearby, including the System 6 reserve 130m west of the application area.

The removal of 1ha of native vegetation as proposed is therefore not likely to cause significant impact on habitat for rare or priority fauna species, and as such is not likely to be at variance to this principle.

Methodology DEC site visit (2008)
Nature Base (2008)

GIS database:

- CALM Managed Lands and Waters - CALM 01/06/05
- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 28 Nov 08

(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

Five rare and 20 priority flora species have been recorded within the local (10km radius) area. Of these, 2 rare and 3 priority are likely to occur within the application area due to them occurring locally within the same soil and vegetation types. These are *Caladenia huegii*, *Drakaea elastica*, *Schoenus benthamii* (P3), *Lasiopetalum membranaceum* (P3) and *Caladenia speciosa* (P4). Some of these species are known to occur in disturbed areas and as such there is a high likelihood they occur within the application area.

As 3 of these species are orchids, a flora survey would need to be undertaken at the appropriate time of year to determine whether these species are present within the application area (DEC, 2008). The proposed clearing by livestock grazing may therefore be at variance to this principle.

Methodology DEC (2008)
WA Herbarium (2008)

GIS database:

- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 28 Nov 08

(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

Whilst there are 3 threatened ecological communities recorded within a 5km radius of the application area, none share the same vegetation type or have buffers which encroach into the proposed clearing. The application to clear 1ha of native vegetation is therefore not likely to be at variance to this principle.

Methodology GIS Database:

- SAC Biodatasets - accessed 28 Nov 08
- Heddle Vegetation Complexes - DEP 22/06/95
- Pre European Vegetation - DA 01/01
- Soils, Statewide DA 11/99

(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 application falls within the Swan Coastal Plain IBRA Bioregion, which has 38.84% of the pre-European extent of native vegetation remaining (Shepherd, 2007). The Shire of Capel has 34.08% native vegetation remaining (Shepherd, 2007).

The vegetation proposed for clearing is of Beard Vegetation Association 6, of which 26.18% remains in the Swan Coastal Plain. Additionally, it is a component of Heddle Vegetation Complex Karrakatta which has 29.5% remaining (Heddle, 1980). These vegetation types therefore fall below the EPA's (2000) threshold of 30%, below which species loss appears to accelerate exponentially.

The local (10km radius) area is also heavily cleared with approximately 20 - 25% native vegetation remaining. It is also part of an East-West ecological linkage identified under the Greater Bunbury Region Scheme. This links the nearby System 6 reserve, which is 130m west of the applied area, with other large remnants of native vegetation (EPA 2003). Bush block subdivisions extend to the north east and south west of the application area. The clearing as proposed will cause further fragmentation of the ecological linkages in the landscape and contribute to biodiversity loss (Molloy, 2008).

The vegetation under application is in degraded to good condition (Keighery, 1994), and the upper storey will be retained. However, the clearing is likely to increase the fragmentation of vegetation in the local area, and therefore is at variance to this principle.

Methodology

- EPA (2000)
- EPA (2003)
- Heddle (1980)
- Keighery (1994)
- Molloy (2008)
- Shepherd (2007)

GIS Databases:

- Heddle Vegetation Complexes - DEP 22/06/95
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Local Government Authorities - DLI 8/07/04
- Mattiske Vegetation - CALM 1/03/1998
- Pre European Vegetation - DA 01/01
- SAC Biodatasets - accessed 28 Nov 08
- NLWRA, Current Extent of Native Vegetation 20 Jan 2001

(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 water course to the application area is Five Mile Brook, a major tributary 800m north west of the proposed clearing. Additionally, a perennial EPP lake lies 1.5km south east, and a sumpland zoned as multi-use 700m south.

Given the distance from nearby watercourses, the vegetation under application is not considered to be growing in, or associated with a watercourse or wetland and the clearing as proposed is therefore not likely to be at variance to this principle.

Methodology GIS Databases:

- EPP Lakes Policy Area - DEP 14/05/97
- EPP, Wetlands 2004 (DRAFT) - EPA 21/7/04
- Clearing Regulations, Environmentally Sensitive Areas 30 May 2005
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC 11/04/07
- Hydrography linear - DOW 13/7/06
- Hydrography linear (hierarchy) - DoW 13/7/06

(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 areas chief soils are brown sands, but the topography is of low relief reducing the risk of soil erosion. Additionally, the proponent plans to retain trees and irrigate for pasture, which may protect the soil from erosion.

The application is considered unlikely to be at variance to this principle.

Methodology GIS database:

- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Annual Evaporation Contours (Isopleths) - WRC 29/09/98
- Soils, Statewide DA 11/99
- Topographic contours statewide - DOLA and ARMY 12/09/02

(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

A System 6 conservation area lies 130m west from the application area, and the Tuart Forest National Park is 5.5km south west.

The application area falls within the Greater Bunbury Regional Scheme and it is also part of an East-West ecological linkage identified under the Greater Bunbury Region Scheme (EPA 2003). Whilst the area under application is small clearing as proposed will cause further fragmentation of the ecological linkages in the landscape and contribute to biodiversity loss.

The proposed clearing may be at variance to this principle.

Methodology EPA (2003)

GIS Databases:

- CALM Managed Lands and Waters - CALM 01/06/05
- Hydrography, linear - DOW 13/7/06
- System 6 Conservation Reserves Properties - DEC 11/7/06

(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 groundwater salinity is mapped as 500-1000mg/L and the land is not marked as being at risk of acid sulfate soils. The clearing of 1ha of native vegetation as proposed is not likely to cause significant deterioration of surface or groundwater.

Methodology GIS database:

- Acid Sulfate Soil Risk Map, Swan coastal Plain - DEC 07/08/06
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Annual Evaporation Contours (Isopleths) - WRC 29/09/98
- 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

(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 clearing of 1ha of native vegetation as proposed is not likely to exacerbate the incidence or intensity of flooding.

- Methodology** GIS database:
- Evaporation Isoleths - WRC 29/09/98
 - Hydrographic catchments, catchments - DoW 01/06/07
 - Hydrographic catchments, subcatchments - DoW 01/06/07
 - Hydrography, linear - DoW 13/7/06
 - Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

Planning approval has not been granted from Shire of Capel. File note: TRIM ref DOC71698.

The application is within a Rights in Water Irrigation groundwater area. An irrigation licence has been applied for. File note: TRIM ref DOC71698.

A submission was received (Trim Ref: DOC69681). The issues raised included weed intrusion, soil unsuitability, impacts on Western Ringtail Possum habitat, fire hazards, requirement for carbon offsets and non essential nature of the proposal. These have either been addressed in the 10 clearing principles or are outside the scope of this assessment.

- Methodology** GIS database:
- Cadastre - Landgate Dec 07
 - RIWI Act, Groundwater Areas - DoW 13/07/06
 - Town Planning Scheme Zones - MFP 31/08/98

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing may be at variance to Principle (a), (c) and (h), is at variance to principle (e) and is not likely to be at variance to the remaining clearing Principles.

5. References

DEC (2008) NatureBase - Fauna Species Profile: . Accessed at <http://www.naturebase.net/content/view/840/1288/>. Accessed 21/12/08. Department of Environment and Conservation, Western Australia.

DEC (2008) Site Inspection Report for Clearing Permit Application CPS 2812/1, Lot 24 on plan 18827, Gelorup. Site inspection undertaken 8/12/08. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC71447).

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, Western Australia.

EPA (2003) Greater Bunbury Region Scheme. Bulletin 1108. Environmental Protection Authority, Western Australia.

Heddle, 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.

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

Molloy S, 2008. Methodology Support paper for the South West Regional Ecological Linkage Project. Project methodology in draft. Department of Environment and Conservation and the Western Australian Local Government Association.

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.

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.

Western Australian Herbarium (1998). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/> (Accessed 21/12/08).

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)