



1. Application details

1.1. Permit application details

Permit application No.: 112/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: MR Geoff & MRS Deborah Murphy

1.3. Property details

Property: LOT 60 ON DIAGRAM 95200 (MUCHEA 6501)
 Local Government Area: Shire Of Chittering
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
6.4		Mechanical Removal	Grazing & Pasture
5.3		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
<p>Heddle Vegetation Complex:</p> <p>Yanga Complex: Predominantly a closed scrub of Melaleuca species and low open forest of Casuarina obesa on flats subject to inundation. On drier sites the vegetation reflects the adjacent vegetation complexes of Bassendean and Coonambidgee. (Heddle et al. 1980)</p> <p>Beard Vegetation Association:</p> <p>1018: Mosaic: Medium forest; jarrah-marri / Low woodland; banksia / Low forest; tea-tree / Low woodland; Casuarina obesa. (Shepherd et al. 2001)</p>	<p>The vegetation under application is a remnant in an area that has been predominantly cleared and grazed. In view of the history of grazing on the property, the understorey has been significantly disturbed with weed species found throughout (some may have been intentionally planted for grazing).</p> <p>Vegetation within the area under application consists principally of Eucalyptus tottiana, Nuytsia floribunda and Jacksonia sternbergiana in the northern section over predominantly pasture, with a small section of Eucalyptus rudis trees over pasture in in the central area close to the wetland. IN the southern section, the trees were predominantly Melaleuca preissiana with occasional Corymbia calophylla and Eucalyptus tottiana. Acacia saligna was present throughout much of the applied area, appearing to have colonised the edges of vegetated stands as a result of disturbance.</p> <p>Vegetation condition ranged from Good to Completely Degraded, with the majority being Degraded or Completely Degraded.</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>Vegetation clearing description based on information obtained from a site inspection undertaken 12 March 2007 (TRIM ref: DOC18726)</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 is not likely to be at variance to this Principle**

A site inspection of the area under application (Site inspection report 2007), identified vegetation as a mixed woodland of *Banksia attenuata*, *Banksia menziesii*, *Banksia illicifolia*, *Corymbia calophylla*, *Eucalyptus todtiana*, *Melaleuca preissiana*, and *Nuytsia floribunda*. Understorey vegetation was relatively sparse, however certain areas do contain relatively thick patches of *Beaufortia elegans*, *Xanthorrhoea preisii*, and *Kunzea glabrescens*.

Overall, vegetation within the applied area is considered to be in a degraded condition, having been subject to disturbance associated with grazing. This is in contrast to other areas of remnant vegetation within the property, which are primarily considered to be in good condition, having a more intact understorey, despite experiencing the same grazing pressures.

Given the condition of the vegetation under application, it is considered unlikely that the area under application is representative of an area of high biological diversity.

Methodology Reference:

- Site Inspection report (2007) (TRIM Ref: DEC18726)

(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**

In consideration of the size, vegetation structure and condition of the area under application, the proposed clearing is unlikely to have a significant impact on local fauna populations or their habitats.

Methodology References:

- BCS (2007) (TRIM Ref: DOC18830)
- CALM (2004) (TRIM Ref: NI816)

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

Comments **Proposal is not at variance to this Principle**

Given the number of Declared Rare Flora (DRF) and Priority flora known within the local area, CALM (2004) advised that there is a high likelihood of the DRF taxa *Grevillea curviloba* subsp. *curviloba* and *G. curviloba* subsp. *incurva* being present with the area applied area as the nearest population is present approximately 1km to the east.

A targeted flora survey of the applied area was undertaken by Regeneration Technology Pty Ltd (2007), in May 2007. No *Grevillea curviloba* subsp. *curviloba* or *Grevillea curviloba* subsp. *incurva* were identified during the survey. While this survey time is recognised as occurring outside of the flowering times of these species, they are deemed to be readily identifiable, and may be surveyed at this time of year. It is therefore considered that the proposed clearing is unlikely to be at variance with this Principle.

Methodology Reference:

- Regeneration Technology Pty Ltd (2007)
Reference:
- CALM (2004) (TRIM ref: NI816)

(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 three known occurrences of the Threatened Ecological Community (TEC) 'Shrublands and Woodlands on Perth to Gingin Ironstone of the Swan Coastal Plain', located approximately 2.2km north of the proposed clearing. However, this Ironstone Community would not be present within an area containing white/grey sands or an overstorey containing *Banksia* species.

A site inspection of the applied area, undertaken in March 2007, confirmed the area comprised on deep white/grey sands, with vegetation consisting primarily of *Banksia* woodland over *Acacia saligna* and *Xanthorrhoea preisii*. It is therefore considered unlikely that the area under application contains occurrences of this TEC.

In addition to this TEC, BCS (2007) advises that despite inconsistencies with soil mapping, photographs of the applied area indicate grey sandy soils which can be associated with TEC 20a 'Banksia attenuata woodlands over species rich dense shrublands'. During the site inspection of this area vegetation was observed to consist of a mixed woodland of *Banksia attenuata*, *Banksia menziesii*, *Banksia illicifolia*, *Corymbia calophylla*, *Eucalyptus todtiana*, *Melaleuca preissiana*, and *Nuytsia floribunda*. Understorey vegetation was relatively

sparse, however certain areas did contain relatively thick areas of *Beaufortia elegans*, *Xanthorrhoea preisii*, and *Kunzea glabrescens*.

Comparisons between the vegetation observed on site and that identified in Gibson et al. (1994) show dissimilarities between species composition and richness; with the applied area lacking numerous indicator species for TEC 20a, such as *Mesomelaena pseudostygia*, *Alexgeorgea nitens*, and *Daviesia nudiflora*.

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

- Methodology** References:
- BCS (2007) (TRIM Ref: DOC 18836)
 - CALM (2004) (TRIM ref: NI816)
 - Gibson et al. (1994)
 - Site Inspection Report (2007) (TRIM Ref: DOC18726)
- GIS Databases:
- Threatened Ecological Communities - CALM 12/4/05

(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 not likely to be at variance to this Principle**
- Hedde et al (1980) defines the vegetation under application as 'Yanga Complex', which is mapped as having 18.7% of its pre-European extent remaining. This vegetation type is predominantly a closed scrub of *Melaleuca* species and low open forest of *Casuarina obesa* on flats subject to inundation. Site inspections indicate however, that the area to be cleared that corresponds most closely to this vegetation type is scattered trees over pasture, and therefore is not likely to be a significant remnant.
- On drier sites the vegetation reflects the adjacent vegetation complexes of Bassendean North and Coonambidgee, neither of which has a low extent remaining. The vegetation under application is also classified as vegetation association 1018 (Shepherd 2006), which has a representation of 22.5% of the pre- European extent.
- The vegetation under application is considered to be degraded, and the proposal involves the removal of the sparse understorey and the fencing and removal of grazing pressure from the vegetation in good condition, and the fencing of wetlands and revegetation on the property .
- The clearing is therefore not likely to be at variance to this Principle.

- Methodology** References:
- Department of Natural Resources and Environment (2002)
 - Hedde et al. (1980)
 - Shepherd et al. (2001)
 - Shepherd (2006)
- GIS Databases:
- Pre-European Vegetation - DA 01/01
 - Hedde Vegetation Complexes - DEP 21/06/95

(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 may be at variance to this Principle**
- The eastern section of Lot 60 is recognised as containing a portion of a palusplain wetland, currently identified predominantly as being of Multiple Use category, with one section identified as Conservation category. It is noted that one area of Multiple Use wetland is recognised under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. While the vegetation under application is recognised as being primarily within an degraded condition, it is considered that the clearing of vegetation directly adjacent to this wetland area may be at variance to this Principle.
- Advice provided by Wetlands Program (2007) notes that the majority of the area under application is located outside wetland areas. A small area proposed for clearing is identified within Multiple Use palusplain (UFI 14255). Multiple Use wetlands retain few important attributes and functions and are not a priority for protection. The Wetlands Program does not have any concerns regarding the proposed clearing of this small area of Multiple Use Wetland.
- It is noted that the landowner has committed to revegetation and fencing off a the 50m minimum wetland buffer area through the WWF Wetland Watch Program. In addition, an area of Multiple Use palusplain and Multiple Use sumpland to the south of the Conservation Category wetland is also proposed for revegetation and fencing.

- Methodology** Reference:

- Wetlands Program (2007) (TRIM Ref: DOC26117)
- GIS Databases:
 - Geomorphic Wetlands (Mgt categories), Swan Coastal Plain - DEC
 - Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
 - EPP (Lakes) - DEP 06/92

(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**
- Acid Sulphate Soil (ASS) mapping identifies the area under application as predominantly having a Class 2 (low to moderate at less than 3 metres depth) risk of ASS or potential ASS occurring.
- DAFWA (2007) advise that soil within the area under application is comprised of Yanga 14X soil type, which is described as comprising sandy rises on flat to gently sloping plain, with occasional low dunes. Siliceous/humic pans, bog iron and clays are reported as occurring beneath the sandy rises.
- In consideration of the amended area, DAFWA (2007) advises that the proposed clearing has a low risk of both water erosion and water logging, however does have some risk of eutrophication due to the low Phosphorus Retention Index (PRI) of the soils.
- However, the eutrophication risk is not directly related to the clearing, but is dependent upon the type and intensity of the proposed future land use. Transport of nutrients is believed to be largely related to the transport of soil and organic matter through erosion and run off. To a lesser extent soluble phosphate may move in either soil solution or runoff. Phosphorus in solution is highly reactive. It is likely to be absorbed by sub soil clay, and or the humic pans that are likely to underlay the site to be cleared. Therefore eutrophication risk is likely to be low to moderate depending on land use (DAFWA, 2007)
- Given the above, it is considered that the proposed clearing is unlikely to be at variance to this Principle.
- Methodology** Reference:
- DAFWA (2007) (TRIM Ref: DOC18145)
 - GIS Database:
 - Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC

(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**
- Yeal, Bampanup and Chandala Nature Reserves are located within 10 kilometre of the property. The proposed clearing is also within 1.5 kilometres of the Chandala Swamp, which is listed on the register 'Directory of Important Wetlands in Australia'.
- In consideration of the amended area, it is considered unlikely that the proposed clearing will further fragment ecological linkages in the local area, given the existing representation of vegetation within the applied property.
- Methodology** Reference:
- CALM (2004) (TRIM ref: NI816)
 - GIS Databases:
 - CALM Managed Land and Waters - CALM 01/07/05
 - Gingin 1m Orthomosaic - DLI 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**
- There is a low potential for nutrient loss resulting in eutrophication. DAFWA (2007) advises that while soils within the area under application have a low to moderate risk of eutrophication, the export of phosphorus will likely be absorbed by sub soil clay, and or the humic pans that are likely to underlay the site to be cleared.
- Advice provided by Wetlands Branch (2007) noted that wetland areas are currently utilised by cattle. The proposal to fence all of the Conservation category wetland and a 50m buffer, and a large portion of the Multiple Use wetland, thereby excluding cattle, is considered likely to improve the water quality of the wetland areas. In addition, the revegetation proposal should provide a long term approach to improving water quality.
- Methodology** Reference:
- DAFWA (2007) (TRIM Ref: DOC 18145)
 - Wetlands Branch (TRIM Ref: DOC26117)

(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**
Given the size of the applied area, and its distance from major watercourses and drainage systems, it is considered unlikely that the proposed clearing would cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases:
- Hydrography, linear - DOE 1/02/04

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

Comments

A submission (2004a) was received advising that there is a concern about whether or not there is a genuine need to clear any more vegetation in the Swan Coastal Plain, one of the most diverse parts of the State. Recommendation that an appropriately timed flora and fauna surveys be undertaken, with consideration to the biodiversity of the site, the significance of the site for fauna and whether the site contains Declared Rare Flora or includes any threatened ecological communities.

A Submission (2004b) was received advising that this application be rejected, as the property contains valuable remnant vegetation which provides refuge for native fauna and flora and links up with a corridor of bushland to the west.

A Submission (2004c) was received advising that there is no objection to the clearing as proposed.

A Submission (2004d) was received requesting that consideration of soil type, capability and presence of wetlands be considered.

The Shire of Chittering (2007) Council meeting held on 16 May 2007 moved to approve the clearing of a 1.24 hectares of vegetation for the purpose of horse agistment. This development approval is subject to condition such as the retention of horses to designated areas, the collection and management of manure, and the establishment of native vegetation strips surrounding paddocks.

Methodology Submission (2004a) (TRIM ref: HD17794)
Submission (2004b) (TRIM ref: ND192)
Submission (2004c) (TRIM ref: HD17941)
Submission (2004d) (TRIM ref: IN17931)
Shire of Chittering (2007) (TRIM ref: DOC23809)

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Grazing & Pasture	Mechanical Removal	6.4	Clearing of scattered sparse understorey within area cross hatched yellow.
Grazing & Pasture	Mechanical Removal	5.3	Clearing of scattered sparse understorey within area cross hatched yellow.

5. References

CALM (2004) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. TRIM Ref: NI816.

DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref: DOC9939.

DAWA (2004) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref: NI818.

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.

EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.

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.

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

Regeneration Technology Pty Ltd (2007). Rare Flora Survey. Lot 60 Timaru Road, Muchea. TRIM Ref: DOC23839

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.

Site Inspection (2004) Site Inspection report, Department of Environment and Conservation, Western Australia. TRIM Ref: ND290

Site Inspection (2006) Site Inspection report, Department of Environment and Conservation, Western Australia. TRIM Ref: DOC10619

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)