



1. Application details

1.1. Permit application details

Permit application No.: 1481/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Tuan Linh / Cong Phung Vu / Diu

1.3. Property details

Property: LOT 72 ON PLAN 26866

Local Government Area: Shire Of Gingin & Shire Of Northampton

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
50		Mechanical Removal	Horticulture

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 Associations 1014 - Mosaic; Low woodland; banksia / Shrublands; tea-tree thicket (Shepherd et al. 2001, Hopkins et al. 2001).	The vegetation under application is split into two areas. The first area is located on the corner of Gingin Brook Rd and Quin Rd and includes a Conservation Category Wetland (CCW). The vegetation within this section is in an excellent condition and comprises of <i>Banksia</i> woodland with a dense and diverse understorey. Species observed within the understorey in this area included <i>Xanthorrhoea</i> sp., <i>Desmocladius</i> sp., <i>Acacia pulchella</i> , <i>Macrozamia riedlei</i> , <i>Patersonia occidentalis</i> , <i>Jacksonia furcellata</i> , <i>Banksia grandis</i> , <i>Banksia laricina</i> , <i>Stirlingia latifolia</i> and <i>Rhodanthe</i> sp. The upper storey comprised <i>Banksia attenuata</i> , <i>Banksia menziesii</i> , <i>Nuytsia floribunda</i> and <i>Eucalyptus</i> sp. including <i>E.todtiana</i> .	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The vegetation clearing description is based on information obtained during the site inspection undertaken 08/02/2007 (TRIM Ref. DOC15730).
Heddle Vegetation Complex - Bassendean Complex - North; Vegetation ranges from a low open forest and low open woodland of <i>Banksia</i> species - <i>E.todtiana</i> to low open woodland of <i>Melaleuca</i> species and sedgeland which occupy the moister sites (Heddle et al. 1980).	The second area of vegetation under application occurs to the west along Gingin Brook Rd. This area includes a multiple use wetland area with <i>Melaleuca</i> and <i>Lepidosperma longitudinale</i> , a small completely degraded section (~0.5ha) with a weed dominated understorey and scattered <i>Jacksonia furcellata</i> , a second wetland area with <i>Melaleuca</i> and some surface water present, an area of Marri and <i>Xanthorrhoea</i> tall open woodland, and a <i>Banksia</i> woodland (~10ha) similar to the first area, being in an excellent condition with a high level of floral diversity. A Conservation Category Wetland (CCW) is also located on the southern boundary of this area.		

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
	<p>The vegetation under application is split into two areas. The first area is located along Gingin Brook Rd on the corner of Quin Rd (~26ha). The second area occurs to the west along Gingin Brook Rd (~24ha).</p> <p>The majority of the vegetation under application (~35ha) is in an excellent condition with a highly diverse lower storey and <i>Banksia</i>/<i>Eucalyptus</i> overstorey. The second vegetated area also comprises of a small area of tall open Marri woodland with a <i>Xanthorrhoea</i> understorey (~0.5ha), two wetland areas and a small area of completely degraded vegetation (~0.5ha).</p> <p>Overall the vegetation under application is a large intact remnant in excellent condition with a high level of biological diversity. The clearing of 50ha is likely to have an adverse impact on the biodiversity of the region and a significant intrinsic conservation value. Therefore, the proposed clearing is at variance to this Principle.</p>
Methodology	References: - Shepherd et al. (2001)

- Site inspection 08/02/2007 (TRIM Ref. DOC15730)
- GIS database:
- Gingin 1m Orthomosaic - DLI 03

(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

The vegetation under application is split into two areas. The first area is located along Gingin Brook Rd on the corner of Quin Rd (~26ha). The second area occurs to the west along Gingin Brook Rd (~24ha).

The majority of the vegetation under application (~35ha) is in an excellent condition with a highly diverse lower storey and *Banksia/Eucalyptus* overstorey. The second vegetated area also comprises of a small area of tall open Marri woodland with a *Xanthorrhoea* understorey (~0.5ha), two wetland areas and a small area of completely degraded vegetation (~0.5ha).

Several faunal species of conservation significance are known to occur within the local area (~10km radius). These species include the Western Brush Wallaby (Priority 4), Chuditch (Threatened) and Carnaby's Black Cockatoo (Threatened), which are known to occur within habitat similar to that contained within the vegetation under application. Furthermore, the vegetation under application comprises floral species known to comprise the diet of these species (NatureBase 2007).

Overall the vegetation under application is a large intact remnant in excellent condition with a high level of biological diversity. The clearing of 50ha is likely to have an adverse impact on the biodiversity of the region through the displacement of fauna and loss of habitat. Given this and the known occurrence of conservation significant fauna in the local area, the proposed clearing is at variance to this Principle.

Methodology References:

- Site inspection 08/02/2007 (TRIM Ref. DOC15730)
- NatureBase (2007)
- GIS databases:
- Gingin 1m Orthomosaic - DLI 03
- SAC Bio Datasets, Date accessed 21/02/2007

(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

There are sixteen known Declared Rare or Priority Flora populations within a 10km radius of the vegetation under application. The closest known population is *Verticordia lindleyi* subs. *Lindleyi* (Priority 4) which is located 2.7kms south of the vegetation under application. Other known populations within a 10km radius include:

- 3 populations of *Conostephium minus* (Rare)
- 1 population of *Halgoris aculeolata* (Priority 2)
- 1 population of *Tricoryne robusta* (Priority 2)
- 1 population of *Blennospora doliiformis* (Priority 3)
- 1 population of *Dillwynia dillwynioides* (Priority 3)
- 1 population of *Drosera occidentalis* subs. *occidentalis* (Priority 4)
- 5 populations of *Verticordia lindleyi* subs. *Lindleyi* (Priority 4)
- 1 population of *Anthotium juniciforme* (Priority 4)
- 1 population of *Schoenus natans* (Priority 4)

Of the species listed above, only one (*Drosera occidentalis* subs. *occidentalis*) occurs within a different Beard Vegetation Association than that of the vegetation under application.

Given this, and the close proximity of the vegetation under application to the populations of DRF and Priority Flora, the proposed clearing may be at variance to this Principle.

Methodology GIS databases:

- Declared Rare and Priority Flora List - CALM 01/07/05
- Pre-European Vegetation - DA 01/01

(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 are approximately 13 known occurrences of Threatened Ecological Communities (TEC) within a 10km radius of the vegetation under application. The closest known occurrence of a TEC is approximately 3.7kms

south east of the vegetation under application.

Three TEC that have been identified in the upland areas of the Bassendean Supergroup (Government of Western Australia 2000) are:

- *Banksia attenuata* woodlands over species rich dense shrublands,
- Eastern *Banksia attenuata* and/or *Eucalyptus marginata* woodlands, and
- Eastern shrublands and woodlands.

While the vegetation under application does consist of *Banksia* woodland (Site Inspection 2007) mapping of the above listed Floristic Community Types by Gibson et al. (1994) does not identify any of these within close proximity to the area of vegetation under application; being primarily restricted to *Banksia* woodlands east and south-east of the city of Perth. Therefore, it is considered that the proposed clearing is not likely to be at variance with this Principle.

Methodology

References:

- Gibson et al. (1994)
- Government of Western Australia (2000)
- Site inspection 08/02/2007 (TRIM Ref. DOC15730)

GIS Databases:

- Environmentally Sensitive Areas - DOE 08/03/05
- 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 not likely to be at variance to this Principle

The vegetation under application is a component of Beard Vegetation Association 1014 (Hopkins et al. 2001) and Heddle: Bassendean Complex - North (Heddle et al. 1980) of which 53.5% and 72% of Pre-European extent remain respectively (Shepherd et al. 2001).

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents a clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment 2002, EPA 2000).

land	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation** status	% in reserves/CALM managed
IBRA Bioregions					
Swan Coastal Plain*	1 498 297	626 512	41.8	Depleted	
Shire of Gingin*	315,560	177,688	56.3	Least Concern	
Vegetation type:					
Beard: 1014*	48359	25871	53.5	Least Concern	39.7
Heddle:					
Bassendean Complex -North***	74147	53384	72	Least Concern	27.5

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

*** (EPA, 2003)

Although the vegetation under application is in an overall excellent condition, both Beard and Heddle vegetation communities are adequately represented at 53.5% and 72% respectively.

Therefore the proposed clearing is considered not likely to be at variance to this Principle.

Methodology

References:

- Shepherd et al. (2001)
- Hopkins et al. (2001)
- Department of Natural Resources and Environment (2002)
- Site inspection 08/02/2007 (TRIM Ref. DOC15730)

GIS databases:

- Heddle Vegetation Complexes - DEP 21/06/95
- Pre-European Vegetation - DA 01/01
- 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 seriously at variance to this Principle

Two Conservation Category Wetlands (CCWs) and a Multiple Use palusplain are mapped within the vegetation under application. The vegetation under application is also in close proximity to the Gingin Brook (~500m north), Quin Brook (~1.8km south west) and several Resource Enhancement (REW) and Conservation Category wetlands (the closest being an REW ~85m away). The Gngangara Mound is located ~1km south of the vegetation under application.

The vegetation under application is in an overall excellent condition, with areas comprising of wetland vegetation communities. Therefore, the vegetation under application is considered to contain vegetation growing in, or in association with, an environment associated with a watercourse or wetland.

Furthermore, the vegetation under application is within the buffer distance of 200m around wetlands on transmissive soils recommended by the Water and Rivers Commission (2001) for the protection of CCWs and REWs from nutrient inputs and maintenance of natural water levels (Water and Rivers Commission 2001).

DAFWA (2007) advise that the proposed clearing of 50ha of native vegetation is also likely to eutrophication to the Gingin Brook and Moore River.

Given the above, the proposed clearing is seriously at variance to this Principle.

Methodology References:

- Site inspection 08/02/2007 (TRIM Ref. DOC15730)
 - DAFWA (2007) (TRIM Ref. DOC16205)
 - Water and Rivers Commission (2001)
- GIS databases:
- Rivers 250K - GA
 - ANCA, Wetlands - CALM 08/01
 - EPP, Areas - DEP 06/95
 - EPP, Lakes - DEP 1/12/92
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
 - Hydrography, linear - DOE 1/2/04

(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 vegetation under application lies within soil unit Cb39. These soils are associated with a subdued dune-swale landscape with chief soils of leached sands (Department of Agriculture 2004).

The vegetation under application falls within an area mapped as having a Class (2) and Class (1) Acid Sulphate Soils risk. A Class (1) area is defined as having a high to moderate risk of ASS occurring within 3 m of natural soil surface that could be disturbed by most land development activities. A Class (2) area is defined as a having a moderate to low risk of ASS occurring within 3 m of natural soil surface that could be disturbed by most land development activities.

DAFWA (2007a) advised that the proposed clearing is likely to result in eutrophication to the nearby Gingin Brook and Moore River, wind erosion and waterlogging and therefore the clearing of 50ha of native vegetation is seriously at variance to this Principle.

An Environmental Management System (EMS) was submitted by the applicant for the proposed horticultural pursuit, addressing the land degradation issues identified (Bodycoat Consultancy 2007).

The Commissioner of Soil and Land Conservation (2007b) has reviewed the EMS and advised that the clearing application may be at variance to Principle (g) as the proposed clearing is likely to lead to waterlogging, increased nutrient export and wind erosion. In particular, the Commissioner noted that low lying swampy areas should not be cleared.

Methodology References:

- DAFWA (2007a) (TRIM Ref. DOC16205)
 - DAFWA (2007b) (TRIM Ref. DOC20211)
 - Department of Agriculture (2004)
 - Bodycoat Consultancy (2007)
- GIS databases:
- Soils, Statewide - DA 11/99
 - Acid Sulfate 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

The Gngangara-Moore River State Forest is located ~3.1kms to the south west of the vegetation under application. The nearest Bush Forever site (406, Wilbinga-Caraban Bushland) is located ~11km south west of the vegetation under application. Given the distance to these conservation areas, the proposed clearing is not considered to contribute to the conservation values of, or provide a buffer to, the reserves.

Methodology GIS databases:

- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 1/07/05

(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

The vegetation under application does not include any Public Drinking Water Source Areas (PDWSA) or PDWSA Protection Zones.

The vegetation under application lies within an area mapped with an average groundwater salinity of 500-1000 (TDS) mg/L.

DAFWA (2007) advised that there is a high to extreme risk of eutrophication to groundwater and surface water, and waterlogging following the proposed clearing. This information was reviewed following the submission of an Environmental Management System (EMS) for the proposed horticultural pursuit (Bodycoat Consultancy 2007). Following a review of this document, DAFWA (2007b) advise that the proposed clearing may be at variance to this Principle as the clearing of 50ha of native vegetation, particularly in low lying areas, is likely to lead to wind erosion, water logging and nutrient export.

Methodology References:

- Bodycoat Consultancy (2007)
 - DAFWA (2007) (TRIM Ref. DOC16205)
 - DAFWA (2007b) (TRIM Ref. DOC20211)
- GIS databases:
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06
 - Groundwater Salinity, Statewide - 22/02/00

(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

The vegetation under application occurs within an area associated with an annual evaporation rate of approximately 2000mm and an annual rainfall of approximately 800mm.

DAFWA (2007) advise that there is a high to very high risk of waterlogging following the proposed clearing. Given this, the relatively large area applied to be cleared and the low position of the area in the landscape, the proposed clearing is considered likely to lead to localised flooding. Therefore, the proposed clearing may be at variance to this Principle.

Methodology Reference:

- DAFWA (2007) (TRIM Ref. DOC16205)
- GIS databases:
- Rainfall, Mean Annual - BOM 30/09/01
 - Evaporation Isopleths - BOM 09/98

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

Comments

Two Notice of Intention to Clear (NOICs) have previously been submitted for this property. The first NOIC was lodged by the previous landowners in 1998 for 360ha for agriculture. The second NOIC was submitted by the applicants in 2002 for 120ha. The Commissioner advised the applicants that he was opposed to the clearing as there is a high risk of wind erosion and likely eutrophication to the Gingin Brook and the Moore River. The Commissioner recommended that the applicants withdraw the NOIC or, in the event that the applicants did not withdraw the NOIC, a Soil Conservation Notice would be placed over the area to protect the areas proposed to be cleared. The NOIC was subsequently withdrawn (TRIM Ref. DOC15532). The Commissioner also advised the applicants that if the land degradation issues were overcome, the proposal would be referred to the Environmental Protection Authority for further assessment due to nearby threatened flora populations (TRIM Ref. DOC16205).

There are no Aboriginal Sites of Significance within the area under application.

The area under application lies within a Rights in Water and Irrigation Act 1914 (RIWI) groundwater area. A water licence has previously been granted for this property for 9ha of vegetables. The applicant has advised that they will be applying for a license to irrigate from for the superficial aquifer for 900,000KL.

The Shire of Gingin is not in support of the further clearing of this property, as the Council has only approved development for 9ha of the property. The Shire has advised that they have previously received an application for this area, and resolved to only consider such an application if the Council were in receipt of;

- further supporting information and evidence in terms of land capability, environmental assessment and water licensing; and
- a comprehensive Planning Application for irrigated horticulture (TRIM Ref. DOC11401).

Two submissions opposing the clearing were received:

The first submission raised the following issues:

- the clearing can be considered broadscale, and should not be cleared;
- the Shire of Gingin appears to have a never-ending procession of clearing approvals; and
- moving fauna or flora or requiring offsets does not do the job. Prevention is better than cure (TRIM Ref. DOC8633).

The second submission opposing the proposed clearing raised the following issues:

- the vegetation proposed to be cleared varies from the highest quality Banksia spp. bush land (~50% of vegetation) to thinly scattered vegetation on failed pasture land that includes an area of conservation category wetland;
- the virgin banksia woodland may include Banksia laricina, which is restricted to the Northern Complex;
- the soils have very low nutrient retention and a Class 5 eutrophication risk;
- the soils are not suitable for agriculture;
- the proposed clearing will increase the risk of eutrophication to the Gingin Brook; and
- the Gingin area already contains ample cleared land to fulfil the needs of horticulture (TRIM Ref. DOC10553).

The applicants were given the opportunity to provide additional information in relation to the issues identified by this assessment. An Environmental Management System (EMS) for the proposed horticultural pursuits was submitted (Bodycoat Consultancy 2007), however it is considered that this document only addresses potential land degradation impacts. The EMS was reviewed by the Commissioner of Soil and Land Conservation. DAFWA (2007b) advised that strategies to maintain plant cover to reduce erosion and maintain wide buffers between the development areas and low lying areas are potentially effective and that some clearing could be considered under a modified clearing plan that maintains effective buffers on the environmentally sensitive areas within the proposed clearing area, and with a monitoring regime for nutrients linked to well licensing.

Methodology

References:

- Bodycoat Consultancy (2007)
- DAFWA (2007) (TRIM Ref. DOC16205)
- DAFWA (2007b) (TRIM Ref. DOC20211)

GIS databases:

- Native Title Claims - DLI 7/11/05
- Aboriginal Sites of Significance - DIA
- RIWI Act, Groundwater Areas - WRC 13/06/00

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Horticulture	Mechanical Removal	50	<p>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. The clearing as proposed is at variance to Principles (a), (b) and (f) and may be at variance to Principles (c), (g), (i) and (j).</p> <p>Given the above, the assessing officer therefore recommends that a clearing permit be refused.</p>

5. References

Bodycoat Consultancy (2007) Environmental Management System for a Horticultural Enterprise, lot 72 Gingin Brook Road, Muckenburra, Gingin (TRIM Ref. DOC19199).

DAFWA (2007) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (DEC TRIM Ref. DOC16205).

DAFWA (2007b) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (TRIM Ref. DOC20211).

Department of Agriculture (2004) Soil-landscape mapping, Western Australia Department of Agriculture, Date accessed 18/01/2007.

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 (2003) 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.

Gibson et al. (1994). A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management.

Government of Western Australia (2000) Bush Forever Volumes 1 and 2. Western Australian Planning Commission, Perth 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.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.

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

NatureBase (2007) Descriptions by the Department of Environment and Conservation (<http://www.naturebase.net/content/view/840/1288/>) Accessed on Wednesday, 21 February 2007.

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 (2007) (TRIM Ref. DOC15730).

Water and Rivers Commission (2001) Position Statement: Wetlands

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)