



1. Application details

1.1. Permit application details

Permit application No.: 336/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Van Hgan Doan & Anh Loan Duong

1.3. Property details

Property: LOT 74 ON PLAN 22316
Local Government Area: Shire Of Gingin
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2		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 association 1948: Low Woodland; Banksia on limestone (Hopkins et al. 2001, Shepherd et al. 2001).	The proposal includes the clearing of 2ha of native vegetation in a substantially cleared area. The Gngangara-Moore River State Forest abuts the southern boundary of the property.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The Department of Agriculture advises that the area under application is Banksia woodland, and is in good condition (DAWA 2005). Aerial photography indicates that the area under application is the only remaining vegetation on the property of approximately 11ha.
Hedde Vegetation Complex: Cottesloe Complex North: Predominantly low open forest and low woodland of B. attenuata (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 not likely to be at variance to this Principle The area under application is a small patch of remnant vegetation remaining in a mostly cleared landscape. Aerial photography suggests that the vegetation, albeit in good condition (DAWA 2005), is sparse and is not contiguous with any other vegetation. CALM (2005) advises that, due to the relatively small size, sparseness and physical separation from the surrounding areas of bushland, there is a low likelihood that the area under application has a higher biodiversity than other less disturbed remnant vegetation in the local area.
Methodology	CALM (2005) (TRIM: CEO1785/04) DAWA (2005) (TRIM: CEO239/05)

(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) advises that there is a possibility of 2 Priority species occurring within a 10km radius of the area under application. These species are the Western Brush Wallaby (Macropus irma, Priority 4), and Quenda (Isodon obesulus fusciventer, Priority 5). However, the area under application is relatively small, fragmented and isolated, therefore the occurrence of these species is a possibility rather than a likelihood (CALM 2005).
Methodology	CALM (2005) (TRIM: CEO1785/04)

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

Comments Proposal is not likely to be at variance to this Principle

There are no declared rare flora or priority species on the GIS database in the area under application. CALM (2005) advises that there are 10 records of the declared rare species, *Eucalyptus argutifolia* (Wabbling Hill Mallee), occurring in the local area (10km radius). However, there is a low likelihood of this species occurring in the area under application, due to the unfavourable geological substrate (CALM 2005). The nearest populations of threatened/ priority species are *Grevillea evanescens* (Priority 1), *Eucalyptus x mundijongensis* (Priority 1) and *Tetratheca pilifera* (Priority 3), which are all located approximately 2.5km from the area under application. However, CALM (2005) report that 'the probability of such species occurring there in viable populations is low'.

Methodology CALM 2005 (TRIM: CEO1785/04)
GIS Databases:
- Threatened Plant Communities - DEP 06/95
- Declared Rare and Priority Flora List - CALM 13/08/03

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significant ecological community.

Comments Proposal is not likely to be at variance to this Principle

The nearest TEC occurrence (*Melaleuca huegelii* - *Melaleuca acerosa*) is approximately 2km south in adjacent bushland (Gnangara -Moore River State Forest) (CALM 2005). This TEC, while considered to be 'endangered' according to the CALM TEC database, as endorsed by the Minister for the Environment, is not presently listed under the EPBC Act 1999 (CALM 2005). CALM (2005) advises that given the biogeographical and geomorphological conditions of the area under application, it is unlikely that this suite of species would occur in this area. The subject area doesn't appear to have a limestone ridge environment, and does not appear to have the dense vegetation associated with this community type (CALM 2005). Furthermore, given the relatively small size of the proposed clearing and its lack of connectivity to other bushland, it is unlikely that the area under application would be necessary for the maintenance of this ecological community (CALM 2005).

Methodology CALM (2005) (TRIM: CEO1785/04)
GIS Databases:
- Threatened Ecological Communities - CALM 15/07/03
- Threatened Plant Communities - DEP 06/95
- Environmentally Sensitive Areas DOE 22/10/04

(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 State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment, 2002; EPA, 2000). The vegetation within the area under application consists of Beard vegetation association 1948 (Shepherd et al 2001, Hopkins et al 2001) and the Heddle vegetation complex Cottesloe Complex North (Heddle et al 1980). The Beard vegetation association has approximately 21.4% of its original extent remaining (Shepherd et al 2001, Hopkins et al 2001) while in comparison, the Heddle vegetation complex has approximately 70% remaining (Heddle et al 2001). Given that Beard's (Shepherd et al 2001) study is significantly broader than Heddle's (Heddle et al 1980) study, the latter provides a more accurate representation of the vegetation type and should be used in this instance. Thus, the local Heddle vegetation complex in this application is above the recommended minimum of 30% representation (Shepherd et al 2001, Hopkins et al 2001).

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation status**	In Reserves/CALM-managed land
IBRA Bioregion –					
Swan Coastal Plain	1,529,235***	657,450***	43	Depleted	
Shire of Gingin	315,560	315,560	56.3	Least Concern	
Beard vegetation association –					
1948	81,022	17,315	21.4	Vulnerable	15.6%
Heddle vegetation complex –					
Cottesloe Complex North	8,670	6,082	70	Least Concern	5,579ha

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

Methodology Shepherd et al (2001)
Hopkins et al (2001)

Hedde et al (1980)
GIS databases:
- Pre-European Vegetation - DA 01/01
- Hedde Vegetation Complexes - DEP 21/06/95
- Matiske Vegetation - CALM 24/03/98
- 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 not likely to be at variance to this Principle

There is no record of watercourses or ecological communities that are wetland or groundwater dependent within 1800m of the area under application.

Methodology

GIS Databases:
- EPP, Areas DEP 06/95
- EPP, Lakes - DEP 28/07/03
- EPP, Wetlands (draft) - DEP 21/07/04
- Hydrography, linear - DOE 01/02/04
- ANCA wetlands - CALM 08/01

(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 area under application has a soil mapping unit that is not rated as having a high degradation risk and is well suited to the proposed land use (DAWA 2005). As the soil type on this site is sand, appropriate management should be undertaken to minimise the risk of wind and water erosion on the site. There is no known risk of shallow or deeper Acid Sulphate Soils (ASS) or Potential Acid Sulphate Soils (PASS).

Methodology

DAWA (2005) (TRIM: CEO239/05)
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 is not likely to be at variance to this Principle

Gnangara-Moore River State Forest 65 abuts the southern boundary of the property, approximately 300m from the area under application. The clearing as proposed is unlikely to be detrimental to the adjacent conservation area.

This notwithstanding, CALM (2005) advises that it is possible that the proposed agricultural land use may result in degradation of perimeter vegetation of the adjacent forest. However, given the larger area of horticultural activity to the east, west and north of the land parcel under application, any vegetation buffer within the area under application is unlikely to be effective.

Nonetheless, the clearing as proposed is not likely to have a significant impact on the environmental values of any nearby conservation area.

Methodology

CALM (2005) (TRIM: CEO1785/04)
GIS database
- CALM Managed Lands and Water - CALM 01/08/04
- System 6 Conservation Reserves - DEP 06/95
- System 1 to 5 and 7 to 12 Areas - DEP 06/95

(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 area under application is located within a proclaimed groundwater area (Gingin GWA) and a Priority 3 Public Drinking Water Source Area (PDWSA). The clearing as proposed is compatible with the requirements of a Priority 3 Public Drinking Water Source Area (PDWSA).

Due to medium rainfall (800mm per year on average) in the region there is low groundwater recharge. Therefore, the clearing as proposed is not likely to change water tables or significantly alter salinity or pH. Furthermore, given the small size the clearing as proposed is not likely to be at variance to this Principle.

Methodology

GIS Databases:
- Public Drinking Water Source Areas (PWDSAs) - DOE 04/11/04
- Rainfall, Mean Annual BOM 30/09/01
- Evaporation Isopleths - BOM 09/98

- Isohyets - BOM 09/98
- Salinity Monitoring LM 50m - DOLA 00
- Salinity Risk LM 25m - DOLA 01
- Topographic Contours, Statewide - DOLA 12/09/02

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Comments **Proposal is not likely to be at variance to this Principle**
 No floodways or areas of flooding exist within the area under application. The area shows a general relief in topography toward the south-west. Given the relatively small size of the area under application and the transmissive nature of the sands at the site, clearing is unlikely to cause or exacerbate the incidence of flooding.

Methodology GIS Databases:
 - Topographic Contours, Statewide - DOLA 12/09/02
 - FMD 100 year ARI Floodway and Flood Fringe Areas DOE 02/03
 - FMD 100 year ARI Flood Levels (mAHD) DOE 02/03

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

Comments
 Van Hgan Doan and Anh Loan Duong became the legal owners of Lot 74 on Plan 22316 in March 2005.

 Shire of Gingin considers the application for land clearing to be premature in the absence of a land use approval (Shire of Gingin 2005). Therefore, such approval is required by the applicant prior to commencement of the clearing as proposed.

WRC licences:
 The area under application is situated within the Gingin Groundwater Area and the applicant has lodged an application for a licence to extract groundwater sufficient for the irrigation of 11.2ha of vegetables, which is currently being assessed by the Department of Environment.

Methodology Shire of Gingin Direct Interest Submission (2005) (TRIM ref. ED468)
 GIS Databases:
 - Native Title Claims - DLI 19/12/04
 - WRL, Properties, Ground Water

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Horticulture	Mechanical Removal	2	Grant	<p>The assessable criteria have been addressed and the clearing as proposed is at variance to Principle (e). The Beard vegetation association (Shepherd et al 2001) has approximately 21.4% of its original extent remaining which is below the 30% target outlined in the National Objectives Targets for Biodiversity Conservation (Department of Natural Resources and Environment 2002). However, the flora study conducted by Heddle (et al 1980) provides more detailed classification of the vegetation within the Swan Coastal Plain and therefore a more accurate vegetation representation. As such, the Heddle vegetation (70%) complex is above the 30% representation.</p> <p>The assessing officer therefore recommends that the permit should be granted with the following advice: The applicant should proceed with their application for a Licence to take Groundwater. The applicant should be mindful of the risk of wind and soil erosion and manage the land to minimise this risk.</p>

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. DoE TRIM ref CEO1785/04.
 DAWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref CEO239/05
 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.
 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.
 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, BJ (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.