



## 1. Application details

### 1.1. Permit application details

Permit application No.: 1257/1  
Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Minh Cuong & Thong Minh Huynh

### 1.3. Property details

Property: LOT 50 ON PLAN 30001 (Lot No. 50 MAYFIELD BEERMULLAH 6503)  
Local Government Area: Shire Of Gingin  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
8.2		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 1014: Mosaic: Low woodland; banksia /Shrublands; tea-tree thicket (Shepherd 2006, Hopkins et al. 2001)	The area under application (8.2ha) is located within Lot 50 which is a 29.7ha property (zoned rural), 19.3km north-west of the Gingin town site. The clearing is for the development of a market garden.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The condition of the native vegetation under application was sourced from information from the Site Inspection (2006b).
Heddlle Vegetation Complex: Mungala Complex; Vegetation ranges from open woodland of E. calophylla - E. decipens to closed scrub of Melaleuca spp. - Casuarina spp. (Heddlle et al. 1980)	Sections of the area under application are parkland cleared with other sections consisting of the occasional marri over an understorey of mixed weeds (including wild oats, lupin, Ursinia sp.) and a few native shrubs including Acacia sp., Xanthorrhoea preissii, Kingia australis., Jacksonia sp. with Mesomelaena sp. and Thysanotus tuberosus (Site Inspection, 2006b).		

## 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 (8.2ha) is located within the southern portion of a 29.7ha property, located within a rural landscape that has been substantially cleared.

The native vegetation under application was identified as being in a degraded condition (Site Inspection 2006b). Sections of the area under application are parkland cleared with the occasional marri (*Corymbia calophylla*), with other sections consisting of a few native shrubs including *Acacia* sp., *Xanthorrhoea preissii*, *Kingia australis*, *Jacksonia* sp. with *Mesomelaena* sp. and *Thysanotus tuberosus* and no other native understorey species were observed (Site Inspection, 2006b).

Given the lack of species diversity and community structure, it is considered that the area under application is unlikely to comprise a high level of biological diversity.

**Methodology**    **Reference:**  
- Site Inspection (2006b) (TRIM Ref DOC10763)  
**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 not likely to be at variance to this Principle**  
The area under application consists of the occasional marri (*Corymbia calophylla*), a few native shrubs including *Acacia* sp., *Xanthorrhoea preissii*, *Kingia australis*, *Jacksonia* sp. with *Mesomelaena* sp. and *Thysanotus tuberosus* with no other native understorey species observed (Site Inspection, 2006b).  
  
Given the lack of species diversity and community structure, it is considered that the vegetation to be cleared is unlikely to comprise of significant habitat for indigenous fauna. Therefore the clearing is not likely to be at variance to this principle.

**Methodology**    **Reference:**  
- Site Inspection (2006b) (TRIM Ref DOC10763)

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

**Comments**    **Proposal is not likely to be at variance to this Principle**  
There are no known records of Declared Rare Flora (DRF) in the local area (10km radius). The nearest recorded DRF is located approximately 10.6km east south-east of the proposed area, on soils and within vegetation complexes that differ for those under application.  
  
The following Priority flora have been recorded within a 5 km radius of the proposed clearing:  
- *Verticordia lindleyi* subsp. *lindleyi* (Priority 4),  
- *Haloragis aculeolata* (Priority 2),  
- *Anthotium junciforme* (Priority 4), and  
- *Tricoryne robusta* (Priority 2).  
  
The above Priority flora occur within the same Beard vegetation complex (except for *Verticordia lindleyi* subsp. *lindleyi*), Heddle vegetation complex (except for *Anthotium junciforme* and *Tricoryne robusta*) and soils (except for *Verticordia lindleyi* subsp. *lindleyi*) as that of the area under application. As no known flora surveys have been conducted in this location, there is a possibility of Priority flora occurring within the area under application.  
  
DEC Conservation Officer (2007; TRIM Ref ED1921) advised that given the information available Priority flora is unlikely to occur within the area under application.  
  
Given the above, the clearing as proposed is unlikely to 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  
- Heddle Vegetation Complexes - DEP 21/06/95  
- Soils, Statewide - DA 11/99

**(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 no known records of Threatened Ecological Communities (TECs) within the area under application. However, the area under application is located within the buffer zone of a TEC, located approximately 800m to the north-east. This TEC has been identified as being Shrublands and Woodlands on Muchea Limestone (DEC 2000) and is mapped within a Resource Enhancement Wetland. Typical native species that are associated with the TEC include *Casuarina obesa*, *Eucalyptus decipiens*, *Eucalyptus foecunda* and *Melaleuca huegeli*. The TEC occurs on heavy soils or shallow black clay or sandy clay soils on limestone (DEC 2000).  
  
The vegetation under application includes the occasional marri (*Corymbia calophylla*), *Banksia* (*Banksia* spp.), a few native shrubs including *Acacia* sp., *Xanthorrhoea preissii*, *Kingia australis*, *Jacksonia* sp. with *Mesomelaena* sp. and *Thysanotus tuberosus* with no other native understorey species observed (Site Inspection 2006a & 2006b). DAFWA (2006a) advises that the soil sub system within the property (Lot 50) is identified as gentle slopes with coloured earthy sands. Given the limited species and the earthy sands present within the area under application, the clearing as proposed is not likely to be representative of the nearby TEC.  
  
However, the clearing as proposed may affect the maintenance of the TEC, as DAFWA (2006b) has identified the potential for land degradation through eutrophication and increased groundwater recharge leading to water



table rise and salinity.

Additional advice from DAFWA (2007) states that spot height information and soil profile information from Bioscience (2007) suggests that surface and ground water drainage is likely to be away from the sensitive area (wetland area) at the northern end of the Lot 50. DAFWA (2007) concludes that eutrophication risk is low. DAFWA (2007) also suggests that the salinity risk associated with increased groundwater recharge is likely to be low as the area to be cleared is already parkland cleared and the landscape within the vicinity of the property is almost totally cleared.

DEC Conservation Officer (2007; TRIM Ref ED1921) advised that given the information provided by DAFWA (2007) the clearing as proposed is unlikely to impact the maintenance of the nearby TEC.

Given the above, the clearing as proposed is unlikely to be at variance to this Principle.

#### Methodology

##### References:

- Bioscience (2007) (TRIM Ref DOC22326)
- Site Inspection (2006a) (TRIM Ref ED893)
- Site Inspection (2006b) (TRIM Ref DOC10763)
- DAFWA (2006a) (DEC TRIM Ref DOC194)
- DAFWA (2006b) (TRIM Ref DOC11280)
- DAFWA (2007) (TRIM Ref ED1808)
- DEC (2000)
- DEC (2007) (TRIM Ref ED1870)
- GIS Databases:
- Environmentally Sensitive Areas - DOE 08/03/05
- Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
- 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 may be at variance to this Principle

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents the clearance of ecological communities with an extent below 30% of that present Pre-European settlement (Commonwealth of Australia 2001).

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation status***	In secure tenure (%)
IBRA Bioregion					
- Swan Coastal Plain*	1, 501,456	571,758	38.1	Depleted	
Shire of Gingin**	315,560	177,688	56.3	Least Concern	
Vegetation type:					
Beard: Unit 1014*	41,066	21,730	52.9	Least Concern	52.5
Hedde:					
Mungala Complex****	5,905	597	10.1	Vulnerable	4.6

\* (Shepherd 2006)

\*\* (Shepherd et al. 2001)

\*\*\* (Department of Natural Resources and Environment 2002)

\*\*\*\* (EPA 2006)

Vegetation within the area under application is identified as a component of both Beard Vegetation Association 1014 and Hedde Vegetation Complex Mungala Complex, of which there is 53.5% and 10.1% of Pre-European extent remaining respectively.

The native vegetation under application was identified as being in a degraded condition (Site Inspection 2006b). It is noted that there is only 597 ha native vegetation remaining of the Mungala Complex, only 4.6% of which is within secure tenure. The vegetation applied to be cleared is surrounded substantially by cleared land, particularly to the west and therefore may be considered a significant remnant.

An offset condition will be imposed to offset the values of the area to be cleared.

#### Methodology

##### References:

- Commonwealth of Australia (2001)
- Department of Natural Resources and Environment (2002)

- EPA (2006)
- Shepherd et al. (2001)
- Shepherd (2006)
- Heddle et al. (1980)
- Site Inspection (2006b) (TRIM Ref DOC10763)
- GIS Databases:
- Gingin 1m Orthomosaic - DLI 03
- 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 at variance to this Principle**

Wetland mapping of the area under application does not identify any wetlands or watercourses within the area under application. However, mapping does identify wetlands surrounding the area under application including an adjacent Multiple Use Wetland, an adjacent Resource Enhancement Wetland and four Conservation Category Wetlands (CCW) 240m north, 320m north, 510m west (also mapped as an EPP lake) and 850m south-west of the area under application. Furthermore, Mungala Brook is located approximately 1.2km south-west of the area under application and a minor tributary of Mungala Brook is located approximately 300m east of the area under application.

The proponent's submission (Bioscience 2007) suggests that the confining layer beneath the sand would direct drainage to the south (away from the CCWs that are located north of the area under application). In addition, from field observations and soil profiling the area under application is not a wetland. There is no evidence of hydritic soil conditions, no evidence of a watertable within 1.75m from the surface and the area does not contain wetland vegetation. The area under application contains typically upland vegetation, is slightly elevated and well-drained.

Given that these wetlands are predominantly surface water driven, and that the landforms of these wetlands are connected (i.e. basin wetlands interspersed within flat wetlands), the hydrology of these wetlands is likely to be connected. Therefore changes to water quality or quantity of one wetland may result in changes to the other wetlands.

Wetland Program (2007) concludes that priority wetlands occur in close proximity to the area under application. Therefore, the area under application is considered to be growing in association with these wetlands as it is likely to be within the surface water catchment of the wetlands, and may provide fauna resources and habitat.

Given the above the proposed clearing is considered to be at variance with this principle.

Conditions will be placed on the permit to ensure that there is a 50 m buffer from the proposed clearing and the REW.

**Methodology**

**References:**

- Bioscience (2007) (TRIM Ref DOC22326)
- Wetlands Program (2007) (TRIM Ref ED1829)
- GIS Databases:
- 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**

DAFWA (2006a) advised that the property under application is located within the Perth Basin. The soil sub system within the property is identified as gentle slopes with coloured earthy sands (231Ya 2) (DAFWA 2006a).

DAFWA (2006b) Land Degradation Assessment Report identified the potential for land degradation through eutrophication, water table rise and salinity, and wind erosion.

DAFWA (2006a) advised that the nutrients lost from the soil after clearing within Lot 50 are likely to leach into local wetland systems and cause eutrophication and water quality decline.

The entire Pinjarra Zone, within which this property is located, has been identified as a high risk for water table rise and salinity (DAFWA 2006b). The increased recharge from clearing in the area under application (Southern area of Lot 50) could put the down slope area (Northern area of Lot 50) at a greater risk of groundwater rise and salinity (DAFWA 2006b).

In addition, degradation risk analysis shows that the 231Ya 2 soil sub system is at very high risk of wind



erosion, and therefore clearing of vegetation may destabilise these soils further and create a risk of wind erosion at this location (DAFWA 2006b).

Additional advice from DAFWA (2007) states that spot height information and soil profile information from Bioscience (2007) suggests that surface and ground water drainage is likely to be away from the sensitive area (wetland area) at the northern end of the Lot 50. DAFWA (2007) concludes that eutrophication risk is low.

Further, DAFWA (2007) suggests that the salinity risk associated with increased groundwater recharge is likely to be low as the area to be cleared is already parkland cleared and the landscape within the vicinity of the property is almost totally cleared.

However, DAFWA (2007) does suggest that there remains a risk of soil erosion.

Given the above the proposed clearing may be at variance with this principle.

An offset condition will be imposed to reduce the impacts of the proposed clearing with regards to soil erosion.

**Methodology**    **References:**

- Bioscience (2007) (TRIM Ref DOC22326)
- DAFWA (2006a) (DEC TRIM Ref DOC194)
- DAFWA (2006b) (DEC TRIM Ref DOC11280)
- DAFWA (2007) (TRIM Ref ED1808)

**(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**

There are three DEC Managed Lands within close proximity of the area under application. These are Bootine Nature Reserve is located 1.9km south west, Yurine Swamp Nature Reserve is located 2.1km east and Moore River Nature Reserve is located 4.4km North of the area under application.

The area under application may provide an environmental corridor for fauna between reserves. However, due to the degraded condition of the vegetation under application and the distance to the DEC Managed Lands, the clearing as proposed is unlikely to have significant impact on the local conservation values. Therefore the proposed clearing is unlikely to be at variance to this principle.

**Methodology**    **GIS Database:**

- DEC Managed Lands and Waters - 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**

The area under application is surrounded by a Multiple Use Wetland and a Resource Enhancement Wetland. Furthermore, there are four Conservation Category Wetlands in close proximity, being 240m north, 320m north, 510m west (also mapped as an EPP lake) and 850m south-west of the area under application. DAFWA (2006b) indicate that there is a potential risk of eutrophication of wetlands (surface water).

The area under application is not located in a Public Drinking Water Source Area or water catchment area. The ground water within the local area is considered to have marginal to brackish water quality (1000-3000mg/L). DAFWA (2006b) identified that there is a potential risk of recharge to ground water leading to a greater risk of groundwater rise and salinity.

However, additional DAFWA (2007) advice suggests that the salinity risk associated with increased groundwater recharge is likely to be low as the area to be cleared is already parkland cleared and the landscape within the vicinity of the property is almost totally cleared.

The proponent's submission (Bioscience 2007) suggests that a confining layer beneath the sand would direct drainage to the south (away from the CCWs that are located north of the area under application). In addition, from field observations and soil profiling the area under application is not a wetland. There is no evidence of hydric soil conditions, no evidence of a watertable within 1.75m from the surface and the area does not contain wetland vegetation. The area under application contains typically upland vegetation, is slightly elevated and well-drained.

However, Wetland Program (2007) advised that the area under application is likely to be within the surface water catchment of the wetlands, and therefore may contribute to the maintenance of hydrological processes in the wetlands. Changes to the hydrology and water quality in the area under application due to clearing (and horticultural uses) may have an impact on the wetlands.

Given the above, the clearing as proposed may cause deterioration in the quality of surface and ground water.

Conditions will be placed on the permit to ensure that there is a 50 m buffer from the proposed clearing and the REW.

- Methodology**    **References:**
- Bioscience (2007) (TRIM Ref DOC22326)
  - DAFWA (2006b) (TRIM Ref DOC11280)
  - DAFWA (2007) (TRIM Ref ED1808)
  - Wetlands Program (2007) (TRIM Ref ED1829)
- GIS Databases:**
- EPP, Lakes - DEP 1/12/92
  - Geomorphic wetlands (Mgt Categories) Swan Coastal Plain DEC
  - Groundwater Salinity, Statewide - DOW
  - Public Drinking Water Source Areas (PDWSAs) - DOW

**(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**
- With an average annual rainfall of approximately 700mm and an annual evaporation rate of approximately 2,000mm there is little surface flow during normal seasonal rains. It is only during major rainfall events that there is a likelihood of flooding. Given the transmissive nature of the sandy soils identified at the site (Site Inspection 2006), clearing is unlikely to cause or exacerbate the incidence of flooding.

- Methodology**    **Reference:**
- Site Inspection (2006) (TRIM Ref DOC10763)
- GIS Databases:**
- Evaporation Isopleths - BOM 09/98
  - Isohyets - BOM 09/98

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

- Comments**
- A submission (2006) was received advising that the vegetation proposed to be cleared in the southern parcel is mainly parkland cleared marri. The scattered parcel is isolated paddock trees and the northern section is likely to be mainly paperbark spp. There is no objection to the proposed clearing of the parkland vegetation within the southern parcel, or the clearing of the few isolated paddock trees in the central scattered parcel. However, the proposed clearing of the vegetation within the northern parcel is not supported.

The 9.7ha area under application has been amended to 8.2ha to omit the northern portion of the proposed areas to be cleared.

The proponents provided additional advice on the proposal (TRIM Ref DOC22326) and was provided to the Wetlands Program (2007, TRIM Ref ED1829) and DAFWA (2007, TRIM Ref ED1808) for their advice.

There is no other Works Approval or EP Act Licence that affects the areas under application.

Development approval from the Shire of Gingin was granted 8 December 2006 (Shire of Gingin 2007).

- Methodology**    **References:**
- DAFWA (2006b) (TRIM Ref DOC11280)
  - DoW (2006) (TRIM Ref ED1517)
  - DoW (2007) (TRIM Ref ED1832)
  - Shire of Gingin (2007) (TRIM Ref ED1608)
  - Submission (2006) (TRIM Ref EI6238)
  - Submission from proponent (TRIM Ref DOC22326)
  - Water and Rivers Commission (2001)
- 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
Horticulture	Mechanical Removal	8.2	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 Principle (f) and may be at variance to Principles (e), (g) and (i).



## 5. References

- Bioscience (2007) CPS 1257/1 Proponent's submission- Consultant's Report. TRIM Ref DOC22326
- Commonwealth of Australia (2001). National Targets and Objectives for Biodiversity Conservation 2001-2005, AGPS, Canberra.
- DAFWA (2006a) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref DOC194
- DAFWA (2006b) Land degradation assessment report-amended. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref DOC11280
- DAFWA (2007) Additional advice. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. TRIM Ref ED1808
- Department of Environment and Conservation (2000) Shrubland and Woodlands on Muchea Limestone Interim Recovery Plan 2000-2003. Interim Recovery Plan No.57. Department of Environment and Conservation, Western Australia.
- 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.
- DoW (2006) Water Allocation report. Department of Water. Western Australia. TRIM Ref ED1514
- 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.
- Heddl, 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.
- 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 (2006a) Site Inspection Report, Department of Environment and Conservation (DEC), Western Australia. TRIM Ref ED893
- Site Inspection (2006b) Site Inspection Report, Department of Environment and Conservation (DEC), Western Australia. TRIM Ref DOC10763
- Wetlands Program (2007) Wetlands advice. Species and Communities Branch. Department of Environment and Conservation, Western Australia. TRIM Ref ED1829
- WRC (2001) Position Statement: Wetlands. Water and Rivers Commission, 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)

