



1. Application details

1.1. Permit application details

Permit application No.: 1316/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Antonio & Maria Anna Di Trento

1.3. Property details

Property: LOT 56 ON PLAN 22740 (Lot No. 56 SAPPERS KARAKIN 6044)

Local Government Area: Shire Of Gingin

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
200		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
Beard Vegetation Association 1948 - low open forest and low woodland (Shepherd et al. 2001, Hopkins et al. 2001).	The proposal is to clear 200ha of native vegetation within a property totalling 353ha, the majority of which (~300ha) appears, on orthomosaic, to be uncleared.	Pristine: No obvious signs of disturbance (Keighery 1994)	The vegetation clearing description is based on information obtained during the site inspection undertaken 21/06/2006 (TRIM ref DOC11051).
Beard Vegetation Association 1030 - low open forest and low woodland and sedgeland (Shepherd et al. 2001, Hopkins et al. 2001).	The vegetation under application can be separated into three different vegetated areas. A majority of the vegetation (~163ha) was determined to range from an excellent to pristine condition with a high level of biodiversity (Site inspection 21/06/2006).		
Hedde Vegetation Complex - Karakatta Complex - North; low open forest and low woodland and Bassendean Complex - North; Low open forest and low woodland and sedgeland (Hedde et al. 1980).	The second and third areas of vegetation on the northwest (~24ha) and southwest (~13ha) corners have previously been parkland cleared and were assessed as being in good condition. Although the areas have previously been cleared, regrowth was evident to greater and lesser degrees and was diverse, with an upperstorey including Tuarts (<i>Eucalyptus gomphocephala</i>) and <i>Banksia</i> spp.		
	Weed invasion was minimal. Species observed at the site included Pigface (<i>Carpobrotus edulis</i>) and Clover.		

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**

The vegetation under application is located within an otherwise extensively cleared agricultural area.

The majority of the native vegetation (~163ha) applied to be cleared was observed during the site inspection as being in an excellent to pristine condition and comprising of a high level of biodiversity.

Two other vegetated areas within the area under application (in the northwest (~24ha) and southwest (~13ha) corners) are in a good condition. These areas have previously been parkland cleared. However, both areas have regrowth to greater and lesser degrees, with diverse upper and lower storeys.

Overall, the vegetation under application is a large, intact remnant in good to pristine condition with a high level of biodiversity in an extensively cleared landscape. Therefore, the proposed clearing is at variance to this Principle.

Methodology Site inspection 21/6/2006 (TRIM Ref. DOC11051)
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 located within an extensively cleared agricultural area.

The majority of the native vegetation is in an excellent to pristine condition and comprises of a high level of biodiversity.

Two small vegetated areas within the vegetation under application (in the northwest and southwest corners) are in a good condition. These areas have previously been parkland cleared. However, both areas have regrowth to greater and lesser degrees, with diverse upper and lower storeys.

The proposed clearing of a largely intact remnant (200ha) is likely to have a significant adverse impact on the biodiversity of the region and hinder the movement of fauna in a predominantly cleared landscape. Furthermore, the vegetation under application is likely to have a significant intrinsic conservation value by providing fauna habitat not well represented in secure tenure.

Therefore, the proposed clearing is at variance to this Principle.

Methodology Site inspection 21/6/2006 (TRIM Ref. DOC11051)
GIS database:
- Gingin 1m Orthomosaic - DLI 03

(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 no known occurrences of DRF in the area under application with the closest being mapped 18 km west of the area under application.

There are four populations of Priority Flora within a 10km radius of the vegetation under application being:

- *Dryandra lindleyana* subs. *pollostata*, Priority 3, approximately 3.2kms south east;
- *Dodonaea hackettiana*, Priority 4, approximately 5kms SSE and 9kms SSE ; and
- *Stachystemon axillaris*, Priority 4, approximately 7.4kms south east of the vegetation under application.

Dryandra lindleyana, *Dodonaea hackettiana* and *Stachystemon axillaris* are known to occur within the same Hedde vegetation complex (Hedde et al. 1980) and soil unit associated with the vegetation under application. *Dryandra lindleyana* is also associated with same Beard vegetation association (1030) (Hopkins et al. 2001). Therefore, the proposed clearing may be at variance to this Principle.

Methodology GIS databases:
- Declared Rare and Priority Flora List - CALM 01/07/05
- Threatened Plant Communities - DEP 06/95
- Hedde Vegetation Complexes - DEP 21/06/95
- 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 no known occurrences of Threatened Ecological Communities (TEC) in the vicinity of the proposed clearing (the closest TEC is approx. 24kms SE of the area under application).

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

Methodology GIS database:

- 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 at variance to this Principle

The vegetation under application is located within the Intensive Land-use Zone (Shepherd et al. 2001) within the area defined in EPA Position Statement No. 2 (EPA 2000). The EPA's position on clearing in the agricultural area for agricultural purposes is that significant clearing of native vegetation has already occurred, and lead to a reduction in biodiversity and increase in land salinisation. Therefore, any further reduction in native vegetation through clearing for agriculture cannot be supported. Furthermore, the EPA (2000) recommend that all existing remnant vegetation should be protected from passive clearing through, for example, grazing by stock or clearing by other means.

The vegetation under application is a component of Beard Vegetation Associations 1948 and 1030 (Hopkins et al. 2001) of which 21.4% and 65.5% of Pre European extent remain respectively (Shepherd et al. 2001). The majority of the area under application (~186.8ha) lies within Beard Vegetation Association 1948, with the north east corner of the area under application (~13.2ha) within Beard Vegetation Association 1030.

The vegetation under application is a component of two Heddle complexes. The western half of the vegetation under application (~101.5ha) lies within Heddle: Karrakatta Complex - North (Heddle et al. 1980) of which 36.9% of Pre European extent remains (Shepherd et al. 2001). The vegetation on the eastern side (~98.5ha) is a component of Heddle: Bassendean Complex - North (Heddle et al. 1980) of which 72% of Pre European extent remains (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).

reserves/CALM	Pre-European (ha)*	Current extent (ha)*	Remaining (%)*	Conservation** status	% In managed land
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: 1948	81,022	17,315	21.4	Vulnerable	15.6
1030	139002.549	90984.843	65.5	Least concern	9.8
Heddle:					
Karrakatta Complex -North	25,579	9,444	36.9	Depleted	0.2
Bassendean Complex - North	74,147	53,384	72	Least Concern	38

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

Beard Vegetation Association 1948 representation is below the State Governments National Objectives and Targets for Biodiversity Conservation, at only 21.4%. Below the 30% target, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity.

Representation of Beard Vegetation Association 1030 and Heddle: Karrakatta Complex-North within secure tenure are below the 15% pre-1750 distribution of each vegetation ecosystem that should be protected in a comprehensive, adequate and representative reserve system recommended by JANIS Forests Criteria (1997). Heddle: Karrakatta Complex-North is the most vulnerable, with only 0.2% currently in secure tenure.

Given this and the excellent to pristine condition of the majority of the vegetation under application, the proposed clearing is at variance to this Principle.

- Methodology**
- Shepherd et al. (2001)
 - Hopkins et al. (2001)
 - Department of Natural Resources and Environment (2002)
 - EPA (2000)
 - Site inspection 21/6/2006 (TRIM Ref. DOC11051)
 - JANIS Forests Criteria (1997)
 - GIS databases:
 - Hedde Vegetation Complexes - DEP 21/06/95
 - Pre-European Vegetation - DA 01/01
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - EPA Position Paper No 2 Agriculture Region - DEP 12/00

(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 are several wetlands in close proximity to the vegetation under application. These are:
-Karakin Lakes: located approximately 3kms south west and classed as a Conservation Category Wetland (CCW) as well as being an Australian Nature Conservation Agency (ANCA) wetland system.
-Doopiter Swamp: located approximately 550m south east and classed as a CCW.
-Ducater Swamp: located approximately 300m north east and classed as a Resource Enhancement Wetland (REW).

The description of the vegetation reflects an upland vegetation community and given the distance to the local wetlands, it is unlikely that the vegetation under application is growing in or associated with a watercourse or wetland.

- Methodology**
- DAFWA (2006) (DEC TRIM ref: EI6607)
 - GIS databases:
 - 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 is seriously at variance to this Principle

The vegetation under application lies within two soil units. The majority of the vegetation under application (~197.6ha) lies on soil unit JK9, which is associated with an undulating dune landscape overlying deep aeolianite with chief soils of brown and leached sands (Department of Agriculture, 2004).

A smaller section (~2.4ha) in the north east corner of the vegetation under application is located on soil unit Cb39, which is associated with a subdued dune-swale landscape with chief soils of leached sands (Department of Agriculture, 2004).

DAFWA (2006) advice indicates that there is a moderate phosphate eutrophication risk to the CCWs, Doopiter Swamp and the Karakin Lakes, due to increased recharge and leaching of fertilizers through the sandy soils.

DAFWA (2006) advise that the loss of vegetation is likely to cause appreciable land degradation as the soils of the area are highly erodible, with a Class IV land capability class for the wind erosion hazard. Therefore, the proposed clearing is seriously at variance to this Principle.

- Methodology**
- Department of Agriculture (2004)
 - DAFWA (2006) (DEC TRIM ref: EI6607)
 - GIS database:
 - Soils, Statewide - DA 11/99

(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 at variance to this Principle

There are two DEC Managed Lands within a 5km radius of the vegetation under application. These are:

- South Mimegarra Nature Reserve (NR), approximately 2.5kms north; and
 - Namming Nature Reserve (NR), approximately 4.7kms north east of the vegetation under application.
- Given these distances, the clearing as proposed is not likely to impact on the environmental values of these two nature reserves.

However, the proposed clearing of 200ha is a significant level of clearing within an extensively cleared agricultural landscape, and given the excellent to pristine condition of the vegetation it is likely to have a significant intrinsic conservation value.

Furthermore, the majority of the vegetation is in an excellent to pristine condition and is associated with Heddle: Karakatta Complex-North and Beard vegetation association 1948 which currently have only 0.2% and 9.8% in secure tenure respectively. This is below the 15% pre-1750 distribution of each vegetation ecosystem that should be protected in a comprehensive, adequate and representative reserve system recommended by JANIS Forests Criteria (1997).

Therefore, the vegetation under application is considered to provide habitat and vegetation communities not well represented in secure tenure and is therefore at variance to this Principle.

- Methodology** DAFWA (2006) (DEC TRIM ref: EI6607)
 JANIS Forests Criteria (1997)
 GIS databases:
- Bushforever - MFP 07/01
 - Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
 - CALM Managed Lands and Waters - CALM 1/07/05
 - Heddle Vegetation Complexes - DEP 21/06/95
 - Pre-European Vegetation - DA 01/01

(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 fall within any Public Drinking Water Source Areas (PDWSA) or PDWSA Protection Zones.

DAFWA (2006) advise that there is an off site degradation hazard (moderate eutrophication risk) to the CCWs, Doopiter Swamp and Karakin Lakes as a result of increased recharge to these areas combined with nutrient leaching from excessive fertiliser application.

Although the clearing itself is not likely to contribute significantly to the leaching of nutrients, the mobilisation of nutrients and increased recharge to lower lying areas (including the CCWs) resulting from the clearing of 200ha may impact on the surface water quality of the area.

Therefore the proposed clearing may be at variance with respect to impacts on surface water quality.

- Methodology** DAFWA (2006) (DEC TRIM ref: EI6607)
 GIS database:
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06

(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 vegetation under application occurs within an area associated with an annual evaporation rate of approximately 2000mm and an annual rainfall of approximately 700mm.

The clearing of 200ha of vegetation is likely to result in an increased occurrence of localised flooding due to increased surface water runoff.

However, given the high annual evaporation rate, the proposed clearing is not likely to be at variance to this Principle.

- Methodology** GIS databases:
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC
 - Evaporation Isopleths - BOM 09/98
 - Rainfall, Mean Annual - BOM 30/09/01

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

Comments

The vegetation under application is located within the Intensive Land-use Zone (Shepherd et al. 2001) within the area defined in EPA Position Statement No. 2 (EPA 2000). The EPA's position on clearing in the agricultural area for agricultural purposes is that significant clearing of native vegetation has already occurred, and lead to a reduction in biodiversity and increase in land salinisation. Therefore, any further reduction in native vegetation through clearing for agriculture cannot be supported. Furthermore, the EPA (2000) recommend that all existing remnant vegetation should be protected from passive clearing through, for example, grazing by stock or clearing by other means.

Two notices of Intention to Clear (NOIC) were previously lodged in 1999 and 2001 for Lot 56 Sappers Rd, Karakin from the two previous owners of the property. In 1999 the land owners at the time were advised that the NOIC would be forwarded to the Environmental Protection Authority (EPA) for assessment. The clearing proposal was subsequently withdrawn. In November 2001, another NOIC was lodged by the subsequent owners of the property. This proposal was assessed by the Department of Agriculture (WA) and referred to the Environmental Protection Authority (EPA). On 12 April 2002, the Chairman of the EPA advised the proponents of his intention to set the level of assessment at Proposal Unlikely to be Environmentally Acceptable (PUEA). The proponents were also considering subdividing the land and retaining an area for conservation, however this was not supported by the Western Australian Planning Commission or Shire of Gingin. This clearing proposal was subsequently withdrawn.

The vegetation under application is within a Native Title Claim area. However, as the land is privately owned, the clearing as proposed does not fall under the future acts process of the Native Title Act 1993.

The Shire of Gingin has raised no objections to the proposed clearing, under the Council's Town Planning Scheme No. 8.

Two submissions from the same source were received opposing the proposed clearing. The following points were raised in the submissions:

- a) Clearing of this valuable native vegetation for pasture production is not recommended;
- b) The majority of the 200ha of vegetation proposed to be cleared is virgin banksia bushland that has a high conservation value;
- c) The soil unit has a very low capacity for moisture availability and high phosphate eutrophication risk;
- d) Agricultural use will increase the risk of nutrient export to the nearby Karakin Lakes;
- e) The medium-long term land use for this valued native vegetation may well be conservation with Government ownership or large subdivision for rural living that would enable over 80% of the vegetation to be protected;
- f) If land clearing is approved, it would be important to adjust the proposal from the present clear fell (worst land practice) to one that would include retained vegetation for bush corridors, wind breaks and park land clearing; and
- g) There is no opposition to the clearing of the regrowth section within the area applied to be cleared.

There is no other RIWI Act Licence, Works Approval or EPA Act Licence that affects the vegetation under application.

Methodology DAFWA (2006) (DEC TRIM ref: EI6607)
GIS databases:
- Native Title Claims - DLI 7/11/05
- Aboriginal Sites of Significance - DIA
- 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
Grazing & Pasture	Mechanical Removal	200	<p>The vegetation under application is located within the Intensive Land-use Zone (Shepherd et al. 2001) within the area defined in EPA Position Statement No. 2 (EPA 2000). The EPA's position on clearing in the agricultural area for agricultural purposes is that significant clearing of native vegetation has already occurred, and lead to a reduction in biodiversity and increase in land salinisation. Therefore, any further reduction in native vegetation through clearing for agriculture cannot be supported. Furthermore, the EPA (2000) recommend that all existing remnant vegetation should be protected from passive clearing through, for example, grazing by stock or clearing by other means.</p> <p>Two notices of Intention to Clear (NOIC) were previously lodged in 1999 and 2001 for Lot 56 Sappers Rd, Karakin from the two previous owners of the property. In 1999 the land owners at the time were advised that the NOIC would be forwarded to the Environmental Protection Authority (EPA) for assessment. The clearing proposal was subsequently withdrawn. In November 2001, another NOIC was lodged by the subsequent owners of the property. This proposal was assessed by the Department of Agriculture (WA) and referred to the Environmental Protection Authority (EPA). On 12 April 2002, the</p>

Chairman of the EPA advised the proponents of his intention to set the level of assessment at Proposal Unlikely to be Environmentally Acceptable (PUEA). The proponents were also considering subdividing the land and retaining an area for conservation, however this was not supported by the Western Australian Planning Commission or Shire of Gingin. This clearing proposal was subsequently withdrawn.

The application has been assessed and the clearing as proposed has been determined to be seriously at variance to Principle (g), at variance to Principles (a), (b), (e) & (h) and may be at variance to Principles (c) and (i). In particular:

- For Principle (g) there is a very high risk of wind erosion causing appreciable land degradation.
- For Principle (a) the vegetation proposed to be cleared is in an excellent to pristine condition, with the vegetation under-represented in secure tenure and remnant vegetation.
- For Principle (b) the excellent to pristine condition of the vegetation under application provides significant habitat for fauna in an area that has been extensively cleared.
- For Principle (c) there are four populations of Priority Flora within a 10km radius of the vegetation under application. Three of these species are known to occur on the same soil unit and within the same Hedde Vegetation Complex.
- For Principles (e) and (h) Beard Unit 1948 is under-represented with only 21.4% of the pre-1750 vegetation extent remaining and Hedde: Karakatta Complex-North has only 0.2% in secure tenure, and.
- For Principle (i) there a moderate eutrophication risk and increased recharge to Dooptier Swamp and Karakin Lakes, both of which are Conservation Category Wetlands (CCW).

Given the above, the assessing officer therefore recommends that a clearing permit be refused.

5. References

- DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM ref EI6607.
- Department of Agriculture (2004) Soil-landscape mapping, Western Australia Department of Agriculture, Date accessed 27/11/2006
- 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 (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.
- 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.
- JANIS Forests Criteria (1997) Nationally agreed criteria for the establishment of a comprehensive, Adequate and Representative reserve System for Forests in Australia. A report by the Joint ANZECC/MCFFA National Forest Policy Statement Implementation Sub-committee. Regional Forests Agreement process. Commonwealth of Australia, Canberra.
- 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., 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.

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)

