



1. Application details

1.1. Permit application details

Permit application No.: 1624/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: James L Henry

1.3. Property details

Property: LOT 5 ON PLAN 12160

Local Government Area: Shire Of Gingin

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4		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
<p>Beard Vegetation Associations;</p> <ul style="list-style-type: none"> - 37: Shrublands; teatree thicket; - 1014: Mosaic: Low woodland; banksia / Shrublands; teatree thicket (Shepherd et al. 2001). <p>Hedde Vegetation Complex - Karrakatta Complex - North; Predominantly low open forest and low woodland of Banksia spp. E-E.todtiana, less consistently open forest of E.gomphocephala - E.todtiana - Banksia species (Hedde et al. 1980).</p>	<p>The application is to clear 4.0ha of native vegetation in the Shire of Gingin for a turf farm. The property is surrounded by State Forest to the south and east. A wetland is located to the north of the vegetation under application. The eastern portion of the property contains a small area (~0.7ha) of remnant and regenerated native vegetation which will remain intact.</p> <p>There are two types of vegetated areas within the vegetation under application. The first area on the eastern portion of the property (~2.1ha) has previously been cleared and is in a completely degraded condition with sparse regeneration of Xanthorrhoea sp. and Jacksonia furcellata. The area is dominated by weeds, namely Pigface (Carpobrotus sp.)</p> <p>The second area in the western part of the vegetation under application has previously been parkland cleared and is in a degraded condition. The under storey is dominated by weeds (mainly Pigface) with occasional Stirlingia latifolia. The upper storey comprises of several</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>The vegetation clearing description is based on information obtained during the site inspection undertaken 02/01/2007 (TRIM Ref. DOC13142).</p>

mature local (Jarrah and Marri) and introduced (Lemon Scented) Eucalyptus species. Banksia and Jacksonia furcellata are also scattered throughout this area.

Both areas have previously been cleared and are ploughed on a regular basis to prevent weed growth.

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 vegetation under application is located within an agricultural area and is bordered to the east and south by the Gnaragarra-Moore River State Forest.

The vegetation under application can be separated into two vegetated areas which are in a completely degraded (~2.1ha) and degraded (~3.6ha) condition (Site inspection 2007).

The completely degraded area has previously been cleared and contains sparse regeneration of *Xanthorrhoea* sp. The area assessed as degraded has previously been parkland cleared, and comprises several mature local and introduced Eucalyptus spp. and scattered Jacksonia furcellata and Banksia spp.

Overall the vegetation under application has a low level of biological diversity and is in a degraded condition. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology Reference:
- Site inspection (2007) (TRIM Ref. DOC13142)
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 vegetation under application can be separated into two vegetated areas which are in a completely degraded (~2.1ha) and degraded (~3.6ha) condition.

Overall, the vegetation is sparse with a low level of diversity. Some of the mature trees under application do have hollows suitable for nesting by native birds, however many of these were observed to be occupied by feral bees at the time of the site inspection (02/01/2007).

Given the overall degraded condition and scattered nature of the vegetation, it is considered unlikely that the vegetation under application provides significant habitat to indigenous fauna or forms part of an ecological linkage necessary for the maintenance and movement of fauna. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology Reference:
- Site inspection (2007) (TRIM Ref. DOC13142)
GIS databases:
- Gingin 1m Orthomosaic - DLI 03
- SAC Bio Datasets, Date accessed 19/04/2007

(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 nine known Declared Rare (DRF) or Priority Flora populations within a 10km radius of the vegetation under application. The closest known population is *Drakaea elastica* (Rare) located approximately 3.1kms from the vegetation under application. Other known populations of DRF or Priority Flora within a 10km radius include:

- 3 populations of *Eucalyptus argutifolia* (Rare);
- 1 population of *Grevillea evanescens* (Priority 1);
- 1 population of *Eucalyptus mundijongensis* (Priority 1);
- 1 population of *Blennospora doliiformis* (Priority 3);
- 1 population of *Verticordia lindleyi* subs. *Lindleyi* (Priority 4); and

- 1 population of *Schoenus natans* (Priority 4).

None of the above listed DRF occur within the same Beard Vegetation Association as the vegetation under application. *Eucalyptus argutifolia* (Rare) is known to occur within the same Heddle complex, however known local occurrences are mapped within a different soil unit to the vegetation under application.

Drakaea elastica (Rare) is known to occur within the same Heddle complex (Karrakatta Complex -North) (Heddle et al. 1980) and soil type (chief soils of leached sands) as the vegetation under application. The area of vegetation under application has been cleared previously and ploughed on a regular basis. Given the constant disturbance and clearing within this area, *Drakaea elastica* is not likely to be found within the area of vegetation under application.

Given the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology **References:**
 - Site inspection (2007) (TRIM Ref. DOC13142)
GIS databases:
 - Heddle Vegetation Complexes - DEP 21/06/95
 - Pre-European Vegetation - DA 01/01
 - Soils, Statewide - DA 11/99
 - SAC Bio Datasets, Date accessed 19/04/2007

(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 32 known occurrences of Threatened Ecological Communities (TEC) within a 10km radius of the vegetation under application, the closest being approximately 5.8kms from the vegetation under application. One of these TEC is Floristic Community Type 7 known as 'Herb rich saline shrublands in clay pans' (Gibson et al. 1994). The remaining TEC occurrences are Floristic Community Type 26a, *Melaleuca huegelii*-*Melaleuca systema* shrublands on limestone ridges (Gibson et al. 1994).

The description of the vegetation under application and geology of the site does not match the description and geology of Floristic Community Type 7 or 26a. Given this and the distance to the closest occurrence, the proposed clearing is not likely to be at variance to this Principle.

Methodology **Reference:**
 - Gibson et al. (1994)
GIS database:
 - SAC Bio Datasets, Date accessed 19/04/2007

(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 Associations 37 and 1014 (Hopkins et al. 2001) and Heddle: Karrakatta Complex - North (Heddle et al. 1980) of which 57.8%, 52.9% and 36.9% 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).

	Pre-European	Current extent	Remaining	Conservation***	% In
reserves/CALM	(ha)	(ha)	(%)	status	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: 37**	39,385	22,748	57.8	Least concern	12.2
Beard: 1014**	41,066	21,730	52.9	Least concern	21.3
Heddle:					
Karrakatta Complex -North****		25,579	9,444	36.9	Depleted 0.2

* (Shepherd et al. 2001)

** (Adapted from: Shepherd et al. 2001)

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

**** (EPA 2003)

Both Beard Vegetation Associations and Heddle: Karrakatta Complex - North are above the State Government's 30% biodiversity conservation target.

Although Beard Vegetation Association 37 and Heddle Karrakatta Complex - North representation within secure tenure is below the 15% pre-1750 distribution reservation system recommended by JANIS Forests Criteria (1997), the vegetation under application is in an overall degraded condition with a low level of biological diversity. Therefore, the vegetation under application is not considered to represent the associated vegetation communities, or be significant as remnant native vegetation.

Methodology

References:

- Site inspection (2007) (TRIM Ref. DOC13142)
- Shepherd et al. (2001)
- Adapted from: Shepherd et al. (2001)
- Hopkins et al. (2001)
- Department of Natural Resources and Environment (2002)

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 not likely to be at variance to this Principle

There are several wetlands in close proximity to the vegetation under application including Conservation Category Wetlands, Resource Enhancement Wetlands (REW) and Multiple Use Wetlands.

The closest wetland is a REW approximately 130m north of the vegetation under application within the applicant's property, with low lying stands of *Melaleuca raphiophylla* within 50m of the vegetation under application. This wetland is also listed as a lake to be protected under the Environmental Protection (Swan Coastal Plain Lakes) Policy 1992 (EPA 1992).

The sparse vegetation remaining on site is consistent with upland vegetation and not wetland-dependent vegetation (Site inspection 2007). Given this and the distance to the mapped REW, the vegetation applied to be cleared is not growing in, or in association with a wetland or watercourse.

Methodology

References:

- Site inspection (2007) (TRIM Ref. DOC13142)
- EPA (1992)
- Water and Rivers Commission (2001)

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
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05

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

The vegetation under application falls within an area mapped as having a Class (2) Acid Sulphate Soils risk. This Class 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.

Given the overall degraded condition of the vegetation, sparse nature of the vegetation present and lack of understorey, the proposed clearing is not considered likely to cause appreciable land degradation.

Methodology

References:

- DAWA (2004)

- Site Inspection (2007) (TRIM Ref. DOC13142)
- 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

There are two conservation areas in close proximity to the subject area being Wilbinga-Caraban Bushland (Bush Forever) located approximately 6.5kms south west and the Gnangara-Moore River State Forest located directly adjacent to the vegetation under application.

Given the distance to the Wilbinga-Caraban Bushland, the proposed clearing is not considered likely to impact on the environmental values of this conservation area.

However, the proposed clearing is located adjacent to the Gnangara-Moore River State Forest with the State Forest abutting the southern and eastern boundary of the property.

Biodiversity Coordination Section (2006) advice indicates that the State Forest is unlikely to be impacted by the proposed clearing, given the overall low quality of the vegetation under application. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology Reference:

- Biodiversity Conservation Section (2006)
- GIS databases:
 - 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 is not likely to be at variance to this Principle

The vegetation under application is not located within any Public Drinking Water Source Areas (PDWSA) or PDWSA Protection Zones, and is associated with an average groundwater salinity of 500-1000 (TDS) mg/L.

Given the overall degraded condition and sparse nature of the vegetation under application, the proposed clearing is not considered likely to cause deterioration in the quality of surface or underground water.

Methodology Reference:

- Site Inspection (2007) (TRIM Ref. DOC13142)
- GIS databases:
 - Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06
 - Groundwater Salinity, Statewide - 22/02/00
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC

(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 800mm.

DAFWA (2007) advise that there is a low risk of flooding or waterlogging following the proposed clearing. Given this and the overall sparse and degraded nature of the vegetation under application, the proposed clearing is unlikely to lead to significant increases in peak flood height or duration.

Methodology Reference:

- DAFWA (2007) (TRIM Ref. DOC20569)
- Site Inspection (2007) (TRIM Ref. DOC13142)
- 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

The vegetation under application is in close proximity (~130m) to a mapped Resource Enhancement Wetland (REW). The Water and Rivers Commission (2001) provides a recommended buffer distances for which

development should occur from wetland areas. Given the transmissive nature of the soils within the proposed area, it is considered that a minimum 200 metres buffer to any identified Resource Enhancement or Conservation Category Wetland should be maintained. Advice from the Department's Wetlands Program (2007) recommends that the buffer of 200m from the turf farm to the wetland be recommended to protect the values of the wetland. A low lying area containing a dense stand of *Melaleuca raphiophylla* not included in the mapped REW is located within 50m of the area under application. This vegetation is within the minimum 50m wetland buffer recommended for all wetland areas by the Water and Rivers Commission (2001).

DAFWA (2007) advise that the area of vegetation under application may not be suitable for development due to the management practices of a turf farm on the soil types present. DAFWA (2007) have identified a very high to extreme risk of eutrophication following the proposed clearing and establishment of the land for horticultural use.

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

This area 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 area under application lies within a Rights in Water and Irrigation Act 1914 (RIWI) groundwater area. There is currently an inforce Groundwater Licence (GWL150450(3)) for the irrigation of 10 hectares of turf, valid until 20 November 2008.

The applicant has sought and been granted Development Approval from the Shire of Gingin for this activity. This approval includes a condition that the applicant has a 10m set back from all boundaries for the turf farm, and that a vegetated buffer comprising 2 rows of trees and shrubs, offset at 2m spacings between plants, be established around the perimeter of the turf farm (TRIM Ref. DOC15151).

There is no other Works Approval or EP Act Licence that affect the area under application.

Methodology

References:

- DAFWA (2007) (TRIM Ref. DOC20569)
- Wetlands Program (2007)
- Water and Rivers Commission (2001)

GIS databases:

- Native Title Claims - DLI 7/11/05
- Aboriginal Sites of Significance - DIA
- RIWI Act, Areas - WRC 05/04/02
- Gingin 1m Orthomosaic - DLI 03

4. Assessor's comments

Purpose	Method Applied	area (ha)/ trees	Comment
Horticulture	Mechanical Removal	4	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 not likely to be at variance to any of the clearing principles.

5. References

- 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.
- Biodiversity Coordination Section (2007) Biodiversity advice for land clearing application (TRIM Ref. DOC13652).
- DAFWA (2007) Land degradation assessment report. Advice to Assessing Officer, Native Vegetation Assessment Branch, received 18/04/2007. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (TRIM Ref. DOC20569).
- DAWA (2004) Soil-landscape mapping, Western Australia Department of Agriculture, Date accessed 27/12/2006.
- 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 (1992) Environmental Protection (Swan Coastal Plain Lakes) Policy 1992. Western Australian Government Gazette, 24 December, 1992, pp 6287-93
- EPA (2001) Environmental Protection of Wetlands. Preliminary Position Statement No.4. Perth, Western Australia.
- 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.
- 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.

Site inspection (2007) (TRIM Ref. DOC13142)

Wetlands Program (2007) Wetlands advice for land clearing application (TRIM Ref. DOC14567).

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)
