



1. Application details

1.1. Permit application details

Permit application No.: 1541/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Glen Brocklehurst

1.3. Property details

Property: LOT 38 ON PLAN 17506
 Local Government Area: Shire Of Gingin
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.93		Mechanical Removal	Building or Structure

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 949 - Low woodland; banksia (Shepherd et al. 2001, Hopkins et al. 2001)	The vegetation under application is located within a parcel of land of ~2.8ha, of which ~1ha has previously been cleared, and is situated within a zoned Rural Industrial area.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The description and condition of the vegetation applied to be cleared was determined during a site inspection undertaken 14/12/2006 (TRIM Ref. DOC15431).
Hedde Vegetation Complex - Coonambidgee Complex; Vegetation ranges from a low open forest and low woodland of E.todtiana - B.attenuata - B.menziesii - B.ilicifolia with localised admixtures of B.prionotes to an open woodland of E.calophylla - Banksia species (Hedde et al. 1980).	In 2003 the vegetation under application was burnt in a large bushfire, which went through the local area, removing the lower storey vegetation and badly damaging the upper storey. The majority of the vegetation under application comprises regenerated local native species.		
	The condition of the vegetation under application is very good with a diverse lower storey comprising of a variety of species including Xanthorrhoea sp, Conostylis sp., Patersonia occidentalis, Hibbertia sp., Jacksonia furcellata, Kunzea glabrescens and Dasypogon bromeliifolius.		
	The upper storey comprised of species including Banksia attenuata, Melaleuca sp. and Nuytsia floribunda.		
	Weed invasion (predominantly Veldt grass) was evident along the		

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 the Shire of Gingin which has approximately 56.3% native vegetation cover remaining (Shepherd et al. 2001), and is within a zoned Rural Industrial area. The vegetation under application was subject to a large bushfire in December 2003, which removed the lower storey and damaged and removed species within the upper storey.

The vegetation under application is in a very good condition with a diverse lower storey comprising of regenerated *Dasyogon bromeliifolius*, *Conostylis* sp., *Patersonia occidentalis*, *Hibbertia* sp and *Xanthorrhoea* sp. The upper storey comprises of regenerated *Banksia*, *Melaleuca*, *Eucalyptus* and *Nuytsia* species (Site inspection, 14/12/2006).

Edge effects were seen on the perimeter of the vegetation under application, with weed invasion evident in these areas. However given this and the impact of the recent fire, the vegetation under application has shown a strong ability to regenerate and maintain biological diversity.

Overall the vegetation is considered to comprise a high level of biological diversity in both the upper and lower storeys given the number of species present. Therefore, the proposed clearing is at variance to this Principle.

Methodology Shepherd et al. (2001)
Site inspection 14/12/2006 (TRIM Ref. DOC15431)
GIS databases:
- Gingin 1m Orthomosaic - DLI 03
- Town Planning Scheme Zones - MFP 8/98

(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 may be at variance to this Principle**

The vegetation under application is located within the Shire of Gingin which has approximately 56.3% native vegetation cover remaining (Shepherd et al. 2001), and is within a zoned Rural Industrial area. The vegetation under application was subject to a large bushfire in December 2003, which removed the lower storey and damaged and removed species within the upper storey.

Overall the vegetation under application is in a very good condition, with a high level of biodiversity and given the recent fire, the vegetation has shown a strong ability to regenerate. As a result of the recent fire the current level of leaf litter is low.

Notwithstanding, the vegetation under application has a diverse lower storey, ranging in density from low to high across the site. Given this and the close proximity of the vegetation under application to the local watercourses (~570m away), the vegetation under application is considered likely to be suitable habitat for Quenda (*Isodon obesulus*). A variety of passerine birds were observed during the site inspection (14/12/2006).

Given the above, and the fact that a fauna survey does not appear to have been undertaken within the local area, the vegetation under application may provide significant habitat for local fauna. Therefore, the proposed clearing may be at variance to this Principle.

Methodology Shepherd et al. (2001)
Site inspection 14/12/2006 (TRIM Ref. DOC15431)
GIS databases:
- Gingin 1m Orthomosaic - DLI 03
- Town Planning Scheme Zones - MFP 8/98

(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 populations of Declared Rare (DRF) or Priority Flora within a 10km radius of the vegetation under application. The closest known population is *Verticordia lindleyi* subs. *Lindleyi* (Priority 4) which is located 3.7kms southwest of the vegetation under application. Other known populations within a 10km radius include:

- 1 population of *Eleocharis keigheryi* (Rare)
- 1 population of *Isotropis cuneifolia* subs. *glabra* (Priority 2)
- 1 population of *Blennospora doliiformis* (Priority 3)
- 1 population of *Dillwynia dillwynioides* (Priority 3)

- 2 populations of *Verticordia lindleyi* subs. *Lindleyi* (Priority 4)
- 1 population of *Caladenia speciosa* (Priority 4)
- 1 population of *Schoenus natans* (Priority 4)

All of the species listed above occur on the same soil unit (Cb39) as the vegetation under application. However, none of these species are known to occur within the same Beard or Heddle vegetation communities. Given this, the proposed clearing is not likely 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
 - Soils, Statewide - DA 11/99
 - Heddle Vegetation Complexes - DEP 21/06/95

(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 four known occurrences of Threatened Ecological Communities (TEC) within a 10km radius of the vegetation under application, the closest being approximately 8kms to the west.

Three of these known occurrences are the Vulnerable Floristic Community Type 7 known as 'Herb rich saline shrublands in clay pans' (Gibson et al. 1994). The fourth TEC is the Vulnerable Floristic Community Type 15, known as 'Forests and woodlands of deep seasonal wetlands' (Gibson et al. 1994).

The vegetation under application is associated with leached sands (Cb39), and does not include any mapped wetland areas. Given this and the distance to these TECs, the proposed clearing is not likely to be at variance to this Principle.

Methodology Gibson et al. (1994)
 GIS Databases:
 - Threatened Ecological Community Database - CALM 12/04/05
 - Soils, Statewide - DA 11/99
 - Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain - DEC

(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 949 (Hopkins et al. 2001) and Heddle: Coonambidgee Complex (Heddle et al. 1980) of which 57.6% and 45.1% 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: 949*	218 287	125 707	57.6	Least Concern	22.7
Heddle:					
Coonambidgee Complex	6 272	2 830	45.1	Depleted	9.4

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

The vegetation under application is in an overall very good condition, and both Beard and Heddle vegetation communities are adequately represented at 57.6% and 45.1% respectively.

It is noted that although 45.1% of Heddle's Coonambidgee Complex remains, this is represented by only 2,830 ha. Further, this Heddle Complex within secure tenure 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 the JANIS Forests Criteria (1997), at only 9.4%.

Methodology JANIS Forests Criteria (1997)
Shepherd et al. (2001)
Hopkins et al. (2001)
Department of Natural Resources and Environment (2002)
Site inspection 14/12/2006 (TRIM Ref. DOC15431)
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 no wetlands or watercourses mapped within the vegetation under application. A multiple use palusplain and several conservation category sumplands are located to the north, west and south of the vegetation under application, with the closest point being approximately 570m away. These areas are associated with the Gingin Brook, and Gingin Brook West >500m south of the subject area.

The vegetation under application is outside the recommended buffer distance for these wetland areas. Furthermore, the description and appearance of the vegetation is associated with an upland community. Therefore, the proposed clearing is not likely to be at variance to this Principle.

Methodology Site inspection 14/12/2006 (TRIM Ref. DOC15431)
GIS databases:
- Rivers 250K - GA
- 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 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 (Department of Agriculture, 2004).

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

There is no evidence of salinity occurring within, or adjacent to, the vegetation under application. Furthermore, the risk of wind and water erosion is low given the small area of vegetation applied to be cleared (~1.93ha).

Therefore, DAFWA (2007) advise that the proposed clearing is not likely to lead to appreciable land degradation and is not likely to be at variance to this Principle.

Methodology DAFWA (2007) (TRIM Ref. DOC17469)
Department of Agriculture (2004)
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 may be at variance to this Principle**
There are no Bush Forever sites or DEC managed areas within close proximity to the vegetation under application. The closest being the Yeal Nature Reserve approximately 6.3kms south west of the vegetation under application.

There are six System 6 Conservation Reserves within a 10km radius of the vegetation, with the closest being approximately 4km to the east. The closest Environmentally Sensitive Area (ESA) is the Gingin Brook West located approximately 580m to the south. Given the distance to these conservation areas, the proposed clearing is not likely to impact on the environmental values of these reserves.

Notwithstanding, Hedde Coonabidgee Complex within secure tenure 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 the JANIS Forests Criteria (1997), at only 9.4%. Therefore, the proposed clearing may be at variance to this Principle.

Methodology JANIS Forests Criteria (1997)
Shepherd et al. (2001)
GIS databases:
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 1/07/05
- System 6 Conservation Reserves - 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 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) advise that there is a low risk of salinity, and low to medium risk of eutrophication resulting from the proposed clearing. Therefore the proposed clearing may be at variance to this Principle.

Methodology DAFWA (2007) (TRIM Ref. DOC17469)
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 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. Given the small area applied to be cleared (~1.93ha), the proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology 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
There are no Aboriginal Sites of Significance within the area under application.
There 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. However, as the proposed clearing is for the construction of buildings, it is unlikely that a groundwater license is required.

The Shire of Gingin has approved the development of two warehouses, a caretakers cottage and vacant storage area on Lot 38 Hoy Rd, Coonabidgee (TRIM Ref. DOC14083).

Two submissions from the same source were received. The submission advised that ~1ha of the vegetation had already been cleared, and that this would, under normal circumstances, be ample area for buildings. The submission raised concerns that the clearing of 2.8ha for buildings is excessive (TRIM Ref. DOC10824).

Methodology 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
Building or	Mechanical	1.93	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 and the clearing as proposed is at variance to Principle (a) and may be at variance to Principles (b) and (h).

Notwithstanding, the vegetation under application is located within a zoned rural industrial area. Furthermore, the applicant has been granted Development Approval for the construction of buildings and structures over the majority of the property.

5. References

- DAFWA (2007) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (TRIM Ref. DOC17469).
- Department of Agriculture (2004) Soil-landscape mapping, Western Australia Department of Agriculture, Date accessed 09/02/2007.
- 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 (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.
- Gibson et al. (1994) A Floristic Survey of the Southern Swan Coastal Plain. Western Australian Department of Conservation and Land Management
- 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.
- 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 14/12/2006 (TRIM Ref. DOC15431).

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)