



1. Application details

1.1. Permit application details

Permit application No.: 3385/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Brookton

1.3. Property details

Property: LOT 7857 ON PLAN 128250 (BROOKTON 6306)
Local Government Area:
Colloquial name:

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|---------------------|
| 0.35 | | Mechanical Removal | Miscellaneous |

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: 5: Medium woodland; wandoo & powderbark (<i>Eucalyptus accedens</i>) (Shepherd 2007) | The proposal is to clear 0.35 ha for the purpose of constructing a rubbish disposal cell at the Shire of Brookton's rubbish tip. The area under application consists of open woodland of <i>Eucalyptus accedens</i> and <i>Eucalyptus wandoo</i> over an understorey of <i>Gastrolobium spinosum</i> , <i>Allocasuarina campestris</i> , <i>Grevillea monticola</i> , <i>Acacia pulchella</i> and <i>Lasiopetalum rotundifolium</i> in good (Keighery 1994) condition. The area under application has a dense leaf litter layer. The area under application does not contain any hollows as majority of the trees are saplings. | Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994) | Vegetation clearing description based on site visit conducted by DEC officers on 12 November 2009 (DEC 2009) |

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 applied area consists of open woodland of *Eucalyptus accedens* and *Eucalyptus wandoo* over an understorey of *Gastrolobium spinosum*, *Allocasuarina campestris*, *Grevillea monticola*, *Acacia pulchella* and the critically endangered *Lasiopetalum rotundifolium* in good (Keighery 1994) condition and contains a dense leaf litter layer (DEC 2009) which may provide habitat for reptiles and small mammals such as the conservation significant Southern Death Adder and Quenda. Additionally, the conservation significant Carnaby's Black-Cockatoo is likely to forage on the seeds and nectar from the flowers of *Dryandra* spp., *Grevillea* spp. and *Hakea* spp (Shah 2006) which occur within the area under application.

During a site visit carried out of the area under application in November 2009 (DEC 2009) five individuals of the critically endangered flora, *Lasiopetalum rotundifolium*, were found within the area under application. *L. rotundifolium* only occurs in six populations, confined to the Brookton - Narrogin area where it grows in open wandoo woodland on the slopes of hills, in gravelly brown clayey sand (Brown et al. 1998, DEC 2009b). This species has a status of Critically Endangered (Brown et al. 1998).

In addition, although not recorded during the site visit (DEC 2009), the area under application may also provide habitat for the rare flora species *Thomasia montana* and *Caladenia williamsiae* and the priority flora species, *Acacia insolita* subsp. *efoliolata* (DEC 2009a).

The area under application is considered to be a part of a significant remnant in an extensively cleared landscape as there is only 8.5% of vegetation remaining in the local area (10km radius) and occurs in a Shire that has only 15.7% of pre-European vegetation remaining (Shepherd 2007). In addition, aerial photography suggests the area under application may be part of a significant north-south ecological linkage in the local area which allows movement of fauna and flora across an extensively cleared landscape.

Given the above and that the vegetation is in good (Keighery 1994) condition, the vegetation under application is considered to comprise a high level of biological diversity.

Methodology **References**
-Brown et al. (1998)
-DEC (2009)
-DEC (2009a)
-DEC (2009b)
-Keighery (1994)
- Shah (2006)
- Shepherd (2007)
GIS Databases
-SAC Bio Databases (3/11/09)
-NWLRA, Current Extent of Native Vegetation

(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**
Within the local area (~10 km radius) three species of conservation significant fauna have been recorded including Carnaby's Black Cockatoo (*Calyptorhynchus latirostris*), Quenda (*Isodon obesulus fusciventer*) and Southern Death Adder (*Acanthophis antarcticus*).

The area under application occurs in an extensively cleared and highly fragmented landscape and as a result it can be surmised that all remnant vegetation in the local area is of considerable importance as wildlife habitat. The area under application appears to be part of a significant north-south ecological linkage in the local area and allows movement of fauna and flora across an extensively cleared landscape.

The applied area consists of open Wandoo Woodland in good condition and contains a dense leaf litter layer (DEC 2009) which may provide habitat for reptiles and small mammals such as the conservation significant Southern Death Adder and Quenda. Additionally, the conservation significant Carnaby's Black-Cockatoo is likely to forage on the seeds and nectar from the flowers of *Dryandra* spp., *Grevillea* spp. and *Hakea* spp (Shah 2006). The vegetation under application includes these species which may be utilised by these foraging birds.

The area under application occurs within a property that is 85% vegetated with the majority of the vegetation in better condition than the area under application (DEC 2009). Given this and the relatively small area proposed to be cleared (0.35ha), the significance of the vegetation under application as fauna habitat is reduced, however still important.

Therefore, the clearing as proposed may be at variance to this Principle.

Methodology **References**
- DEC (2009)
- Shah (2006)
GIs Databases
- SAC Bio Databases (3/11/09)
- Brookton 80cm Orthomosaic - Landgate 2005

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

Comments **Proposal is at variance to this Principle**
Five rare flora species have been recorded in the local area (~10 km radius) including the critically endangered *Lasiopetalum rotundifolium* which has been recorded 70 m southeast of the area under application and within the same property, *Thomasia montana* recorded 470m south, *Hakea aculeata* occurring 10 km northeast, *Caladenia williamsiae* occurring 5.8 km east and *Acacia brachypoda* occurring 10 km north of the area under application.

The area under application contains open wandoo woodland over sandy yellow mottled soils with ironstone gravels (DEC 2009, Northcote et al. 1960-68).

According to the DEC databases, there are four recordings of critically endangered *L. rotundifolium* occurring

within the same property as the applied area. During a site visit carried out of the area under application (DEC 2009), five individuals of *L. rotundifolium* were identified within the applied area along with an addition 6 individuals found 160 m southeast on the same property.

In a 1998 survey of the Shire of Brookton rubbish tip, 276 individuals of *L. rotundifolium* were recorded on the property (DEC 2009b). Since this time considerable clearing has occurred and it is not clear how many individuals of this population still exist, therefore a flora survey of the population is required to establish the significant of the 5 individuals found within the applied area.

L. rotundifolium only occurs in six populations and 2500 plants in total confined to the Brookton- Narrogin area (DEC 2009b). There is a subpopulation occurring on the adjacent property to the west and within a few kilometres to the south which contained 967 plants in 1999 (DEC 2009b). However, these populations have not been surveyed in the past 5-10 years (DEC 2009b). This species has a status of Critically Endangered (Brown et al. 1998).

In addition, although not identified during the site visit (DEC 2009) the area under application may also provide habitat for *T. montana* and *C. williamsiae* (DEC 2009a) which were recorded 470m south and 5.8 km east of the area under application, respectively.

T. montana occurs high in the landscape on lateritic red loam to brown soils and grows with Wandoo, Marri and Sheoak (Brown et al 1998) and occurs within the same soil and Beard Vegetation Complex as the area under application. *C. williamsiae* occurs on red loamy soil (Brown et al 1998) and within the same soil type at the area under application.

The presence or absence of these species from within the application area can only be obtained through an appropriately timed flora survey.

Given the above, the proposed clearing is considered likely to be at variance to this Principle.

Methodology References
-Brown et al (1998)
- DEC (2009)
- DEC (2009a)
- DEC (2009b)
-Northcote et al. (1960-68)
GIS Databases
- SAC Bio Databases (3/11/09)
-Soils, Statewide

(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) within a 10km radius of the area under application. The closest TEC is located approximately 18km north of the applied area and is associated with perched wetlands of the wheatbelt region.

Given that the vegetation under application comprises of Eucalyptus wandoo woodland associated with ironstone gravel and sandy soils, and that no wetland vegetation was observed during the site inspection (DEC 2009), it is not considered likely that the vegetation under application comprises, or is necessary for the maintenance of, a TEC.

Methodology References
-DEC (2009)
GIS Databases:
-SAC BIO Datasets (3/11/09)
-Soils, Statewide

(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 described as Beard vegetation association 5: Medium woodland; wandoo and powderbark (*Eucalyptus accedens*), of which there is 42.2% of pre-European extent remaining (Shepherd 2007).

The area under application is located within the Shire of Brookton, within which there is only 15.7% of pre-European vegetation extent remaining. In addition, there is approximately 8.5% of pre-European vegetation remaining in the local area (~10km radius).

The Beard vegetation association of the vegetation under application retains more than the EPA supported threshold level (30%) recommended in the National Objectives Targets for Biodiversity Conservation within the Avon Wheatbelt Bioregion; below which species loss appears to accelerate exponentially at an ecosystem level (EPA, 2000). However, the local area (~10 km radius) and the Shire of Brookton have only 8.5% and 15.7% of pre-European vegetation remaining, respectively. In addition, the Avon Wheatbelt bioregion has only 15.17% of pre-European vegetation remaining.

In addition, the area under application is a part of a significant north-south ecological linkage in the local area and allows movement of fauna and flora across an extensively cleared landscape.

Given this, the vegetation under application is considered a significant remnant in a cleared landscape and therefore, the proposal is at variance to this Principle.

| | Pre-European (ha) | Current extent (ha) | Remaining % |
|---------------------------|-------------------|---------------------|-------------|
| IBRA Bioregion | | | |
| Avon Wheatbelt | 9,517,109.6 | 144,369.0 | 15.1* |
| Shire of Brookton | 160,119.3 | 25,243.4 | 15.7* |
| Local Area (~10km radius) | 31,400 | ~2665.5 | 8.5% |
| Beard type in Bioregion | | | |
| 5 | 288,144.16 | 118,328.3 | 41.07* |

* (Shepherd 2007)

- Methodology**
- References
 - EPA (2000)
 - Shepherd (2007)
 - GIS Databases
 - Brookton 80cm Orthomosaic - Landgate 2005
 - Interim Biogeographic Regionalisation of Australia
 - NWLRA, Current Extent of Native Vegetation
 - SAC Bio Databases (3/11/09)

(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 recorded within a 10km radius of the area under application. The closest watercourse is a minor watercourse occurring 270 m east and the Avon River South which is located approximately 3.6km east of the area under application.

Given the distance to the nearest watercourses, and that no wetland dependent vegetation was observed during the site visit (DEC 2009), the proposed clearing is not considered likely to be at variance to this Principle.

- Methodology**
- References
 - DEC (2009)
 - GIS Databases
 - Hydrography, linear

(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

Soils within the area under application are described as ironstone gravels and yellow mottled, sandy soils (Northcote et al. 1960-68), which generally have a low risk of wind erosion and a high risk of water erosion (Department of Agriculture 2005). The area under application is also associated with a low risk of salinity.

The main land degradation risk associated with the area under application is water erosion due to the slope of the applied area and gravelly soils. However, given the limited size of the area of the proposed clearing (0.35ha), it is not considered likely that the proposed clearing would result in appreciable land degradation.

- Methodology**
- References
 - Department of Agriculture (2005)
 - DEC (2009)
 - Northcote et al. (1960-68)
 - GIS Databases

- Salinity Risk
- Soils, Statewide

(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

The closest conservation area to the application area is the Boyagin Nature Reserve which is located approximately 6.7km south of the applied area.

The area under application is situated in a landscape which has been extensively cleared for agriculture and has been isolated from local conservation reserves, it is therefore not considered likely to provide a corridor for movement of fauna to these reserves. However, the area under application is a part of a remnant that may act as a stepping stone for avian fauna to this conservation reserve.

However, given the small size of the area proposed to be cleared (0.35ha) within a 32ha property that is 85% vegetated and the distance and the lack of connectivity to the conservation area, it is not considered likely for the proposal to be at variance to this Principle.

Methodology GIS Databases
 -DEC Tenure
 -Brookton 80cm Orthomosaic - Landgate 2005

(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

There are no wetlands recorded within a 10km radius of the area under application. The closest watercourse is a minor watercourse occurring 270 m east and the Avon River South which is located approximately 3.6km east of the area under application. The area under application has a low risk of salinity.

Given the distance from the nearest wetland and watercourse and that there is a low risk of salinity, it is not considered likely that the proposed clearing would cause deterioration in the quality of underground water.

The removal of vegetation from the gravelly soils within the applied area may result in water erosion. This is likely to be minimal given the area under application is limited to 0.35ha and given the distance to the nearest watercourse, it is not considered likely that the proposed clearing would cause sedimentation and result in deterioration in surface water quality.

Methodology GIS Databases
 -Salinity , Risk
 -Brookton 80cm Orthomosaic - Landgate 2005

(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

There are no wetlands recorded within a 10km radius of the area under application. The closest watercourse is a minor watercourse occurring 270 m east and the Avon River South which is located approximately 3.6km east of the area under application.

Given the distance to the nearest watercourse and wetland and the relatively small area (0.35ha) proposed to be cleared, it is not considered likely for the proposed clearing to cause or exacerbate the incidence or intensity of flooding.

Methodology GIS Databases
 -Hydrography, linear

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

Comments

The proposal is to clear 0.35 ha for the purpose of constructing a rubbish disposal cell at the Shire of Brookton's rubbish tip.

Response to DEC's decision letter dated 3 December 2009 received from Shire of Brookton on the 14 December 2009.

The area under application occurs on Crown Land Reserve 24588 (Lot 7857 on Plan 128250) and is under management order to the Shire of Brookton for the purpose of a rubbish disposal site.

The area under application is under management order to the Shire of Brookton for the purpose of a rubbish

disposal site.

Methodology GIS Databases
-Town Planning Scheme Zones
- ICMS Polygons

4. Assessor's comments

Comment

The 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 proposed clearing is at variance to the clearing Principles (a), (c) and (e) and may be at variance to Principle (b).

5. References

- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- DEC (2009) Site Inspection Report for Clearing Permit Application CPS 3385/1, Lot 7857, Brookton Hwy, Brookton. Site inspection undertaken 12/11/09. Department of Environment and Conservation, Western Australia (TRIM Ref. DOC106962).
- DEC (2009a) Rare and Priority Flora Advice, Native Vegetation Conservation Branch. Department of Environment and Conservation. TRIM Ref DOC106374
- DEC (2009b) Advice on *Lasiopetalum rotundifolium*, Species and Communities Branch. Department of Environment and Conservation. TRIM Ref DOC109106
- Department of Agriculture (2005) AgMaps Land Manager CD-rom for the Shires of Serpentine-Jarrahdale, Kwinana, Rockingham, Mandurah, Murray, Boddington, Waroona and Harvey. Department of Agriculture, Western Australia. ISSN: 1448-235X.
- 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, Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Shah, B. (2006) Conservation of Carnaby's Black-Cockatoo on the Swan Coastal Plain, Western Australia. December 2006. Carnaby's Black-Cockatoo Recovery Project. Birds Australia, Western Australia.
- Shepherd, D.P. (2007). 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.

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 (now DEC) |
| DMP | Department of Mines and Petroleum (ex DoIR) |
| 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) |