



1. Application details

1.1. Permit application details

Permit application No.: 2047/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Boyup Brook

1.3. Property details

Property: ROAD RESERVE (BOYUP BROOK 6244)
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Local Government Area: Shire Of Boyup Brook

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.96		Mechanical Removal	Road construction or maintenance

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>Aerial photographs and photos taken during a site visit (DEC, 2007) indicate that the vegetation condition ranges from degraded to completely degraded (Keighery, 1994). The vegetation structure consists of isolated mature Marri trees, native and exotic shrubs, exotic grasses and some native regrowth.</p> <p>Beard Vegetation Associations:</p> <p>992 Medium forest; jarrah & wandoo (Eucalyptus wandoo)</p> <p>Heddle Vegetation Complex:</p> <p>Michinbin complex Open Woodland.</p> <p>Dwellingup complex Open Forest.</p> <p>Mattiske Vegetation:</p> <p>NWf1 (Newgalup) - Woodland of Eucalyptus rudis-Eucalyptus patens on footslopes on valley slopes in the subhumid zone.</p> <p>NWg1 (Newgalup) - Woodland of Corymbia</p>	<p>The areas under application are for the purpose of road widening and sealing. Aerial photographs and photos taken during a site visit (DEC, 2007) indicate that the vegetation condition ranges from degraded to completely degraded (Keighery, 1994). The vegetation structure consists of isolated mature Marri trees, native and exotic shrubs, exotic grasses and some native regrowth.</p>	<p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>Vegetation condition established through site visit (2007), TRIM ref DOC39797.</p>

calophylla-Eucalyptus marginata subsp. marginata on slopes, open heath on shallow soils near granites, open forest of Eucalyptus rudis-Eucalyptus wandoo on the valley floors in the subhumid zone.

DMg (Dalmore) - Mosaic of woodland of Eucalyptus wandoo with some Corymbia calophylla on deeper soils and open heath of Myrtaceae-Proteaceae spp. and lithic complex on shallow soils near granite outcrops in subhumid to arid zones.

As above.

As above.

Completely Degraded: As above.
No longer intact;
completely/almost
completely without
native species
(Keighery 1994)

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 is to be cleared for the purpose of road widening on Banks Road Reserve. Aerial photographs and photos taken during a site visit (2007) indicate that the vegetation condition ranges from degraded to completely degraded (Keighery, 1994) with limited scope for regeneration without intensive management. The local surrounding area appears to have undergone previous clearing possibly in association with agricultural activities. The vegetation structure consists of isolated mature Marri trees, native and exotic shrubs, exotic grasses and some native regrowth.

Given that the vegetation is relatively isolated and degraded with obvious signs of disturbance and limited scope for regeneration, it is unlikely that the vegetation within the application area is representative of vegetation comprised of outstanding biodiversity in the Bioregion or local area.

Methodology Site Visit (2007)
Keighery (1994)
GIS Database:
- Bridgetown 50cm Orthomosaic - DLI 04

(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**

There has been 1 recorded sighting of the classified vulnerable *Cacatua pastinator pastinator* (Muir's Corella) 8.5km south-east from the proposed clearing site. This is the only recorded rare and endangered fauna mapped in a 10km radius from the application area.

There is only one remaining population left of *C. pastinator pastinator* located in the south-west of Western Australia including the Boyup Brook area. The corella relies on remnant patches of woodland for nesting and the majority of nests are found in or adjacent to farmland and along roadsides and watercourses. They nest in hollows of mostly live and dead Marri (*Corymbia calophylla*) and Jarrah (*Eucalyptus marginata*) on roadsides and edges of forested areas (DEC, 2006). Trees with hollows were identified within the proposed clearing area during the site visit (2007), though are not large enough for Muir's Corella to breed in. Muir's Corella use trees with a minimum diameter at breast height (DBH) of 680mm (Fauna advice, 2007).

Given the above, it is unlikely that the roadside vegetation is necessary for the maintenance of indigenous fauna.

Methodology Site Visit (2007)
DEC (2006)
Fauna Advice (2007)
GIS Database:
- Bridgetown 50cm Orthomosaic - DLI 04
- Sac Biodata Sets 201107

(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 is 1 known record of Declared Rare and Priority Flora within a 10km radius of the proposed clearing site. This is the *Caladenia dorrienii*, which was sighted 1.5km south of the application area. *C. dorrienii* was recorded on the same vegetation complex (Michibin) and soil type (Ta8) as the proposed clearing area.

Due to the degraded condition of the vegetation under application and the linear structure of the vegetation, the proposal is unlikely to contain DRF or impact on local populations.

Methodology GIS Layer:
 - Bridgetown 50cm Orthomosaic - DLI 04
 - Sac Biodata Sets 201107
 - Hedde vegetation complexes - DEP 21/06/95
 - 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

Mapping indicates there are no existing threatened or priority ecological communities within the Shire of Boyup Brook, therefore the proposed clearing is unlikely to be at variance to this principle.

Methodology GIS Layer:
 - Bridgetown 50cm Orthomosaic - DLI 04
 - Sac Biodata Sets 201107

(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

	Pre-European (ha)*	Current Extent Remaining (ha)*	(%)*	Conservation Status**
IBRA Bioregion:				
Jarrah Forest	4,506,674.56	2,426,079.80	53.8	Least Concern
Sub IBRA Bioregion:				
Southern Jarrah Forest	2,607,875.20	1,368,940.67	50.2	Least Concern
Shire: Boyup Brook***	282,638	127,847	45.2	Depleted
Beard Unit:				
992 – Medium Forest Jarrah	122,053.22	25,684.79	21	Vulnerable
Mattiske Complex:				
Nwfl	-	-	6	Endangered
NWg1	-	-	6	Endangered
DMg	-	-	4	Endangered

*Shepherd et al. 2001

**Department of Natural Resources and Environment 2002

***Within the Intensive Land Use Zone (Inside the Clearing Line)

****Mattiske Consulting 2002

The proposed clearing area is within the Jarrah Forest IBRA Region and Southern Jarrah IBRA Subregion, where the area of vegetation remaining is above 50%. Within the Shire of Boyup Brook 45.2% of pre-European vegetation remains (Shepherd 2001). These percentages are higher than the National Objectives Targets for Biodiversity Conservation, which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment, 2002; EPA 2000).

Beard Unit 992 falls within the conservation status of vulnerable with a remaining percentage of 21%.

The road proposed to be cleared is within Mattiske vegetation complexes Newgalup 1 (NWf1), Newgalup (NWg1) and Dalmore (DMg) which are classed as endangered (having less than 10% vegetation remaining). The condition of the vegetation within the road reserve proposed to be cleared varies from Degraded to Completely Degraded (Keighery 1994). Some areas along the road reserves consist only of pasture and weed species (Site Visit, 2007).

Given the above, the proposed clearing may be at variance to this principle. To mitigate the loss of vegetation, conditions will be placed on the permit to ensure an offset plan is developed by the Shire and approved by the Department's CEO prior to the commencement of any clearing under this permit.

Methodology Site Visit (2007)
Shepherd et al. (2001)
Department of Natural Resources and Environment (2002)
EPA (2000)
Mattiske Consulting (2002)

GIS Database:

- Pre-European Vegetation - DA 10/01
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Heddl vegetation complexes - DEP 21/06/95

(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 may be at variance to this Principle

The application is to clear native vegetation for road widening and sealing. A minor perennial watercourse cuts through the centre of the proposed clearing area in a north south direction. From aerial photography it appears that the watercourse has been diverted through a culvert. Boyup Brook and the Blackwood River are located 250m east and 1.8km southeast of the proposed clearing area respectively.

Given the small scale of clearing proposed and the degraded condition of most of the vegetation, the proposed clearing is unlikely to further degrade any watercourse or water quality within the area.

Methodology GIS Layer:
- Bridgetown 50cm Orthomosaic - DLI 04
- Hydrography, linear - DOE 1/2/04 (Hyd-type)

(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 topography of the area has a moderate relief rising from 190-250 AHD, and receives a mean annual rainfall of 700mm. Groundwater salinity has been mapped between 1000-3000mg/L TDS (Total Dissolved Solids) giving it a low to moderate rating. The area under application consists two soil types:

* Ta8 - Incised valley side slopes of moderate to very steep relief: chief soils are hard acidic, and also neutral, yellow mottled soils.

* JZ2 - Dissected plateau having a gentle to moderately undulating relief, and with broad swampy drainage-ways and basins. It is characterized by lateritic gravels and block laterite: the chief soils are ironstone gravels with sandy and earthy matrices.

The proposed clearing for road widening clearing may cause some short term land degradation issues in terms of localised flooding and soil erosion during works. However this issue should be minimised as the existing road has in place roadside infrastructure to prevent land degradation associated with roads i.e. table drains and culverts. Given this, the proposed clearing is not likely to cause appreciable land degradation.

Methodology GIS Layer:
- Bridgetown 50cm Orthomosaic - DLI 04
- Groundwater Salinity, Statewide - DOW
- Topography contours, statewide - DOLA 12/09/02
- Rainfall, Mean Annual - BOM 30/09/01
- 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

There are no conservation areas within a 10km radius of the proposed clearing area.

Therefore the proposed clearing will not impact on the environmental values of any conservation reserves.

Methodology GIS Layer:
 - Bridgetown 50cm Orthomosaic - DLI 04
 - CALM managed lands and waters - CALM 1/07/08 (category)

(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 proposed clearing site lies within the Hardy Estuary - Blackwood River catchment area. The region is of moderate relief (190-250m AHD) and has an annual rainfall of 700m. A few surface waterbodies are located in close proximity to the application site. The purpose of clearing is for road widening.

The proposed clearing of the roadside may cause some short term water quality issues in terms of localised surface water sedimentation during works. However these issues should be minimised as the existing roads have in place roadside infrastructure to prevent water quality issues associated with roads i.e. table drains and culverts.

Due to the small and isolated area proposed to be cleared it is unlikely the area under application will exacerbate existing salinity issues or increase water levels within the proposed clearing area.

Methodology GIS Layer:
 - Bridgetown 50cm Orthomosaic - DLI 04
 - Hydrography catchments - catchment DOE 23/03/05
 - Rainfall, Mean Annual - BOM 30/09/01
 - Topography contours, statewide - DOLA 12/09/02

(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 hydrogeology of the area is predominately rock of low consisting of gneiss and migmatite. These can assist in intensifying flooding if an abundance of vegetation is cleared. Given though, the small scale of clearing, it is unlikely it will cause or exacerbate flooding within the local area.

Methodology GIS Layer:
 - Bridgetown 50cm Orthomosaic - DLI 04
 - Hydrogeology, statewide - DOW

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

Comments
 There are two Native Title Claims over the proposed clearing area. The Department of Environment and Conservation's advertising of the application in the West Australian Newspaper constitutes legal notification of the Native Title representative body for the purpose of the future act procedures under the Native Title Act 1993.

An Environmental Impact Assessment falls within the most western portion of the proposed clearing application. It is s38 - Not assessed - Public advice given

No submissions have been received.

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Road construction or maintenance	Mechanical Removal	0.96	The proposed clearing is at variance to principle e; may be at variance to principle f; and not likely to be at variance to principle a, b, c, d, g, h, i and j.	

5. References

DEC. 2006. Managing Muir's Corella in Blue Gum Plantations Fauna Note No. 33/2006. Department of Environment and Conservation. Western Australian Government.

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.

Fauna Advice 2007. Department of Environment and Conservation 2007. Western Australian Government. DEC TRIM ref DOC41926

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mattiske Consulting 2002. Review of Management Options for Poorly Represented Vegetation Complexes. Mattiske Consulting 2002.

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 Visit 2007. Department of Environment and Conservation. 2007. Western Australian Government. DEC TRIM Ref DOC39797

6. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)