



1. Application details

1.1. Permit application details

Permit application No.: 649/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Brian Wilfred Barrows

1.3. Property details

Property: LOT 1557 ON PLAN 208631 (NALYERLUP 6338)

Local Government Area: Shire Of Gnowangerup

Colloquial name: Kent Location 1557 on Plan 208631, Area 12

1.4. Application

| Clearing Area (ha) | No. Trees | Method of Clearing | For the purpose of: |
|--------------------|-----------|--------------------|---------------------|
| 38 | | Mechanical Removal | Cropping |

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 940 - Mosaic; Shrublands; mallee scrub, black marlock / Shrublands; tallrack mallee-heath (Hopkins et al., 2001; Shepherd et al., 2001). | Vegetation observed on site is consistent with the Beard Vegetation Association 940 description (DoE Site Visit, TRIM ref AD208). The vegetation under application is 38ha, which is part of a larger area of native vegetation (2870ha). The landscape around this vegetation remnant is highly cleared. | Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994). | The area under application has previously been cleared in around 1978 (DAWA, 2005). However the vegetation has regrown, shows a high level of biodiversity, has almost no invasive weeds and displays no other obvious signs of disturbance (DoE Site Visit, TRIM ref AD208). |

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 |
|-------------|--|
| | <p>The proposed clearing area is part of a significant remnant between the Stirling Range National Park and nearby State Conservation reserves. This remnant is the largest, on freehold land, within the Shire of Gnowangerup (CALM, 2005). The Department of Conservation and Land Management (CALM, 2005) also advised that the area under application lies near the border between two IBRA (Interim Biogeographic Regionalisation of Australia) Regions, which suggests it is in a transitional zone containing an important change over in vegetation types and species present.</p> <p>A site visit by the Department of Environment (DoE) confirmed that the area under application is part of a larger remnant, displays a high level of biodiversity compared to vegetation in the local area (15km radius) and region, in terms of species richness and ecosystem diversity. This is due to the lack of native vegetation remaining in the area (18.5% of the Pre-European extent remains in the Shire of Gnowangerup (Hopkins et al., 2001; Shepherd et al., 2001)) and the predominance of cropping and agricultural activities surrounding the area under application.</p> |
| Methodology | <p>DoE Site Visit (TRIM ref AD208), CALM (2005), Hopkins et al. (2001), Shepherd et al. (2001)</p> <p>GIS Databases:</p> <ul style="list-style-type: none"> - Mt Barker Orthomosaic 1.4 Orthomosaic - DOLA 01 - Interim Biogeographic Regionalisation of Australia-EA 18/10/00 |

(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

CALM (2005) reported that the proposed area is part of a significant stepping stone to the Stirling Range National Park and has significant corridor values for the Vulnerable and Priority listed fauna species such as Malleefowl, Tamar Wallaby, Western Brush Wallaby and Quenda that have been recorded within the vicinity of the proposed development. It is also part of a contiguous buffer of a significant size and two Specially Protected and six Priority Listed Fauna species are known to occur in the local area (10km radius) (CALM, 2005).

The following information was provided by CSIRO Scientists as part of a submission (TRIM ref A1780): The area under application is part of a larger remnant of vegetation, which is the third largest in the area (60km radius) after the Stirling Range National Park and Corackerup Nature Reserve. The whole remnant has an area of 2870ha, of which this application is for 38ha. In the WA wheatbelt, the mean remnant size is 36.5ha, so the area under application is significant in its own right. The vegetation has been identified in CALMs 'South Coast Macro Corridor Project' (SCMCP) as it provides connectivity and/or stepping stones between Corackerup Nature Reserve, Stirling Range National Park and Fitzgerald River National Park. In the SCMCP, the area under application is classified as part of 'strategic zone A' - ie contains areas of woody vegetation where the area is greater than 30ha and is less than 1km from the next potential link between major protected areas. The remnant has a rich mosaic of habitat including shrublands, mallee and heath, which offers high quality habitat for birds, potentially including Malleefowl habitat. Sightings of Malleefowl in vegetation adjacent to the area under application have been reported for 1985, and twice in 2001. As the vegetation in the area under application matures, it will become increasingly suitable for Malleefowl habitation.

Due to the role that the area under application, as part of a larger remnant, contributes to fauna habitat and connectivity, this proposal is considered to be at variance to this Principle.

Methodology CSIRO Scientists (TRIM ref A1780), CALM (2005)

(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 15 populations of 5 species of Declared Rare Flora (DRF) and 5 populations of 4 species of Priority flora within the local area (10km radius of the proposed area) (CALM, 2005). The nearest DRF is *Thelymitra psammophila* (Sandplain Sun Orchid) located approximately 4.2km from the site (CALM, 2005). The area under application has not been surveyed for flora therefore it cannot be established if significant flora exists at the site. However, the closest DRF the Sandplain Sun Orchid is found in sandy clay, loam (FloraBase, 2005) which is similar to the sandy and loamy soils found at the site (DAWA, 2005) and within the same Beard Vegetation Association. CALM (2005) recommends that a flora survey be carried out to establish the presence of DRF.

Methodology CALM (2005), DAWA (2005), FloraBase (2005)
GIS Databases:
-Declared Rare and Priority Flora List - CALM 01/07/05
-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 recorded State or Federally listed Threatened Ecological Communities (TEC) within 10km of the proposed clearing, or evidence to suggest that any TEC's exist on the land that is proposed to be cleared (CALM, 2005). The nearest is 21km to the south west (PYUNG01) in the Stirling Ranges.

Methodology CALM (2005)
GIS Database:
-Threatened Ecological Communities - CALM 12/04/05

(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 following information was provided by CSIRO Scientists as part of a submission (TRIM ref A1780): The area under application is part of a larger remnant of vegetation, which is the third largest in the area (60km radius) after the Stirling Range National Park and Corackerup Nature Reserve. The whole remnant has an area of 2870ha, of which this application is for 38ha. In the WA wheatbelt, the mean remnant size is 36.5ha, so the area under application is significant in its own right. The vegetation has been identified in CALMs 'South Coast Macro Corridor Project' (SCMCP) as it provides connectivity and/or stepping stones between Corackerup Nature Reserve, Stirling

Range National Park and Fitzgerald River National Park. In the SCMCP, the area under application is classified as part of 'strategic zone A' - ie contains areas of woody vegetation where the area is greater than 30ha and is less than 1km from the next potential link between major protected areas.

The remnant has a rich mosaic of habitat including shrublands, mallee and heath, which offers high quality habitat for birds, potentially including Malleefowl habitat. Sightings of Malleefowl in vegetation adjacent to the area under application have been reported for 1985, and twice in 2001. As the vegetation in the area under application matures, it will become increasingly suitable for Malleefowl habitation.

The vegetation in the area under application is a component of Beard Vegetation Association 940 of which there is 39.6% of the pre-European extent remaining (Hopkins et al., 2001; Shepherd et al., 2001). This represents a 'depleted' vegetation association for biodiversity conservation (Department of Natural Resources and Environment 2002). Of the vegetation remaining 50.4% (CALM, 2005) is in reserve which exceeds the set benchmark of 15% (JANIS, 1997).

The Shire of Gnowangerup has been extensively cleared with 18.5% of the pre-European vegetation extent remaining (Hopkins et al., 2001; Shepherd et al., 2001). If the Stirling Range vegetation was removed from this total, the Shire would have only 10% remaining, most of which is in a degraded condition. The area under application lies within the EPA Agricultural Zone within which they do not support any further clearing for agricultural purposes (EPA, 2000). The vegetation under application is considered to be a significant component in terms of its contribution to vegetation representation in the locality and bioregion. Clearing is considered to be at variance to this Principle.

Methodology Department of Natural Resources and Environment (2002), EPA (2000), Hopkins et al. (2001), Shepherd et al. (2001), CALM (2005), AGPS (2001), JANIS (1997)

(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 at variance to this Principle

The area under application is traversed by two first order non-perennial watercourses which feed into Ninterup Creek that runs east into Detatup Brook and then southwards 10km to the Pallinup River (DAWA, 2005).

The two watercourses join in the centre of the property, with the majority of the area under application within 100m of either watercourse. Clearing of this area would adversely affect the watercourses, including their vegetated buffer areas and watercourses downstream.

Methodology DAWA (2005)
GIS Database:
-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 at variance to this Principle

Advice from the Commissioner of Soil and Land Conservation indicates that there is some risk of on and off site degradation in the form of salinity, water erosion and eutrophication if the proposed clearing is carried out, therefore the proposal is considered to be at variance with this Clearing Principle (DAWA, 2005).

A previous decision in 2003 by the Commissioner of Soil and Land Conservation applied to the area that is covered under this application and was "formal objection to the proposed clearing on the grounds of land degradation in the form of on and off-site salinity which is liable to result" (TRIM ref A1902).

Methodology DAWA (2005)

(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 proposed area is part of a significant stepping-stone to the Stirling Range National Park and surrounding areas for fauna. However CALM (2005) considers that as long as the rest of the remnant is not cleared there may be sufficient vegetation to maintain the 'stepping-stone' effect. However, the maintenance of the rest of the remnant can not be assumed as it is all on freehold land.

Two CALM managed Crown Reserves are situated within a 10km radius of the proposed clearing. There is a sufficient distance between these reserves and the proposed clearing site to determine it unlikely that the inherent environmental values of the reserves will be significantly impacted by the clearing (CALM, 2005).

Other Conservation areas in the area are 15.5km south east (Greaves Road Nature Reserve) and 16km south (Stirling Ranges National Park). The area under application and the larger remnant that it is part of, contributes

to connectivity and ecological linkage between conservation areas.

Methodology CALM (2005)
 GIS Databases:
 -CALM Managed Lands and Water - CALM 01/07/05
 -Mt Barker 1.4m Orthomosaic - DOLA 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 area under application is not in a gazetted, proclaimed or declared water catchment area. The proposal is to clear a significant area (38ha) on land that is subject to salinity (DAWA, 2005) and with two minor non-perennial watercourses through its centre. The clearing is likely to impact the waterbodies present through siltation and sedimentation the time of vegetation removal. It may also alter the salinity of the area through a rise in the groundwater tables. The risk of eutrophication will increase if clearing is permitted, this can be managed through the use of appropriate vegetated buffers (DAWA, 2005). However, as previously mentioned, much of the land under application would need to be protected if significant buffers were established. Flows from this property would reach the Pallinup River and finally the Beaufort Inlet, both of these waterbodies already suffer from eutrophication (SCRIPT, 2004) and any further input of nutrients into the system should be avoided.

Methodology DAWA (2005), SCRIPT (2004)
 GIS Database:
 -Hydrography, linear - DOE 1/2/04
 -Public Drinking Water Source Areas (PDWSAs) - DOE 09/08/05

(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 area under application receives an annual average rainfall of approximately 400mm. The area gently slopes (2-5%) in a south easterly direction, however given the potential for intense rainfalls on a dry landscapes the increased surface water runoff (DAWA, 2005) may increase the intensity and duration of flooding on and off-site. Any impact is unlikely to be significant given the low rainfall in the area and the presence of a large vegetated area adjacent to the proposed site.

Methodology DAWA (2005)
 GIS Database:
 - Hydrography, linear - 1/2/04

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

Comments

The Commissioner for Soil and Land Conservation formally objected to this area being cleared in April 2003 (TRIM ref AI902).

One submission received states that while the vegetation does not currently have the structure to suit Malleefowl habitat, it is likely to in the future and they support the areas retention based on biodiversity grounds.

a submission from two CSIRO Scientists advised that clearing of this area would further fragment native vegetation in a highly cleared area and that the site proposed to be cleared formed part of a highly significant remnant of vegetation (TRIM ref AI780).

Methodology

4. Assessor's recommendations

| Purpose | Method | Applied area (ha)/ trees | Decision | Comment / recommendation |
|----------|--------------------|--------------------------|----------|--|
| Cropping | Mechanical Removal | 38 | Refuse | <p>In 2003, the previous owners applied to clear 72ha of native vegetation on the property, including the area covered under this application. The Commissioner of Soil and Land Conservation officially objected to that proposal.</p> <p>The application has been assessed against the Clearing Principles and found to be at variance to Principles a, b, e, f and g and may be at variance to Principle c.</p> <p>The vegetation under application is part of the largest remnant of native vegetation, on freehold land, within the Shire of Gnowangerup. This Shire has only 18.5% of its Pre-European vegetation extent remaining (10% if the vegetation in the Stirling Range National Park is taken out).</p> |

The remnant contains a high level of biodiversity and has significant corridor values for both Specially Protected and Priority Listed Fauna. It is an important stepping stone between conservation areas in a highly cleared landscape.

The area proposed to be cleared also has two watercourses running through it, which would be affected by any clearing and DAWA (2005) has reported a number of land degradation risks associated with the proposal. Salinisation is considered to be significant.

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

5. References

- AGPS (2001) The national objective and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra.
- CALM (2005) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref IN25319.
- DAWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref AI803.
- 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.
- FloraBase (2005) Descriptions by the Western Australian Herbarium, CALM. Text used with permission (<http://florabase.calm.wa.gov.au/help/copyright>). Accessed on Friday, 30 December 2005.
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALM Science 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.
- SCRIPT (2004) Southern Prospects 2004 - 2009, South Coast Strategy for Natural Resource Management, Background Paper Four, Water Resources in the South Coast. Report prepared for the South Coast Regional Initiatives Team.
- 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 |
|------|--|
| 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) |

