



1. Application details

1.1. Permit application details

Permit application No.: 2591/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: MR Andrew Leslie Harris

1.3. Property details

Property: LOT 1144 ON PLAN 105655 (NANNUP 6275)
 Local Government Area: Shire Of Nannup
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2		Mechanical Removal	Grazing & Pasture

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: Vegetation association 3: Medium forest; jarrah & marri Vegetation association 1184: Medium woodland-fringing; jarrah, marri, Eucalyptus rudis & Agonis flexuosa (Hopkins et al. 2001; Shepherd et al. 2001). Mattiske Vegetation Complex Bridgetown (BT): Mixture of open forest of Eucalyptus marginata subsp. marginata-Corymbia calophylla with some Eucalyptus patens on slopes to low open forest of Eucalyptus rudis-Melaleuca raphiophylla on the valley floors in the humid zone (Mattiske Consulting 1998)	The area under applications proposal is to selectively remove 2 hectares of native vegetation for the purpose of pasture; the area under application is broken into three sections (section 1, 2 and 3). The sections are described as being in a degraded (Keighery 1994) condition, consisting of a small cluster of trees and shrubs with little to no understorey.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The soil type of the area is described as dissected lateritic plateau of a generally hilly relief: chief soils on the slopes are hard acidic, and also neutral, yellow mottled soils, containing moderate to large amounts of ironstone gravels. Associated are block laterite, gravelly and bouldery and soils on ridge tops; leached sands, some on deposits containing water-worn stones; and small areas of soils of adjoining units (Northcote et al. 1960-68).

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 proponent has proposed to clear 2ha for the purpose of grazing. The vegetation is described as being in a degraded (Keighery 1994) condition, consisting of a small cluster of trees and shrubs with little to no understorey.

There are eleven records of a priority flora species within a 10km radius of the area under application. All species grow in a different soil type and Mattiske vegetation type as the area under application.

The area under application is within a dieback risk area and is surrounded by remnant vegetation in good

condition. Therefore there is a risk of the phytophthora disease spreading. Additionally, there is a risk of weeds spreading into the remnant vegetation via the clearing disturbance. Dieback and weed conditions will be placed on the Permit to mitigate these potential impacts.

Due to the degraded condition of the vegetation and the vegetation type is well represented in the local area (10km radius), it is not considered to hold significant biodiversity values and is therefore not likely to be at variance to this principle.

Methodology DEWHA (2008)
Keighery (1994)
Mattiske Consulting (1998)
Northcote et al. (1968)
Shepherd (2006)
Shepherd et al (2001)
GIS Database:
- CALM Managed Lands and Waters - CALM 01/06/05
- DEFL, SAC Biodataset (22/07/08)
- Donnybrook 50cm - Landgate04
- Register of National Estate - Environment Australia, Australian and world heritage division 12/03/02
- TEC Database, SAC Biodatasets - accessed 22/07/08

(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**
Within the local area (10km radius from the proposed clearing) there are eight records of historical threatened fauna.

Due to the degraded condition of the vegetation and native vegetation remaining is well represented in a 10km radius area (95% remaining within the local area), the proposed clearing is not considered to be significant habitat for the fauna. Therefore it is unlikely that the vegetation proposed to be cleared is significant habitat for fauna species and the clearing as proposed is therefore not likely to be at variance to this principle.

Methodology GIS Database:
- CALM Managed Lands and Waters - CALM 01/06/05
- Donnybrook 50cm - Landgate04
- Threatened Fauna, SAC Bio Dataset (17/07/08)

(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**
Within the local area (10km radius) of the site under application there are two records of rare flora. As the rare flora species grow in a different vegetation type and soil type as the area in question the clearing is unlikely contain suitable habitat for the rare species.

Methodology Keighery (1993)
Mattiske Consulting (1998)
Shepherd (2006)
Shepherd et al. (2001)
Western Australian Herbarium (1998-)
GIS Database:
- DEFL, SAC Bio Dataset (24/07/08)
- Donnybrook 50cm - Landgate04
- Mattiske Vegetation - CALM 1/03/1998
- Pre European Vegetation, SAC Biodatasets - accessed 24/07/08

(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 at variance to this Principle**
There are no known threatened ecological communities (TECs) occurring within a 10km area. Therefore the clearing as proposed is not at variance to this principle.

Methodology GIS Database:
- TEC Database, SAC Biodatasets - accessed 17/07/08

(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 at variance to this Principle		
	Pre-European	Current Extent	Remaining
IBRA Bioregion			
Jarrah Forest Shire	4,506,654.28	2,405,331.40	53.4
Nannup	293,222.29	247,538.37	84.4
Beard Vegetation			
3	2,661,403.29	1,846,588.90	69.4
1184	63,562.26	27,102.22	42.6
Mattiske Vegetation			
Bridgetown (BT)	214,760	143,623	66.9

The area under application is located in the Jarrah Forest Bioregion and is in the Shire of Nannup. The extent of the Jarrah Forest is 53.4%. The extent of the pre-European vegetation (3 and 1184) is 69.4% for vegetation type 3 and 42.6% for vegetation type 1184 (Shepherd et al. 2001) and within the Shire of Nannup is 84.4% (Shepherd et al. 2001). The extent of the Mattiske Vegetation Complex, Bridgetown (BT) is 66.9%. Vegetation has not been extensively cleared within this region, and is higher than the desirable 30% threshold level target identified by the EPA (2000).

As the area under application is considered to be in a degraded (Keighery 1998) condition and the local area (10km radius) is well represented of these vegetation types, therefore is not at variance to this principle.

Methodology EPA (2000)
 Mattiske Consulting (1998)
 Shepherd (2006)
 Shepherd et al. (2001)
 GIS Database:
 - Donnybrook 50cm - Landgate04
 - Interim Biogeographic Regionalisation of Australia - EA 18/10/00
 - Mattiske Vegetation (01/03/1998)
 - Pre European Vegetation, SAC Bio Dataset (24/07/08)

(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**
 There are several 1st and 2nd order minor perennial water courses in close proximity to the area under application. Section 2 of the area under application is within the 30m buffer zone (WRC 1996; DoW, 2005), which is already sparsely vegetated.

Aerial photography suggests the area under application it is not growing in association with these water courses, however it is likely to be functioning as a buffer. The buffering function of the vegetation is limited due to its degraded nature. The proposal therefore may be at variance to this principle.

Methodology DoE (2005)
 WRC (1996)
 GIS Database:
 Hydrography linear - DOW 13/7/06
 Hydrography linear (hierarchy) - DoW 13/7/06

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments **Proposal may be at variance to this Principle**
 The topography of the site in section 1 is between 250-220m AHD (Australian Height Datum), section 2 is between 210-185m AHD and section 3 is between 215-175m AHD.

The soil type of the area is described as dissected lateritic plateau of a generally hilly relief, chief soils on the slopes are hard acidic, and also neutral, yellow mottled soils, containing moderate to large amounts of ironstone gravels (Northcote et al. 1960-68). The mean annual rainfall is 1000mm per annum and the evapotranspiration rate is 800mm. Given the high rainfall and high relief in topography, water erosion is likely to occur on the site.

The area under application is within a class V capability rating from a water erosion perspective. Class V land should not generally be cleared (Land Degradation Guidelines, DAFWA Advice, 2008). Soil loss to the natural

drainage system is likely during the clearing and development phase (DAFWA Advice 2008). The proposed clearing may cause water erosion due to the high relief and high rainfall.

However the proponent intends to leave approximately 40% of the larger trees and to just clear smaller re growth to allow for easier movement of stock and machinery. The proponent will only be lightly stocking the area over the summer period to leave grass covering from the previous year to protect soil until new pastures have been established. Given the above, the proposal should deal with both on site and off site impacts of soil erosion if implemented (DAFWA Advice 2008).

Therefore the proposed clearing may be at variance to this principle.

Methodology Northcote et al. (1968)
GIS Database:
- Evapotranspiration Isopleths - WRC 29/09/98
- Groundwater Salinity Statewide DoW 13/07/06
- Hydrographic catchments, catchments - DoW 01/06/07
- Hydrogeology, statewide DOW 13/07/06
- Mean Annual Rainfall Isohytes (1975 - 2003) DEC 02/08/05
- Topographic Contours, Statewide - DOLA 12/09/02

(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 at variance to this Principle

The proposed clearing site is surrounded by state forest, nature reserves and other DEC managed lands. This includes DEC managed land which is 1.9km north from the area under application, the Jarrahwood State Forest is 2.3km west, the Nannup State Forest is 4.2km south of the area under application, the Mullalyup State Forest is 4.7km north, Ellis Creek State Forest is 4.5km south and the Powlalup Nature Reserve is 8.7km east of the area under application. This nature reserve is a Registered National Estate.

Given the scale of the proposed clearing (2ha), the native vegetation remaining is well represented within the local area of a 10km radius (95%) and the degraded (Keighery 1994) condition of the land in question, the area under application is not likely to disturb linkages, corridors or impact on the registered national estate, DEC managed lands or the state forest.

Methodology GIS Database:
- CALM Managed Lands and Waters - CALM 01/06/05
- Donnybrook 50cm - Landgate04
- Register of National Estate - Environment Australia, Australian and world heritage division 12/03/02

(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

There are several 1st and 2nd order minor perennial water courses in close proximity to the proposed clearing site. As the water courses are 1st and 2nd order streams the Department of Water (DoW) recommends a 30m buffer on each side of the stream be maintained for water quality purposes (WRC 1996; DoW, 2005). The native vegetation buffers provide environmental benefits to the waterways, as they act as a filter to help protect waters from pathogens, turbidity, nutrient-enriched run-off and spreading of waterborne weed species (DoE, 2005). Sections 1 and 3 of the area under application are not within the buffer zone. Section 2 of the area under application is within a 30m buffer zone (WRC, 1996), although the buffer zone within section 2 is not completely vegetated. The clearing of section 2 will incrementally reduce water quality, contribute to sedimentation and turbidity via water erosion (DAFWA Advice, 2008). Aerial photography suggests it is not growing in association with these water courses, however it is likely to be functioning as a buffer.

Methodology DoE (2005)
WRC (1996)
GIS Database:
Evapotranspiration Isopleths - WRC 29/09/98
Groundwater Salinity Statewide DoW 13/07/06
Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05

(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 at variance to this Principle

The topography of the site in section 1 is between 250-220m AHD (Australian Height Datum), section 2 is between 210-185m AHD and section 3 is between 215-175m AHD. The mean annual rainfall is 1000mm per annum and the evapotranspiration rate is 800mm.

Given the high evaporation rate and high relief in topography, flooding in the areas under application is unlikely to occur. The proposal is therefore is not at variance to this principle.

Methodology GIS Databases:
- Topographic Contours, Statewide - DOLA 12/09/02
- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Soils, Statewide DA 11/99

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

Comments

The area proposed to clear is zoned rural.

Methodology GIS Database:
- Town Planning Scheme Zones - MFP 31/08/98

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 may be at variance to principle (f), (g) and (i), principles (a), (b) and (c) are not likely to be at variance and the remaining principles are not at variance.

5. References

- Brown A., Thomson-Dans C. and Marchant N.(1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- DAFWA (2008) Land Degradation Advice for clearing permit application CPS 2591/1. Received 19/08/2008. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia (TRIM Ref. DOC61570).
- Department of Environment (DoE) (2005), Water Quality Protection Note, Vegetation Buffers to Sensitive Water Resources
- Department of the Environment, Water, Heritage and the Arts (2008) Powlalup Nature Reserve (RNE), Department of the Environment, Water, Heritage and the Arts, Canberra. Available from: <http://www.environment.gov.au/sprat>. Accessed July 2008
- 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.
- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Serena, M. and Soderquist, T. (1995). Western Quoll. In R. Strahan (Ed.) The Mammals of Australia. Australian Museum and Reed Books. Chatswood, NSW.
- 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.
- Water and Rivers Commission (1996), Policy and Guidelines
- Water and Rivers Commission (2001). Position Statement: Wetlands, Water and Rivers Commission, Perth.

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)

