



1. Application details

1.1. Permit application details

Permit application No.: 1223/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Ashley J. & Nigel F. Armstrong

1.3. Property details

Property: LOT 9381 ON PLAN 156164 (CARNAMAH 6517)
 LOT 6273 ON PLAN 82783 (KADATHINNI 6519)
 LOT 9775 ON PLAN 162980 (KADATHINNI 6519)
 LOT 9284 ON PLAN 162835 (CARNAMAH 6517)
 LOT 2 ON PLAN 25545 (Lot No. 2 LUCAS ROKICH CARNAMAH 6517)
 LOT 9392 ON PLAN 156164 (KADATHINNI 6519)

Local Government Area: Shire Of Carnamah & Shire Of Three Springs
 Colloquial name: Cooladdi Farm

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
67.83		Burning	Grazing & Pasture
2.2		Burning	Grazing & Pasture
2.19		Burning	Grazing & Pasture
30.95		Burning	Grazing & Pasture
53.92		Burning	Grazing & Pasture
2.01		Burning	Grazing & Pasture
0.79		Burning	Grazing & Pasture
10.02		Burning	Grazing & Pasture
6.14		Burning	Grazing & Pasture
8.27		Burning	Grazing & Pasture
1.86		Burning	Grazing & Pasture
0.49		Burning	Grazing & Pasture
1.6		Burning	Grazing & Pasture
9.21		Burning	Grazing & Pasture
2.83		Burning	Grazing & Pasture
0.28		Burning	Grazing & Pasture
42.56		Burning	Grazing & Pasture
8.23		Burning	Grazing & Pasture
81.98		Burning	Grazing & Pasture
19.5		Burning	Grazing & Pasture
2.46		Burning	Grazing & Pasture
58.91		Burning	Grazing & Pasture
43.09		Burning	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 125: Bare areas; salt lakes.	The property is located within the Marchagee System as classified by John Beard (Beard 1976). The vegetation is described as Scrub Heath with the taller conspicuous species being Actinostrobus arenarius, Adenanthos stricta, Banksia prionotes, B. attenuate, B.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	The majority of the area (457.3 ha) to be cleared is unaltered except for the effects of grazing within York gum woodlands. This has resulted in the selected removal of understorey species and grasses (Site visit 8 May 2006).
Beard vegetation association 142: Bare area; drift sand.			
Beard vegetation association 697: Shrublands; scrub-heath on lateritic sandplain in the southern Geraldton			

Sandplain.
(Hopkins et al. 2001,
Shepherd et al. 2001).

burdettiana, Eucalyptus
pyriformis, E. todiana.
Some pockets of York gum
woodland were observed
during the site visit as well
as melaleuca thickets
associated with damplands
and salt lakes (DAFWA,
2006).

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 to be cleared is described as Scrub Heath (Beard, 1976) with the taller conspicuous species being *Actinostrobos arenarius*, *Adenanthos stricta*, *Banksia prionotes*, *B. attenuate*, *B. burdettiana*, *Eucalyptus pyriformis* and *E. todiana*. Some pockets of York gum woodland were observed during the site visit as well as melaleuca thickets associated with damplands and salt lakes. (Site visit 8 May 2006)

The proposed clearing falls within the Geraldton Sandplains Bioregion, an area recognised for its biodiversity. Although the area under application consists of a number of different sized areas, they total approximately 457.3 ha of remnant vegetation that is in excellent condition (Keighery, 1994; Site visit, 8 May 2006) which represents a significant area of native vegetation in an extensively cleared landscape.

Given the vegetation under application retains a good structural density and is in excellent condition this proposal is at variance with this Principle.

Methodology Site visit (8 May 2006)
Keighery (1994)
Beard (1976)
GIS Databases:
- 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 may be at variance to this Principle**

The vegetation to be cleared is described as Scrub Heath (Beard, 1976) with the taller conspicuous species being *Actinostrobos arenarius*, *Adenanthos stricta*, *Banksia prionotes*, *B. attenuate*, *B. burdettiana*, *Eucalyptus pyriformis* and *E. todiana*. Some pockets of York gum woodland were observed during the site visit as well as melaleuca thickets associated with damplands and salt lakes. (Site visit 8 May 2006)

The area under application consists of a number of different sized areas, which totals approximately 457.3 ha of remnant vegetation that is in excellent condition (Keighery, 1994; Site visit, 8 May 2006). This represents a significant area of native vegetation in an extensively cleared landscape as well as providing stepping stones for fauna throughout the landscape.

The proposed clearing may impact on fauna through loss of habitat and disturbance, and from further fragmentation of remnant vegetation. Therefore the area under application may provide a significant habitat for indigenous fauna.

Methodology Site visit (8 May 2006)
Keighery (1994)
Beard (1976)
GIS Database:
- CALM Managed Lands & Waters - CALM 01/07/05
- Cadastre - DLI 09/06

(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 eight records of Declared Rare Flora (DRF) and 18 records of Priority Flora taxa occurring within 20 km of the area under application. In addition the vegetation under application is in excellent condition (Keighery, 1994), with the majority of the recorded populations occurring on the same soil type as that located within the area under application. It is therefore highly likely that the proposed clearing contains Declared Rare or Priority Flora species, and therefore the proposed clearing may be at variance with this Principle.

Methodology Keighery (1994).
GIS Databases:

- Declared Rare and Priority Flora list - CALM 01/07/05
- Clearing Regulations - Environmentally Sensitive Areas - DoE 30/05/05
- Pre-European Vegetation - DA 01/01
- Soils, Statewide - DA 11/99

(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

Five Threatened Ecological Communities (TECys) occur within 15 km of the area under application. The nearest is located approximately 10 km from the notified area. The vegetation and soil type of the area under application is not consistent with the vegetation and soil type from where the TECys are located. It is therefore not expected that this proposal will impact upon any of these known occurrences.

Therefore, it is unlikely that the proposed clearing is at variance with this Principle.

Methodology GIS Databases:
- 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 vegetation proposed to be cleared is part of Beard vegetation association 125, 142 and 697 (Hopkins et al. 2001). There is approximately 26.5% and 27.5% of Beard vegetation associations 142 and 697 remaining respectively (Shepherd et al. 2001). In addition the Shire of Three Springs, the Geraldton Sandplains Bioregion and the Avon Wheatbelt Bioregion all have less than 30% of native vegetation remaining within the intensive agricultural area.

The State Government is committed to the national Objectives Targets for Biodiversity Conservation 2001-2005 (AGPS 2001) which includes a target that prevents clearance of ecological communities with an extent below 30% of the present pre-1750 (Department of Natural Resources and Environment 2002; EPA 2000). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity.

In addition the area under application is located within the agricultural area as defined by EPA Position Statement No. 2. The EPA does not support any further reduction in native vegetation through clearing for agriculture within this area (EPA 2000).

The proposed clearing is therefore at variance to this principle.

	Pre-European Reserves/CALM- area (ha)*	Current extent (ha)*	Remaining %*	Conservation status**	managed land,
%					
IBRA Bioregion - Geraldton Sandplains ***					
Avon Wheatbelt ***	2,474,401	663,290	26.8	Vulnerable	
8,967,527					
924,828					
10.3					
Vulnerable					
Not available					
Shire - Camamah					
Three Springs	286,940				
258,882					
51,008					
19.7					
Vulnerable					
Not available					
Beard veg type - 125	3,491,833	3,287,864	94.2	Least concern	7.0
Beard veg type - 142	711,281	188,532	26.5	Vulnerable	4.0
Beard veg type - 697	172,424	47,345	27.5	Vulnerable	26.9

* (Shepherd et al. 2001)

** (Department of Natural Resources and Environment 2002)

*** Area within the Intensive Landuse Zone

Methodology Shepherd et al. 2001.
Hopkins et al. 2001.

Department of Natural Resources and Environment. 2002.

EPA. 2000.

GIS Databases:

- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Pre-European Vegetation - DA 01/01
- Local Government Authorities - DLI 08/07/04
- EPA Position Paper No 2 Agriculture Region - DEP 12/00

(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 at variance to this Principle

The area under application contains two minor non-perennial watercourses and five non-perennial lakes (Site visit 8 May 2006). The riparian vegetation surrounding these areas are well established, with the creeklines both containing a dense cover of Yorkgum woodland. Dense melaleuca thickets are associated with the damplands and salt lakes and provide a significant buffer to already cleared agricultural areas. In addition the proposed clearing lies adjacent to Yarra Yarra Lakes, which is a known wetland that is permanently inundated (DAFWA, 2006).

The proposed clearing is therefore at variance to this Principle.

Methodology DAFWA (2006)
Site visit (8 May 2006)
GIS Databases:
- Hydrography, linear - DoE 01/02/04
- Hydrographic Catchments - Catchments - DoE 23/03/05

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

Comments Proposal is seriously at variance to this Principle

The majority of the property comprises of yellow and pale sands with some gravel found on slopes and rises. The eastern edges of the property are located on alluvial plain and lake margin with some salt lakes and contain loamy duplexes with saline subsoils. A small pocket of heavier York gum loamy duplex appears on the property's north western paddock. (DAFWA, 2006)

DAFWA (2006) advises that the clearing of vegetation is likely to increase the risk of salinisation of lakes, soaks and damplands within the area under application. Some of the vegetation is located immediately upslope from salt scalds and clearing is also likely to increase the spread of salinisation associated with these scalds. The clearing of vegetation associated with one of the creek lines would not only increase water erosion risk but also contribute recharge to the salt scald it feeds into.

Clearing of vegetation associated with sandy soils is likely to increase the risk of wind erosion due to the sandy nature of the soils and dunal landforms located within (DAFWA, 2006). Wind erosion blowouts were noted on at least two sites associated with a similar dunal landform (Site visit, 2006).

DAFWA Advice (2006) concludes that the proposed clearing of 457.3 ha is likely to be at variance with principle (g) for wind erosion, water erosion and flooding and seriously at variance with principle (g) for salinity.

This proposal is therefore seriously at variance with this Principle.

Methodology DAFWA (2006).
Site visit (8 May 2006)
GIS Databases:
- Rainfall, Mean Annual - BOM 30/09/01
- Salinity Risk LM 25m - DOLA 00
- Acid Sulphate Soil risk map, SCP DOE 04/11/04
- Soils, Statewide - DA 11/99

(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 four Nature Reserves and one National Park within 25 km of the area under application with the closest being approximately 11.6 km. The western side of the property adjoins a large area of remnant vegetation as well as a parcel of Unallocated Crown Land. In addition the eastern side of the property is adjacent to Yarra Yarra Lakes which is vested for nature conservation.

The proposed clearing of 457.3 ha is a significant level of clearing within an extensively cleared agricultural

landscape. It is highly likely that the vegetation provides important habitat and wildlife corridors to adjacent native vegetation remnants and indirectly to conservation reserves in the local area.

Therefore the proposed clearing may be at variance with this Principle.

- Methodology** GIS Databases:
- CALM Regional Parks - CALM 12/04/02
 - WRC Estate - DoE 09/04
 - CALM Managed Lands & Waters - CALM 01/07/05
 - Proposed National Parks FMP-CALM 19/03/03
 - Register of National Estate - EA 28/01/03

(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 at variance to this Principle

DAFWA (2006) advises that a bore located southeast of the house, which is 50 m deep, went from sheep quality to very salty (too much for sheep) within a period of six months. Another bore located just west of the house provides excellent quality water for the home (12 grains) however is very low in quality. Another bore located northwest of the house is 45 m down and the water quality is only just suitable for sheep.

DAFWA (2006) have further advised that the clearing of vegetation is likely to increase the risk of salinisation of lakes, soaks and damplands. Some of the vegetation is located immediately upslope from salt scalds and clearing is also likely to increase the spread of salinisation associated with these scalds. The clearing of vegetation associated with one of the creek lines would not only increase water erosion risk but also contribute recharge to the salt scald it feeds into.

The removal of 457.3 ha of native vegetation will result in increased recharge to the groundwater systems and increase the risk of further salinity both on and off the site (DAFWA, 2006). Therefore the proposed clearing is at variance with this Principle.

- Methodology** Site visit (8 May 2006)
DAFWA (2006)
GIS Databases:
- Public Drinking Water Sources (PDWSAs) - DOE 09/08/05
 - Hydrographic Catchments - Catchments - DOE 23/03/05
 - Hydrography, linear - DoE 01/02/04
 - Rainfall, Mean Annual - BOM 30/09/01

(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 at variance to this Principle

The majority of the property comprises of yellow and pale sands with some gravel found on slopes and rises. However the eastern edges of the property are located on alluvial plain and lake margin where the soils are loamy duplexes with saline subsoils. (DAFWA, 2006)

DAFWA Advice (2006) states that 'the removal of vegetation associated with the eastern corner of the property is likely to increase the risk of flooding as the vegetation borders the Yarra Yarra Lakes, which periodically are inundated with floodwaters from as far away as Kalannie.'

This proposal is therefore at variance with this Principle.

- Methodology** DAFWA (2006).
GIS Databases:
- Rainfall, Mean Annual - BOM 30/09/01
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The Shire of Carnamah has advised that Council does not have any objection or comment regarding the application.

There is no further requirement for a RIWI Act Licence, Works Approval or EP Act Licence for the area under application.

The area under application is freehold land and therefore Native Title has been extinguished.

- Methodology** Shire of Carnamah submission

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Grazing & Pasture	Burning	67.83	<p>The principles have been assessed and the clearing as proposed is seriously at variance to Principle (g), is at variance to Principles (a), (e), (f), (i) and (j), and may be at variance to Principles (b), (c) and (h).</p> <ul style="list-style-type: none"> - Principle (a): The proposal consists of large areas of remnant vegetation in excellent condition. - Principle (b): The area under application consists of a number of different sized areas, which totals approximately 457.3 ha of remnant vegetation that is in excellent condition. The proposed clearing may impact on fauna through loss of habitat and disturbance, and from further fragmentation of remnant vegetation. - Principle (c): There are eight records of Declared Rare Flora (DRF) and 18 records of Priority Flora taxa occurring within 20 km of the area under application. In the absence of further information to determine whether the vegetation to be cleared contains Declared Rare or Priority Flora species, the proposed clearing may be at variance with this Principle. - Principle (e): The vegetation proposed to be cleared is part of Beard vegetation association 125, 142 and 697 (Hopkins et al. 2001). There is approximately 26.5% and 27.5% of Beard vegetation associations 142 and 697 remaining respectively (Shepherd et al. 2001). In addition the Shire of Three Springs, the Geraldton Sandplains Bioregion and the Avon Wheatbelt Bioregion all have less than 30% of native vegetation remaining within the intensive agricultural area. The National Objectives Targets for Biodiversity Conservation 2001-2005 includes a target that prevents clearance of ecological communities with an extent below 30% of the present pre-1750 (Department of Natural Resources and Environment 2002; EPA 2000). - Principle (f): The area under application contains two minor non-perennial watercourses and five non-perennial lakes. The removal of native vegetation from within these riparian zones will have significant impacts on the watercourses and surrounding lands, with cleared areas already showing signs of degradation. - Principle (g): The proposed clearing has the potential to cause appreciable on and off site land degradation in the form of salinity, wind erosion, water erosion and flooding. - Principle (h): The proposed clearing of 457.3 ha is a significant level of clearing within an extensively cleared agricultural landscape. It is highly likely that the vegetation provides important habitat and wildlife corridors to adjacent native vegetation remnants and indirectly to conservation reserves in the local area. - Principle (i): The removal of 457.3 ha of native vegetation will result in increased recharge to the groundwater systems and increase the risk of further salinity both on and off the site. - Principle (j): The removal of vegetation associated with the eastern corner of the property is likely to increase the risk of flooding as the vegetation borders the Yarra Yarra Lakes.

The assessing officer therefore recommends that the application for a permit be refused.

As a refusal of the proposed clearing has been recommended, the DEC have not requested flora and fauna surveys from the applicant in relation to clearing principles (b) and (c). Therefore if the recommendation to refuse is not upheld the DEC may require the applicant to undertake flora and fauna surveys prior to final recommendation.

Grazing & Pasture	Burning	2.2
Grazing & Pasture	Burning	2.19
Grazing & Pasture	Burning	30.95
Grazing & Pasture	Burning	53.92
Grazing & Pasture	Burning	2.01
Grazing & Pasture	Burning	0.79
Grazing & Pasture	Burning	10.02
Grazing & Pasture	Burning	6.14
Grazing & Pasture	Burning	8.27
Grazing & Pasture	Burning	1.86
Grazing & Pasture	Burning	0.49
Grazing & Pasture	Burning	1.6
Grazing & Pasture	Burning	9.21
Grazing & Pasture	Burning	2.83
Grazing & Pasture	Burning	0.28
Grazing & Pasture	Burning	42.56
Grazing & Pasture	Burning	8.23

Pasture		
Grazing & Pasture	Burning	81.98
Grazing & Pasture	Burning	19.5
Grazing & Pasture	Burning	-2.46
Grazing & Pasture	Burning	58.91
Grazing & Pasture	Burning	43.09

5. References

- Beard J.S. (1976) The Vegetation of the Dongara Area Western Australia. Vegmap Publications Perth.
- DAFWA (2006) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM Ref HP2966.
- 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.
- 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.
- 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 Report (2006) Department of Environment and Conservation (DEC), Western Australia. DEC TRIM Ref DOC8856.

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)

