



1. Application details

1.1. Permit application details

Permit application No.: 2822/1
 Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Mr & Mrs Barton & Denella Hulls

1.3. Property details

Property: LOT 19854 ON PLAN 225357 (House No. 3069 NUNGARIN-WYALKATCHEM SOUTH TRAYNING 6488)
 LOT 11 ON PLAN 41115 (SOUTH TRAYNING 6488)
 Local Government Area: Shire Of Trayning
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
6		Mechanical Removal	Drainage

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>The vegetation within the area under application is mapped as Beard (1980) associations:</p> <ul style="list-style-type: none"> - 1049, described as medium woodland, Eucalyptus wandoo (Wandoo), Eucalyptus loxophleba (York Gum), Eucalyptus salmonophloia (Salmon Gum), Eucalyptus species (Morrel) and Eucalyptus salubris (Gimlet); and - 1413, described as shrublands, Acacia species, Allocasuarina species and Melaleuca thicket. 	<p>A site inspection undertaken by DEC staff identified that the vegetation under application comprises predominantly revegetation of Atriplex sp. (Saltbush) and other salt-tolerant species (and occasional trees), plus scattered self-recruited indigenous species. The revegetation is in good condition considering the altered conditions (Keighery scale, 1994).</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)</p>	

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 may be at variance to this Principle**

This proposal is to clear up to 6 hectares of native vegetation to construct a deep drain and undertake creekline restoration to improve surface water conveyance as part of a larger drainage project (CPS 2823/1 and 2824/1).

There are four records of priority flora within 5 kilometres of the area under application. All occur within red loamy soil and are associated with saline flats. There is a possibility that these species may occur within the area under application. DEC advice (2008) indicates that there are a number of priority flora within 10 kilometres of the area under application, however all are located higher in the landscape and are unlikely to be impacted by the proposal.

A site inspection undertaken by DEC staff identified that the vegetation under application comprises predominantly revegetation of Atriplex sp. (Saltbush) and other salt-tolerant species, plus scattered self-recruited indigenous species, within two natural watercourses. A portion of the area under application will impact on revegetated indigenous tree species.

Vegetation along watercourses has an important function as an ecological linkage in landscapes that have been extensively cleared. Aerial photography indicates that the landscape appears to be extensively cleared. It is possible that the area under application represents a high level of biological diversity in this context.

The edges of the deep drain and re-shaped watercourse will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site on an adjoining property where the deep drain intersects Lee Road (refer CPS 2823/1). It is expected that in the medium to long term both revegetation and naturally regenerated vegetation will improve biodiversity values in the area. An offset condition imposed on the permit will ensure that revegetation occurs.

Methodology DEC 2008
DEC 2009
GIS datasets:
- Trayning 50cm Orthomosaic - Landgate 2004
SAC biodatasets:
- WAHERB - DEC 2008
- DEFL - DEC 2008

(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

A site inspection undertaken by DEC staff identified that the vegetation under application comprises predominantly revegetation of *Atriplex* sp. (Saltbush) and other salt-tolerant species, plus scattered self-recruited indigenous species, within two natural watercourses.

Vegetation along watercourses has an important function as an ecological linkage in landscapes that have been extensively cleared. Aerial photography indicates that the landscape appears to be extensively cleared. It is likely that indigenous fauna utilise the vegetation within the area under application to move through the landscape.

There are no records of threatened or priority fauna within 5 kilometres of the area under application. DEC advice (2008) indicates that there are a number of threatened and priority fauna within 10 kilometres of the area under application, however all are located higher in the landscape and are unlikely to be impacted by the proposal.

The edges of the deep drain and re-shaped watercourse will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site on an adjoining property where the deep drain intersects Lee Road (refer CPS 2823/1). It is expected that in the medium to long term both revegetation and naturally regenerated vegetation will provide wildlife habitat. An offset condition imposed on the permit will ensure that revegetation occurs.

Methodology DEC 2008
DEC 2009
GIS datasets:
- Trayning 50cm Orthomosaic - Landgate 2004
SAC biodatasets:
- Fauna - DEC 2007

(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 are no records of rare flora within 5 kilometres of the area under application. Given that the area under application is affected by secondary salinity, it is unlikely that rare flora will be found within it.

Methodology SAC biodatasets:
- WAHERB - DEC 2008
- DEFL - DEC 2008

(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 records of threatened or priority ecological communities within 5 kilometres of the area under application. Given that the vegetation under application occurs within a drainage line affected by secondary salinity, it is unlikely that a TEC or PEC will be present.

Methodology SAC biodatasets:
- TEC PEC boundaries - DEC 2008

(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 area under application falls within the Avon Wheatbelt bioregion which has approximately 15.17% of its pre-European extent of vegetation coverage remaining.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Pre-European % in reserves/DEC managed lands **
BIOREGION				
Avon Wheatbelt (AW)				
- overall *	9 517 109	1 443 690	15.17	2.04
- in agricultural zone #		924 828	10.3	n/a
LOCAL GOVERNMENT AUTHORITY				
Shire of Trayning				
- overall *	165 120	13 729	8.31	0.59
- in agricultural zone #		13 811	8.4	n/a
VEGETATION ASSOCIATIONS				
Beard association: 1049*				
- in AW bioregion	833 304	30 023	3.60	0.42
- in Shire of Trayning	79 908	3 118	3.90	0.26
Beard association: 1413*				
- in AW bioregion	546 675	135 264	24.74	2.16
- in Shire of Trayning	27 785	2 235	8.04	0.95

REFERENCES

statistics from AGWA Technical Report 249 (Shepherd et al, February 2002)
 * statistics from DEC/DAFWA (Shepherd et al, May 2007)

Both of the mapped Beard (1980) vegetation associations within the area under application have less than 30% of their pre-European extent remaining within the Avon Wheatbelt bioregion and are therefore considered by the EPA (2000) to be below threshold levels for species loss. EPA Position Statement No.9 states that vegetation complexes with less than 30% of their pre-clearing extent remaining within the bioregion are considered to be critical assets.

In addition, one has less than 10% of its pre-European extent remaining within the Avon Wheatbelt bioregion and is regarded by the EPA as being endangered. Within the local government area, one has less than 10% and one has less than 5% of their pre-European extents remaining.

Regarding significance of the vegetation in a local context, vegetation along watercourses has an important function as an ecological linkage in landscapes that have been extensively cleared. The proposal will impact on vegetation providing a corridor for wildlife movement through an agricultural landscape.

A site inspection undertaken by DEC staff identified that the vegetation under application comprises predominantly revegetation of *Atriplex* sp. (Saltbush) and other salt tolerant species, plus scattered self-recruited indigenous species, within two natural watercourses. While comprising mainly revegetation that is not wholly consistent with the mapped vegetation associations, it is considered that the vegetation under application is important as a corridor and therefore significant as a remnant in an extensively cleared landscape.

The edges of the deep drain and re-shaped watercourse will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site on an adjoining property where the deep drain intersects Lee Road (refer CPS 2823/1). An offset condition imposed on the permit will ensure that revegetation occurs.

(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 occurs within two watercourses. Clearing will impact on vegetation growing in association with this watercourse.

The edges of the deep drain and re-shaped watercourse will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site on an adjoining property where the deep drain intersects Lee Road (refer CPS 2823/1). An offset condition imposed on the permit will ensure that revegetation occurs.

Methodology GIS datasets:

- Hydrography, linear (medium scale, 250k GA) - WRC 1999
- Hydrography, linear (course scale, 1M GA) - WRC 1999

(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 area under application is mapped as type Va66, described as gently undulating to rolling terrain with some ridges and uneven slopes; and with the variable presence of lateritic mesas and buttes and granitic tors and bosses: chief soils are hard alkaline yellow mottled soils and hard alkaline red soils, either of which may be dominant locally. Associated are a variety of soils. Acid lateritic strata are common below 4-5 ft. As mapped, lateritic mesas and buttes are a constant feature, as are small granitic bosses and tors and minor valleys.

Salinity mapping and salinity risk datasets indicate that the valley floor is saline and at risk of spreading.

The construction of a deep drain may disturb sulphides at depth, possibly resulting in increased acidity of water downstream.

Advice from the Commissioner for Soil and Land Conservation (DAFWA) indicates that the clearing for the larger drainage project:

- will possibly contribute to a rise in the groundwater table, and on and off site salinity, due to the increased flow of water into the braided drainage line and salt lake chain; and
- may increase the likelihood of increased overland water flow and therefore impact significantly on water erosion risk and infrastructure damage downstream of the proposed works.

To address the risk of salinity and increased water flows, the edges of the deep drain and re-shaped watercourse will be allowed to naturally regenerate once the proposed clearing is completed, and the applicant advises that revegetation will be established within a fenced site on an adjoining property where the deep drain intersects Lee Road (refer CPS 2823/1). It is expected that in the medium to long term both revegetation and naturally regenerated vegetation will stabilise the drain and watercourse, and assist in stripping nutrients and utilising recharge. An offset condition imposed on the permit will ensure that revegetation occurs.

Methodology DAFWA 2008

GIS datasets:

- Soils, Statewide - AGWA 1999GIS Dataset
- Salinity Mapping LM (25m) (DOLA 00)
- Salinity Risk LM (25m) (DOLA 00)

(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

Walconcobbing Nature Reserve occurs approximately approximately 12 kilometres southeast of the area under application. It is unlikely that the proposed clearing of 6 hectares of native vegetation will impact on this reserve.

DEC advice (2008) indicates that a Land for Wildlife property occurs approximately 10 kilometres southeast of the area under application. It is unlikely that the proposed clearing of 6 hectares of native vegetation will impact on this property.

While the clearing for this proposal is unlikely to have an impact on the reserve, the overall proposed drainage project that this proposal is a part of will discharge approximately 3 kilometres from the Land for Wildlife

property and approximately 5 kilometres from the reserve and may therefore have downstream impacts on these conservation areas.

The proposed clearing is to facilitate the construction of a deep drain and enable creekline restoration to improve surface water conveyance as part of a larger drainage project. The extent of clearing is expected to be relatively small in comparison to the larger drainage project, and is situated at the starting point of the drain. On this basis it is not expected that significant long-term downstream impacts to conservation areas will result.

Methodology DEC 2008
GIS database
- Trayning 50cm Orthomosaic - Landgate 2004
- Topographic Contours, Statewide - DOLA 2002
- CALM Managed Lands and Waters - CALM 2005
- Register of National Estate - EA 2003
- Clearing Regulations - Environmentally Sensitive Areas - DOE 2005
- Pre-European Vegetation - DA 2001

(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 occurs within the valley floor, at an elevation of 280 metres above sea level. Surrounding land is at the same or greater elevation. The proposed clearing may result in sedimentation downstream and possibly erosion during the first rainfall event following clearing, although it is expected that drainage construction will have occurred by this time and therefore the potential for sedimentation and erosion impacts will be contained within the drain.

It is possible that the proposed clearing of 6 hectares of native vegetation within a watercourse will cause deterioration in the quality of surface or underground water.

Although not directly related to the clearing, the proposed drain construction may disturb sulphides in the soil profile, which may result in saline acid sulphate soils that could have impacts downstream at and beyond the discharge point of the drain.

DEC advice (2008) in relation to an invitation to comment on an 'Notice of Intent to Drain' for the whole project (not just this portion) expresses concern about one of the saline wetlands into which the proposed drains will discharge, and comments that it is not suitable owing to its limited capacity and connectedness to other wetlands in the system. On this basis the overall proposal is highly likely to result in degradation to water quality downstream.

To address the risk of water quality deterioration, the edges of the deep drain and re-shaped watercourse will be allowed to naturally regenerate once the proposed clearing is completed, and the applicant advises that revegetation will be established within a fenced site on an adjoining property where the deep drain intersects Lee Road (refer CPS 2823/1). It is expected that in the medium to long term both revegetation and naturally regenerated vegetation will stabilise the drain and watercourse, and assist in stripping nutrients and utilising recharge. An offset condition imposed on the permit will ensure that revegetation occurs.

Methodology DEC 2008
GIS datasets:
- Salinity Mapping LM 25m - DOLA 2000
- Salinity Risk LM 25m - DOLA 2000
- Topographic Contours, Statewide - DOLA 2002

(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 approximately 400mm of rainfall per year, and has an evapotranspiration rate of approximately 400mm per year. The landform of the area under application is of low gradient and located within the valley floor.

It is unlikely that the proposed clearing of 6 hectares of native vegetation within a watercourse would result in increased flooding.

Although not directly related to the clearing, the proposed drain construction may result in increased water volumes at the discharge point.

Methodology GIS datasets:
- Rainfall, Mean Annual - BOM 30/09/01
- Evapotranspiration, Areal Actual - BOM 30/09/01

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

Comments

The area under application falls within the EPA's Position Statement No.2 agricultural area. There is a general presumption against clearing within the agricultural area for agricultural purposes.

Although not relevant for the purpose of assessing the proposed clearing, the following points should be considered regarding the construction of the proposed drainage:

- most indigenous mammals would not be capable of crossing a deep drainage channel, especially when the channel holds water;
- construction of the drain construction may disturb sulphides in the soil profile, which may result in saline acid sulphate soils that could have impacts downstream at and beyond the discharge point of the drain; and
- any impacts to vegetation at or beyond the discharge point of the drain as a result of the drain construction and operation (whether immediate or long-term) will constitute clearing.

Water quality will require regular monitoring in the long-term to ensure that there are no significant impacts on the environment.

The proponent advises that a 'Notice of Intent to Drain' for the whole proposal was sent to the Department of Agriculture and Food (WA) and has received 'no objection' from the Commissioner for Soil and Land Conservation.

The applicant advises that a permit to 'Obstruct or Interfere' with a watercourse under the Rights in Water and Irrigation Act 1914 has been issued, however a copy of this has not been provided with the application.

Methodology

- EPA Position Statement No.2
- GIS dataset
- Aboriginal Sites of Significance - DIA
- Native Title Claims - DLI

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 with principles (e) and (f), may be at variance with principles (a), (b), (g), (h) and (i) and is not likely to be at variance with principles (c), (d) and (j).

5. References

- AGPS (2001) The national objective and targets for biodiversity conservation 2001-2005. Commonwealth of Australia, Canberra.
- DAFWA (2008) Commissioner for Soil and Land Conservation advice on land degradation.
- DEC (2008) Yilgarn District office advice provided in October 2008 in relation to a 'Notice of Intent to Drain' received for comment.
- DEC (2009) Native Vegetation Conservation Branch report of a site inspection undertaken on 15 January 2009 (unpublished).
- 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.
- Schoknecht N. (2002) Soil Groups of Western Australia. A simple guide to the main soils of Western Australia. Resource Management Technical Report 246. Edition 3
- 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
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)