Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2823/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Mr Owen Gent Crestwell Downs Pty Ltd**

1.3. Property details

Property:
LOT 23238 ON PLAN 225357 (SOUTH TRAYNING 6488)
LOT 11861 ON PLAN 225357 (House No. 2875 NUNGARIN-WYALKATCHEM SOUTH TRAYNING 6488)
LOT 11898 ON PLAN 225385 (Lot No. 11898 GENTS SOUTH TRAYNING 6488)
LOT 11860 ON PLAN 225357 (SOUTH TRAYNING 6488)
LOT 11857 ON PLAN 225357 (SOUTH TRAYNING 6488)
LOT 601 ON PLAN 302225 (SOUTH TRAYNING 6488)
LOT 603 ON PLAN 302225 (SOUTH TRAYNING 6488)
LOT 11856 ON PLAN 225357 (SOUTH TRAYNING 6488)
LOT 19608 ON PLAN 225357 (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:
16		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
The vegetation within the area under application is mapped as Beard (1980) associations: - 1049, described as medium woodland, Eucalyptus wandoo (Wandoo), Eucalyptus loxophleba (York Gum), Eucalyptus salmonophloia (Salmon Gum), Eucalyptus species (Morrel) and Eucalyptus salubris (Gimlet); - 1053, described as shrublands, Melaleuca uncinata (Broombush) thicket with scattered Eucalyptus loxophleba (York Gum); and - 1413, described as shrublands, Acacia species, Allocasuarina species and Melaleuca thicket.	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).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (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 may be at variance to this Principle

This proposal is to clear up to 16 hectares of native vegetation to remove silt build-up and re-sculpt an existing deep drain, construct three broad silt-traps at the location of existing farm crossings, construct a broad shallow surface water conveyance to assist evaporation, and install piping to channel drain water into playa lakes and undertake creekline restoration to improve surface water conveyance as part of a larger drainage project (CPS 2822/1 and 2924/1).

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, along an existing deep drain and within a natural watercourse. Native fauna were observed utilising the vegetation.

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 will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site adjacent the deep drain where it intersects Lee Road, 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, along an existing deep drain and within a natural watercourse. Native fauna were observed utilising the vegetation.

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 is one species of threatened fauna (Shield Backed-Trapdoor Spider) that has been recorded within 2 kilometres of the area under application, and a second species (Western Spiny Tailed Skink) within 7 kilometres. 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 will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site adjacent the deep drain where it intersects Lee Road, 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
- TEC PEC sites - 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: 1053*				
- in AW bioregion	13 823	2 211	16.0	7.06
- in Shire of Trayning	435	32	7.47	0.00
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)

All 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, two have 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, along an existing deep drain and within a natural watercourse. 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 will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site adjacent the deep drain where it intersects Lee Road. An offset condition imposed on the permit will ensure that revegetation occurs.

Methodology DEC 2009
EPA Position Statement No.9
GIS datasets:
- Pre-European Vegetation - AGWA 2001

(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 along an existing deep drain and within a natural watercourse. Clearing will impact on vegetation growing in association with this watercourse.

The edges of the deep drain will be allowed to naturally regenerate once the proposed clearing is completed. The applicant advises that revegetation will be established within a fenced site adjacent the deep drain where it intersects Lee Road. 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 types:
- 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;
- SI28, described as broad flat valleys with small clay pans and salt-lake remnants in some localities: chief soils are hard alkaline yellow soils underlain by acid lateritic clays below depths of from 2 to 4 feet. Associated are small areas of soils in sandy localities; soils in areas where some low gilgai microrelief is present; some other soils, especially in western valleys; and other soils on lunettes and dunes some of which are gypseous; and
- SV1, described as saline valleys and salt lakes - salt-lake channels, mostly devoid of true soils, and their fringing areas; few freshwater lakes: common soils are gypseous and saline loams on riverine wash and usually underlain by clayey or sandy strata by about 12 inches. Associated are various resalinized soils on fringe areas, and dunes and lunettes of various sandy, silty, and clayey soils of slight profile development. Deposits of common salt, gypsum, lime, and alunite occur as do remnants of the old lateritic profile and occasionally outcrops of country rock.

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

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.

The proposed clearing is predominantly to faciliate the removal of silt build-up and re-scultpting of an existing deep drain, as well as to enable the construction of three broad silt-traps and a broad shallow surface water conveyance and to faciliate the installation of piping to channel drain water into playa lakes. Given that most of the clearing proposed will occur within an existing deep drain, it is not expected that significant long-term land degradation impacts will result.

To address the risk of salinity and increased water flows, the edges of the deep drain 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 adjacent the deep drain where it intersects Lee Road, 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

Walcancobbing Nature Reserve occurs approximately approximately 5 kilometres southeast of the area under application. It is possible that the proposed clearing of 16 hectares of native vegetation will impact on this reserve.

DEC advice (2008) indicates that a Land for Wildlife property occurs approximately 3 kilometres southeast of the area under application. It is possible that the proposed clearing of 16 hectares of native vegetation will impact on this property.

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 predominantly to faciliate the removal of silt build-up and re-scultpting of an existing deep drain, as well as to enable the construction of three broad silt-traps and a broad shallow surface water conveyance and to faciliate the installation of piping to channel drain water into playa lakes. Given that most of the clearing proposed will occur within an existing deep drain, it is not expected that significant long-term downstream impacts to conservation areas will result.

Methodology DEC 2008
DEC 2009
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 270-280 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 16 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 likely to result in degradation to water quality downstream.

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 in the valley floor.

It is unlikely that the proposed clearing of 16 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
- Topographic Contours, Statewide - DOLA 12/09/02

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.

DEC advice (2008) in relation to an invitation to comment on an 'Notice of Intent to Drain' 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.

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.

A copy of a permit to 'Obstruct or Interfere' with a watercourse under the Rights in Water and Irrigation Act 1914 has been provided for Lot 11861 on Plan 225357 and Lot 11898 on Plan 225385.

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 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.

Riasat, A, Hatton, T, George, R, Byrne, J and G Hodgson. 2004. Evaluation of the impacts of open deep drains in the Narembeen area, wheatbelt of Western Australia, Australian Journal of Agricultural Research 55:1159-1171

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)