



1. Application details

1.1. Permit application details

Permit application No.: 1759/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Shire of Dumbleyung

1.3. Property details

Property:

- LOT 8458 ON PLAN 133424 (NORTH MOULYINNING 6351)
- LOT 8459 ON PLAN 133425 (NORTH MOULYINNING 6351)
- LOT 10919 ON PLAN 228618 (NORTH MOULYINNING 6351)
- LOT 11994 ON PLAN 228618 (NORTH MOULYINNING 6351)
- LOT 10918 ON PLAN 228618 (NORTH MOULYINNING 6351)
- LOT 13974 ON PLAN 205638 (House No. 8483 RABBIT PROOF FENCE NORTH MOULYINNING 6351)
- LOT 10904 ON PLAN 228620 (NORTH KUKERIN 6352)
- LOT 10905 ON PLAN 228620 (House No. 797 SPRINGHURST NORTH KUKERIN 6352)
- LOT 10906 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 11887 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10832 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10911 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10914 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10913 ON PLAN 228620 (House No. 8747 RABBIT PROOF FENCE NORTH MOULYINNING 6351)
- LOT 14017 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 11900 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10994 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10833 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 10912 ON PLAN 228620 (NORTH MOULYINNING 6351)
- LOT 8008 ON PLAN 130755 (NORTH MOULYINNING 6351)
- LOT 8835 ON PLAN 137657 (NORTH MOULYINNING 6351)
- LOT 8445 ON PLAN 131580 (NORTH MOULYINNING 6351)
- LOT 8444 ON PLAN 133138 (NORTH MOULYINNING 6351)
- LOT 8006 ON PLAN 131369 (NORTH MOULYINNING 6351)
- LOT 8005 ON PLAN 131368 (NORTH MOULYINNING 6351)
- LOT 8004 ON PLAN 130753 (NORTH MOULYINNING 6351)
- PART LOT 8744 ON PLAN 133143 (NORTH MOULYINNING 6351)
- LOT 8503 ON PLAN 133136 (NORTH MOULYINNING 6351)
- LOT 8504 ON PLAN 133137 (NORTH MOULYINNING 6351)
- LOT 9652 ON PLAN 137600 (House No. 2745 DUMBLEYUNG-LAKE GRACE NORTH MOULYINNING 6351)
- LOT 12164 ON PLAN 145134 (NORTH MOULYINNING 6351)
- LOT 9651 ON PLAN 137599 (NORTH MOULYINNING 6351)
- LOT 7986 ON PLAN 130648 (NORTH MOULYINNING 6351)
- LOT 8945 ON PLAN 137093 (NORTH MOULYINNING 6351)
- LOT 8728 ON PLAN 133142 (NORTH MOULYINNING 6351)
- LOT 7994 ON PLAN 133134 (NORTH MOULYINNING 6351)
- LOT 7995 ON PLAN 131367 (NORTH MOULYINNING 6351)
- LOT 7987 ON PLAN 131365 (NORTH MOULYINNING 6351)
- LOT 7988 ON PLAN 131366 (NORTH MOULYINNING 6351)
- LOT 16 ON PLAN 19739 (NORTH MOULYINNING 6351)
- LOT 10431 ON PLAN 233437 (NORTH MOULYINNING 6351)
- LOT 7093 ON PLAN 125676 (NORTH MOULYINNING 6351)
- LOT 8235 ON PLAN 132345 (NORTH MOULYINNING 6351)

LOT 8234 ON PLAN 132344 (NORTH MOULYINNING 6351)
 LOT 7091 ON PLAN 125669 (NORTH MOULYINNING 6351)
 LOT 8738 ON PLAN 132342 (NORTH MOULYINNING 6351)
 LOT 9883 ON PLAN 138227 (NORTH MOULYINNING 6351)
 LOT 10305 ON PLAN 83797 (NORTH MOULYINNING 6351)
 LOT 15 ON PLAN 19739 (House No. 1983 ONE FOURTEEN NORTH MOULYINNING 6351)
 LOT 10051 ON PLAN 145030 (NORTH MOULYINNING 6351)
 LOT 12413 ON PLAN 146054 (NORTH MOULYINNING 6351)
 LOT 14430 ON PLAN 151646 (NORTH MOULYINNING 6351)
 LOT 13125 ON PLAN 147932 (NORTH MOULYINNING 6351)
 LOT 11276 ON PLAN 85174 (NORTH MOULYINNING 6351)
 LOT 10585 ON PLAN 83943 (House No. 8508 RABBIT PROOF FENCE NORTH MOULYINNING 6351)

Local Government Area:

Shire Of Dumbleyung

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
10		Mechanical Removal	Drainage
		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
There is 1 Beard vegetation association represented within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application (type 1023), comprising medium woodland; York Gum (<i>Eucalyptus loxophleba</i>), Wandoo (<i>Eucalyptus wandoo</i>) and Salmon Gum (<i>Eucalyptus salmonophloia</i>). This vegetation association has been extensively cleared and is under-represented in the conservation estate.	A site inspection undertaken by DEC staff on 2 May 2007 visited four culvert sites along Treloars Road and Moulyinning Road, and found that a second widespread vegetation type occurs within the valley floor (although not consistent with the Beard vegetation association for the areas under application), comprising mixed samphires and other salt-affected watercourse tolerant species.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	No supporting information regarding the composition, structure and condition of the vegetation within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application has been provided by the applicant. These areas are located on private property and were not visited during a site inspection undertaken by DEC staff on 2 May 2007 as necessary access permissions had not been sought from the relevant landowners. The condition of the vegetation within the areas under application has been surmised from aerial photography compared with photographs of vegetation within nearby reserves provided in a report titled 'Fence Road Arterial Drain Environmental Impact Assessment' prepared by the Department of Water in June 2006 for the Dumbleyung Water Management Strategy Steering Group.

A further 2 Beard vegetation associations (types 1093 and 1094) occur within the drainage channel, although these have been previously cleared within the areas nominated for the purpose of this proposal.

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 proposed clearing involves the removal of up to 10 hectares of native vegetation along a drainage channel (to a width of 20 metres either side of the drainage channel's centreline) to facilitate the re-profiling of the existing drainage channel to improve the movement of surface and ground water through the valley floor, and includes the establishment of a monitoring (gauging) station along an existing track within Crown Reserve 9447 (Shire of Dumbleyung) approximately 250 metres from the drainage discharge area. Four areas of remnant vegetation on private property will be directly impacted by this activity, which are referred to in this report and in supporting information as Area 1-2, Area 3-4, Area 5-6 and Area 7-8. In addition, valley floor vegetation (samphires and similar species) on private property adjacent Treloars Road will also be impacted by the proposal, and a portion of Crown Reserve 9447 will be impacted for the establishment of a monitoring station.

There are 3 Beard vegetation associations represented within the areas under application. Beard type 1023

occurs within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application. A further 2 Beard vegetation associations (types 1093 and 1094) occur within the drainage channel, although these have been previously cleared within the areas nominated for the purpose of this proposal. A site inspection undertaken by DEC staff on 2 May 2007 found mixed samphires and other salt-affected watercourse tolerant species to be widespread in the valley floor, although not consistent with the specific Beard vegetation associations found within the areas under application. In 2001 the Shire of Dumbleyung had approximately 9.5% of its original vegetation extent remaining (DAWA 2001).

Aerial photography indicates that Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application appear to be significant remnants in an extensively-cleared and highly-fragmented landscape, with linkages to other areas of remnant vegetation by way of vegetation along road reserves. The composition, structure and condition of the vegetation within these areas is not known, however aerial photography indicates that these areas appear to have similar density as that found within nearby reserves, thus it is likely that the biological diversity of these remnants is significant in a local context.

Given that the areas under application are located in the valley floor, the vegetation within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 are already subject to (or at threat of) waterlogging and secondary salinity, and in the long-term may degrade and lose their current biological diversity in the absence of remedial drainage. Thus, in the long term the proposed clearing is unlikely to have a net detrimental impact on biological diversity, and for this reason this proposal is not likely to be at variance to this principle.

Methodology Shire of Dumbleyung 2007
DAWA 2001
Beard 1980
DEC site visit 2 May 2007
GIS dataset
- Pre-European Vegetation DA 2001
- Interim Biogeographic Regionalisation of Australia 2000
- Salinity Mapping LM (25m) DOLA 2000
- Salinity Risk LM (25m) DOLA 2000
- Dumbleyung Kokerin 1.4m Orthomosaic DLI 2002

(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

No supporting information regarding the composition, structure and condition of the vegetation within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application has been provided by the applicant. The vegetation within these areas is presumed to be of good condition, within an extensively-cleared and highly-fragmented landscape and with linkages to other areas of remnant vegetation by way of road reserves.

There are over 150 recorded occurrences of Threatened and Priority fauna within a 50 kilometre radius of the area under application, approximately half being Threatened species. The nearest recorded occurrences of these are described below.

Red-tailed Phascogale (*Phascogale calura*, Threatened) has been recorded at 2 sites approximately 2.6km and 2.9km from Area 5-6 since 2004. DEC's Species and Communities Branch advises that this arboreal marsupial seems to prefer dense woodland or tall shrubland with a continuous canopy and is most often associated with dense stands of *Allocasuarina huegeliana* (Rock Sheoak) and *Eucalyptus wandoo* (Wandoo). It is possible that this species would utilise Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 as habitat where continuous canopy occurs.

White-browed Babbler (*Pomatostomus superciliosus ashbyi*, Priority 4) has been recorded approximately 6.9km from Area 7-8. DEC's Species and Communities Branch advises that this bird lives in Eucalypt forests and woodlands, and forages on or near the ground for insects and seeds. It is possible that this species would utilise Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 as habitat.

In the absence of supporting information regarding the composition, structure and condition of the vegetation within Area 1-2, Area 3-4, Area 5-6 and Area 7-8 of the areas under application, but considering the broad Beard vegetation associations present within the areas under application and considering species present within photographs provided in a report "Fence Road Arterial Drain Environmental Impact Assessment" prepared by the Department of Water in June 2006, it is possible that habitat exists within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application for Threatened and Priority species not previously recorded within close proximity to the areas under application, including Carnaby's Black-Cockatoo (*Calyptrorhynchus latirostris*) and Malleefowl (*Leipoa ocellata*).

Non-threatened but locally-significant species may use the vegetation in the area under application as habitat in this extensively-cleared and highly-fragmented landscape. It is possible that the areas proposed to be cleared represent the sole habitat of many fauna.

Given the above points, this proposal may be at variance to this principle.

To mitigate any potential impacts of the proposal on significant habitat for indigenous fauna, a condition has been imposed on the permit to undertake a fauna assessment prior to undertaking clearing, in order to identify and avoid any significant habitats within or immediately adjacent the areas under application.

Methodology Department of Water report 2006
DEC's Species and Communities Branch
Shire of Dumbleyung 2007
SAC Bio dataset
- Fauna 29/03/07

(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 over 150 recorded occurrences of Declared Rare and Priority Flora within a 50 kilometre radius of the areas under application, approximately a third of these comprising Declared Rare Flora. Many of these records occur within the same vegetation associations and on similar soil / geomorphology types as those found within the areas under application.

The nearest occurrence of Declared Rare Flora is *Conostylis seorsiflora* subsp. *trichophylla* (Hairy Mat *Conostylis*) located approximately 430m from Area 7-8. This species occurs in sandy loam and grey/white sand. This record's coordinates suggest the location to be in an adjacent paddock, however information provided with the record indicates that this species is located in an area of open Eucalypt woodland which indicates either the bushland immediately adjacent the area under application (Area 7-8) or an area of remnant vegetation located approximately 1 kilometre east of the area under application. Both of these areas of bushland occur within the same broad soil group and both contain the same broad vegetation association (Beard type 1023), thus both may contain habitat suitable for this species. An additional two occurrences of this species have been recorded 5.2 and 6.3 kilometres west of Area 7-8.

A record of Priority flora *Grevillea newbeyi* (Priority 3) is located approximately 40 metres east of the proposed drainage channel and approximately 660 metres north of Area 1-2. FloraBase indicates that *Grevillea newbeyi* occurs in clay loam and sandy gravelly soils. A record of Priority flora *Wurmbea drummondii* (York Gum Nancy, Priority 4) is located approximately 20 metres north of the proposed drainage channel and approximately 1.9 kilometres southwest of Area 3-4. FloraBase indicates that *Wurmbea drummondii* occurs in loam, clay and sandy clay associated with winter-wet sites, soils which also occur within the area under application. Additionally, the Priority flora *Synaphea platyphylla* (Priority 3) and *Microcorys cephalantha* (Priority 3) occur within 5 kilometres of the areas under application. FloraBase indicates that both *Synaphea platyphylla* and *Microcorys cephalantha* occur in sandy loam. Thus Priority flora may occur within the area under application.

A report "Fence Road Arterial Drain Environmental Impact Assessment" prepared by the Department of Water in June 2006 on behalf of the applicant indicates CALM advice that two Priority species *Cryptandra inconspicua* (Priority 2) and *Bossiaea divaricata* (Priority 3) may be impacted by the downstream effects of the proposal. The report indicates that the proposal is not likely to impact on these species as they are located 2km and 600m respectively from the Dongolocking Creek and some 10km downstream of the area under application, where the drain discharge is unlikely to reach except in high rainfall events. DEC advice provided in relation to the NOID on 24 October 2006 indicated that the expected groundwater discharge downstream of the proposal is not considered significant due to the area already being severely impacted by secondary salinity. Therefore it is unlikely that there will be significant impact on these species as a result of this proposal.

Given the close proximity of Declared Rare and Priority flora to the areas under application, and the lack of supporting information to indicate that these species will not be impacted by the proposed clearing, this proposal may be at variance to this principle.

To mitigate any potential impacts of the proposal on Declared Rare or Priority flora within the areas under application, a condition has been imposed on the permit to undertake a flora survey prior to undertaking clearing, in order to identify and avoid any populations of Declared Rare or Priority flora within or immediately adjacent the areas under application.

Methodology Department of Water report 2006
DEC NOID advice 24 October 2006
FloraBase
Schoknecht 2002
GIS dataset
- Soils Statewide DAWA 1999
SAC Bio dataset
- DeFI 17/04/07

(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 3 known occurrences of Threatened Ecological Communities within a 50km radius of the areas under application. This is located approximately 35 kilometres northwest of Area 7-8 within Toolibin Nature Reserve. Given the distance, and given that the areas under application occur within Coblinine River catchment and the TECs occur within the upper reaches of the northern Arthur River catchment, it is unlikely that the proposed clearing will impact on this TEC. Therefore this proposal is not likely to be at variance to this principle.

Methodology SAC Bio dataset
- TEC 05/01/07
- Hydrographic Catchments - Catchments - DOW

(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

There is 1 Beard vegetation association represented within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 of the areas under application (type 1023), comprising medium woodland; York Gum (*Eucalyptus loxophleba*), Wandoo (*Eucalyptus wandoo*) and Salmon Gum (*Eucalyptus salmonophloia*). This vegetation association has been extensively cleared and is under-represented in the conservation estate.

A further 2 Beard vegetation associations (types 1093 and 1094) occur within the drainage channel, although these have been previously cleared within the areas nominated for the purpose of this proposal.

A site inspection undertaken by DEC staff on 2 May 2007 visited four culvert sites along Treloars Road and Moulyinning Road, and found that a second widespread vegetation type occurs within the valley floor (although not consistent with the Beard vegetation association for the areas under application), comprising mixed samphires and other salt-affected watercourse tolerant species.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation status **	Pre-European % in reserve/DEC
IBRA Bioregions: #					
- Avon Wheatbelt ***	9 578 995	1 536 296	16.0	Vulnerable	
Shire of Dumbleyung #	253 816	24 003	9.5	Endangered	
Beard vegetation assoc: *					
- Type 1023	1 601 636	103 064	6.4	Endangered	1.2
- Type 1093	8 259	782	9.5	Endangered	12.2
- Type 1094	70 341	4 057	5.8	Endangered	0.1

statistics from Shepherd et al 2001 (Technical Report 249)

* statistics from AGWA 2005 (Shepherd et al)

** Department of Natural Resources and Environment 2002

*** Within the Intensive Landuse Zone

For the reasons above this proposal is at variance to this principle, however it is not considered to be seriously at variance because in the long term it is possible that the vegetation within the area under application will be degraded as a result of possible waterlogging and associated salinity in the absence of remedial drainage.

To mitigate any potential impacts of the clearing on remnant vegetation, the proposed clearing will be carried out in accordance with a condition imposed on the permit requiring that clearing of vegetation be avoided, and where this is not possible, minimised. In addition, a condition has been imposed to offset the values of the area to be cleared to address the loss of vegetation within a highly cleared landscape.

Methodology Beard 1980
DAWA 2001
EPA Position Statement No. 2
DEC site visit 2 May 2007
GIS dataset
- Pre-European Vegetation DA 2001
- Interim Biogeographic Regionalisation of Australia EM 2000

(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 areas under application occur within a watercourse situated low in the landscape (280-290 metres ASL) within a broad valley floor. The removal of deep-rooted perennial vegetation may have an impact on depth to the local watertable, thereby potentially affecting other vegetation communities in the vicinity.

There are no Ramsar wetlands within a 50 kilometre radius of the areas under application. The nearest ANCA wetland is Lake Dumbleyung located approximately 27.7 kilometres from Area 1-2.

Because the areas under application are situated in a watercourse, this proposal is at variance to this principle. However the proposed clearing is not considered to be seriously at variance because the vegetation within Area 1-2, Area 3-4, Area 5-6, Area 7-8 and Crown Reserve 9447 are already subject to (or at threat of) waterlogging and secondary salinity, and in the long-term the condition and biological diversity of these areas may degrade in the absence of remedial drainage.

To minimise the impact of the proposed clearing on watercourse-associated vegetation, the proposed clearing will be carried out in accordance with a condition imposed on the permit requiring that clearing of vegetation be avoided, and where this is not possible, minimised.

Methodology Beard 1980
 GIS dataset
 - Topographic Contours Statewide DOLA 2002
 - Dumbleyung Kokerin 1.4m Orthomosaic DLI 2002
 - ANCA, Wetlands - CALM 08/01
 - Rivers 250K GA
 - Lakes 250K GA
 - Hydrography Linear - DoE 1/2/04
 - RAMSAR, Wetlands - CALM 21/10/02

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

Comments Proposal is not likely to be at variance to this Principle

Salinity mapping and salinity risk indicate that the valley floor is saline and at risk of spreading. It is possible that sediment within the drainage channel contributes to waterlogging and secondary salinity in the local area.

The soil and geomorphology of the area under application falls within 2 main groups, described as (type SI28) broad flat valleys with small clay pans and salt-lake remnants in some localities with hard alkaline yellow soils underlain by acid lateritic clays; and (type SV1) saline valleys and salt lakes (including salt-lake channels, mostly devoid of true soils, and their fringing areas) with gypseous soils and saline loams underlain by clayey or sandy strata. The soils present within the area under application have predominantly a low to medium potential for water and wind erosion (DAWA 2002).

The Commissioner of Soil and Land Conservation (DAFWA) initially objected to the proposed drainage on 10 April 2006 on the basis of design issues associated with volumes of water to be carried during 1:10-20 ARI storm events, gradients observed in sections of the proposed drains, and dispersive subsoil clays. The design was subsequently amended to provide for separation of groundwater and surface flows at critical sections along the system, which is expected to safely carry excess flows anticipated under storm/flood conditions, and should minimise the effect of the dispersive nature of the subsoil clays. The Commissioner's advice on 17 November 2006 stated "no objection on land degradation grounds to the proposed works being implemented in accordance with the amended plan and my recommendations". In further advice provided on 3 July 2007, the Commissioner concludes "that the removal of up to 10ha of vegetation to facilitate the construction of the proposed drains is unlikely to cause appreciable land degradation".

The DEC provided advice on 24 October 2006 that it did not object to the notice of intent to drain, on the basis of several points described in the environmental impact assessment undertaken by the Department of Water's report "Fence Road Arterial Drain Environmental Impact Assessment" (2006). DEC recommended that "the proponent undertakes environmental monitoring, once the drainage work commences, specifically to verify the flow rate and water quality described in the EIA and the NOI. If the actual values exceed those predicted, this may result in conservation assets downstream being detrimentally impacted. The Department may object in the future to the drainage works if actual rates exceed those predicted thus causing downstream conservation assets to be impacted."

It is unlikely that in the long-term the clearing will result in increased wind or water erosion, waterlogging or salinity, thus this proposal is not likely to be at variance to this principle.

Methodology DAFWA NOID advice 10 April 2006
 DAFWA NOID advice 17 November 2006

DAFWA land degradation advice 3 July 2007
 DEC NOID advice 24 October 2006
 Department of Water report 2006
 DAWA 2001
 Schoknecht 2002
 GIS dataset
 - Salinity Mapping LM (25m) DOLA 2000
 - Salinity Risk LM (25m) DOLA 2000
 - Topographic Contours Statewide DOLA 2002

(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 area under application occurs within five areas of bushland (four drainage and one monitoring station), although none are formally managed for conservation as part of the reserve system or under a Conservation Covenant. These areas of bushland (280-290m ASL) may be subject to waterlogging and associated salinity, and may benefit from the improved flow of water through the valley floor as a result of this proposal.

Several Conservation Covenanted areas of bushland occur within a 10km radius of the area under application, two being located within 2.6km of Area 7-8 of the area under application. These are located upstream and higher in the landscape (300-310m ASL) than the area under application (280-290m ASL), and are unlikely to be impacted on by this proposal.

The nearest DEC-managed is the Dongolocking Nature Reserve located approximately 6.1km west of Area 7-8. Owing to the distance from the area under application and its higher landscape position (320-330m ASL), it is unlikely that this reserve will be impacted on by this proposal.

A report "Fence Road Arterial Drain Environmental Impact Assessment" prepared by the Department of Water in June 2006 on behalf of the applicant indicates three reserves that may be affected by this proposal. Crown Reserve 9680 (Shire of Dumbleyung) is almost entirely remnant vegetation. The initial drainage proposal was to directly impact on Reserve 9680, however following advice provided by DEC on 24 October 2006 in relation to a NOID the drainage route was amended to bypass this reserve, acknowledged in the Department of Agriculture and Food's advice provided on 17 November 2006. Crown Reserve 9447 (Unallocated Crown Land) is located approximately 210 metres downstream of the drainage discharge area. The DOW report indicates that there will be an encroachment of groundwater discharge on Crown during the initial stages of construction, however in the long term the net effect of increased discharge of saline water on vegetation would be minimal as the vegetation is already salt-affected. Crown Reserve 13891 (Department for Planning and Infrastructure) is located approximately 10 kilometres downstream of the drainage discharge area. The DOW report indicates that there is not likely to be any impact on Crown Reserve 13891 by this proposal owing to the distance from the area under application.

It is proposed to establish a monitoring station in Crown Reserve 9447 (Unallocated Crown Land), located approximately 210 metres downstream of the drainage discharge area. This monitoring station is to be established along existing tracks.

Given the above, it is not likely that this proposal will impact on the environmental values of conservation reserves, therefore this proposal is not likely to be at variance to this principle.

Methodology Department of Water report 2006
 DEC NOID advice 24 October 2006
 DAFWA NOID advice 17 November 2006
 GIS dataset
 - Ramsar Wetlands CALM 2003
 - System 1-5 and 7-12 Areas DOE 1995
 - CALM Managed Lands and Waters CALM 2005
 - Clearing Regulations - Environmentally Sensitive Areas DOE 2005
 - Agreements to Reserve (ATRs) DA 2005
 - Register of the National Estate EA 2003
 - Topographic Contours Statewide DOLA 2005
 SAC Bio dataset
 - Covenants CALM 2006
 - Land for Wildlife sites CALM 2006

(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 not likely to be at variance to this Principle

The area under application is located in the valley floor. Salinity mapping and salinity risk datasets indicate that

the valley floor is saline and at risk of spreading.

The applicant has proposed to install a monitoring station within Crown Reserve 9447 immediately downstream of the drain discharge point in order to determine changes in the quality of water as a result of the drain construction.

The Commissioner of Soil and Land Conservation (DAFWA) advises no objection on land degradation grounds on the basis that the proposal provides for the separation of groundwater and surface water flows at critical sections along the system, and this and the channel profile should minimise the effect of the dispersive nature of the subsoil clays (DAFWA 2006).

It is unlikely that this clearing will alter the quality of the surface flow or groundwater, however it may provide benefit in enhancing the free movement of water through the valley floor thereby preventing waterlogging and associated salinity. Thus it is unlikely that this proposal is at variance to this principle.

Methodology DAFWA NOID advice 17 November 2006
GIS dataset
- 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 areas under application are subject to moderately low rainfall (approximately 350 - 400mm/annum) and matching evaporation rate (approximately 400mm/annum).

The position of the areas under application in the landscape is the valley floor. It is unlikely that this clearing will result in increased duration or peak flooding, however it may provide benefit in improving the movement of water through the valley floor.

It is unlikely that this proposal is at variance to this principle.

Methodology GIS dataset
- Evapotranspiration Area Actual BOM 2001
- Mean Annual Rainfall Isohyets BOM 2001
- Topographic Contours Statewide DOLA 2002

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

Comments

The area under application occurs within the 'Agricultural Area' defined in EPA Position Statement No. 2, which aims to limit broad-scale clearing within the already extensively-cleared agricultural area. This proposal to undertake clearing aims to enhance the free movement of water through the valley floor thereby preventing waterlogging and associated salinity, which may have a benefit to the long-term maintenance of those remnants subject to this clearing proposal. The proposed clearing will be carried out in accordance with a condition imposed on the permit requiring that clearing of vegetation be avoided, and where this is not possible, minimised. In addition, there will be no net loss of vegetation as a condition has been imposed to offset the values of the areas to be cleared.

The site of the monitoring station part of this proposal is located on Crown Reserve 9447.

It is the applicant's responsibility to ensure that all approvals have been received from relevant stakeholders prior to undertaking clearing.

Methodology GIS dataset
- Aboriginal Sites of Significance DIA
- RIWI Act, Ground Water Areas DOW
- RIWI Act, Surface Water Areas DOW
EPA Position Statement No. 2

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Drainage	Mechanical Removal	10	To allow construction of proposed drainage scheme
Drainage	Mechanical Removal		Monitoring works Drainage Works area

5. References

- Beard, J.S. (1980) Vegetation Survey of Western Australia, the Vegetation of the Dumbleyung area Western Australia. Vegmap Publications, Perth.
- Commissioner of Soil and Land Conservation (January 2006). Notice of Intent to Drain - Fence Road Arterial Drain Project - Various Williams Locations. Department of Agriculture and Food (WA), Perth.
- Department of Agriculture and Food WA (July 2007). Land Degradation Assessment Report for Application for a Clearing Permit (Area Permit) - Reserve 9447, Dumbleyung - Lake Grace Road, Shire of Dumbleyung.
- Department of Water (June 2006) Fence Road Arterial Drain Environmental Impact Assessment - supporting information.
- 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.
- 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., 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
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)

