



1. Application details

1.1. Permit application details

Permit application No.: 603/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Co-operative Bulk Handling Limited

1.3. Property details

Property: LOT 543 ON PLAN 222197 (Lot No. 543 OLD NARDLAH BROOMEHILL VILLAGE 6318)
 LOT 529 ON PLAN 222197 (Lot No. 529 OLD NARDLAH BROOMEHILL VILLAGE 6318)
 LOT 528 ON PLAN 222197 (Lot No. 528 OLD NARDLAH BROOMEHILL VILLAGE 6318)
 LOT 527 ON PLAN 222197 (Lot No. 527 OLD NARDLAH BROOMEHILL VILLAGE 6318)
 LOT 526 ON PLAN 222197 (Lot No. 526 OLD NARDLAH BROOMEHILL VILLAGE 6318)
 LOT 525 ON PLAN 222197 (Lot No. 525 DARCY BROOMEHILL VILLAGE 6318)
 LOT 530 ON PLAN 222197 (Lot No. 530 REILLY BROOMEHILL VILLAGE 6318)

Local Government Area: Shire Of Broomehill

Colloquial name: Broomehill Reilly St - Lots 525-530 and 543

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
3.9		Mechanical Removal	Building or Structure

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 area under application is comprised of Beard Vegetation Unit 1085: Medium woodland; Wandoo (Eucalyptus wandoo) and Blue Mallet (Eucalyptus gardneri).	The vegetation is considered to be in very good condition on Lots 525 - 530, and in good condition on Lot 543 due to greater invasion of exotic grasses (Keighery BJ, 1994). Considered as a whole, the contiguous vegetation on these Lots is considered to be significant.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	A site inspection undertaken by DOE staff on 05/04/05 confirmed the condition and composition of the vegetation within the area under application.
	<p>A site inspection undertaken by DOE staff on 05/04/05 found that overstorey species included wandoo (Eucalyptus wandoo) and flat topped yates (Eucalyptus occidentalis). Understorey species observed include fringe lily, donkey orchid, Acacia puchella, Conostylis setigera, Caladenia longicauda (Common white spider orchid), Stylium spp., Caladenia flava, Drosera pallida, Calectasia spp., Gastrolobium parvifolium, Jacksonia sparsa (Priority 4), Calytrix leschenaultii, Myrtaceae spp., Hardenbergia comptoniana, Calytrix</p>		

stipulosa, Crassula colorata (stonecrop), Hakea corymbosa (Cauliflower Hakea) and Helipterum manglesii (pink sunray). Introduced species include Briza major, Arctotheca calendula (cape weed) Hypochaeris spp. and a number of grass species.

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 proposal to clear involves the removal of approximately 8.56 hectares of native vegetation on Lots 525, 526, 527, 528, 529, 530 and 543 to enable the expansion of the existing grain handling and storage facility.

A site inspection of the area under application was undertaken by regional officers on 05/04/05 to determine vegetation composition and condition, and the vegetation was found to be of predominantly very good condition with a diverse range of native flora species present, with some areas of lesser quality vegetation.

There is one Beard vegetation association (type 1085) represented within the area under application. This has less than 9% of its pre-European extent remaining, and approximately 0% of its original extent protected in DEC-managed reserves. In 2001 the Shire of Broomehill had approximately 9.5% of its original vegetation extent remaining (DAWA 2001).

Aerial photography indicates that the vegetation present within the area under application has connectivity with other areas of remnant vegetation, and is part of a contiguous remnant in similar condition.

CALM advice provided in 2006 indicates that vegetation of this type is extremely important for biodiversity conservation and a priority for reservation, and the clearance of Lots 525 - 530 may have a detrimental impact on the connectivity of the remaining remnant vegetation of the Broomehill townsite. Furthermore, the presence of mature Wandoo trees suggests the likely presence of hollows suitable as habitat for a number of bird and mammal species, and may include nesting habitat for Western Rosella (inland spp., Priority 3) and other species such as Carnaby's Black Cockatoo (Endangered under the EPBC Act). CALM recommends that the proponent pursue the option of acquiring adjacent cleared farmland in the first instance rather than clearing existing remnant vegetation, or if this is not possible that the mature Wandoo are retained and that an offset requirement is imposed to compensate for the loss of this native vegetation in an already extensively cleared and fragmented landscape.

Given that the vegetation association present within the area under application is extensively cleared and under-represented in the conservation estate, this proposal is considered to be at variance to this principle.

Methodology

CALM biodiversity advice 2006
Site visit 05/04/05
DAWA 2001
Beard 1980
Environment Australia 2001
GIS dataset
- Pre-European Vegetation DA 2001
- Interim Biogeographic Regionalisation of Australia 2000
- Dumbleyung Kookerri 1.4m Orthomosaic GA

(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 report was prepared by Greg Harewood in February 2007 on behalf of the proponent following a survey of the area under application. The report identified usage of the area under application by 26 indigenous fauna (1 reptile, 23 birds, 2 mammals). The reptile species and some of the smaller bird species have small home ranges, and the populations within the area under application will be detrimentally impacted on by the proposed clearing. However these species are likely to be widespread in the local area where similar habitat exists, and their survival as a species is not likely to be significantly affected by the proposed clearing.

The Harewood report identified eleven species of Threatened and Priority fauna as potentially utilising / frequenting the area under application, even if infrequently or as vagrants. Given the composition and condition of the vegetation and presence of some degraded areas, in conjunction with biodiversity advice provided by CALM (2006) the most likely of these species to potentially occur within the area under application include Carnaby's Black-Cockatoo (Endangered), Southern Carpet Python (Schedule 4), Peregrine Falcon (Schedule 4) and Western Rosella (Priority 3). There is also potential for at least 4 additional Threatened and Priority

species as determined by Harewood (2007), however the likelihood of their occurrence within the area under application is lower than those listed above due to the age of last recorded occurrence, extent of home range or other habitat requirements.

The Harewood report (2007) identified a total of 42 trees (predominantly mature Wandoo) with hollows suitable for Western Rosella and Carnaby's Black-Cockatoo (although no actual evidence of usage by these species) within and directly adjacent the area under application. While not all trees identified are within the area proposed to be cleared, it is likely that the proposed clearing and development of the site will deter many species from using hollows in trees directly adjacent the area under application. The loss of trees within the area under application will likely result in displacement to breeding populations and loss of foraging habitat.

The vegetation within the area under application may be suitable as habitat for Threatened or Priority species that have not been previously recorded at this location (or recorded during this survey). The vegetation within the area under application is likely to provide habitat for other fauna species not observed during the Harewood survey. If approved, the proposed clearing will reduce the fauna habitat available, and disrupt the connectivity of vegetation to further fragment remnant vegetation in this area.

The vegetation within the area under application is of a similar composition as a larger remnant of vegetation adjacent to the east, thus the impacts of the proposed clearing on local fauna may be reduced to some degree by the availability of similar habitat within close proximity. It is likely however that the adjacent bushland has reached equilibrium in terms of ecosystem function and that the proposed clearing will disrupt this balance by causing refugees to compete for resources.

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

Methodology CALM biodiversity advice 2006
Site visit 05/04/05
Harewood report 02/07
GIS dataset
- Katanning 1.4m Orthomosaic DLI 2002
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 approximately 35 known occurrences of Declared Rare and Priority Flora within a 50 kilometre radius of the area under application, approximately half 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 area under application.

The nearest occurrence of Declared Rare Flora is *Dryandra mucronulata* subsp. *retrorsa*, located approximately 14.3 kilometres southwest of the area under application. This species occurs on clay or clay loam soils associated with flats (and rocky hills). Given the proximity of the record it is unlikely that this population extends into the area proposed to be cleared.

CALM biodiversity advice (2006) indicates that five species of Priority flora occur within a 10 kilometre radius of the area under application (WAHerb database). These are *Acacia errabunda* (Priority P3), *Synaphea drummondii* (Priority 3), *Acacia grisea* (Priority 4), *Caladenia integra* (Priority 4) and *Dryandra porrecta* (Priority 4). *Acacia errabunda* (Priority 3) has been recorded approximately 700 metres from the area under application, and *Synaphea drummondii* (Priority 3) and *Dryandra porrecta* (Priority 4) have been recorded approximately 1.1 kilometres from the area under application within the Broomehill Golf Links. The proponent has not provided information regarding the soil types present within the notified area, however GIS map layers indicate that these three species occur within the same soil (type 5503) and Beard vegetation association (type 1085) as found within the area under application, thus there is a possibility that these species also occur within the area under application.

A site inspection undertaken by DOE staff on 05/04/05 found the vegetation within the area under application to be of very good condition. Given the condition of the vegetation and that it is previously unsurveyed for its species composition, there is a possibility that Declared Rare and Priority flora may exist there. Thus this proposal may be at variance to this principle.

Methodology CALM biodiversity advice 2006
GIS dataset
- Soils Statewide DAWA 1999
- Pre-European Vegetation DA 2001
SAC Bio dataset
- DeFI 17/04/07
FloraBase

(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

CALM biodiversity advice (2006) indicates that there is no evidence to suggest that any EPBC Act listed TECs or State listed TECs are present on the site of the proposed clearing. The proposal is not likely to be at variance to this Principle.'

Methodology CALM biodiversity advice (2006)
SAC Bio dataset
- TEC 05/01/07

(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 one Beard vegetation association represented within the area under application (type 1085). This has less than 9% of its pre-European extent remaining, and approximately 0% of its original extent protected in DEC-managed reserves.

	Pre-European (ha)	Current extent (ha)	Remaining (%)	Conservation status **	Pre-European % in reserve/DEC
land					
IBRA Bioregions: #					
- Avon Wheatbelt (whole)	9 578 995	1 536 296	16.0	Vulnerable	
- Avon Wheatbelt (ILZ only)	8 967 527	924 828	10.3	Vulnerable	
Shire of Broomehill #	119 170	11 265	9.5	Endangered	
Beard vegetation assoc: *					
- type 1085	51 787	4 615	8.9	Endangered	0.0

statistics from Shepherd et al 2002 (Technical Report 249)

* statistics from AGWA 2005 (Shepherd et al)

** Department of Natural Resources and Environment 2002

The State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-1750 (Department of Natural Resources and Environment 2002; EPA, 2000).

CALM biodiversity advice (2006) indicates that due to extensive clearing and under-representation in the conservation estate, any remnants of Beard vegetation association type 1085 are extremely important for biodiversity conservation and a priority for reservation. Aerial photography indicates that Lots 525-530 of the area proposed to be cleared form part of a contiguous area of remnant vegetation surrounding the townsite of Broomehill, and the clearing of this section is likely to have a detrimental effect on the connectivity of the remaining remnant vegetation.

As the vegetation association within the area under application has just 8.9% of its original extent remaining, and the proposed clearing will reduce this to just 8.8% remaining, the proposal is at variance to this Principle.

Methodology CALM biodiversity advice (2006)
Department of Natural Resources and Environment (2002) / EPA (2000)
Beard 1980
DAWA 2002
DAWA 2005
EPA Position Statement No. 2
Environment Australia 2001
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 not likely to be at variance to this Principle

A minor non-perennial watercourse flowing in an easterly direction is mapped approximately 100 metres east of Lot 543 and approximately 120 metres north of Lots 525-530. Aerial photography indicates that this watercourse is cleared and thus devoid of perennial vegetation, and cleared land occurs between the watercourse and the area under application.

A second minor non-perennial watercourse flowing in a westerly direction is mapped approximately 450 metres west of Lot 543. Aerial photography indicates some perennial vegetation cover between this watercourse and the area under application. Given the proximity of this watercourse to the area under application it is unlikely that the riparian vegetation associated with this watercourse extends into the area under application.

It is not likely that the proposed clearing will impact on vegetation associated with these watercourses. The proposed clearing is therefore not likely to be at variance to this Principle.

Methodology GIS dataset

- ANCA, Wetlands - CALM 08/01
- EPP Areas - DEP 06/95
- EPP Lakes - DEP 28/07/03
- Geomorphic Wetlands (Mgt Categories) Swan Coastal Plain - DoE 15/9/04
- Geomorphic Wetlands, Augusta to Walpole - DoE 18/6/03
- Hydrography Linear - DoE 1/2/04
- RAMSAR, Wetlands - CALM 21/10/02
- Katanning 1.4m Orthomosaic DLI 2002

(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. The area under application is located at an elevation of approximately 330 metres ASL, similar to that of the immediately surrounding landscape. Areas at risk of salinity are located approximately 200 metres northeast, 300 metres southeast and 400 metres west of the area under application. The area under application has a groundwater salinity level of 14000-35000 mg/L.

The Deputy Commissioner for Soil and Land Degradation describes the landscape within the area under application as drainage lines, lower to upper slopes and crests on colluvium over deeply weathered granite in the Blackwood and Gordon River Catchments from Woodanilling to south of Tambellup, comprising grey deep and shallow sandy duplex soils (DAWA advice 2005).

The Deputy Commissioner for Soil and Land Degradation provided advice on 30/06/05 that indicates that the proposed clearing of 8.56 hectares of land on Broomehill Lots 525, 526, 527, 528, 529, 530 and 543 is unlikely to cause appreciable land degradation, and therefore this clearing is unlikely to be at variance to this principle (DAWA advice 2005).

In the short-term the proposed clearing may have an impact on localised flooding and soil erosion during works, and structures should be installed to minimise / mitigate these impacts. It is unlikely that in the long-term the proposed clearing will result in increased wind or water erosion, waterlogging or salinity. This proposal is not likely to be at variance to this principle.

Methodology DAWA land degradation advice 2005

- GIS dataset
- Salinity Mapping LM (25m) DOLA 2000
- Salinity Risk LM (25m) DOLA 2000
- Groundwater Salinity, Statewide DOE
- 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

There are more than 50 DEC-managed land parcels within a 50 kilometre radius of the area under application. The nearest of these are Broomehill Nature Reserve #17111 located approximately 5.6 kilometres southeast of the area under application, and Peringillup Nature Reserve #36324 located approximately 8.8 kilometres south of the area under application. In relation to these two reserves, CALM biodiversity advice (2006) indicates that the reserves are of sufficient distance from the area under application that they are unlikely to be affected by the proposed clearing. There are only a few, very small and widely spaced pockets of remnant vegetation between the notified area and the nature reserves that would serve as any kind of linkage between them.

CALM biodiversity advice (2006) indicates that within the Broomehill townsite there are numerous Crown Reserves vested in Local Government, with largest being just over 100 hectares in size; a small number of Other Crown Reserves, the largest being a roadside reserve of 11.65 hectares ; up to 200 lots of Unallocated Crown Land, the largest being 23.77 hectares plus many small areas of Unvested Crown Reserve. From aerial photographs these reserves within the vicinity of the townsite contain significant areas of remnant vegetation.

Within a 50 kilometres radius of the area under application, there are a large number of privately-managed conservation areas including approximately 40 Land for Wildlife sites, 1 NTWA conservation covenant site, approximately 20 land parcels with DAFWA memorials, 3 Bushland Benefits sites, plus an Australian Bush Heritage Fund site (Kojonup Reserve, located approximately 41.6 kilometres northwest of the area under application) (SAC Bio datasets, maps and pers comm with program coordinators). The nearest of these is a Land for Wildlife site located within 1.5 kilometres of the area under application. The nearest DAFWA memorial is located approximately 22.4 kilometres northwest of the area under application.

Most of these conservation areas are located at or higher than the elevation of the area under application thus any impacts from surface water increases as a result of clearing are not likely to affect these areas. Furthermore, given the distances between these conservation areas and the area under application, it is unlikely that the proposed clearing will have a significant impact. However, the nearest conservation area is situated at 320m ASL and downstream of the area under application, and may be impacted by increased surface water flows although the impact is not expected to be significant because aerial photography indicates some perennial vegetation cover between this watercourse and the area under notification, which is likely to utilise much of the water shedding from the area under application.

In relation to the proposed clearing having an impact on adjacent or nearby conservation areas, it is unlikely that this proposal is at variance to this principle.

Methodology CALM biodiversity advice (2006)
GIS dataset
- CALM Managed Lands and Waters - CALM 1/07/05
- Register of National Estate EA 2003
- Clearing Regulations - Environmentally Sensitive Areas DOE 2005
- Katanning 1.4m Orthomosaic DLI 2002
- Pre-European Vegetation DA 2001
- Topographic Contours Statewide } DOLA 12/09/02
SAC Bio datasets
- dec_covenants_polygons
- ntwc_covenants_parcel
- bb_coordinates_round1
http://www.bushheritage.org.au/our_reserves/state_westernaustralia

(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 has a groundwater salinity level of 14000-35000 mg/L. The Deputy Commissioner for Soil and Land Conservation (DAWA land degradation advice 2005) advises that there are no signs of salinity on the property. The proposed clearing is not within a gazetted public drinking water supply area. Thus the proposed clearing is unlikely to have a significant impact on the quality of underground water.

A minor non-perennial watercourse flowing in an easterly direction is located approximately 100 metres east of Lot 543 and approximately 120 metres north of Lots 525-530. The area under application is part of the catchment for this watercourse, and the proposed clearing may have an impact in terms of increasing surface water run-off and possibly sediment increases particularly since the land between this watercourse and the area under notification is already cleared. However given that aerial photography indicates that this watercourse is not well-vegetated, the impact of the proposed clearing is not likely to significantly increase the levels of nutrients, etc, that already enter the watercourse via run-off from adjacent cleared land.

A second minor non-perennial watercourse flowing in a westerly direction is located approximately 450 metres west of Lot 543. Similarly this may be impacted by the proposed clearing, however the impact is not expected to be significant since aerial photography indicates some perennial vegetation cover between this watercourse and the area under notification.

Given the above, the proposal is not likely to be at variance to this principle.

Methodology DAWA land degradation advice 2005
GIS dataset
- Evapotranspiration Area Actual - BOM 30/09/01
- Mean Annual Rainfall Isohyets (1975 - 2003) - DOW
- Topographic Contours Statewide - DOLA 12/09/02

- Groundwater Salinity, Statewide - DOE
- Katanning 1.4m orthomosaic - DLI 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 not likely to be at variance to this Principle

The area under application is subject to moderately low rainfall (approximately 400-450mm/annum) and moderately high evaporation rate (approximately 1200mm/annum). The clearing is unlikely to have a significant impact on rainfall events.

The Deputy Commissioner for Soil and Land Conservation advises that the clearing of vegetation is likely to result in increased surface water run-off which would contribute to increased stream flows, however is not considered to cause extensive flooding due to the size of the catchment (DAWA land degradation advice 2005).

It is unlikely that the proposed clearing of 4.5 hectares will result in increased duration or peak flooding, thus it is unlikely that this proposal is at variance to this principle.

Methodology DAWA land degradation advice 2005
GIS dataset
- Evapotranspiration Area Actual - BOM 30/09/01
- Mean Annual Rainfall Isohyets (1975 - 2003) - DOW
- Topographic Contours Statewide - DOLA 12/09/02

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. This document aims to limit the amount of clearing in an extensively cleared landscape, and defines threshold limits for vegetation communities.

Methodology EPA Position Statement No.2

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	3.9	

5. References

- Carter, J, Lewis, K and Tingey, K (5 April 2005). Site visit - Lots 525, 526, 527, 528, 529, 530 and 543 Ravensthorpe Rd, Broomehill - CPS603 - Co-operative Bulk Handling Limited.
- Department of Conservation and Land Management 2002 A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 - Avon Wheatbelt 2 (AW2 - Rejuvenated Drainage subregion)
- 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.
- Harewood, G. (February 2007). Fauna Assessment - Lot 525-530 Broomehill - incorporating Carnaby's Black-Cockatoo and Western Rosella (inland ssp) nest habitat surveys. Report to CBH, provided to DEC as supporting information for CPS 903/1.
- 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.

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)