



1. Application details

1.1. Permit application details

Permit application No.: 2363/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Shire of Busselton

1.3. Property details

Property: LOT 8 ON DIAGRAM 66799 (House No. 48 WESTERN CAPE NATURALISTE 6281)

Local Government Area: Shire Of Busselton

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
19.35		Mechanical Removal	Extractive Industry / Waste Facility

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>Beard:</p> <p>- Unit 1000 (Chapman): Medium forest; jarrah-marri / Low woodland; banksia / Low forest; tea-tree (Melaleuca spp.) (Hopkins et al., 2001; Shepherd, 2006).</p> <p>Mattiske:</p> <p>- Gracetown (G3): Mixture of low woodland of Agonis flexuosa, open forest of Corymbia calophylla-Eucalyptus marginata subsp. marginata and tall open forest of Eucalyptus diversicolor with some Corymbia calophylla and Eucalyptus cornuta on eastward facing slopes in the hyperhumid zone (Havel & Mattiske Consulting, 1998).</p>	<p>The proposal involves clearing approximately 1.49 hectares for the purpose of sand extraction.</p> <p>The vegetation under application is dominated by Banksia attenuata woodland on deep grey (becoming orange) sand, and is predominantly in very good condition (Keighery, 1994).</p>	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)</p>	<p>Description of the clearing application area is based on site inspection conducted by DEC officers on 28 March 2008.</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 is not likely to be at variance to this Principle**

The proposal is for the clearing of approximately 19.35 hectares of native vegetation that is predominantly in very good condition (Keighery, 1994; DEC, 2008d).

The local area (10 kilometre radius) is approximately 60% vegetated; the majority of that vegetation is coastal reserve, protected within the DEC-managed Leeuwin - Naturaliste National Park.

Flora and Fauna surveys on the local area (conducted in accordance with EPA Guidance Statement 51) did not observe any conservation significant flora or fauna species within the area under application (DEC, 2008; Smith, 2008; Ecosystem Solutions, 2008).

A site visit of the original applied area (1.49ha) observed that the vegetation under application would be suitable habitat for *Caladenia excelsa* as well as Western Ringtail and Brushtail possums (DEC, 2008a; DEC, 2008b, DEC, 2008c). However during a site visit conducted on the increased amended area, no *Caladenia excelsa* were observed, thus the DEC was satisfied that no rare flora occurred within the application area. The DEC was concerned that the regionally restricted flora species *Beyeria viscosa* may be adversely impacted by the proposed clearing. However, at present this species is not threatened or priority listed (DEC 2008d).

Numerous tracks can be observed through the vegetation under application with additional disturbances on the western side of the applied area due to current extraction activities.

Given the level of disturbance throughout the proposal area and taking into account that nearby vegetation is in a similar or better condition, the vegetation under application is not likely to have a high level of biological diversity in a local context.

Methodology Keighery (1994)
DEC (2008a)
DEC (2008b)
DEC (2008c)
DEC (2008d)
DEC (2008e)
GIS Databases:
CALM Managed Lands and Waters - CALM 1/6/04;
DEFL, SAC Bio Dataset 29 Oct 2008;
Busselton 50cm ORTHOMOSAIC - DLI04

(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 is not likely to be at variance to this Principle

The vegetation under application is in very good (Keighery, 1994; DEC, 2008d) condition however there are obvious signs of disturbance such as gravel extraction activity and numerous tracks through the applied area.

The local area (10 kilometre radius) is approximately 60% vegetated; the majority of that vegetation is coastal reserve, protected within the DEC-managed Leeuwin - Naturaliste National Park.

A site visit of the original applied area (1.49ha) identified habitat suitable for the Western Ringtail Possum with evidence of fresh scats within the boundary of the property and the southern end of the property showing signs of runnel usage. Within the original applied area evidence of Brushtail possum presence was also recorded (DEC, 2008a).

During a more recent site visit of the increased amended area, old Western Ringtail Possum scats were observed as well as signs of Brushtail possum and arboreal mammal activity had been noted in the block of vegetation to the south of the application area (DEC 2008d).

A fauna survey of the applied area did not observe any evidence of Western Ringtail Possums occurring within the applied area. The fauna survey identified Western Grey Kangaroos as the only native fauna species utilizing the area under application (Ecosystem Solutions, 2008)

The area under application appears to have habitat suitable for fauna indigenous to Western Australia however is unlikely to be significant habitat in a local context due to the condition and extent of nearby native vegetation.

Methodology DEC (2008a)
DEC (2008d)
Ecosystem Solutions (2008)
Keighery (1994)
GIS Databases:
Threatened Fauna, SAC Bio Dataset 29 Oct 2008
CALM Managed Lands and Waters - CALM 1/6/04;
Busselton 50cm ORTHOMOSAIC - DLI04
Beard Vegetation Association May 2008

(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 8 records of rare flora species within a 10km radius of the area under application of these, 4 occur on the same vegetation types as the area under application.

In particular, the applied area was identified as having ideal habitat for *Caladenia excelsa* (rare flora) as

Banksia attenuata woodland dominated on deep grey (becoming orange) sands (DEC, 2008b)

There are also 12 priority flora species which occur on the same vegetation type as the applied area and their distribution patterns suggest that they may occur within the applied area.

A Flora and Vegetation survey of the area did not identify any rare or priority flora species within the applied area (Smith, 2008). This information in this survey is limited by the opportunistic survey method and the timing of the survey not corresponding with all of the flowering periods for rare flora found within the local area (10km radius) (Smith, 2008).

A DEC conducted site visit observed no rare or priority listed flora species within the application area. The DEC was satisfied that while conditions were conducive for the rare species Caladenia excelsa to occur, no occurrences were recorded (DEC, 2008d).

Given that a flora survey and DEC site inspection did not observe any rare or priority flora within the local area and taking into account the disturbed condition of much of the applied area, the vegetation under application is not likely to include rare flora.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology DEC (2008b)
DEC (2000d)
Smith (2008)
GIS Databases:
DEFL, SAC Bio Dataset 29 Oct 2008;
Soils, Statewide;
Busselton 50cm ORTHOMOSAIC - DLI04

(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 10 known records of Threatened Ecological Communities within the local area (10km radius), the closest of which being 4.2km north east of the applied area.

Given the distance between the applied area and the closest known TEC the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Databases:
TEC Database, SAC Bio Dataset 29 Oct 2008;
Threatened Ecological Communities - CALM

(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 not likely to be at variance to this Principle

	Pre-European (ha)	Current extent (ha)	Remaining %	% in reserves/DEC- managed land
IBRA Region:				
- Jarrah Forest	4,671,007	2,601,026	55.68**	71.15
- Beard 1000 within JF	5428	3193	58.83*	12.79
- Beard 3 within JF	2,390,590	1,657,274	69.32	57.55
LGA:				
- Shire of Busselton	146,450	61,734	42.15**	65.89
Vegetation type:				
Beard:				
- Unit 1000 *	99,835	28,540	28.59**	15.74
- Unit 3*	2,661,405	1,863,719	70.03 **	79.98
Mattiske:				
- Gracetown (G3)***	43,318	38,686	89.3	N/A
- Cowaramup (Cw2) ***	63,666	15,236	23.9	N/A

* (Shepherd, 2007)

** (Shepherd et al., 2001; Hopkins et al., 2001)

*** (Mattiske & Havel, 1998)

The area under application is located in the Shire of Busselton in the Jarrah Forest Bioregion, which retain approximately 42.15% and 55.68% (Shepherd, 2007), respectively of the pre-European extent.

The area under application is mapped partly as Mattiske Vegetation complex Cw2 which retains less than 30% of the pre-European extent (Shepherd, 2007; Mattiske & Havel, 1998). However, the other 2 vegetation types present are both well represented within the bioregion.

The local area (10 kilometre radius) is approximately 60% vegetated; the majority of that vegetation is in coastal reserve, protected within the DEC-managed Leeuwin - Naturaliste National Park.

Given the extent of native vegetation remaining in the local area, the amount of beard vegetation 3 & 1000 remaining within the bioregion, the vegetation under application is unlikely to be significant in an extensively cleared landscape.

Methodology Shepherd (2007);
Mattiske & Havel (1998);
GIS databases:
- Interim Biogeographic Regionalisation of Australia - EM 18/10/00;
- Mattiske Vegetation - CALM 24/3/98;
- Pre-European Vegetation - DA 01/01;
- Local Government Authorities - DLI 8/7/04

(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**
The area under application does not include any mapped wetlands or watercourses.

The closest mapped water expression is a non-perennial swamp and inundation area approximately 130m north of the applied area.

Given the distance between the applied area and the closest wetland and / or watercourse, the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Databases:
- Hydrography, Linear - DoE 1/2/04;
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Busselton 50cm ORTHOMOSAIC - DLI04

(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 soils of the applied area are deep grey to orange sands (DEC, 2008d). The likelihood of soil erosion and water logging is considered to be low, the only significant land degradation risk relates to eutrophication which may result from the actual operation of the proposed facility (DAFWA advice 2008).

Due to the large area and sandy nature of the soils present within the application area, staged clearing conditions will be placed on the permit to mitigate any potential impacts that may arise as a result of wind erosion on and off site.

Methodology DEC (2008d)
DAFWA advice (2008)
GIS Databases:
- Salinity Risk LM25m - DOLA 00;
- Hydrogeology, Statewide - DoW;
- Groundwater Salinity, Statewide - DoW

(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 local area includes 8 areas of conservation significance within the local area (10km radius), the closest of which is approximately 800m west of the applied area.

Given the distance between the applied area and the closest area of conservation significance that clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Databases:
- Register of National Estate - EA 28/01/03;
- CALM Managed Lands and Waters - CALM 1/07/05

(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 Jingarmup Brook catchment (of which this application is a part) is moderately cleared (~ 50% of local area (5km radius).

The groundwater salinity is mapped as 1000 to 3000 TDS/mg/L. The annual rainfall is 900 mm and evaporation is 800 mm. Hydrogeology consists of rocks of low permeability with local aquifers in fractured and weathered rocks.

The application area is 115m AHD and there are no wetlands in the local area (10km radius).

The soil type mapped for the application area is described as chief soils of the broad shallow valleys being acid grey earths sometimes containing ironstone gravels and exist in association with leached sands in valley deposits and outwash areas; soils containing ironstone gravels on ridges and their slopes and areas of block laterite. (Northcote et al, 1960-68) The sands described are at a high risk of wind erosion following clearing due to the high sand content.

There are no major watercourses or wetlands within 2 kilometres of the area under application; therefore the application area is not in association with a watercourses or wetlands and an effective buffer exists between the applied area and the nearest watercourse/wetland.

Given the small area under application and distance from any wetland or watercourse, the proposed clearing is not likely to cause deterioration in the quality of surface or underground water and is therefore not likely to be at variance to this Principle.

Methodology Northcote et al. (1960-68);

GIS Databases:
- Hydrographic Catchments, Catchments - DoW;
- Topographic Contours, Statewide - DOLA 12/9/02;
- Groundwater Salinity, Statewide - DoW;
- Hydrogeology, Statewide - DoW

(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

Given the porosity of the soils of the applied area (predominantly sandy; DEC, 2008d) the clearing is unlikely to cause of exacerbate the incidence or intensity of flooding either onsite or off site.

Therefore the clearing as proposed is not likely to be at variance to this principle.

Methodology GIS Databases:
- CALM Managed Lands and Waters - CALM 1/07/05;
- Topographic Contours, Statewide - DOLA 12/9/02

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

Comments

The end land use of the area under application is as a waste facility. A copy of the Dunsborough Waste Management Facility Licence has been provided (DOC62127).

Methodology

4. Assessor's comments

Comment

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986 and has found:

- Principle (g) may be at variance
- All other Principles are not likely to be at variance

5. References

- Burbridge, A., (1998). Endangered: Western Ringtail Possum. LANDSCOPE 13 (2): 49, viewed electronically in Western Ringtail Possum, Fauna Species Profile, Department of Environment and Conservation, from <www.naturebase.net/component?option=com_docman/task,cat_view/gid,372/dir,ASC/order,name/Itemid,1288/limit,5/limit_start,15/>, accessed on 24/4/2008
- Department of Environment and Conservation (DEC), Blackwood District (2008a). District comments on fauna values for Lot 8 Vidler Rd, Naturalise, DEC Bunbury. TRIM Ref: DOC49908.
- Department of Environment and Conservation (DEC), Blackwood District (2008b). District comments on flora values for Lot 8 Vidler Rd, Naturalise, DEC Bunbury. TRIM Ref: DOC49331.
- Department of Environment and Conservation (DEC), Site Inspection (2008c). Inspection report for Lot 8 Vidler Rd, Naturaliste, DEC Bunbury. TRIM Ref: DOC49909.
- Department of Environment and Conservation (DEC), Site Inspection (2008d). Inspection report for Lot 8 Vidler Rd, Naturaliste, DEC Bunbury. TRIM Ref: DOC67627
- Ecosystem Solutions (2008) Vidler Rd Dunsborough: WRT & Fauna Report (Trim Ref: DOC 67166).
- Flora Base (2008) *Caladenia excelsa* Species Profile, Department of Environment and Conservation, viewed electronically from <http://florabase.dec.wa.gov.au/browse/profile/13619> accessed on 09/05/2008
- 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.
- Mattiske, E.M. and Havel, J.J. (1998). Vegetation mapping in the South West of Western Australia. Department of Conservation and Land Management, Perth.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Sac Bio Datasets (22/8/07). Department of Environment and Conservation, Sac Bio Datasets, Kensington, Western Australia.
- Shepherd, D.P. (2006). 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.
- Shire of Busselton (2008). TRIM Ref: DOC49952.
- Smith (2008) Ekologica Pty Ltd Report on a spring flora and vegetation survey of remnant vegetation at Dunsborough waste facility (Trim Ref: DOC 67167).

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)