



1. Application details

1.1. Permit application details

Permit application No.: 1256/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: RPS Bowman Bishaw Gorham

1.3. Property details

Property: LOT 9 ON PLAN 12464 (House No. 2559 MARMION JINDALEE 6036)
 LOT 9046 ON PLAN 47613 (House No. 2500 MARMION BUTLER 6036)
 ROAD RESERVE (JINDALEE 6036)
 Local Government Area: City Of Wanneroo
 Colloquial name:

1.4. Application

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

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
QUINDALUP COMPLEX : Coastal dune complex consisting mainly of two alliances - the strand and fore-dune alliance and the mobile and stable dune alliance. Local variations include the low closed forest of <i>M. lanceolata</i> - <i>Callitris preissii</i> and the closed scrub of <i>Acacia rostellifera</i>	The proposed area to be cleared has been described as being remnant vegetation in good to very good condition (Keighery, 1994). The vegetation under application presents a diverse range of remnant vegetation with: * Scattered shrubland * Acacia woodland * Heathland * Sedgeland	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The assessment has been made with a combination of resources. RPS Bowman Bishaw and Gorham provided 3 vegetation and flora reports (TRIM ref DOC 6702, 6708, 6707, 6711, 6713, 8790) . A CALM report (TRIM ref DOC 7160) and desktop assessment were also used. The land parcel related to the proposed clearing area has been zoned 'urban'. This clearing application is in advance of a subdivision development to be undertaken. The area was zoned urban prior to 1996 meaning that the area has not been assessed by the EPA. Given this, the area under application is expected to be consumed by the northward development of housing within the next few years
COTTESLOE COMPLEX - CENTRAL AND SOUTH : Mosaic of woodland of <i>E. gomphocephala</i> and open forest of <i>E. gomphocephala</i> - <i>E. marginata</i> - <i>E. calophylla</i> ; closed heath on the Limestone outcrops	* dune specific vegetation - such as <i>Xanthorrhoea preissii</i> , <i>melaleuca systema</i> and <i>Lepidosperma squamatum</i> * limestone vegetation such as - <i>Acacia rostellifera</i> and <i>Dryandra sessilis</i>		A consultant (RBS Bowman, Bishaw and Gorman) for the proponent provided a Vegetation and flora survey which was used in the assessment of the application. This was not used as a stand alone document and was compared with external advice and GIS databases to ensure a broad base of information.

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**
 The proposed area to be cleared is within the Swan Coastal Plain bioregion, which is known as an area of constrained use. The vegetation type representation of 41.1% (Cottesloe complex) and 49.5% (Quindalup complex) are above the target figures of 10% for constrained use areas and also above the 30% target for areas outside of the constrained use areas.

The vegetation is considered to range from good - very good condition in the report by RPS Bowman, Bishaw and Gorham, and aerial photography and site photo's concur with this assessment, although most of the site appears to fall within 'very good' condition with localised 'good' sections (Keighery, 1994).

The biodiversity found within the proposed area to be cleared is quite high. In a flora and vegetation survey by

RPS Bowman Bishaw and Gorham 140 native species were identified and a possible seven Floristic communities recognised. There has been no formal fauna survey completed for this area, however, numerous species of fauna are likely to be present within the area proposed to be cleared, adding to the biodiversity values of the region. Some of the possible (conservation significant) fauna species include:

- * Carnaby's Cockatoo
- * SW Carpet Python
- * Quenda
- * Western Brush Wallaby
- * *Lerista lineata*
- * *Neelaps calanotus*

The proposed clearing area and surrounding area is zoned urban with urban development to the south and east. Land directly to the north is involved with the proposed Alkimos waste water treatment plant. Land directly to the south is under EPA assessment for an urban development project.

Given the surrounding land uses and above factors, it is considered that the vegetation under application has a high diversity of native plants and fauna and is significant as an ecological community in comparison to the remaining native vegetation in the local area.

Methodology RPS Bowman Bishaw and Gorham, 2006
Keighery, 1994
BCS, 2006
GIS Databases:
- Heddle Vegetation Complexes - DEP 21/06/95
- Aerial Photography - Swan coastal plain 40cm orthomosaic 05

(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

BCS have advised that flora known to exist with the proposed clearing including *Banksia*, *Dryandra*, *Grevillea* and *Hakea* are all flora species that the Carnaby's Cockatoo is known to utilise as a food source. Given that the vegetation under application has been classified as good to very good (Figure 2, Vegetation and Flora Survey report, RPS Bowman Bishaw Gorham, March 2006), there may be a loss of good quality feeding habitat for this species.

The following conservation significant fauna species: SW Carpet Python, Quenda, Western Brush Wallaby, *Lerista lineata* and *Neelaps calanotus* are likely to be present at the area proposed to be cleared.

The clearing of 40.3ha of native vegetation in very good condition is likely to impact habitat for fauna indigenous to WA.

Methodology BCS advice, 2006
Bowman, Bishaw and Gorman report 2006

(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 known Declared Rare Flora (DRF) within 5km of the proposed area to be cleared. A flora survey conducted by RPS Bowman Bishaw Gorham (Report prepared March 2006) identified Priority species, *Conostylis pauciflora* adjacent to the area to be cleared. The report is not confident on labelling which subspecies of the plant was located, with variation between *Conostylis pauciflora* susp. *pauciflora* (Priority 4 taxon) and *Conostylis pauciflora* subsp. *euryrhipis* (Priority 3 taxon) open to interpretation. The report concluded that the species shared more characters in common with *Conostylis pauciflora* subsp. *pauciflora*.

The area has undergone three floristic surveys, one in June 2004, another in spring 2005 and a final survey in May 2006. In these surveys the *Conostylis pauciflora* has not been found within 100m of the proposed clearing area.

The RPS Bowman Bishaw Gorham report also stated that *Conostylis pauciflora* subsp. *euryrhipis* is "common in heath on consolidated dunes between Cervantes and Yanchep" and that *Conostylis pauciflora* subsp. *pauciflora* is known in the area around Dawesville.

As the species is not limited to the area proposed to be cleared and there are no recorded DRF within this area the proposed clearing is not likely to be at variance to this principle.

Methodology RPS Bowman Bishaw Gorham (March 2006)
CALM Advice (2006)

(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**

The proposed area to be cleared has undergone three vegetation and flora surveys at different times of the year. In the last survey of May 2006 a possible TEC was identified. Floristic Community Type 26a (FCT 26a) appeared, through compilation of sample species, to occur in a plot adjacent to the proposed clearing area. Upon further study of this plot it appeared there was some ambiguity with the plot classification. Predominant characteristics of FCT 26a include location on limestone ridges with common (although not essential) occurrence of *Melaleuca hueglinii*. This site is not located on a limestone ridge and there is no occurrence of *Melaleuca hueglinii*. Due to these factors and consultation with other botanists it is felt that it is unlikely that this area forms a TEC.

Methodology RPS Bowman Bishaw and Gorham, 2006
GIS Databases:
- Threatened Ecological Communities - CALM 12/04/05
- Threatened Plant Communities - DEP 06/95
- Environmentally Sensitive Areas - DOE 30/05/05

(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 Remaining (ha)*	Conservation Status**	% in Reserves/CALM managed land
IBRA Bioregion:				
Swan Coastal Plain	1,498,297	626,512	41.8	Depleted
Shire: Wanneroo	78,809	45,361	57.6	Least concern
Beard Unit 1948	81,022	17,315	21.4	Vulnerable
Heddele Vegetation:				
(i) Cottesloe Complex --				
Central And\South	44,995	18,474	41.1	Depleted
(ii) Quindalup complex	36,013	17,820	49.5	Depleted

The area under application is located within the Swan Coastal Plain Bioregion, where 41.8% (Shepherd et al., 2001) of pre-European vegetation is left remaining within the intensive land-use zone (ILZ).

In recognition of past land use planning decisions, the area under application is classified as a 'constrained area'. In these areas the retention objective is more realistically placed at 'at least 10 percent'. Given that the proposed clearing area retains 40% of pre European vegetation it is unlikely that this proposal is at variance to this principle.

Methodology Shepherd et al (2001)
Department of Natural Resources and Environment (2002)
GIS Database:
- Heddele Vegetation Complexes y DEP 21/06/95
- Pre-European Vegetation

(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 proposed clearing site does not lie in a watercourse or wetland area and does not provide a buffer area for watercourses or wetlands.

Methodology Aerial photograph
GIS Databases:
- Hydrography, linear - DOE 01/02/04
- Geomorphic wetlands - Swan Coastal Plain - DOE 15/09/04

(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**

The area under application displays low relief with shallow gradients. Groundwater salinity (measured as Total

Dissolved Solids) ranges from 500 - 1000 mg/L in the superficial (Leederville) aquifer. Annual rainfall in the region is 800mm.

Advice sought by DAFWA indicated that any issues related to land degradation would have been addressed when this parcel of land was originally planned and zoned urban.

Given the sandy soil types and coastal position, wind erosion may be an issue at the time of clearing, however, this may be minimised with appropriate management strategies.

Relative to the above factors it is not likely that the proposed clearing be at variance to this principle.

Methodology DAFWA (2006)
GIS Database:
- Topographic Contours, Statewide - DOLA 12/09/02
- Groundwater Salinity, Superficial aquifers - DOE 1/04/05
- Rainfall, Mean Annual - BOM 30/09/01

(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 proposed to be cleared does not lie within or adjacent to areas set aside for conservation. However, the property in which the area under application lies (lot 9 on plan 12464) is adjacent to Bush Forever site 397, although the proposed clearing is located some 300m from the Bush Forever boundary. The proposed clearing may have some impacts on this Bush Forever site. It is noted that the Butler-Jindalee District Structure Plan proposes that the Bush Forever site is separated from the urban development by a neighbourhood connector road development.

Methodology RPS Bowmann Bishaw Gorham, 2006
Keighery, 1994
GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05
- Bushforever - MFP 07/01

(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 proposed clearing site lies within the Swan Coastal Catchment, and within the Perth Coastal Underground Water Pollution Control Area, a Priority 3 (P3) classification area as defined under the Metropolitan Water Supply Sewerage and Drainage Act, 1909, (MWSSD Act). P3 areas are declared over land where water supply sources need to coexist with other land uses such as residential, commercial and light industrial developments, and are protected through management guidelines rather than restrictions on land use (DOE 2006).

The most recent groundwater data found depth to groundwater to be 22.09m below Top of Casing (TOC) on 28/10/2006 at a monitoring bore located 53m from the area under application. Groundwater salinity (measured as Total Dissolved Solids) ranges from 500 - 1000 mg/L in the superficial (Leederville) aquifer. Relative to these figures, clearing is unlikely to significantly alter water table depth or groundwater quality.

Due to the low relief and shallow gradients of the proposed clearing area, it is unlikely that surface water quality will be significantly altered by the proposed clearing.

The proposal is therefore unlikely to be at variance to this principle.

Methodology GIS Database:
- Hydrographic Catchments - Catchments - DOE 23/03/05
- WIN Groundwater Sites, Monitoring - DEWCP (Current)
- Groundwater Salinity, Statewide - 22/02/00
- Topographic Contours, Statewide - DOLA 12/09/02
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments
Due to the low relief and shallow gradients of the area under application, it is unlikely that surface water regimes will be significantly altered by the proposed clearing, indicating that clearing is not likely exacerbate flooding

Methodology GIS Database:
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

The area has been zoned 'urban' prior to 1996, therefore it has not been assessed by the EPA and will remain unassessed unless a future subdivision development wishes to alter the MRS boundaries.

The area under application has a recent native title claim laid over it, however as it is freehold land native title has been extinguished.

Methodology

4. Assessor's recommendations

Purpose	Method Applied	Decision	Comment / recommendation
Miscellaneous	Mechanical Removal	40.3 trees	Grant

5. References

Clearing Assessment Unit's biodiversity advice for land clearing application. Advice to Director General, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC 7160.

DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DoE TRIM ref 6918

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.

Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.

Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALM Science 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.

RPS Bowman Bishaw and Gorman, 2006, Lot 9 Marmion Avenue, Jindalee, Vegetation and Flora Survey

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
CALM	Department of Conservation and Land Management
DAWA	Department of Agriculture
DEP	Department of Environmental Protection (now DoE)
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 DoE)

