



1. Application details

1.1. Permit application details

Permit application No.: 2166/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Bryan Andrew Olsen

1.3. Property details

Property: LOT 401 ON PLAN 48887 (House No. 20 FRAYNE WANDI 6167)
 LOT 401 ON PLAN 48887 (House No. 20 FRAYNE WANDI 6167)
 LOT 401 ON PLAN 48887 (House No. 20 FRAYNE WANDI 6167)
 Local Government Area: Town Of Kwinana
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.18		Mechanical Removal	Grazing & Pasture

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
The vegetation under application consists of a few Banksias, with denser vegetation towards the centre including thickets of Kunzea and clumps of understorey species of Dasyopogon and Xanthorrhoea. Understorey species have been grazed by livestock (Site visit, 2007).	The proposed clearing site comprises an area of 0.18 ha in Wandi (Town of Kwinana) for the purpose of 'horse paddocks.'	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was assessed during a site visit (2007)

Beard vegetation association 1001: Medium very sparse woodland; jarrah, with low woodland; banksia & casuarina.

Hedde Bassendean Complex - Central And South: Ranges from woodland of E. marginata - C. fraseriana - Banksia spp. to low woodland of Melaleuca species, and sedgelands on the moister sites. This area includes the transition of E. marginata to E. totiana in the vicinity of Perth (Vegetation complexes for the Swan Coastal Plain, Dandaragan Plateau and Darling Scarp (Hedde et al. 1980).

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 proponent has submitted a clearing application to clear up to 0.18 hectares of native vegetation for the purpose of creating horse paddocks.

The vegetation under application consists of a few Banksias, with denser vegetation towards the centre including thickets of Kunzea and clumps of understorey species of Dasyogon and Xanthorrhoea. Understorey species have been grazed by livestock (Site visit, 2007).

During a site visit (2007) the average condition of the vegetation proposed to be cleared was considered to be degraded (Keighery, 1994) with dead vegetation and a very minimal understorey consisting of some weed species. The area vegetation under application is dominated by thickets of disturbed Kunzea species. There is a noticeable lack of suitable habitats for fauna with minimal ground cover and only a few large native trees present.

Given the average condition of the vegetation is degraded, with obvious signs of disturbance and limited scope for regeneration, the vegetation within the area under application is unlikely to be representative of vegetation comprised of outstanding biodiversity in the bioregion or local area (5kms radius).

Methodology Site Visit (2007)

(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**

There are 10 records of rare or endangered fauna within the local area. They include 8 sightings of the priority 5, *Isoodon obesulus fusciventer* (Quenda), 2 reports of Priority 4 *Macropus irma* (Western Brush Wallaby) and one sighting of the classified Endangered *Calypterhynchus latirostris* (Carnaby's Black Cockatoo).

Aerial photography suggests that any previous linkages between the native vegetation in the proposed clearing area and the recorded locations of these conservation significant fauna have been modified by clearing activities and urban development. Within the area under application there is a lack of suitable understorey shrubs (site visit, 2007) for the ground dwelling fauna such as Quenda, and no Quenda diggings were observed. Furthermore, there were no trees with hollows within the proposed clearing area and limited Banksia, which are required to support *C. latirostris*.

Given the area under application consists of isolated trees and shrubs of a degraded condition and the local area supports intact vegetation structures, native vegetation in the area under application is not considered to be necessary for the maintenance of a significant habitat for fauna indigenous to Western Australia.

Methodology Site Visit (2007)
GIS Database:
-SAC Bio Datasets
-Pre-European Vegetation Extent - DA 01/01

(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 20 populations of declared rare flora (DRF) and priority flora within the local area. The DRF records closest to the proposed clearing area consist of *Diuris purdiei* (situated at approximately 1.8km SE of the application site), *Drakaea elastica* (situated at approximately 1.9km NW), and *Caladenia huegelii* (situated at approximately 2.2km N of the application site).

All of the species of DRF identified within the local area, fall under the same Beard vegetation association, Hedde vegetation complex, and soil type as the area under the application.

No sightings of DRF were recorded within the area under application (site visit, 2007). This may be due to the DRF identified within the local area not flowering in November (WA Herbarium, 2007).

Both *C. huegelii* and *D. elastica* thrive in low-lying situations adjoining wet-winter swamps as per the area under application. *D. elastica* are found under thickets within wet-winter swamps, such as the thickets of *Kunzea* within the area under application.

Given the degraded condition of the vegetation under application, it is unlikely to be necessary for the continued existence of rare flora.

Methodology Site Visit (2007)
WA Herbarium (2007)
GIS Database:
-SAC Bio Datasets
-Soil Statewide - DA 11/99
-Hedde Vegetation Complexes - DEP 21/06/95
-Pre-European Vegetation Extent - DA 01/01

(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**

Mapping indicates there are no existing threatened or priority ecological communities within the local area (5kms).

The following TEC's are found within the Bassendean Dunes floristic community type on the Swan Coastal Plain (Bush Forever, 2000) of which the area under application falls within:

- 20a - Banksia attenuata woodlands over species rich dense shrublands
- 20b - Eastern Banksia attenuata and/or Eucalyptus marginata woodlands
- 20c - Eastern shrublands and woodlands

Given the lack of species diversity and Banksia attenuata within the area under application, it is unlikely that it is an area that is necessary for the maintenance of a significant ecological community.

Methodology Bushforever (2000)
GIS Database:
-SAC Bio Datasets 271107

(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**

The area under application is located in the Town of Kwinana and within the Swan Coastal Plain Bioregion. The extent of pre-European vegetation within these areas is 40.2% and 38.1% respectively (Shepherd et al., 2001; Shepherd, 2006). It consists of Beard Vegetation Association 1001 (Hopkins et al., 2001) of which there is 26.5% of the pre-European vegetation extent remaining within the Swan Coastal Plain Bioregion (Shepherd, 2006). This vegetation complex is considered to have a 'vulnerable' conservation status (Department of Natural Resources and Environment, 2002).

Furthermore, the application falls within Hedde Bassendean (central and south) Complex and Bassendean (central and south within the Swan Coastal Plain of the Perth Metropolitan Region) of which there is 27.0% and 24.0% respectively of the pre-European extent remaining (Hedde, 1980), and both have a conservation status of 'vulnerable' (Department of Natural Resources and Environment, 2002).

A number of these percentages are lower than 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).

Given the condition of the vegetation under application, it is unlikely the proposed clearing represents a significant remnant of vegetation.

Methodology Shepherd et al. (2006)
Department of Natural Resources and Environment, (2002)
Hedde et al. (1980)
GIS Database:
-Hedde Vegetation Complexes - DEP 21/06/95
-Interim Biogeographic Regionalisation of Australia - EA 18/10/00
-Pre-European Vegetation Extent - DA 01/01

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments **Proposal is at variance to this Principle**

The area under application falls within the Australian Nature Conservation Agency (ANCA) wetland area of Gibbs Road Swamp System, this is supported by the presence of wetland dependant vegetation such as dasygogon and Kunzea within the area under application (Site Visit, 2007).

There are 7 records for Environmental Protection Policy (EPP) lakes within the local area. The EPP lake record

closest to the application site is situated at approximately 364m SW of the proposed clearing area. None of these wetlands come in contact with the area under application.

Given the area under application is within an ANCA wetland area, the vegetation is considered to be associated with wetland vegetation and is therefore at variance.

Due to the small and degraded size of the vegetation under application, and lack of noticeable ecological linkages to the surrounding wetlands the proposed clearing is not likely to have significant impact on the values of wetlands.

Methodology Site Visit (2007)
GIS Database:
-ANCA, Wetlands - CALM 08/01
-EPP, Lakes - DEP 1/12/92

(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 proposed clearing area is characterised by a low relief elevation rising from 25m to 30m Australian Height Datum (AHD) with leached sands as chief soils. Groundwater salinity in the application site has been mapped for less than 500 Total Dissolved Solids (TDS), which gives it a low rating. Furthermore, it is situated in an area that has been identified as 'Class 2' with a 'moderate to low' Acid Sulphate Soil (ASS) Risk.

The purpose of the area under application is to create a horse paddock. Clearing within the local (5km radius) and regional area of the Bassendean Dunes can increase phosphorus export into the groundwater. Additionally, the local area is prone to wind erosion and waterlogging, given its low relief, though is unlikely due to infrastructure and vegetated areas surrounding the area under application and reducing the risk.

Due to the vegetation condition (Site Visit, 2007) and the small scale of clearing proposed, it is unlikely that it will cause land degradation.

Methodology Site Visit (2007)
GIS Database:
-Topographic contours- DOLA 12/09/02
-Soil Statewide - DA 11/99
-Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
-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

There are two conservation areas, Wandi Nature Reserve and Modong Nature Reserve, situated at approximately 1.5 km W and 2km S respectively from the application site.

The proposed clearing site's vicinity is surrounded by Bush Forever site 347 with the closest portion being 152m SE of the application site. From aerial photography, a buffer of native vegetation is apparent between the proposed clearing area and the Bush Forever site.

Given the small and degraded condition of the area under application, clearing of native vegetation is unlikely to impact on the environmental values of any adjacent or nearby conservation areas.

Methodology GIS Database:
-Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
-Pre-European Vegetation Extent - DA 01/01
-Bushforever - MFP 07/01
-CALM Managed Lands and Waters - CALM 01/07/05

(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 area under application is within the Peel Estuary_Serpentine River hydrographic catchment, and the EPP Area Peel Inlet-Harvey Estuary. There are also 7 records for Environmental Protection Policy (EPP) lakes within the local area. The EPP lake recorded closest to the application site is situated at approximately 364m SW of the area and do not come in contact with the area under application.

Additionally, the application area is within the Jandakot Underground Water Pollution Control Area, protected as a 'Priority 2' Public Drinking Water Source Area (PDWSA). A submission received from the Town of Kwinana

(2007) states no objections to future land use on site.

The groundwater salinity has been mapped for less than 500mg/L Total Dissolved Solids (TDS), and is situated in an area that has been identified as 'Class 2' with a 'moderate to low' Acid Sulphate Soil (ASS).

Given the small and degraded condition of the vegetation under application clearing is unlikely to cause deterioration in the quality of surface or groundwater.

Methodology Town of Kwinana (2007)
GIS Database:
- Public Drinking Water Source Areas (PDWSAs)- DOW
- Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
- Groundwater Salinity Statewide DOW
- Hydrographic Catchment - Catchments - 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**
The proposed clearing area is characterised by a low relief elevation rising from 25m to 30m AHD [Australian Height Data] with subdued dune-swale terrain and leached sands as chief soils. The mean annual rainfall of the area is 900mm per annum.

The proposed clearing area has been identified as an area subject to inundation within the Gibbs Road Swamp System, classified as an ANCA wetland.

Given the small and degraded nature of the proposed clearing area it is not likely that clearing of native vegetation will exacerbate the likelihood of flooding.

Methodology GIS Database:
-Rainfall, Mean Annual - BOM 30/09/01
-Topographic contours- DOLA 12/09/02
-Soil Statewide - DA 11/99
-ANCA, Wetlands - CALM 08/01

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

Comments
The application site is within the Jandakot Underground Water Pollution Control Area, protected as a 'Priority 2' Public Drinking Water Source Area (PDWSA). Within the Western Australian Planning Commission Statement of Planning Policy No.2.3, Jandakot Groundwater Protection Policy (2003), it states 'that the local government may, at its discretion, but after having due regard for the advice from the Water and Rivers Commission, permit the use', of land in a Priority 2 area for stables. Following this, a submission was received from the Town of Kwinana stating that they have no objections to the clearing of the vegetation on Lot 401 Frayne Place, Wandii.

Planning approval for the clearing of native vegetation within the area under application was issued by the State Administrative Tribunal (SAT). As part of the SAT planning approval an area located in at the side of the is to be revegetated.

The proposed land use of the area under application is to create horse paddocks. This will exacerbate nutrient loss as land will be left barren, and increase pressures on the Peel Inlet-Harvey Estuary EPP area.

Methodology Town of Kwinana (2007)
GIS Database:
-Public Drinking Water Source Areas (PDWSAs) - DOW

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Grazing & Pasture	Mechanical Removal	0.18	The proposal maybe at variance to principle c, f and i; and is unlikely to be at variance to principle a, b, d, e, g, h and j

5. References

Bush Forever 2000. Volume 2, Directory of Bush Forever Sites. The Government of Western Australia 2000.
DEH. 2007. Department of Environment and Heritage. 2007. Commonwealth Government. Sited on 19/11/07 at deh.gov.au
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.

Jandakot Groundwater Protection Policy (2003). Statement of Planning Policy No. 2.3. Western Australian Planning Commission

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.

Site Visit (2007). Department of Environment and Conservation. 2007.

Town of Kwinana (2007). Submission received by the Town of Kwinana 20 November 2007.

WA Herbarium (2007). Department of Environment and Conservation. 2007. Sited on 19/11/07 at <http://florabase.dec.wa.gov.au/>

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)