



1. Application details

1.1. Permit application details

Permit application No.: 1939/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Racing & Wagering Western Australia

1.3. Property details

Property: LOT 768 ON PLAN 202443 (Lot No. 768 FORTY PORT KENNEDY 6172)
ROAD RESERVE (PORT KENNEDY 6172)
Local Government Area: City Of Rockingham
Colloquial name: Sewer line to Horse Training Complex

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.3		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
Heddlle Vegetation Complex: 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>Melaleuca lanceolata</i> - <i>Callitris preissii</i> and the closed shrub of <i>Acacia rostellifera</i>	The proposal is to clear 0.3 ha for the purpose of installing a sewer and water pipeline to the Lark Hill Thoroughbred Horse Training Complex. The vegetation under application comprises <i>Acacia saligna</i> , <i>Allocasuarina</i> spp, <i>Senecio</i> spp. and sedges. The vegetation ranges in condition from degraded to completely degraded, with an average condition of degraded.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation clearing description based on a site visit conducted by DEC officers on 1 August 2007.
Beard Vegetation Association: 3048 - Shrublands; scrub-heath on the Swan Coastal Plain	The pipeline will be mechanically installed on the western side of Forty Road Reserve to the Lark Hill training track, with the width of clearing being approximately 3m. This will be varied to a 1m width in the area adjacent to the Threatened Ecological Community (TEC) and through the wetland, by installing the pipeline manually.		

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 area under application is located within Bush Forever site 356, and a portion of the applied area is also located within a Conservation Category Wetland (CCW) and is adjacent to a Threatened Ecological Community (TEC).

The vegetation under application comprises *Acacia saligna*, *Allocasuarina* spp. *Senecio* spp. and native sedges in a degraded condition (DEC, 2007).

Given the area under application is relatively small (0.3ha), is linear in shape, is in a degraded condition and the limited diversity of remaining remnants under application, it is not considered likely to comprise a high level of biodiversity.

Methodology DEC (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

Within the local area (5km radius) there have been three recorded occurrences of Priority Fauna including:

- * Quenda (*Isodon obesulus fusciventer*) (P5)
- * Woylie (*Bettongia penicillata ogilbyi*) (P5)
- * Carpet Python (*Morelia spilota imbricata*) (P4).

The vegetation under application is limited to *Acacia saligna*, *Allocasuarina* spp, *Senecio* spp and sedges (DEC, 2007). Given the absence of a dense understorey within the applied area and the lack of hollows, the vegetation under application is not considered likely to provide suitable habitat for ground-dwelling fauna such as the Quenda and Carpet Python.

The only recorded sighting of the Woylie occurred in 1995, approximately 2.7km southwest of the area under application, with no further sightings of this species recorded within the local area. Given the small area (0.3ha), linear shape and lack of dense understorey, it is not considered likely that the vegetation under application would provide suitable habitat for the Woylie.

Given the small area (0.3ha), linear shape, lack of dense understorey and degraded condition of the vegetation under application, it is not likely that it comprises significant habitat for indigenous fauna.

Methodology DEC (2007)
SAC BIO Datasets - accessed 29/08/07

(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 populations of Declared Rare Flora (DRF) within a 5km radius of the area under application, however, there are three known occurrences of Priority species within a 5km radius, of which *Jacksonia sericea* (P4) is located approximately 1km northeast of the applied area.

The Priority species *J. sericea* (P4) is a low spreading shrub found on sandy soils and is located in the same vegetation complex and soil type as the area under application. DEC officers did not observe any prostrate *Jacksonia sericea* along the application area, during the site inspection (DEC, 2007).

Given that there are no DRF identified within the local area, no *Jacksonia Sericea* was observed during the site visit (DEC 2007), the small area (0.3ha), linear shape and degraded condition of the remnant vegetation within the application, it is not considered likely that the vegetation under application includes, or is necessary for the continued existence of, rare flora.

Methodology DEC (2007)
Western Australian Herbarium (1998)
SAC BIO Datasets - accessed 21/08/07
GIS Databases:
Hedde Vegetation Complexes - DEP 21/06/95
Soils, Statewide - DA 11/99

(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 approximately 80 known occurrences of Threatened Ecological Communities (TECs, FCT19a and FCT19b) within the local area (5km radius) of the area under application.

The closest TEC is mapped immediately adjacent to a portion of the area under application in the Forty Road Reserve. This TEC has been identified as Floristic Community Type 19b (woodlands over sedgeland in Holocene dune swales) and is considered to be in very good condition (DEC Species and Communities Branch

2007). The area under application is located within the buffer to this TEC and numerous other TECs in the local area.

A 55m portion of the vegetation under application is located immediately adjacent to the mapped TEC. The vegetation in this area is limited to *Acacia saligna*, *Senecio* spp and sedges in a degraded condition and is not considered to be part of the TEC.

Although a portion of the vegetation under application is located immediately adjacent to a mapped TEC, the small area (0.3ha), linear shape and degraded condition of the remnant vegetation makes it unlikely to be considered a TEC or be necessary for the maintenance of the adjacent TEC.

Methodology DEC (2007)
DEC Species and Communities Branch (2007)
SAC BIO Datasets - accessed 21/08/07

(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 not likely to be at variance to this Principle

Hedde et al. (1980) defines the vegetation under application as Quindalup Complex, of which there is 47.1% of pre-European extent remaining and which is described as being of a 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment 2002; EPA 2006).

The vegetation under application is also described as Beard vegetation association 3048 which has 28.9% of pre-European remaining (Shepherd 2006) and which is considered to be of a 'vulnerable' status for biodiversity conservation (Department of Natural Resources and Environment 2002). In addition the vegetation under application is within the City of Rockingham of which there is 35.1% of pre-European extent remaining, and which is considered to be of a 'depleted' status for biodiversity conservation (Department of Natural Resources and Environment 2002; Shepherd et al. 2001).

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, 2006). Beyond this value, species extinction is believed to occur at an exponential rate and any further clearing may have irreversible consequences for the conservation of biodiversity and is therefore not supported.

Although the identified Beard vegetation association has less than the recommended 30% minimum of Pre-European extent remaining, the applied area is considered to within a constrained area. The EPA (2003) recognises the Perth Metropolitan Region as a constrained area, providing for the reduction of vegetation complexes to a minimum of 10% of the Pre-European extent. In addition, there is approximately 35% of Pre-European extent remaining in the local area.

	Pre-European area (ha)	Current extent (ha)	Remaining %	Conservation status*** % in reserves	
Swan Coastal Plain	1,501,456	571,758	38.1%**	Depleted	
City of Rockingham	24,326	24,326	35.1%*	Depleted	
Hedde vegetation complex					
Quindalup Complex	38,238	18,000	47.1%***	Depleted	5.2%
Beard vegetation associations 3048	12,101	3,499	28.9%	Vulnerable	19.8%

* (Shepherd et al. 2001)

** (Shepherd 2006)

***(EPA, 2006)

***(Department of Natural Resources and Environment 2002)

Given, the amount of remaining remnants within the local area, the small area (0.3ha), the linear shape and the degraded condition of the remaining remnants within the application it is not likely that this proposal will be at variance to this principle.

Methodology Department of Natural Resources and Environment (2002)
EPA (2006)
Hedde et al. (1980)
Shepherd et al. (2001)
Shepherd (2006)

(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

There are number of Conservation Category Wetlands (CCW) and Resource Enhancement Wetlands within a 5km radius of the area under application, the closest is the Point Becher Wetland (CCW) in which a 55m section of the southern portion of vegetation under application is part of this wetland.

The closest EPP lake is Stakehill Swamp which is located 880m east of the area under application and the nearest watercourse is the Peel Main Drain which is located approximately 5.8km east of the applied area.

Given that a portion of the vegetation under application is located within a Conservation Category Wetland (CCW) and that wetland dependent sedges were observed during the DEC site visit (DEC, 2007), it is considered that the vegetation under application is growing in, or association with a wetland, however, the proposal is unlikely to have any deleterious effect on these wetlands if cleared due to the modified nature of the remaining remnants.

The proposed clearing is considered to be at variance to this Principle.

To mitigate any loss of vegetation associated with the wetland, an offset condition has been imposed on the permit.

Methodology DEC (2007)
GIS Databases:
ANCA, Wetlands - CALM 08/01
EPP, Lakes - DEP 1/12/92
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW
RAMSAR, Wetlands - CALM 14/02/03

(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

Soils within the area under application are part of the Quindalup system and comprise calcareous sands which have a nil to low risk of water erosion and acid sulphate soils within 3 metres, and are generally associated with a low to nil risk of salinity (State of Western Australia 2005). A portion of the applied area is identified as having a high salinity risk (DOLA 2000), however, given the small size of the area involved (490m) it is not considered likely that the proposed clearing of individual Acacia and Allocasuarina trees would result in any increased salinity level.

The main land degradation risk associated with the sandy soils identified on site is considered to be nutrient export and wind erosion (State of Western Australia 2005). The clearing of 0.3ha of native vegetation which is in a degraded condition, is not considered likely to impact on the export of nutrients.

The high risk of wind erosion is due to the sandy nature of these soils and the coastal location of the applied area. Given the degraded condition of the vegetation under application which is limited to individual Acacia and Allocasuarina trees within a narrow, linear road reserve and the expanse of non-native grasses which would minimise the risk of wind erosion, it is not considered likely that the proposed clearing would result in appreciable land degradation.

Methodology DOLA (2000)
State of Western Australia (2005)
GIS Databases:
Acid Sulfate Soil Risk Map, Swan Coastal Plain - DEC
Salinity Risk LM 25m - DOLA 00
Soils, Statewide - DA 11/99

(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 at variance to this Principle

The area under application is located within the boundaries of Bush Forever Site 356. The northern portion of the applied area is also situated within an area listed on the Register of National Estate which is identified as significant as it contains a curved headland (Point Becher) and an active curving Quindalup dune system (AHC, 2007). In addition a portion of the area under application is located within a Conservation Category Wetland (CCW).

The northern portion of the area under application is located immediately adjacent to the Rockingham Lakes Regional Park and the System 6 Conservation Reserve 240. The DEC Species and Communities Branch,

advise (2007) that machinery used for the installation of the proposed pipelines may have a high impact on the mapped TEC immediately adjacent to a portion of the area under application, and that this TEC should be restored to its original condition following any disturbance.

Given that the area under application is located within the identified Bush Forever site and Register of National Estate and within a CCW, it is considered that the proposed clearing will have a direct impact on the environmental values of these environmentally sensitive areas. In addition the proposed clearing may have an indirect impact through the spread or introduction of dieback or weed species by machinery used for the installation of the pipeline.

There are serious consequences associated with the spread of such diseases and exotic species into an area reserved for conservation, including the potential extinction of species. Indirect impacts may occur if dieback and weed risks are not adequately managed. The proposal is therefore considered to be at variance to this Principle.

Conditions have been placed on the permit to ensure wash down of vehicles and machinery, and to ensure construction material is weed and dieback free. In addition, conditions have also been imposed requiring weed control within the road reserve and additional cleared areas, and offsetting.

Methodology AHC (2007)
DEC Species and Communities Brach (2007)
GIS Databases:
Bushforever - MFP 07/01
CALM Managed Lands and Waters - CALM 1/07/05
CALM Regional Parks - CALM 12/04/02
Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
EPP, Lakes - DEP 1/12/92
Register of National Estate - EA 28/01/03
System 6 Conservation Reserves - DEP 06/95

(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 nearest watercourse is the Peel Main Drain which is located approximately 5.8km east of the area under application, however, a portion of the applied area is located within a Conservation Category Wetland (CCW).

The applied area has a high risk of salinity and water erosion and a nil to low risk of acid sulphate soils and is not located within a Public Drinking Water Source Area (PDWSA).

Given that the proposed clearing is limited to 0.3 hectares, is linear in shape and the degraded condition of the remaining remnants it is not considered likely that it would result in a deterioration in groundwater quality. In addition, due to the low gradient and high infiltration rates of the soils associated with the site, the proposed clearing is not considered likely to result in water erosion causing deterioration in surface water quality.

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

Methodology GIS Databases:
Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW
Salinity Risk LM 25m - DOLA 00
Public Drinking Water Source Areas (PDWSAs) -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 area under application is located at an elevation of 10m within a flat landscape. The soils identified on site are described as Quindalup sands which have a low risk of water logging due to their poor water holding capacity (State of Western Australia, 2005).

Given the high infiltration rates of the sandy soils on site, it is not considered likely that the proposed clearing of 0.3 hectares would cause or exacerbate the incidence of flooding.

Methodology State of Western Australia (2005)
GIS Databases:
Acid Sulphate Soil Risk Map, Swan Coastal Plain - DEC
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Salinity Risk LM 25m - DOLA 00

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

Comments

The lot under application is part of a Native Title Claim however, since it is freehold land Native Title is extinguished under the Native Title Act. Therefore the clearing as proposed should not fall under the future acts process of the Native Title Act 1993.

The Fire and Emergency Services Authority (FESA, Unexploded Ordinance (UXO) Liaison Officer) advised that Forty Road Reserve and the Race Course fall within the Rockingham Artillery Range Area which was surface surveyed for UXO in the 1980's and recommends that a 'Deep' survey be undertaken prior to any excavation of the proposed pipelines. Andrew Arnold (FESA UXO Liaison Officer) advised that he would contact the applicant (Racing and Wagering) to discuss this issue (FESA, 2007)(TRIM ref: DOC 33359).

The area under application is located within an Environmentally Sensitive Area and is situated within Bush Forever site 356. The northern portion of the area under application is located within an area listed with the Register of National Estate and is adjacent to the Rockingham Lakes Regional Park and a System 6 Conservation Reserve. In addition, a portion of the southern applied area is located within a Conservation Category Wetland (CCW) and is immediately adjacent to a Threatened Ecological Community (TEC).

The Department of Environment and Conservation (DEC Species and Communities Branch, 2007) recommend either manual or underground installation of the proposed pipe lines in the area adjacent to the Threatened Ecological Community (TEC) and that the area be restored to its original state following any disturbance.

The Bush Forever office does not object to the proposed sewer line construction through the Bush Forever site, but recommend erection of temporary fencing to minimise disturbance to vegetation during construction work and revegetation offsets of 2:1 (Bush Forever, 2007).

The City of Rockingham (2007) does not object to the proposal provided the sewer pipeline is installed either manually or underground in the area adjacent to the Threatened Ecological Community and revegetation offsets are applied, particularly to the strand of Acacias in the northern applied area.

The local LCDC (2007) group is opposed to the proposed clearing in such an environmentally sensitive area and recommends the installation of the pipeline by tunnelling. The proponent has investigated the possibility of underground installation of the pipeline, but due to a 12 month waiting period and the urgent need for this infrastructure, tunnelling is not a viable option. To mitigate potential environmental impacts from the use of machinery, the proponent has reduced the width of the clearing required by manual installation in the area adjacent to the mapped boundary of the Threatened Ecological Community (TEC).

Methodology

- FESA (2007)
- DEC Species and Community Branch (2007)
- Bush Forever (2007)
- City of Rockingham (2007)
- LCDC (2007)
- GIS Databases:
- Bushforever - MFP 07/01
- CALM Managed Lands and Waters - CALM 1/07/05
- CALM Regional Parks - CALM 12/04/02
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05
- Register of National Estate - EA 28/01/03
- System 6 Conservation Reserves - DEP 06/95

4. Assessor's comments

Purpose	Method	Applied area (ha)/ trees	Comment
Building or Structure	Mechanical Removal	0.3	The assessable criteria have been addressed, and the proposal is at variance to Principles (f) and (h) and not likely to be at variance to all remaining principles.. If a permit is granted specific conditions will need to be included to avoid and minimise the clearing. Conditions will also be required to address offsets, dieback, weeds, recording and reporting.

5. References

- Australian Heritage Council (AHC) - Australian Heritage Database - Reserve 17964, Port Kennedy Drive, Port Kennedy. <http://www.environment.gov.au/cgi-bin/ahdb/>. Accessed 29/08/07
- Bush Forever (2007) Direct interest submission. TRIM ref: DOC 31925.
- City of Rockingham (2007) Direct interest submission. TRIM ref: DOC 32214

Department of Environment and Conservation (DEC) (2007), Site Visit 01/08/2007. Western Australia. TRIM ref DOC32501.

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.

EPA (2006) Guidance for the Assessment of Environmental Factors -level of assessment of proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 Region. Report by the EPA under the Environmental Protection Act 1986. No 10 WA.

FESA (2007) advice for UXO Contamination within the Rockingham Artillery Range Area. TRIM ref: DOC 33359.

Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia, Department of Conservation and Land Management and the Water and Rivers Commission, Perth WA.

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.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

LCDC (2007) Direct interest submission. TRIM ref: DOC 30525

SAC Bio Datasets (21/08/07 & 29/08/07) Department of Environment and Conservation, Kensington, Western Australia.

Shepherd (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.

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.

Species and Communities Branch (DEC) (2007) advice for Threatened Ecological Community. TRIM ref: DOC 33333.

State of Western Australia (2005) AGMAPS Land Manager CD ROM

Western Australian Herbarium (1998-). FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> Accessed 22/08/2007.

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)

