



1. Application details

1.1. Permit application details

Permit application No.: 2109/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Eclipse Resources Pty Ltd

1.3. Property details

Property: LOT 2 ON PLAN 29392 (POSTANS 6167)
 Local Government Area: Town Of Kwinana
 Colloquial name: Continuation of limestone and sand mining

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
7.07		Mechanical Removal	Extractive Industry

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: Cottesloe Complex - Central and south - Mosaic of woodland of E. gomphocephala and open forest of E. gomphocephala - E. marginata - C. calophylla; closed heath on the Limestone outcrops.	The proposal is to clear 8.7 hectares for the purpose of sand and limestone extraction.	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 5 November 2007. Vegetation ranges in condition from completely degraded to good, with the majority being in degraded condition.
Beard Vegetation Association 998: Medium Woodland; Marri (Shepherd 2006)	The majority of the vegetation under application has been previously cleared and historically grazed. Vegetation in the southern portion of the applied area comprises very open woodland of Eucalyptus gomphocephala with Allocasuarina fraseriana over a sparse understorey comprising Xanthorrhoea preissii, Macrozamia riedlei, Banksia spp. and weeds.		
	Vegetation in the central northern portion comprises a thicket of Melaleuca huegelii and Dryandra sessilis on a limestone ridge, surrounded by very sparse X. preissii and M. riedlei, and dense weeds.		

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 majority of the vegetation under application is in degraded condition, with very sparse native understorey due to historical clearing and grazing. Given the low level of species diversity and the degraded to completely degraded condition of the vegetation under application, it is not considered likely to comprise a high level of biodiversity.

Methodology DEC site visit 5/11/07

(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**

Within the local area (5km radius) there are four known occurrences of the following significant fauna species:

- Quenda (*Isoodon obesulus fusciventer*),
- Carpet Python (*Morelia spilota imbricata*),
- Water Rat (*Hydromys chrysogaster*).

The vegetation under application comprises very open *Eucalyptus gomphocephala* woodland located on a sandy rise and is therefore not likely to contain habitat suitable for the Water Rat. In addition majority of the vegetation under application is in degraded to completely degraded condition with very sparse understorey comprising mainly weeds, and is likely to have limited habitat potential for ground dwelling fauna such as the Quenda and the Carpet Python.

During the site visit some mature *E. gomphocephala* were observed to have some hollows that could potentially be used by significant fauna species such as the Carnaby's Black Cockatoo, and mammals such as the Western Brush Tailed Possum.

Although the vegetation under application is in degraded to completely degraded condition, the vegetation includes mature *E. gomphocephala* with hollows that may be utilised by fauna, and it is therefore considered that the vegetation under application may comprise significant fauna habitat.

A condition has been placed on the permit requiring identification of habitat hollows and relocation of fauna if found.

Methodology DEC site visit 5/11/07
GIS Database: SAC Bio datasets accessed 30/11/07

(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**

Within the local area (5km radius) there are nine known populations of the Declared Rare Flora (DRF) *Drakaea elastica*, *Caladenia huegelii* and *Diuris micrantha*, with the closest being *D. micrantha* located approximately 900m to the southwest of the area under application. There are also five known populations of Priority flora in the local area.

D. elastica and *D. micrantha* are species generally found in low-lying situations adjoining winter-wet swamps, or in winter-wet swamps (Western Australian Herbarium 1998), and are therefore not considered likely to be found within the area under application, which is located on a sandy rise.

C. huegelii is generally found in grey or brown sand, clay loam (Western Australian Herbarium 1998) on low sandy rises in low woodlands of *Banksia attenuata* and *Eucalyptus marginata* (DEC undated). The vegetation under application along the eastern buffer does include some *Banksia* species, however this vegetation is very sparse with a dense weed cover and is located on yellow-brown sands, it is not considered likely to contain suitable habitat for *C. huegelii*.

Given that the vegetation under application is in degraded to completely degraded condition, and is located on a sandy rise; and given the distance to the nearest known population of DRF, it is not considered likely that it would include, or be necessary for the continued existence of rare flora.

Methodology DEC site visit 5/11/07
Western Australian Herbarium (1998-)
GIS Database: SAC Bio datasets accessed 30/11/07

(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**

Within the local area there is one known occurrence of a Threatened Ecological Community (TEC) located approximately 550m to the northwest of the area under application. This TEC has been identified as Floristic Community Type (FCT) 26a - *Melaleuca huegelii* - *Melaleuca acerosa* shrublands on Limestone ridges.

Vegetation within the centre of the northern portion of the applied area includes a thicket of *Melaleuca huegelii* and *Dryandra sessilis* on a limestone ridge. This vegetation may have previously comprised FCT 26a, however given the current degraded condition of the vegetation under application it is not considered likely that it is representative of this TEC.

Given that the vegetation under application is located outside the 500m buffer and across a road from the nearest TEC, and given the degraded condition of the M. huegelii thicket, it is therefore not considered likely that the vegetation under application comprises, or is necessary for the maintenance of, a TEC.

Methodology DEC site visit 5/11/07
GIS Database: SAC Bio datasets accessed 30/11/07

(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

The vegetation under application is identified by Heddle et al. (1980) as 'Cottesloe complex - central and south' of which there is 41.1% of pre-European vegetation remaining, and which is considered to be depleted (Department of Natural Resources and Environment 2002).

The vegetation under application is also part of Beard vegetation association 998 of which there is 35.9% remaining (Shepherd et al. 2002), and which also is considered to be depleted (Department of Natural Resources and Environment 2002).

Given that the identified vegetation complexes are above the National Objective Targets for Biodiversity Conservation (EPA 2003) the proposal is not considered likely to be at variance to this Principle.

	Pre-European (ha)	Current (ha)	Remaining %	Conservation
status****	% in reserves			
Swan Coastal Plain	1,501,456	571,758	38.1 **	Depleted 15.9
City of Rockingham	24,326	8,534	35.1*	Depleted
Local Area (~10km radius)	22,500	9,800	~43	Depleted
Heddle vegetation complex			***	
Cottesloe Complex - Central and South	44,995	18,474	41.1	Depleted 8.8
Beard vegetation association 998	51,017	21,178	41.5	Depleted 17.3

* (Shepherd et al. 2001)

** (Shepherd 2006)

*** (EPA, 2006)

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

Methodology Department of Natural Resources and Environment (2002)
EPA (2006)
Shepherd (2006)
GIS Databases:
Heddle Vegetation Complexes - DEP 21/06/95
Pre-European Vegetation - 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 not likely to be at variance to this Principle

The area under application is located approximately 1.8km to the south of the Spectacles wetlands, which is a Conservation Category Wetland (CCW), and 1.3km southeast of a Resource Enhancement Category wetland. The nearest watercourse to the proposal is the Peel Main Drain, which is located approximately 2.5km to the east.

Given that no wetland dependent vegetation was observed during the site visit, and the distance to the nearest watercourse or wetland, it is not considered likely that the vegetation under application is growing in, or in association with a water course or wetland.

Methodology DEC site visit 5/11/07
GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW

(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

Soils within the area under application have been identified as Spearwood S2a phase, and are described as moderately deep to deep siliceous yellow-brown sands or pale sands with yellow-brown subsoils and minor

limestone outcrop (State of Western Australia 2005). These soils are generally associated with a low risk of land degradation, however it is considered that the soils are likely to have a high risk of wind erosion. The high erosion potential is due to the sandy nature of the topsoil and without appropriate ground cover, windbreaks or adequate dust suppression on exposed surfaces the proposal would be likely to cause land degradation.

The majority of the area under application has a low to nil risk of acid sulphate soils and salinity, however there is a small portion in the centre that has a high risk of salinity.

The proposed land use of area under application is a sand and limestone mine; therefore the above mentioned issues should be addressed and managed through the extractive industries licence. The proposal therefore may be at variance to this Principle. A condition has also been placed on the permit requiring that clearing not occur unless actively mining the area to be cleared within six months of the clearing.

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

(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 under application is located approximately 1.3km northeast from Bush Forever site 349 and 1.2km to the west of Bush Forever site 269.

Given the distance to the nearby Bush Forever sites, it is not considered likely that the proposed clearing would have a direct impact on these conservation reserves. In addition, given the degraded condition of the vegetation under application and its limited value as an ecological corridor, it is not considered likely that the proposed clearing would indirectly impact any nearby conservation reserve through restricting fauna movement.

Methodology DEC site visit 5/11/07
GIS Databases:
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 applied area is not within a Public Drinking Water Source Area (PDWSA) and the nearest waterbody is located approximately 1.3km to the northwest. Given the distance to the nearest wetland, that the sandy soils within the area under application have high infiltration rates (State of Western Australia 2005) and that the proposed clearing is for sand extraction, the proposed clearing is not considered likely to cause deterioration in the quality of surface water through run off and sedimentation.

There is a low risk of salinity and acid sulphate soils within the majority of the area under application. A small portion of the area under application has a high risk of salinity, however given the sparse distribution of the vegetation, it is not considered likely that the proposed clearing would contribute to salinity on or offsite resulting in a deterioration in groundwater quality.

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

(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 20-32 metres, and is approximately 1.8km south of a Conservation Category Wetland (CCW) and the nearest watercourse is the Peel Main Drain located approximately 2.5km to the east.

Due to the distance to the nearest watercourse or wetland, and the location of the site on a sandy rise, is not considered likely that the proposed clearing would cause or exacerbate the incidence of flooding.

Methodology GIS Databases:
Geomorphic Wetlands (Classification), Swan Coastal Plain - DEC
Hydrography, linear (hierarchy) - DOW
Topographic Contours, Metropolitan Area - DLI

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

Comments

Lots 2 Abercrombie Road is part of a Native Title Claim however, since it is privately owned the Native Title has been extinguished under the Native Title Act. Therefore the clearing is considered to be a secondary approval and not a future act under the Native Title Act 1993.

Eclipse Resources have indicated that they want to extract sand from the 20m buffer to the adjacent lots in the next 12 months. The applicant has liaised with Alcoa, the adjacent property owner to the east and they do not object to Eclipse doing this and it will not effect the integrity of their cooling ponds. The applicant has also liaised with Department of Agriculture and Food (DAFWA), the adjacent property owner to the west, and they would eventually like Eclipse to mine their property too, and therefore the buffer would not be required.

The Town of Kwinana has approved an extractive industry and resource recovery centre on Lot 2 Abercrombie Road, Postans with a condition that no excavation is to occur within 20m of lot boundaries and the Town of Kwinana therefore does not support the excavation within 20m of lot boundaries. Town of Kwinana has advised however, that they do not object to Eclipse utilising the buffer on the boundaries common with DAFWA for the purposes of stockpiling, access and additional fire control area.

Methodology

Town of Kwinana (2007)
GIS Database: Native Title Claims - DLI

4. Assessor's comments

Purpose	Method Applied	area (ha)/ trees	Comment
Extractive Industry	Mechanical Removal	7.07	The assessable criteria have been addressed and the proposed clearing may be at variance to Principles (b) and (g).

5. References

- 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.
- 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.
- 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.
- Site Visit 5/11/07, Department of Environment and Conservation (DEC), Western Australia. TRIM ref DOC39031.
- 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 on Tuesday 6 November 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)