



1. Application details

1.1. Permit application details

Permit application No.: 520/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Whitfield Minerals Pty Ltd.

1.3. Property details

Property: M63/528
M63/529
Local Government Area: Shire Of Dundas
Colloquial name: M63/528 and M63/529 - mineral exploration

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
31.04		Mechanical Removal	Mineral Exploration

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 Beard vegetation association is 125: Bare areas; salt lakes. (Shepherd et al. 2001, Hopkins et al. 2001)	The area under application consists of two linear areas that form part of a series of dunes on the southern surface of the dry salt lake, Lake Cowan. The vegetation itself is not consistent with that described by Beard. Given that the dunes are not typical of the Beard association the assessment of the vegetation is based on the flora and vegetation studies commissioned by the applicant to support this application. Western Botanical (2004) reports four vegetation associations within the area under application: woodland of Casuarina pauper and Callitris glaucophylla with sclerophyll understorey on elevated gypsiferous dunes; scattered Eucalypt woodland with sclerophyll understorey on elevated gypsiferous dunes; riparian Samphire heath on low gypsiferous dunes; and open sclerophyll shrubland on low gypsiferous dunes. The Priority 2 species Asteridea archeri is present among the open sclerophyll shrublands on the low gypsiferous dunes. A small number of individuals are located along the western slope of M63/528 and the southern slope of M63/529 (Western Botanical, 2004).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	Information relating to the vegetation description has been obtained from orthomosaic and botanical survey photos of the tenements proposed to be cleared. These show some sign of disturbance with tracks over areas of the dunes (Western Botanical 2004, Western Australia ETM 25m 543 - AGO 04).

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**
Lake Cowan is described by CALM (2003) as being 'important for breeding, feeding, roosting, moulting or nursery areas, or refugia for animal taxa'. While the vegetation under application covering some of the dunes on the southern part of the Lake may well be of importance in this role, the communities present are well represented in the locality and region and are not considered to be of any conservation significance.

Methodology CALM 2003
CALM (2005) Land Clearing Proposal Advice (DoE Trim No. IN22931)

(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**

Fauna of note that occur in the local area (50km radius) include Schedule four species: Falco peregrinus (Peregrine falcon) and Priority four species: Hylacola cauta whitlocki (Shy heathwren - western spp) (CALM 2005). The habitats these species favour, however, are not present within the area under application. Therefore the clearing as proposed is not likely to be at variance to this Principle (Whitfield, 2004).

Methodology Whitfield (2004) (DoE Trim No. IN20530)
CALM (2005) Land Clearing Proposal Advice (DoE Trim No. IN22931)

(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**

No Declared Rare Flora species were identified within the area under application (Western Botanical 2004).

The Priority 1 species, Eucalyptus jimberlancia is known to occur within the vicinity (4km) of the area under application (CALM 2005). However, no specimens were identified during the flora survey (Western Botanical 2004).

The Priority 2 species, Asteridea archeri, is present in the area under application and this population extends the known range of the species (Western Botanical 2004). This species occurs within and immediately north-west of the Cape Arid National Park which has similar salt lake, gypsum dune habitat to Lake Cowan (Western Botanical 2004). The population within the area under application represents considerable northwest range extension for the species and given the similar habitat between these two locations, it is likely to be far more widely distributed than current records indicate (Western Botanical 2004). Given that the distribution of this species is not restricted, and that its conservation status remains as Priority 2, the clearing as proposed is not likely to be at variance to this principle.

Methodology CALM (2005) Land Clearing Proposal Advice (DoE Trim No. IN22931)
Western Botanical (2004) (DoE Trim No. IN20530)

GIS database: -
Declared Rare and Priority Flora List - CALM 01/07/05

(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 no known occurrences of Threatened Ecological Communities within 50km of the proposed clearing (CALM 2005).

Methodology CALM (2005) Land Clearing Proposal Advice (DoE Trim No. IN22931)

GIS database: -
Threatened Ecological Communities - CALM 12/4/05

(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**

The State Government is committed to the National Objectives and Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment 2002, EPA 2000).

The vegetation at the site is a component of Beard vegetation association 125 (Hopkins et al. 2001) of which there is ~89.8% of the pre-European extent remaining (Shepherd et al. 2001). This vegetation type is therefore of 'least concern' for biodiversity conservation (Department of Natural Resources and Environment 2002).

However as mentioned in the Vegetation Description, the vegetation within the area under application is not representative of the Beard vegetation association 125. The vegetation communities described in the flora survey are well represented both locally within Lake Cowan and regionally within surrounding Lakes Gilmore and Dundas (Western Botanical 2004).

Methodology Shepherd et al. (2001)
Hopkins et al. (2001)
Department of Natural Resources and Environment (2002)
EPA (2000)
Western Botanical (2004) (DoE Trim Ref IN20530)

(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 a series of dunes on the Lake Cowan surface. The vegetation, however, is typical of gypsiferous dunes around salt lakes (Whitfield 2004). The clearing of this vegetation under application is unlikely to significantly affect the ecological communities associated with the Lake as it represents only a relatively small proportion of the local vegetation association.

Methodology Whitfield (2004) (DoE Trim No IN20530)

GIS database: -
Geodata, Lakes - GA 28/06/02

(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 Department of Agriculture of WA (DAWA 2005) advises that soil erosion is likely to be a serious problem if extensive areas of the gypsiferous dunes are cleared and exposed without careful rehabilitation. DAWA (2005) also advise that clearing in these areas should be limited to 1-2ha at a time to help lessen the risk of soil erosion.

Methodology DAWA advice - 2005, TRIM ref IN21860

(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 within 10km of a CALM managed timber reserve. The clearing as proposed is unlikely to affect this reserve, given that the Coolgardie/Esperance Highway runs between the reserve and Lake Cowan. There are no other reserves within 20km of the proposed clearing.

Methodology CALM (2005) Land Clearing Proposal Advice (DoE Trim No. IN22931)

GIS Databases:
CALM Managed Lands and Waters - CALM 1/06/04

(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 covers gypsiferous dunes on the surface of Lake Cowan. As the lake is the end point of local drainage in the area surface run-off into the lake is not likely to be affected.

The movement of water across the surface of the lake is not likely to be affected as the area under application does not extend across the width of the lake and is not in one continuous band.

Ground water is unlikely to be effected as Lake Cowan is the main point of drainage for the ground water and the area of disturbance would be small in comparison to this larger area to have a significant impact. The clearing of a small portion of the dune system is unlikely to affect the water tables of Lake Cowan or the local groundwater aquifers. The lake is large (21,455ha) and the area to be cleared is in a small southern section of the lake.

Methodology GIS database: -
Geodata, Lakes - GA 28/06/02
Hydrography, Linear - DOE 01/02/04

(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 within Lake Cowan which is the central point of drainage for a wide area. In

addition, the area under application receives little rainfall (300mm per annum) with point potential evapotranspiration of 2000mm per annum. Therefore it is unlikely that the clearing as proposed would exacerbate flooding in the local area.

Methodology GIS database: -
 Geodata, Lakes - GA 28/06/02
 Rainfall, Mean Annual - BOM 30/09/01
 Evapotranspiration, Point Potential - BOM 30/09/01

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

Comments

There is a Native Title claim to the area under the name of the Ngadju people. Mining tenements for purposes consistent with the proposed clearing have been granted, therefore the granting of a clearing permit is not a future act under the Native Title Act.

There is no RIWI Act licence, Works Approval or EP Act licence that will affect the area covered under this application.

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Exploration	Mechanical Removal	31.04	Grant	<p>The Principles have been addressed and the proposed clearing may be at variance with Principle g.</p> <p>For Principle g, the DAWA has identified that clearing of extensive areas of gypsiferous dunes may create a serious soil erosion problem.</p> <p>The assessor advises that the permit be granted but that conditions be set limiting the amount of vegetation cleared at any one time to no more than 2 ha.</p> <p>CALM (2005) recommends that (if a clearing permit is issued then) the proponent should undertake a vegetation rehabilitation program using endemic, provenance correct, flora species when disturbance activities in the area have been completed.</p>

5. References

CALM (2003) A biodiversity audit of Western Australia's 53 biogeographical Subregions in 2002. Department of Conservation and Land Management, Western Australia.

CALM (2005) Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref IN22931.

DAWA (2005) Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref IN21860.

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.

Keighery, BJ (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.

Western Botanical (2004) Botanical survey of Mining Leases M63/528 and M63/529, Lake Cowan, Norseman, WA. TRIM ref. IN20530.

Whitfield Minerals Pty Ltd (2005) Documentation accompanying the application. TRIM ref. IN20530.

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)