



1. Application details

1.1. Permit application details

Permit application No.: 974/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Empire Services Pty Ltd.

1.3. Property details

Property: EP 435
Local Government Area: Shire Of Exmouth
Colloquial name: Dune 1

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.94		Mechanical Removal	Petroleum 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
Beard Vegetation Association 662: Hummock grassland; shrub steppe; mixed acacia scrub and dwarf scrub with soft spinifex and <i>Triodia basedowii</i> (GIS Database; Shepherd et al., 2001). According to Shepherd et al., (2001) there is approximately 100% of this vegetation type remaining, and 2.3% in reserves.	The vegetation of the application area consists of open hummock grasslands of <i>Triodia</i> spp. with scattered shrubs, including <i>Acacia</i> spp. One weed species <i>Cenchrus ciliaris</i> , Buffel Grass is also found in the surrounding area. The vegetation has been previously disturbed by grazing, and seismic surveys (Empire Oil, 2005; GIS Database).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	The application is to clear 0.9ha for a petroleum exploration wellsite and access track. The application area is within a pastoral lease. The proposed access track follows an old seismic line and vehicle access track. The wellsite is situated on a relatively flat area between sand dunes (Empire Oil, 2005; GIS Database).

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 original flora and fauna of the Cape Range Province has been recognised as rich and diverse. In particular, the limestone karst areas of the Cape Range peninsula have a flora with a much higher species diversity than other arid and semi-arid karst areas of Western Australia (EPA, 1999). The karst formations support one of the world's most diverse subterranean fauna. The terrestrial fauna is also rich, particularly in reptiles (EPA, 1999).

However the Cape Range peninsula is also the site of Australia's longest operational on-shore oil field, established in the 1950s. The area surrounding the clearing application area has a long history of disturbance from petroleum exploration activities. Aerial photographs show the landscape criss-crossed by numerous seismic lines (GIS Database), and the majority of the proposed access track follows an old seismic line (Empire Oil, 2005).

The application area is also within the Exmouth Gulf Pastoral Lease, and the vegetation has been extensively grazed over many years by introduced animal species including sheep, goats and horses (Empire Oil, 2005; GIS Database).

The area applied to clear is situated at the south-eastern end of the Cape Range peninsula. This section of the peninsula was described by Payne et al (1987) as undulating sandy plains with linear dunes and minor limestone ridges and outcrop plains. The proposed clearing area is situated amongst sand dunes, with no apparent limestone ridges or outcropping. The vegetation of the application area consists of hummock grasslands which have been significantly degraded due to long-term disturbance from grazing and seismic surveys. No species of flora or fauna of conservation significance have been recorded within the vicinity of the

application area, and the clearing of a small area of previously disturbed vegetation is unlikely to have any impact on the biodiversity of the region.

CALM has reviewed the Environmental Management Plan submitted by the proponent for the proposed wellsite. CALM's key concern related to weed management at the site, and these concerns have been addressed during discussions with the proponent. CALM is satisfied that the clearing application has been adequately assessed by DoIR and that the proposal is not at variance with the relevant biodiversity clearing principles (CALM Advice, 2006).

Methodology CALM Advice (2006).
Empire Oil (2005).
EPA (1999).
GIS Database:
- Exmouth 1.4M Orthomosaic - DOLA 8/00.
- Pastoral Leases - DOLA 10/01.
Payne et al (1987).

(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

The application area is within the Exmouth Gulf Pastoral Lease and has a long history of disturbance from grazing (Empire Oil, 2005; GIS Database). The region has also been the site of extensive petroleum exploration activities over many years, and the landscape is criss-crossed by numerous seismic lines (Empire Oil, 2005; GIS Database).

There are no records of any fauna of conservation significance within the vicinity of the application area (GIS Database). The vegetation of the application area has suffered extensive disturbance, and is unlikely to represent a significant habitat for fauna.

The vegetation type occurring within the application area is well represented in the region (GIS Database), and the small area of proposed clearing is unlikely to have a significant impact on fauna habitat in the region.

Methodology Empire Oil (2005);
GIS Database:
- Exmouth 1.4M Orthomosaic - DOLA 8/00.
- Threatened Fauna - CALM 30/9/05.
- Pastoral Leases - DOLA 10/01
- Pre-European Vegetation - 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

CALM databases have no records of any Declared Rare Flora within a 50km radius of the area applied to clear (GIS Database).

There are no known populations of Priority flora in the immediate vicinity of the application area. A CALM desktop survey of Rare and Priority flora records conducted on behalf of the proponent revealed previous records of four Priority flora species approximately 17 km from the application area: *Acacia startii* (P3), *Acacia alexandri* (P3), *Corchorus congener* (P3) and *Brachychiton obtusilobus* (P4) (Empire Oil, 2005). These species are all widely distributed across the Cape Range area (WA Herbarium, 2006). Of these species, *Corchorus congener* (P3) is considered most likely to occur on sandplains habitat, while the other three species are more likely to occur on rocky, hilly terrain (WA Herbarium, 2006).

The small area of the proposed clearing is unlikely to impact on any species of Declared Rare or Priority Flora.

Methodology Empire Oil (2005).
GIS Database: Declared Rare and Priority Flora List - CALM 01/07/05.
WA Herbarium (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

There are no known Threatened Ecological Communities (TEC's) within the vicinity of the area applied to clear (GIS Database). The nearest known TEC's are the Cape Range Remipede Community, approximately 34 km west of the application area, and the Camerons Cave Troglitic Community, approximately 50 km north of the application area (GIS Database).

Considering the distance of these TEC's from the application area, the proposed clearing is unlikely to have any impact on these or any other Threatened Ecological Community.

Methodology CALM (2002).
GIS Database: Threatened Ecological Communities - CALM 12/04/05.

(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 at variance to this Principle

The application area falls within the IBRA Carnarvon Bioregion and the Shire of Exmouth (GIS Database). Shepherd et al. (2001) report that approximately 100% of the pre-European vegetation still exists in the IBRA Carnarvon Bioregion, although no specific information is available for the Shire of Exmouth. The vegetation in the application area is recorded as Beard Vegetation Association 662: Hummock grassland; shrub steppe; mixed acacia scrub and dwarf scrub with soft spinifex and *Triodia basedowii* (GIS Database). According to Shepherd et al., (2001) there is approximately 100% of this vegetation type remaining, and 2.3% in reserves. The area proposed to clear does not represent a significant remnant of native vegetation.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in reserves/CALM-managed land
IBRA Bioregion - Carnarvon Shire of Exmouth	8,523,963*	8,523,963*	~100%	Least concern	
No information available					
Beard vegetation associations - 662	308,549	308,549	~100%	Least concern	2.3%

* Shepherd et al. (2001)

** Department of Natural Resources and Environment (2002)

Methodology Dept of Natural Resources and Environment (2002).
GIS Database:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.
- Local Government Authorities - DLI 8/07/04.
- Pre-European Vegetation - DA 01/01.
Shepherd et al. (2001).

(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

There are no watercourses or wetlands within the area applied to clear (GIS Database).

The Cape Range Subterranean Waterways, an environmentally sensitive area and ANCA Wetland is located approximately 1km west/northwest of the application area, at its nearest point (GIS Database).

The proposed clearing of a total of approximately 0.94 ha for an exploration wellsite and access track is unlikely to have any significant impact on any watercourse or wetland.

Methodology GIS Database:
- Hydrography, Linear - DOE 1/2/04.
- Clearing Regulations - Environmentally Sensitive Areas - DOE 30/5/05.

(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 application area is situated on the undulating sandy plains of the Cardabia Land System, consisting of narrow sand-dune ridges up to approximately 6-8 m high and broad interdunal areas (Empire Oil, 2005; Payne et al., 1987). The highly permeable sandy soils of the application area reduce the likelihood of erosion due to surface water runoff, and the small area of the proposed clearing is unlikely to result in significant additional wind erosion. In their Environmental Management Plan for the project, the proponent has made a commitment to minimise erosion and surface water runoff (Empire Services, 2005).

The proposed wellsite and access track are located on relatively flat ground between the sand dunes (Empire Oil, 2005; GIS Database), and the small area of the proposed clearing is unlikely to cause appreciable land degradation.

Methodology Empire Oil (2005).
Empire Services (2005).
GIS Database - Topographic Contours, Statewide - DOLA 12/09/02.

(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 application area is situated approximately 1.5 km from the coastline (at its nearest point), on the western side of the Exmouth Gulf. The nearest CALM managed land is the Whitmore, Roberts, Doole Islands and Sandalwood Landing Nature Reserve, which covers a small coastal area and several small islands within the Exmouth Gulf. The nearest section of this Reserve is a small island, approximately 2.8 km west of the application area. The next nearest CALM managed land is the Cape Range National Park, which is located approximately 24 km northwest of the application area (GIS Database).

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EPA Position Statement No. 1 issued in 1999 recommended that part of the Cape Range area should be added to the conservation estate. However the clearing permit application area is situated at the south-eastern end of the Cape Range peninsula, and this section of the peninsula was not recommended for inclusion in the Reserve.

The small area of proposed clearing is unlikely to impact on the conservation values of any conservation area.

Methodology EPA (1999).
GIS Database: CALM Managed Lands and Waters - CALM 1/07/05.

(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

Groundwater salinity levels in the region range between 7000 and 14000 mg/L (GIS Database). The groundwater in the vicinity of the proposed Dune-1 wellsite has a salinity level expected to exceed 3000 ppm (Empire Oil, 2005).

The small area of the proposed clearing is unlikely to cause deterioration in the quality of any surface or underground water.

Methodology Empire Oil (2005).

(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 climate of the application area is arid to semi arid with average annual rainfall between 200 and 300mm and potential annual evaporation between 2,000 and 2,400mm (Empire Oil, 2005). The region is prone to seasonal cyclones and natural flooding may occur occasionally during the wet season (November to March). However the application area is located on coastal sand-dunes, and the sandy soils reduce the potential for local flooding. There are no watercourses within the application area (GIS Database).

The small area of proposed clearing is not likely to cause or exacerbate the incidence or intensity of flooding.

Methodology Empire Oil (2005).
GIS Database - Hydrography, Linear - DOE 01/02/04.

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

Comments

There is a native title claim (WC97/028) over the area under application. This claim has been registered with the National Native Title Tribunal on behalf of the Gnulli claimant group (GIS Database). However, the petroleum permit has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (ie. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no known Aboriginal sites of significance within the areas applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

An Environmental Protection Licence and a Works Approval Licence are not required for the proposed exploration well (DoE, 2006). Should the applicant wish to upgrade to production stage with a design capacity of 5000 tonnes or more per year, a works approval (3 months assessment) and licence will be required prior to operating. The Environmental Management Plan submitted by Empire Services Pty Ltd for the Dune 1 wellsite (Empire Services, 2005), should be adhered to. Any instances of spillages and clean ups should be notified to the Department of Environment within a reasonable period of time (DoE, 2006).

Empire Oil and Gas NL has a current groundwater licence GWL158483(1) for petroleum permit EP 435, granted in accordance with the *Rights in Water and Irrigation Act 1914*, to provide water for use at the Rough Range 1B oil well production facility. No amendment to this licence will be required for the proposed exploration well (DoE, 2006).

The petroleum exploration proposal was referred to the the Environmental Protection Authority (EPA) for consideration. The EPA determined that the overall environmental impact of the proposal was not severe enough to require a formal assessment by the EPA (EPA, 2005).

Methodology DoE Advice (2006).
Empire Sevices (2005).
EPA (2005).
GIS Database:
- Aboriginal Sites of Significance - DIA 04/07/02.
- Native Title Claims - DLI 19/12/04.

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Petroleum Exploration	Mechanical Removal	0.94	Grant	Recommend that the application be granted as it is not at variance to any of the Clearing Principles.

5. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- CALM (2006) Land clearing proposal advice. Advice to Program Manager, Native Vegetation Assessment Branch, Department of Industry and Resources (DoIR). Department of Conservation and Land Management, Western Australia.
- 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.
- DoE (2006) Water Allocation/Licence Advice. Department of Environment, Western Australia.
- Empire Oil (2005) Proposed Dune-1 petroleum exploration well in Exploration Permit EP 435, Exmouth sub basin, Western Australia and Native Vegetation Clearing Permit (Purpose Permit). Empire Oil & Gas NL, Western Australia.
- Empire Services (2005) Environmental Management Plan for the Dune No. 1 Well. Empire Services Pty Ltd, Western Australia.
- EPA (1999) Environmental protection of Cape Range province. Position Statement No. 1. Environmental Protection Authority, Western Australia.
- EPA (2005) Level of Assessments - 14 November 2005. Environmental Protection Authority, 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.
- Payne, A.L., Curry, P.J and Spencer, G.F. (1987) An Inventory and condition survey of rangelands in the Carnarvon Basin, Western Australia. Technical Bulletin No. 73. Department of Agriculture, 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 Australian Herbarium (1998-2006) FloraBase - The Western Australian Flora. Department of Conservation and Land Management, Western Australia.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAWA	Department of Agriculture, Western Australia.
DA	Department of Agriculture, Western Australia.
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

Definitions:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005. Department of Conservation and Land Management, Como, Western Australia*} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P3** **Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4** **Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R** **Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X** **Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1** **Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2** **Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3** **Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4** **Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). *Priority Codes for Fauna*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2** **Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3** **Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4** **Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5** **Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (*Environment Protection and Biodiversity Conservation Act 1999*)

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.