



1. Application details

1.1. Permit application details

Permit application No.: 661/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Chevron Texaco Australia Pty Ltd

1.3. Property details

Property: CROWN RESERVE 11648 (BARROW ISLAND 6712)
Local Government Area:
Colloquial name: Barrow Island - Crown Reserve 11648 - Perentie South Drilling Program

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2		Mechanical Removal	Petroleum Production

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
<p>Beard vegetation unit 667: Hummock grasslands, shrub-steppe; scattered shrubs over <i>Triodia wiseana</i> & <i>T.sp. indet. aff. angusta</i>.</p> <p>E.M. Matisse & Associates (1993) described 34 vegetation types for the island.</p> <p>Three Matisse (1993) vegetation types occur in the area proposed to be cleared:</p> <p>C3 Hummock Grassland of <i>Triodia pungens</i> with dense shrubs, including <i>Acacia bivenosa</i> on back slopes of foredunes.</p> <p>V2 Hummock Grassland of <i>Triodia wiseana</i> with <i>Pentapeltis trichodesmoides</i> on southern escarpment.</p> <p>F1 Hummock Grassland of <i>Triodia angusta</i> on red earth flats and drainage lines.</p>	<p>The areas of proposed clearing are located at two sites, a drilling camp (V2 and C3 vegetation types) and the Perentie South well site (F1 vegetation type). The vegetation types that occur in the areas proposed to be cleared have the following representations on the island, C3 - 414ha, F1 - 1567ha and V2 - 145ha. The existing levels of disturbance for each vegetation type are 2.9%, 2.8% and 10.1% respectively. The proposed clearing will impact 0.12ha, 0.93ha and 0.08ha or an additional disturbance of 0.06% of F1. The drillers camp site (V2 and C3) has been previously cleared.</p> <p>Biological surveys conducted in January and February (ChevronTexaco 2005) indicate that the regrowth vegetation at the camp site (C3 and V2) contains scattered shrubland of <i>Acacia coraicea</i> and <i>Myoporum acuminatum</i> over mixed herbland over open <i>Triodia angusta</i> hummock and <i>Cymbopogon ambiguus</i> tussock grassland.</p> <p>The well site vegetation was described by ChevronTexaco (2005) as comprising two main units of undisturbed vegetation:</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)</p>	<p>There is historical disturbance of vegetation over many parts of Barrow Island.</p> <p>V2 vegetation type for this site is considered to be restricted in their distribution on Barrow Island with less than 250ha. The proposed clearing for this type has been previously cleared for a camp site and the regrowth is not representative of the original vegetation type. Disturbance of previously undisturbed areas has been minimised through site location by the proponent in previously disturbed sites.</p>

Mixed Hummock Grassland
of *Triodia angusta* and
Triodia wiseana and Dense
Hummock Grassland of
Triodia angusta.

A biological survey
undertaken
(ChevronTexaco 2005)

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 at variance to this Principle**

Barrow Island is an A Class Nature Reserve recognised internationally as a unique biodiversity repository. Barrow Island Nature Reserve has an area of about 23000ha and is the second largest island off the WA coast. It is best known for its abundant mammals, and has a rich bird and reptile fauna, unique and valuable assemblage of subterranean animals and valuable vegetation communities. It has not been impacted by grazing by introduced stock or feral predators (CCWA, 2003). The area of the island already affected by clearing is considered significant by the Conservation Commission of WA (2003), totalled 657ha at the end of 2001 (ChevronTexaco, 2003) or 2.8% of the island area. Progressive rehabilitation of areas cleared has also occurred (approx. 400ha). The impact of any additional clearing on the biodiversity of the site needs to be seen in this cumulative context. In addition to this application and the historical clearing there are four other known proposals to clear on Barrow Island. Some of this clearing would be rehabilitated. If these are approved, this would bring the total area known to have been cleared on Barrow Island to 4.6% of the reserve.

Methodology ChevronTexaco 2005
CCWA 2003
Mattiske 1993

(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**

CALM (2004) lists species that are specifically protected under the Wildlife Conservation Act (S1, Rare or is likely to become extinct)

- Barrow Island Golden Bandicoot (*Isoodon auratus barrowensis*),
- Boodie (Barrow Island (*Bettongia lesueur* unnamed subspecies),
- Barrow Island Spectacled Hare-wallaby (*Lagorchestes conspicillatus conspicillatus*),
- Barrow Island Euro (*Macropus robustus isabellinus*),
- Black-flanked Rock-wallaby (*Petrogale lateralis lateralis*),
- Barrow Island Mouse (*Pseudomys nanus ferculinus*),
- Barrow Island Black and White fairy-wren (*Malurus leucopterus edourdi*),
- Blind Gudgeon (*Milyeringa veritas*);
- Barrow Island Bogidomma (*Bogidomma australis*),
- Barrow Island Liagoceradocus (*Liagoceradocus subthalassicus*),
- *Nedsia fragilis*,
- *Nedsia humphreysi*,
- *Nedsia huberti*,
- *Nedsia macrosculptilis*,
- *Nedsia sculptilis*,
- *Nedsia straskraba*,
- *Nedsia urifimbriata*,
- Barrow Island *Draculoides* (*Draculoides bramstokeri*),
- Barrow Island Millipede (*Speleostrophus nesiotis*)

In addition there are three priority species including:

- Ramphotyphlops longissimus (P2)
- Water-rat (Rakali) (*Hydromys chrysogaster*) (P4),
- Eastern Curlew (*Numenius madagascariensis*) (P4)

Methodology

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments **Proposal may be at variance to this Principle**

CALM (2004) lists *Corchorus interstans* (P3) and *Helichrysum oligochaetum* (P1) as recorded on Barrow Island.

Helichrysum oligochaetum (P1) has been recorded from one location on Barrow Island and is unlikely to be encountered during oilfield activity.

Corchorus interstans is widespread on Barrow Island and is known to recover from disturbance. Corchorus interstans was recorded at both the Perentie well site and the drill camp. The species is known to regenerate after disturbance. (ChevronTexaco, 2005).

In addition, Matiske Consulting (1997) identified 27 plant species considered 'Needing Special Attention' based on existing knowledge of their distribution on the island and pending further research to determine their status. The presence of these species was not recorded during the biological survey.

Methodology CALM 2004
ChevronTexaco 2005

(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**

The DoE database indicates that there are no known Threatened Ecological Communities on Barrow Island.

The biological survey of the area did not indicate whether there are any significant ecological communities likely to be affected by the clearing (ChevronTexaco, 2005).

Methodology ChevronTexaco 2005
DoE GIS Threatened Ecological Communities

(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**

There is one Pre-European vegetation type within the proposed area (Hopkins et al 2001, Shepherd et al. 2001):
- Vegetation association 667: Hummock grasslands, shrub-steppe: scattered shrubs over Triodia wiseana & T. sp. indet. aff. angusta of which 100% remains with 100% in IUCN Class I-IV Reserves and

reserves/CALM- IBRA Bioregion: Pilbara Beard vegetation association:	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation status**	% in managed land
	17,944,694	17,944,694	100	Least concern	0
	667	19,949	19,949	100	Least concern

The Beard Vegetation mapping only indicates one vegetation type occurring over the proposed clearing site and only two for the entire island. More detailed vegetation mapping survey undertaken in 1993 (Matiske 1993) identified 34 vegetation types.

Matiske E.M. & Associates (1993) identified 34 vegetation types on Barrow Island. Three Matiske vegetation types occur on the proposed areas to clear.

Methodology

(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 wetlands or watercourses in the immediate or nearby to the area of clearing.

Methodology

(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**

From previous DAWA advice (2004) for clearing on Barrow Island, it is considered that the clearing of 2ha will not result in appreciable on-site or off-site land degradation.

Clearing will be carried out in accordance with the ChevronTexaco Earthworks Procedures to reduce risks associated with erosion.

Methodology

(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

Barrow Island is an A class nature reserve for the protection of flora and fauna including two priority flora species, fauna declared Specially Protected, and Priority listed fauna under the Wildlife Conservation Act.

The proposed clearing is at variance with this principle.

Methodology

(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 proposed clearing is minor and localised and will have a negligible impact on groundwater. There may be a small amount of increased recharge as a result of the clearing but this is not considered detrimental to water quality.

Methodology

(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 is not prone to flooding under normal climatic conditions however Barrow Island is located in a cyclone region.

Surface water flow/flooding are unlikely to be different as a result of the proposed vegetation clearing.

The amount of clearing is localised and incidental and the proposal is not likely to be at variance with this clearing principle.

Methodology

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

Comments

The following issues were raised in a submission, responses in parentheses:

- that comprehensive and appropriately timed flora and fauna surveys of the site be conducted before a decision on this application is made. Such surveys should consider issues including:

1. the biodiversity of the site, including in terms of fungi (clearing principle (a));
(Floristic diversity is an important component of terrestrial biodiversity on Barrow Island. Botanical surveys were conducted to identify possible rare and endangered plant species within the proposed Development areas. The application to clear contains a discussion on rare/threatened/priority species recorded. Fungi specifically was not surveyed. The relative small area to be cleared along with the commonality of many of the vegetation associations in the area would suggest that impacts to fungi, along with flora would not be significant.)

2. the significance of the site for fauna, including invertebrates (clearing principle (b)); and
(the small area to be disturbed is unlikely to represent a significant portion of the known habitat for invertebrate species.)

3. whether the site contains Declared Rare Flora (clearing principle (c)).
(no DRF but Priority Flora described)

Consideration of the application to clear should also involve:

- i. A report on the existing environment at the site, including the topography, soil mapping; etc.;
- ii. Written description and mapping of the condition of vegetation on the site, using a recognised vegetation condition scale;
- iii. An indication of the commonality (or otherwise) of the vegetation community at the site with respect to surrounding vegetation communities;
- iv. A management plan for remaining vegetation; (Not relevant to Gorgon as they have no title or rights to areas other than where they are directly applying to clear)

- v. A management plan covering key environmental issues such as:
- weed control; (Weed control is undertaken by Barrow Island via a CALM agreed Weed Control Plan).
 - proposed nutrient monitoring (including plant tissue analysis etc.); and
 - information on possible Aboriginal / European Heritage issues associated with the site. (Not relevant to clearing application. But cultural heritage sites have been mapped for the Island).

Methodology

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Petroleum Production	Mechanical Removal	2	Grant	Clearing for access route and hard stand area for drilling of exploration well to fulfill ongoing lease requirements

5. References

- CALM Land clearing proposal advice. Advice to A/Director General, Department of Environment (DoE). Department of Conservation and Land Management, Western Australia. DoE TRIM ref XXXXX.
- CCWA (2003) Biodiversity Conservation Values on Barrow Island Nature Reserve and the Gorgon Gas Development. Advice to Government from the Conservation Commission of Western Australia (July 2003).
- ChevronTexaco (2005) Barrow Island Vegetation Management Plan. Document ID:C04336:1. Supporting information to Application to clear.
- DAWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia. DoE TRIM ref XXXXX.
- 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.
- Hopkins, A.J.M., Beeston, G.R. and Harvey J.M. (2001) A database on the vegetation of Western Australia. Stage 1. CALMScience after J. S. Beard, late 1960's to early 1980's Vegetation Survey of Western Australia, UWA Press.
- Keighery, BJ (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske & Associates (1993) 'State of knowledge on vegetation, Barrow Island,' report prepared for West Australian Petroleum Pty Ltd, Perth.
- 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.

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)