



## 1. Application details

### 1.1. Permit application details

Permit application No.: 945/1

Permit type: Area Permit

### 1.2. Proponent details

Proponent's name: Alan Frazer Ridgway

### 1.3. Property details

Property: LOT 2 ON PLAN 256429 ( ISRAELITE BAY 6452)  
LOT 3000 ON PLAN 240172 ( ISRAELITE BAY 6452)

Local Government Area: Shire Of Esperance

Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
27.35		Mechanical Removal	Aquaculture

## 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 42: Shrublands; mallee & acacia scrub on south coastal dunes. (Hopkins et al. 2001, Shepherd et al. 2001).  According to Beard Vegetation Mapping, the vegetation in the area consists primarily of scrub and tall trees including: Acacia cyclops, Acacia salicina, Banksia speciosa, Calothamnus quadrifidus, Melaleuca glaberrima, Myoporum insulare, Pimelia ferruginea and the odd stands of Melaleuca lanceolata and Eucalyptus angulosa on coastal drift sand (DEC 2001)	The proposal includes clearing of 27.35ha for the purpose of aquaculture, tourism chalets and private use. The condition of vegetation under application is considered to range between Degraded to Very Good (Esperance Wildflower Society). The area under application comprises a portion of Nuytsland Nature Reserve, which is recognised for its diverse flora and fauna including rare and endemic flora.  The area proposed to be cleared may also act as an ecological linkage for fauna between the Nuytsland Nature Reserve sites. The area under application also comprises an undedicated road reserve.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	References: - The Esperance Wildflower Society (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

The proposal includes clearing of 27.35ha vegetation considered to be in 'degraded to very good' (Keighery, 1994) condition.

The vegetation within the application area is generally low banksia, mallee and mallee heath. Closer to the coast there are some pockets of taller mallee, coastal tea tree and Acacia sp. The area comprises generally of sand over clay, with some pockets of limestone present.

The Mardabilla Flora Survey report (Esperance Wildflower Society 2005) indicates that a total of 95 species of flora from 37 plant families were recorded during a (summer) flora survey within the area proposed to be

cleared. This flora survey was constrained by some limitations and it is acknowledged that additional species may be present within the application area. The northern area that is proposed to be cleared is predominantly regrowth from historical grazing and exhibits evidence of human disturbance. Therefore, the current level of biodiversity is not considered to be high.

Approximately 5.5ha within the southern end of the application area are located within Nuytsland Nature Reserve. This area has been conserved for the preservation and study of flora, fauna, geological and anthropological features. It is recognised for its diverse flora and fauna including rare and endemic flora, and is regarded as being scientifically important as an area that protects many species of native mammals and birds occurring at the extremity of their range. Some species may show adaptations to the prevailing harsher conditions in Nuytsland Nature Reserve, compared to elsewhere in their range of occurrence. Given these factors, the secure tenure of the Nature reserve and protection from grazing it is likely that this area contains a high level of biological diversity

**Methodology** Keighery, 1994  
The Esperance Wildflower Society (2005)  
GIS Databases:  
- CALM Managed Lands and Waters - CALM 01/06/2004  
- Malcolm 1.4m Orthomosaic - DLI03

**(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 proposal includes clearing of 27.35ha vegetation considered to be in 'degraded to very good' (Keighery, 1994) condition.

Cape Barren Geese (*Cereopsis novaehollandiae grisea*) (Vulnerable) have been recorded visiting the coastal frontage of Mardabilla Lot 2, however their primary habitat is within the islands of the Recherche Archipelago. Mallee Fowl (*Leipoa ocellata*) (Vulnerable) and Australian Bustard (*Ardeotis australis*), are also known to occur in the Point Malcolm-Israelite Bay (DEC 2007a) area however the area proposed to be cleared is unlikely to be significant habitat for these species.

The proposed area to be cleared may provide ecological linkages for fauna between Nuytsland Nature Reserve sites, however, there is still continuation of vegetation around the application area and any fauna corridors should not be significantly impacted.

**Methodology** DEC (2006)  
DEC (2007a)  
The Esperance Wildflower Society (2005)  
SAC biodatasets (2008)  
GIS Databases:  
- Malcolm 1.4m Orthomosaic - DLI03

**(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**

Within the local area (20km radius) there are no records of rare flora, however, there are records of the DRF species *Eucalyptus merrickiae* within 25km of the proposed clearing. This species of rare flora shares similar habitat, characteristics to the application area and is found within the same vegetation and soil type.

DEC advice (2007b) states that although the area to be cleared has been surveyed the limitations within that survey prevented a thorough analysis.

It is recommended that a targeted flora survey be carried out by a qualified botanist, in accordance with EPA Guidance Statement No. 51 to ascertain the presence of *Eucalyptus merrickiae*.

**Methodology** Esperance Wildflower Society (2005)  
DEC (2006)  
DEC advice (2007b)  
GIS Databases:  
SAC Bio dataset, 2008

**(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) within the local area (20km radius) and it is, therefore, unlikely that area proposed to be cleared is necessary for a TEC.



**Methodology** DEC (2006)  
SAC biodatasets, 2008

**(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 proposal includes clearing of 27.35ha vegetation considered to be in 'degraded to very good' (Keighery, 1994) condition.

The vegetation type within the area proposed to be cleared is Beard vegetation association 42 well represented locally (95.6% remaining), as is the Shire of Esperance (71%) and the Esperance Plains IBRA bioregion (51.1%) (Shepherd, 2006).

The local area is well vegetated and therefore, the area under application is not considered to be a significant remnant.

**Methodology** EPA (2000)  
Shepherd, D.P. (2006)  
Keighery, 1994  
GIS datasets:  
- Pre-European Vegetation - DA 01/01  
- EPA Position Paper No 2 Agriculture Region - DEP 12/00  
- Interim Biogeographic Regionalisation of Australia - EA

**(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 mapped wetlands or watercourses within the area proposed to be cleared. The lot under application contains salt lakes in the west of the property, approximately 1km from the proposed clearing area.

A survey conducted by Esperance Wildflower Society 2005 identified some flora species that may be associated with damp areas, this is more likely to be linked to poor drainage areas than to associations with wetlands or watercourses.

**Methodology** WA Herbarium (2007)  
Esperance Wildflower Society (2005)  
GIS Datasets:  
- Hydrography, linear (hierarchy) - DOW  
- Geodata, Lakes - GA 28/06/02  
- Lakes 250K - GA  
- Rivers 250K - GA  
- ANCA Wetlands - CALM - 08/01  
- Malcolm 1.4m Orthomosaic - DLI03

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

**Comments** **Proposal is at variance to this Principle**

The proposal includes clearing of 27.35ha vegetation considered to be in 'degraded to very good' (Keighery, 1994) condition.

DAFWA (2006) has advised that due to the fine sandy soil within the application area, clearing native vegetation will contribute to wind erosion.

Groundwater salinity has been determined to be between 14000 - 35000 TDS (total dissolved solids) mg/L. The proposed clearing of a large area (27.35ha) of native vegetation may impact upon dryland salinity within the local area.

**Methodology** DAFWA (2006)  
Esperance Wildflower Society (2005)  
Keighery, B.J. (1994)  
GIS Datasets:  
- Groundwater Salinity, Statewide DOW  
- Isohyets - BOM 09/98  
- Evaporation Isopleths - BOM 09/98

- Rainfall, Mean Annual - BOM 30/09/01
- Soils, Statewide

**(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 seriously at variance to this Principle**

The proposal includes clearing of 27.35ha vegetation considered to be in 'degraded to very good' (Keighery, 1994) condition.

The Nuytsland Nature Reserve (A class system 12 reserve, proposed national park and on the register of national estate) is part of the area under application to the south (approx. 5.5ha) and surrounds the lot under application. Nuytsland Nature Reserve is recognised for its diverse flora and fauna, and rare and endemic flora, whilst Cape Arid National Park (System 3 Reserve), located 11km to the west, is recognised for its diverse topography, unusual flora and endemic flora. Nuytsland Nature Reserve is considered to be scientifically important to protect many species of native mammals and birds which occur at the end of their range; they may also exhibit adaptations to the harsher conditions encountered in the reserve. Cape Arid National Park has more than 160 bird species, harbouring a number of restricted and threatened species, and therefore having a diverse array of bird species (DEC 2006).

Given that approx. 5.5ha of the Reserve is subject to the clearing application and considering the importance of the Nature Reserves aforementioned for biodiversity conservation and scientific interest, the proposed clearing is likely to affect the environmental values of the Nuytsland Nature Reserve by the removal of a portion of the Reserve through the application to clear. This may also compromise the integrity of the reserve through further consequential vegetation loss through wind erosion and an increase in the risk of the spread of *Phytophthora* dieback and weeds, all of which have the potential to adversely impact on Nuytsland Nature Reserve.

The clearing as proposed is therefore seriously at variance to this principle.

**Methodology**      DEC (2006)  
 Esperance Wildflower Society (2005)  
 Keighery, 1994  
 GIS Datasets:  
 - DEC Managed Lands and Waters - CALM 01/06/2004  
 - Malcolm 1.4m Orthomosaic - DLI03

**(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 may be at variance to this Principle**

The proposed clearing is within the Salt Lake Basin Coastal Hydrographic Catchment Area, and the Salt Lake Basin Surface Water Management Area.

Viewing an old well within the survey area revealed the water table to be approximately 2m below the surface (Esperance Wildflower Society 2005).

Groundwater salinity has been determined to be between 14000 - 35000 TDS (total dissolved solids) mg/L. Given the large area proposed to be cleared (27.35ha) in a landscape of low elevation (DAFWA 2006), the clearing may cause deterioration of surface and underground water in the form of increased salinity and therefore, may be at variance to this Principle.

**Methodology**      DAFWA (2006)  
 Esperance Wildflower Society (2005)  
 GIS Database:  
 - Hydrographic Catchments - Catchments - DOE - 23/03/2005  
 - Public Drinking Water Source Areas - DOE - 04/11/04  
 - Groundwater Salinity, Statewide 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**

Clearing native vegetation within the application area has a low risk of flooding (DAFWA 2006) and is, therefore, not likely to be at variance to this Principle.

**Methodology**      DAFWA (2006).



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

### Comments

Nuytsland Nature Reserve is vested with the Conservation Commission of Western Australia and managed by the Department of Environment and Conservation. The proponent does not currently have approval from either agency to clear within Nuytsland Nature Reserve.

The proponent does not have access to clear the unallocated road under application, managed by the Shire of Esperance.

The Shire of Esperance has raised some concerns regarding the lack of planning consent for proposed aquaculture activities, and the need for rezoning of the property under the Shire of Esperance Town Planning Scheme. It is considered that the council would not support the land clearing activities for aquaculture activities until a development application has been approved (CRN218621).

DAFWA (2006) advises that the soils of the area proposed to be cleared are pale deep sands with a low phosphorous retention ability. The aquaculture proposal would generate nutrient rich waste. The proposed method of disposal of the waste is to spread it onto grazing areas on Lot 2, which does not take into account the low phosphorous retention ability and free draining nature of the sandy soil.

Methodology DAFWA (2006)

## 4. Assessor's comments

### Comment

The assessment has demonstrated that the proposal is seriously at variance with clearing Principle (h); is at variance to principle (g) ,may be at variance with Principle (a), (c) and (i); and not likely to be at variance with Principle (b), (d), (e), (f) and (j).

## 5. References

- DAFWA Land degradation assessment report. Office of the Commissioner of Soil and Land Conservation, Department of Agriculture and Food Western Australia. DEC TRIM ref no.IN25666
- DEC Biodiversity Advice (2006) TRIM ref DOC2575
- DEC Regional Advice (2007a) TRIM ref DOC42059
- DEC Regional Advice (2007b) TRIM ref DOC44020
- EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority.
- Esperance Wildflower Society (2005) - Mardabilla Flora Survey - Prepared for AF and SP Ridgway. Conducted by C. Turley and M. Hoggart TRIM ref DOC 1360
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting (1998) Mapping of vegetation complexes in the South West forest region of Western Australia, CALM.
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001a) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2006).

## 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)

