



1. Application details

1.1. Permit application details

Permit application No.: 2395/1
 Permit type: Area Permit

1.2. Proponent details

Proponent's name: Triquest Property Investments Pty Ltd

1.3. Property details

Property: LOT 20 ON PLAN 34439 (FERGUSON 6236)
 Local Government Area: Shire Of Dardanup
 Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
1.3		Mechanical Removal	Dam construction or maintenance

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:</p> <p>- Unit 1184 (Bridgetown): Medium woodland-fringing; jarrah, marri, Eucalyptus rudis & Agonis flexuosa (Hopkins et al., 2001; Shepherd, 2006).</p> <p>Mattiske:</p> <p>- Lowdon (Lo): Open forest of Corymbia calophylla-Eucalyptus marginata subsp. marginata-Agonis flexuosa with some Eucalyptus wandoo and occasional Corymbia haematoxylon on slopes, and woodland of Eucalyptus rudis-Melaleuca raphiophylla on valley floor in the humid zone (Havel & Mattiske Consulting, 1998).</p>	<p>The proposal involves clearing approximately 1.3 hectares for the purpose of dam construction.</p> <p>The vegetation under application comprises peppermint woodland with the odd marri, jarrah and flooded gum; located within a watercourse at the bottom of a valley (DEC, Site Inspection, 2008). The vegetation (i.e. Agonis flexuosa) presents a tall woodland with extensive canopy cover in excellent health.</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)</p> <p>Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)</p>	<p>Description of the clearing application area is based on a site inspection conducted by DEC officers on 1 October 2008.</p>

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 may be at variance to this Principle**
 The proposal is for the clearing of approximately 1.3 hectares of peppermint woodland, located within a minor perennial watercourse, a tributary of the Ferguson River.

The area under application contains vegetation that is of good condition (Keighery, 1994); consisting of Eucalyptus patens (Blackbutts) on the upper banks of the tributary and an understorey of Juncus species within

the watercourse. *Agonis flexuosa* (Peppermint) dominate the area proposed to be cleared (DEC, 2008). Given the vegetation types present and the connection to Wellington National Park, the application area may be suitable habitat for Western Ringtail Possums.

A priority three flora species *Acacia semitrullata* was recorded 4kms south east of the application area. It is within the same mattsike vegetation type (Lo) and soil type (Tf5) as the proposed clearing area. *A. semitrullata* enjoys wet swampy areas similar to the area under application (WA Herbarium, 2008). Additionally regional advice (DEC, 2008) states that within a 5-10km radius, 8 different threatened plant species occur along minor tributaries such as that found in the application area. No flora survey has been undertaken and therefore the presence or absence of these species is unknown.

There is approximately 55% vegetation remaining within the local area (10km radius). The majority of this vegetation is zoned for forestry and is mostly within Wellington National Park and Boyup State Forest. All cleared areas, and the application area are zoned for general farming.

Ferguson River is located approximately 600m from the application area. The EPA (2003) listed the Ferguson River as an ecological linkage in the Greater Bunbury Regional Scheme. The area under application is a part of a remnant of approximately 52 ha, which is a predominant linkage between Boyanup State Forest to the west and Wellington National Park to the east.

Given the good condition and type of vegetation within the area, the likelihood of threatened flora and fauna residing in the area and the ecological linkage to vegetation in the same or better condition, the proposed clearing area may be at variance to this principle.

Methodology DEC (2008);
EPA (2003);
Keighery (1994); and
WA Herbarium (2008)
GIS Databases:
- CALM Managed Lands and Waters - CALM 1/6/04;
- Environmentally Sensitive Areas - DoE 30/5/05;
- Busselton 50cm ORTHOMOSAIC - DLI04
- Town Planning Zone - MFP 31/08/98

(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

The vegetation under application is dominated by peppermint woodland fringing a minor watercourse at the bottom of the Ferguson Valley. The Wellington National Park is located approximately 2 kilometres east, and is linked to the application area via the watercourse.

Within the local area (10 km radius) there have been four recorded sightings of threatened fauna.

- * *Calyptorhynchus baudinii* (Baudin's Black Cockatoo) - Endangered
- * *Setonix brachyurus* (Quokka) - Vulnerable
- * *Pseudocheirus occidentalis* (Western Ringtail Possum) - Vulnerable
- * *Dasyurus geoffroii* (Chuditch) - Vulnerable

Baudin's Black Cockatoo (EN) usually resides in sites that are heavily forested which are dominated by Marri, Karri and Jarrah. They eat seeds predominately from Marri trees (DEWR, 2008a) which are present within the application area.

Quokka's (VU) have been recorded within the Wellington National Park. They inhabit and forage in densely vegetated swamps and occasionally tea-tree thickets on sandy soils along creek systems such as that within the proposed clearing area, as well as dense heath on slopes (Kitchner, 1995). They are known to browse on peppermint trees (Kitchner, 1995) which are located within the application area.

Chuditch (VU) are found within Jarrah forest, of which the application has been mapped (Mattsike & Havel, 1998). Chuditch populations occur in moist, dense vegetation forests and require hollow logs and burrows for shelter. Riparian vegetation, such as within the proposed clearing area, appears to support higher densities of Chuditch (DEWR, 2008b).

The Western Ringtail Possum (VU) was sighted approximately 850m from the proposed clearing area and requires a habitat that contains peppermint trees (*Agonis flexuosa*), given its arboreal nature and that the majority (79-100%) of the Possum's diet depends on peppermint trees. Possums have a generally small home range (females are limited to one hectare) and tend to remain close to their natal range (DEWR, 2008c). They are highly predated on by foxes when on the ground (DEWR, 2008c). Given the vegetation connectivity to the Wellington State Forest, and the close proximity of possum sighting, the application area may be necessary habitat for Western Ringtail Possums.

The vegetation within the application area is in good condition (Keighery, 1994) and is a significant remnant of vegetation left on the tributary of which it is apart (besides the vegetation secure in Wellington National Park). Furthermore, it provides a vegetative connectivity between conservation areas (Wellington National Park and the Dardanup Conservation Park / Boyanup State Forest). This connectivity provides a linkage for fauna to move between conservation areas.

Given the above, the proposed clearing is may support habitat for fauna endangered or vulnerable listed under the Wildlife Conservation Act 1950. The application area is also likely to be part of an ecological linkage for local fauna populations and therefore may be at variance to this Principle.

Methodology DEWR (2008a)
DEWR (2008b)
DEWR (2008c)
Mattiske & Havel (1998);
Keighery; and
Kitchner (1995)
GIS Databases:
- SAC Bio Dataset 050608
- CALM Managed Lands and Waters - CALM 1/6/04;
- Bunbury 50cm ORTHOMOSAIC - DLI04

(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

There is one known record of rare flora within a 10km radius of the application area. It is *Synaphea* sp. Fairbridge Farm which is located 6.5km north-west of the site proposed to be cleared.

S. Fairbridge Farm is a small shrub found on sand with laterite pebbles, near winter-wet flats, in low woodland with weedy grasses (WA Herbarium, 2008).

The soil type (Tc5) of the area that *S. Fairbridge* Farm is situated, consists of laterite gravel, predominately yellow mottled soils and the possibility of iron stone gravel. The application area is categories Tf5, which contains soil components similar to that of Tc5 (Northcote, 1961). Both these soil categories are compatible with *S. Fairbridge* Farm requirements.

The vegetation of the application area is characterised as open forest of Marri and Jarrah. *S. Fairbridge* Farm has been recorded on the boundary of Mattiske vegetation type *Kingia* (KI) which is also characterised as open Marri and Jarrah forest.

As the application area is located within a watercourse, the areas immediately surrounding the application area, and the area itself, provides a wet habitat, ideal for *S. Fairbridge* farm.

It has been recorded (DEC, 2008) that within a 5-10km radius, 8 different threatened plant species occur along minor tributaries such as that found in the application area.

Given the above, the application may be at variance to this principle.

Methodology Northcote (1961)
WA Herbarium (2008)
GIS Databases:
- SAC Bio Dataset 050608
- Mattiske Vegetation - CALM 1/03/1998
- Bunbury 50cm ORTHOMOSAIC - DLI04

(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 records of Threatened Ecological Communities (TECs) within a 10 kilometre radius of the proposed clearing. The characteristics of the area under application are not consistent with any known TEC; therefore the area under application is not likely to comprise the whole or part of, or be necessary for the maintenance of local TECs, and is therefore not likely to be at variance to this Principle.

Methodology GIS Databases:
- SAC Bio Dataset 050608;

(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			
	Pre-European area (ha)	Current extent (ha)	Remaining %	% in reserves/DEC-managed land
IBRA Region:				
- Southern Jarrah Forest	2,607,857	1,294,281	49.6*	33.2
Local Government Authority:				
- Shire of Dardanup	52,860	25,677	48.6*	34.8
Vegetation type:				
Beard:				
- Unit 1184 (Bridgetown)	63,562	27,102	42.6*	15.4
Mattiske:				
- Lowdon (Lo)	170,364	86,394	50.7**	N/A
Hedde:				
- Lowdon Complex	63,465	28,366	44.7***	N/A
* (Shepherd, 2006)				
** (Mattiske & Havel, 1998)				
*** (Hedde et al. 1980)				

The area under application is located in the Shire of Dardanup in the Southern Jarrah Forest Bioregion, which retains approximately 48.6% and 49.6% (Shepherd, 2006), respectively of the pre-European native vegetation extent.

The area under application is mapped as the Lowdon complexes (Mattiske & Havel, 1998; Hedde et al. 1980), which retain approximately 42% and 50% of the pre-European native vegetation extent. Much of the remaining extent for this complex is protected within large areas of the surrounding national parks and state forests.

There is approximately 55% vegetation remaining within the local area (10km radius). The majority of the land in this area that is still vegetated is zoned for forestry and is mostly within Wellington National Park and Boyup State Forest.

Given the moderate level of Pre-European vegetation remaining with the local (10km) and regional area, the application is not likely to be at variance to this principle.

Methodology Shepherd (2006);
Mattiske & Havel (1998);
Hedde et al. (1980);

GIS databases:
- Interim Biogeographic Regionalisation of Australia - EM 18/10/00;
- Mattiske Vegetation - CALM 24/3/98;
- Hedde Vegetation Complexes - DEP 21/06/95;
- Pre-European Vegetation - DA 01/01;
- Local Government Authorities - DLI 8/7/04

(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 at variance to this Principle**
The proposal involves clearing approximately 1.3 hectares of vegetation within a tributary of the Ferguson River for the purpose of constructing a dam.

The vegetation under application is dominated by peppermint woodland buffering a minor perennial watercourse. In the local context (10km radius) the watercourses, including the one under application, provide the only vegetation connectivity between conservation areas. Specifically the vegetation under application connectivity to Wellington National Park and the Dardanup Conservation Park / Boyanup State Forest via the Ferguson River.

There is an environmental sensitive area (ESA) located 1km upstream from the application area. It is a

seasonally inundated flat floodplain, which receives the majority of its water from overland runoff into Ferguson valley, including the vegetation within the application area, which proceeds downstream to the ESA. There are already two dams located upstream from the ESA and given the large size of the application area and proposed dam it is likely that flows to the floodplain will be compromised, lowering the environmental value of the ESA.

Given the above, and that the native vegetation proposed to be cleared is growing in, or in association with a watercourse and therefore is at variance to this principle.

Methodology GIS Databases:
- Hydrography, Linear - DoE 1/2/04;
- Environmentally Sensitive Areas (ESA) - DEC 30/05/05
- Geomorphic Wetlands (Mgt Categories), Swan Coastal Plain
- Bunbury 50cm ORTHOMOSAIC - DLI04

(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 area under application is described as a dissected tableland with hard acidic yellow mottled soils containing ironstone gravel in association with soft acidic and neutral yellow mottled soils containing ironstone gravel, and various soils in the shallow valleys (Northcote et al. 1960-68). Hydrogeology of the application area consists of rocks of low permeability with local aquifers in fractured and weathered rocks. Given this, clearing of 1.3ha is unlikely to cause or increase waterlogging.

The application area has topography of 110m to 125m AHD and is sheltered on the north side by an adjacent incline of up to 200m AHD, minimising wind erosional processes.

Given the small scale (1.3 hectares) of clearing, the proposed clearing is not likely to cause appreciable land degradation and therefore is not likely to be at variance to this Principle.

Methodology Northcote et al. (1960-68);
GIS Databases:
- Salinity Risk LM25m - DOLA 00;
- Hydrogeology, Statewide - DoW;
- Topographic contours statewide - DOLA and ARMY 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 at variance to this Principle**

The vegetation under application is dominated by peppermint woodland and is within a minor perennial watercourse at the bottom of the Ferguson Valley. The Wellington National Park is located approximately 2 kilometres east, and is linked to the area via the watercourse under application. The topography of the proposed clearing area goes from 125m AHD east to 110m AHD west. The tributary leads away with a low relief from the boundary of Wellington National Park in a westerly direction.

Furthermore, the minor perennial watercourse supports an ecological corridor that connects the Wellington National Park and the Dardanup State Forest to the Ferguson River and other areas of remnant vegetation. Clearing of the vegetation under application would reduce this connectivity.

Given the above, the application is at variance to this Principle.

Methodology GIS Databases:
- Register of National Estate - EA 28/01/03;
- 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 may be at variance to this Principle**

Given the hilly terrain of the local area, groundwater is not readily available, and therefore the significance of small tributaries becomes paramount for down stream users. The proposed clearing is likely to impact on the quality of water through increased turbidity and salinity with runoff from surrounding farmlands likely to increase the amount of nutrients entering the system.

Furthermore, there is an environmental sensitive area (ESA) located 1km upstream from the application area. It is a seasonally inundated flat floodplain, which receives the majority of its water from overland runoff into Ferguson valley, including the vegetation within the application area, proceeds downstream to the ESA. There are already two dams located upstream from the ESA and given the large size of the application area and proposed dam, it is likely that flows to the floodplain will be compromised, lowering the environmental value of

the ESA.

Clearing of riparian vegetation may increase sedimentation due to a loss of filtering processes within the minor perennial watercourse on which the application is based.

Given the above, a reduction in the quality of surface water through sedimentation, erosion, filtration and turbidity may result from the proposed clearing and therefore may be at variance to this Principle.

Methodology GIS Databases:
- Hydrographic Catchments, Catchments - DoW;
- Environmentally Sensitive Areas (ESA) - DEC 30/05/05
- Topographic Contours, Statewide - DOLA 12/9/02;
- Groundwater Salinity, Statewide - DoW;
- Hydrogeology, Statewide - DoW 13/07/06

(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**
Given the scale (2.8 hectares), the proposed clearing is unlikely to cause localised flooding and is therefore not likely to be at variance to this clearing principle.

Methodology GIS Databases:
- Topographic Contours, Statewide - DOLA 12/9/02

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

Comments

The application area was reduced from 2.8ha to 1.3ha (DOC67117). The reduction in size did not address the environmental issues raised within the 30 day sent to the proponent on 23 October 2008.

The proposed clearing is to enable the construction of a dam with a capacity of 40 mega litres (ML) on a watercourse proclaimed for surface water rights under the Rights In Water and Irrigation Act 1914. A permit to interfere with beds and banks (PMB) and a surface water licence (SWL) are currently being reviewed by the Department of Water (2008) and has not been issued as yet. A permit to interfere with bed and banks will exempt clearing of native vegetation for the dam wall but not for the areas to be inundated.

The Shire of Dardanup (2008) has returned the planning and development application to the applicant, as information was not provided to them in time (DOC65406). Additionally, the Shire (2008a) advised the DEC that it is silent on the matter of vegetation clearing within the Lot 20, and therefore offers no comment on the proposal.

Public submission (2008a) has raised several concerns including the following:

- Four dams on the property currently exist;
Two dams within the property are already based within the minor perennial watercourse. This concern is addressed in principle (h).
- Native animals have been sighted utilising the area under application, including kangaroos, possums, etc and is prime Western Ringtail Possum habitat, in that Spots Brook comprises old peppermint trees;
This concern has been addressed in principle (b).
- The proposed clearing will impact on a connection between CALM native bush;
Principle (f) and (h) address this concern concentrating on the vegetation connectivity to Wellington National Park and the Dardanup Conservation Park / Boyanup State Forest via the Ferguson River and its tributaries.
- Downstream effects of the proposed clearing include loss of water vegetation, comprised bank stability and an increase in turbidity and salinity;
This concern is addressed in principle (i).
- The proposal does not comply with DoWs policy on dams;
Under section 51O, the CEO must have regard to the clearing principles, planning instruments and other relevant matters, therefore before making a decision on the application DoW policy needs to be taken into account. Furthermore, a permit to clear native vegetation can not be granted unless a valid water licence has been issued by the Department of Water.

Three public submissions (2008b; 2008c; 2008g) are from previous owners of Lot 20, who were advised in the late 70s / early 80s that a total clearing ban would be enforced on the property; so they sold up. Submission (2008c) advises that if a permit is granted to clear this vegetation, then they will immediately apply to clear more land on their property (given the precedence that will be set). Three other submissions (2008d; 2008e; 2008f) also object to the clearing proposal for these reasons;

A date for the previous ban by the Department of Agriculture and Food Western Australia stated in these submissions could not be ascertained, though, the ban was introduced prior to the introduction of the Environmental Protection (Clearing of Native Vegetation) Regulations 2004. As of 2004, all applications to clear native vegetation which are not exempt under these regulations must be forwarded to the Department of Environment and Conservation for assessment of the 10 clearing principles.

Public submission (2008h) advises the proposal is likely to impact on nearby revegetation works, aimed at reducing erosion and nutrient issues identified in Nutrient and Sedimentation studies funded by the Leschenault Catchment Council (LCC); and is in direct conflict with the Leschenault Catchment Natural Resource Management Strategy of 2007;

Methodology DoW (2008);
Shire of Dardanup (2008);
Shire of Dardanup (2008a);
Public submission (2008a);
Public submission (2008b);
Public submission (2008c);
Public submission (2008d);
Public submission (2008e);
Public submission (2008f);
Public submission (2008g);
Public submission (2008h);

GIS Databases:
- Native Title Claims - DLI 7/11/05

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is at variance to Principles (f) and (h), may be at variance to Principles (a), (b), (c) and (i), and is not likely to be at variance to the remaining clearing Principles.

5. References

- Department of Environment and Conservation (DEC), Site inspection report (2008). Site inspection report for Lot 20 Wellington Mills Rd, Ferguson. DEC Bunbury. TRIM Ref: DOC49626.
- Department of Water (DoW) (2008). TRIM Ref: DOC50781.
- DEWR (2008a). *Calyptorhynchus baudinii* - Baudin's Black Cockatoo. Department of the Environment and Water Resources. Cited 02/01/08 at www.environment.gov.au
- DEWR (2008b). Chuditch Recovery Plan 1992-2001. Department of the Environment and Water Resources. Cited 21/12/07 at www.environment.gov.au
- DEWR (2008c). *Pseudocheirus occidentalis* - Western Ringtailed Possum. Department of the Environment and Water Resources. Cited 15/11/07 at www.environment.gov.au
- EPA (2003) Greater Bunbury Region Scheme. Bulletin 1108. Environmental Protection Authority, Western Australia.
- 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.
- Kitchner, D. J. (1995). Quokka In R. Strahan (Ed). The Mammals of Australia. Australian Musuem and Reed Books.
- Chatswood N.S.W. viewed electronically in Quokka species profile from www.naturebase.net accessed 22/04/08.
- Mattiske, E.M. and Havel, J.J. (1998). Vegetation mapping in the South West of Western Australia. Department of Conservation and Land Management, Perth.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.
- Public submission (2008a). TRIM Ref: DOC49587.
- Public submission (2008b). TRIM Ref: DOC48953.
- Public submission (2008c). TRIM Ref: DOC48917.
- Public submission (2008d). TRIM Ref: DOC49373.
- Public submission (2008e). TRIM Ref: DOC49848.
- Public submission (2008f). TRIM Ref: DOC49853.
- Public submission (2008g). TRIM Ref: DOC50013.
- Public submission (2008h). TRIM Ref: DOC50899.
- Shepherd, D.P. (2007). 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.
- Shire of Dardanup (2008). TRIM Ref: DOC65406.

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)