



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7542/1
Permit Holder:	Stephan Ziverts
Duration of Permit:	25 August 2017 – 25 August 2027

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of silvicultural thinning.

2. Land on which clearing is to be done

Lot 1253 on Deposited Plan 149328, Hazelvale

3. Area of Clearing

The Permit Holder must not selectively clear more than 30 hectares of native vegetation within the area hatched yellow on attached Plan 7542/1.

4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 25 August 2022.

5. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

6. Type of clearing authorised

To the extent authorised under condition 3 of this Permit, the Permit Holder may undertake the following activities within the area cross-hatched yellow on Plan 7542/1:

- (a) clearing and burning of *understorey*;
- (b) clearing for the establishment of a *log landing* no larger than 0.3 hectares in size;
- (c) *thinning* of karri (*Eucalyptus diversicolor*) trees; and
- (d) *culling* and burning of unsaleable trees.

PART II – MANAGEMENT CONDITIONS

7. Vegetation management

- (a) The Permit Holder shall not clear native vegetation within 30 metres of the *riparian vegetation* of any *watercourse* or *wetland*;
- (b) Prior to undertaking any clearing authorised under this Permit, an *environmental specialist* must determine the species composition, structure and density of the *understorey* of areas proposed to be *thinned*;

- (c) The Permit Holder must retain a minimum of 2 *habitat trees* within the area of clearing authorised under this Permit in each hectare authorised under this Permit;
- (d) A minimum retention rate of 15m²/ha *basal area* is required within the area of clearing authorised under this Permit;
- (e) Prior to undertaking any clearing authorised under this Permit, the Permit Holder must exclude all *stock* from the areas subject to *thinning* activities;
- (f) Within 3 months of 25 August 2022, the Permit Holder must *rehabilitate* any *log landings* established within native vegetation by scarifying the soil surface to reduce compaction and facilitate natural regeneration; and
- (g) Within two years of 25 August 2022, the Permit Holder must:
 - (i) determine the species composition, structure and density of the *understorey* of areas subject to *thinning*; and
 - (ii) where, in the opinion of an *environmental specialist*, there is evidence that *understorey* will not recover and develop towards its pre-clearing composition, structure and density determined under condition 7(b), the Permit Holder must undertake *remedial action* at an *optimal time* within the next 12 months to ensure re-establishment of *understorey* prior to expiry of this Permit.

PART III - RECORD KEEPING AND REPORTING

8. Records must be kept

The Permit Holder must maintain the following records in relation to vegetation management pursuant to condition 7 of this Permit:

- (a) monitoring undertaken to ensure that the specified minimum *basal area* is retained;
- (b) number of *log landings* established;
- (c) the location of *log landings*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
- (d) photographs of the *understorey* taken at one year, two years and three years after completing clearing authorised under this Permit; and
- (e) a detailed description of the nature and extent of any *remedial actions* undertaken.

9. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 8 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 25 May 2027, the Permit Holder must provide to the CEO a written report of records required under condition 8 of this Permit where these records have not already been provided under condition 9(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

basal area is the method of expression of tree cover density in an area where the total area of tree trunk, measured at average adult human breast height, is expressed as square metres per hectares of land area;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

habitat tree(s) means trees that have a diameter, at average adult human chest height, of greater than 70cm, healthy but with dead limbs and broken crowns that are likely to contain hollows and roosts

suitable for native fauna, or where these are not present then healthy but with the potential to contain hollows and roosts;

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres of the area cleared.

log landing/s means an area established for the purpose of stockpiling commercially harvested trees, to enable loading for collection;

optimal time means the period from April to June for undertaking *planting*;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing mulch;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

remedial action/s means for the purpose of this Permit, any activity that is required to ensure successful re-establishment of *understorey* to its pre-clearing composition, structure and density, and may include a combination of soil treatments and *revegetation*;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

stock means the horses, cattle, sheep, pigs and other non-indigenous grazing animals kept or bred on a property;

thinned/ing describes a silvicultural activity to promote the growth of selected trees by removing competing trees;

understorey means, for the purpose of this Permit, all native vegetation that does not include trees to be *culled* or subject to harvest.



James Widenbar
MANAGER
CLEARING REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

28 July 2017

Plan 7542/1



Legend

-  Roads
-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority



1:7,611

(Approximate when reproduced at A4)
GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

[Signature] Date 28/7/17

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



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1. Application details

1.1. Permit application details

Permit application No.: 7542/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Mr Stephen Ziverts

1.3. Property details

Property: LOT 1253 ON PLAN 149328, HAZELVALE
Colloquial name:
Local Government Authority: DENMARK, SHIRE OF
DER Region: South Coast
DPaW District: FRANKLAND
LCDC:
Localities: HAZELVALE

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
30		Mechanical Removal	Timber harvesting

1.5. Decision on application

Decision on Permit: Granted

Application:

Decision Date: 28 July 2017

Reasons for Decision:

The clearing permit application received on 31 March 2017 has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing is at variance to clearing principle (f), may be at variance to clearing principle (g) and is not likely to be at variance to the remaining clearing principles.

Through assessment it was identified that the application area includes a watercourse. A condition has been added to the permit to ensure that no clearing occurs within 30 metres of the identified watercourse.

Standard silvicultural thinning conditions have also been added to the permit requiring; the retention of two habitat trees per hectare and a minimal basal area of 15 metres squared per hectare, all stock to be excluded from application area and the rehabilitation of log landings.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The application area has been mapped as the following Mattiske vegetation complexes:

Ky: Open forest of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla*-*Banksia grandis* on mild slopes of hills in perhumid zone and open forest to tall open forest of *Eucalyptus brevistylis* on slopes below outcrops in hyperhumid and perhumid zones.

Q: Mosaic of low open woodland of *Eucalyptus marginata* subsp. *marginata*-*Banksia ilicifolia*-*Nuytsia floribunda* and low open woodland of *Eucalyptus patens*-

Clearing Description

The applicant proposes to clear up to 30 hectares of native vegetation within Lot 1253 on Deposited Plan 149328, Hazelvale, for the purpose of silvicultural thinning and fire control.

Vegetation Condition

Very Good;
Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

Comment

The dominant overstorey species within the application area are *Eucalyptus diversiflora* (karri), *Corymbia calophylla* (marri) and the occasional *Eucalyptus jacksonii* (red tingle) (DEC, 2009).

Dominant midstorey species include *Allocasuarina decussata*, *Trymalium floribunda*, *Acaia pentadenia*, *Lasiopetalum floribundum* and *Hibbertia commutata* (DEC, 2009).

Dominant understorey species include *Leucopogon capitellatus*, *Leucopogon verticillatus*, *Podocarpus drouynianus*, *Hovea elliptica*, *Patersonia umbrosa*,

Melaleuca preissiana-*Nuytsia floribunda* on less undulating flats in hyperhumid and perhumid zones.

S1: Tall open forest of *Eucalyptus diversicolor*-*Corymbia calophylla* on slopes with some *Eucalyptus patens* and *Eucalyptus megacarpa* on valley floors in hyperhumid and perhumid zones.

(Mattiske and Havel, 1998)

Mesomelaena graciliceps, *Chorizema diversifolium* and *Clematis pubescens* (DEC, 2009).

The condition and description of the vegetation under application was determined via a site inspection conducted by former Department of Environment and Conservation (DEC) Staff in 2009 and via aerial imagery (DEC, 2009).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments

Proposed clearing is not likely to be at variance to this Principle

The applicant proposes to clear up to 30 hectares of native vegetation within Lot 1253 on Deposited Plan 149328, Hazelvale, for the purpose of silvicultural thinning and fire control.

The application area is predominately closed karri forest (DEC, 2009). Karri and marri trees dominate the overstorey with *Allocasuarina decussate*, *Trymalium floribunda*, *Acaia pentadenia*, *Lasiopetalum floribundum* and *Hibbertia commutata* being dominant species in the midstorey.

Twenty priority flora species have been recorded within the local area (10 kilometre radius). Eleven of these species are associated swamps and winter wet flats. A watercourse runs parallel with the southern edge of the application area, however the requirement to retain a 30 metre buffer to any riparian vegetation associated with this watercourse will ensure these eleven species are not impacted if located within the application area.

Six of the remaining flora species are listed as priority 3 and 4. Priority 3 species are generally known from collections from several different localities not under imminent threat and priority 4 species are considered to have been adequately surveyed and not in need of special protection, but could be if circumstances change (Parks and Wildlife, 2015a). The proposed thinning of mature karri trees and burning of understorey is unlikely to impact on the conservation status of these species if present within the application area.

Two priority 2 flora species have been located within the local area, one being a moss species found of macrozamia sp. and the other species is found in jarrah forest. Suitable habitat for these two species is not found within the application area.

One priority ecological community has been recorded within the local area, being '*Reedia spathacea* - *Empodisma gracillimum* - *Schoenus multiglumis* dominated peat paluslopes and sandy mud floodplains of the Warren Biogeographical Region'. Suitable habitat for this community is not located within the application area.

As discussed in principle (b) nine terrestrial fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* have been recorded within the local area. Whilst the application area may provide suitable habitat for indigenous fauna, given the local area is highly vegetated (approximately 80 per cent vegetation remaining) the majority of which is held in conservation estate, the application area is not likely to provide significant fauna habitat.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

References:

DEC (2009)

Parks and Wildlife (2015a)

GIS Database:

SAC Bio datasets – Accessed March 2017

(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

Proposed clearing is not likely to be at variance to this Principle

Nine terrestrial fauna species, listed as rare or likely to become extinct under the WC Act, have been recorded within the local area (10 kilometre radius), being; Carnaby's cockatoo (*Calyptorhynchus latirostris*), forest red tailed black cockatoo (*Calyptorhynchus banksii* subsp. *Naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), woylie (*Bettongia penicillata* subsp. *Ogilbyi*), WA pill millipede (*Cynotelopus notabilis*), western ground parrot (*Pezoporus flaviventris*), western ringtail parrot (*Pseudocheirus occidentalis*), quokka (*Setonix brachyurus*) and western archaeid spider (*Zephyrarchaea mainae*) (Parks and Wildlife, 2007-).

The application area is predominately closed karri forest (DEC, 2009). Karri and marri trees dominate the

overstorey with *Allocasuarina decussate*, *Trymalium floribunda*, *Acaia pentadenia*, *Lasiopetalum floribundum* and *Hibbertia commutata* being dominant species in the midstorey.

The local area retains approximately 80 per cent native vegetation, the majority of which is held in conservation estate.

Carnaby's cockatoo is listed as endangered and Baudin's cockatoo and forest red-tailed cockatoo are listed as vulnerable under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012).

Black cockatoos have a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by Proteaceous plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012).

The dominant overstorey species within the application area include karri and marri and therefore the application area may contain both breeding and foraging habitat for black cockatoos.

Whilst the vegetation under application may provide suitable habitat for black cockatoos and other indigenous fauna listed above, given the local area is highly vegetated, the majority of which is held in conservation estate, the vegetation is not likely to be significant habitat for indigenous fauna. In addition, the clearing is for the purpose of silvicultural thinning and the applicant has committed to retaining a 15 m²/hectare basal area and at least two habitat trees per hectare. These actions will assist in minimising potential impacts to fauna habitat.

An ecological linkage, defined by the South West Regional Ecological Linkage (SWREL) Report (Molloy et al., 2009) is mapped within contiguous vegetation approximately 1.2 kilometres west of the application area. This linkage runs north-south and links Frankland State Forest and West Frankland State Forest.

The SWREL report (Molloy et al., 2009) defines an ecological linkage as "A series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape". The application area will support this linkage, however given its location and that it is part of a larger remnant the proposed clearing will not sever it. The proposed clearing is unlikely to reduce the effectiveness of the linkage given that the purpose of clearing is thinning.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
Commonwealth of Australia (2012)
DEC (2009)
Molloy et al. (2009)
Parks and Wildlife (2007-)

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
Three rare flora species have been recorded within the local area (10 kilometre radius).

Two of the tree species grow in association with swampy areas. A watercourse runs parallel with the southern edge of the application area, however the applicant will be required to retain a 30 metre buffer to any riparian vegetation associated with this watercourse. Therefore suitable habitat for these species will not be impacted by the proposed clearing.

The third species is a perennial herb which inhabits infertile grey sands in common sheoak (*Allocasuarina fraseriana*) and jarrah (*Eucalyptus marginata*) woodland or forest (Brown et al., 1998). Suitable habitat for this species is not present within the application area.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
Brown et al. (1998)

GIS Database:
SAC Bio datasets – Accessed March 2017

(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 **Proposed clearing is not likely to be at variance to this Principle**
No threatened ecological communities (TEC) have been recorded within the local area (10 kilometre radius). Therefore the proposed clearing is not likely to comprise of, or be necessary for the maintenance of a TEC.

The proposed clearing is not likely to be at variance to this principle.

Methodology GIS Database:
SAC Bio datasets – Accessed March 2017

(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 **Proposed clearing is not likely to be at variance to this Principle**
The application area is located within the Warren IBRA bioregion. This bioregion has approximately 79 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2016).

The vegetation under application is mapped as Mattiske vegetation complexes Ky, Q and S1 of which there is approximately 90, 94 and 85 per cent of their pre-European extent remaining, respectively (Parks and Wildlife, 2015b).

The area under application is located within the Shire of Denmark, within which there is approximately 75 per cent pre-European extent remaining (Government of Western Australia, 2016).

The local area (10 kilometre radius) retains approximately 80 per cent native vegetation.

The national objectives and targets for biodiversity conservation in Australia have a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The local area, Shire and mapped vegetation complexes all retain over the 30 per cent threshold. Therefore, the proposed clearing is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion				
Warren	833,986	660,310	79	84.5
Shire				
Shire of Denmark	190,534	142,246	75	79
Mattiske Vegetation Complex				
Ky	15,013	13,565	90	90.5
Q	14,982	14,019	94	96
S1	25,607	21,842	85	89

Methodology References:
Commonwealth of Australia (2001)
Government of Western Australia (2016)
Parks and Wildlife (2015b)

GIS Databases:
Imagery
Remnant vegetation

(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 **Proposed clearing is at variance to this Principle**
A watercourse runs parallel with the southern edge of the application area.

No wetlands are mapped within or in close proximity to the application area.

The proposed clearing is at variance to this principle.

The requirement to retain a 30 metre buffer to any riparian vegetation associated with this watercourse will ensure that vegetation growing in association with this watercourse is not disturbed.

Methodology GIS Databases:
Hydrography, linear
Hydrography, hierachy

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

Comments Proposed clearing may be at variance to this Principle

The application area has been mapped as the following soil types (Schoknecht et al., 2004):

- Keystone yellow duplex Phase (approximately 60% of application area): Gravelly yellow duplex soils; jarrah-marri forest
- Minor Valleys S1 Subsystem (Walpole) (approximately 40% of application area): Valleys in granitic terrain, narrow swampy floor; less than 20 metre relief. Gravelly yellow duplex soils on smooth flanks; jarrah-marri-karri forest. Peaty soils on narrow floor; Wattle low forest.

Land Deg Risk Category	Keystone yellow duplex Phase	Minor Valleys S1 Subsystem (Walpole)
Water Erosion	50-70% of map unit has a high to extreme water erosion risk	30-50% of map unit has a high to extreme water erosion risk
Wind Erosion	3-10% of the map unit has a high to extreme wind erosion risk	10-30% of the map unit has a high to extreme wind erosion risk
Waterlogging	3-10% of map unit has a moderate to very high waterlogging risk	10-30% of map unit has a moderate to very high waterlogging risk
Flooding	<3% of the map unit has a moderate to high flood risk 30-50% of map unit has a moderate to high salinity risk or is presently saline	3-10% of the map unit has a moderate to high flood risk
Salinity Risk		30-50% of map unit has a moderate to high salinity risk or is presently saline

Based on the mapped land degradation risk outlined above, the proposed clearing has a relatively low likelihood of causing wind erosion, waterlogging and flooding.

The majority of the application area is mapped at 'greater than 70 per cent of the map unit having a high to extreme risk of water erosion' (Schoknecht et al., 2004). Despite this relatively high risk of water erosion the applicant will be required to retain a 15 m²/hectare basal area which will reduce the risk of water erosion.

Clearing for the purpose of silvicultural thinning where a 15 m²/hectare basal area will be retained is not likely to lead to an increase in salinity.

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

Methodology References:
Schoknecht et al. (2004)

(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 Proposed clearing is not likely to be at variance to this Principle

The application area is located approximately 450 metres north of Walpole Nornalup National Park. At its closest point Frankland State Forest is located approximately 1.5 kilometres north west of the application area and West Frankland State Forest is located approximately 2.7 kilometres south west.

An ecological linkage, defined by the South West Regional Ecological Linkage (SWREL) Report (Molloy et al., 2009) is mapped within contiguous vegetation approximately 1.2 kilometres west of the application area. This linkage runs north-south and links Frankland State Forest and West Frankland State Forest.

The SWREL report (Molloy et al., 2009) defines an ecological linkage as "A series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape".

The application area will support this linkage, however given its location and that it is part of a larger remnant the proposed clearing will not sever it. The proposed clearing is unlikely to reduce the effectiveness of the linkage given that the purpose of clearing is thinning.

Given the distance to the nearest conservation area (450 metres) the proposed clearing will not increase the risk of weeds or dieback being introduced or spread into this area.

Given the above, the proposed clearing is not likely to be at variance to this principle.

Methodology References:
Molloy et al. (2009)

GIS Databases:
Parks and Wildlife Estate

(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 **Proposed clearing is not likely to be at variance to this Principle**
A watercourse runs parallel with the southern edge of the application area. Noting the purpose of clearing, a requirement to retain a 30 metre buffer to any riparian vegetation associated with this watercourse will ensure that the proposed clearing does not impact upon the equality of surface water.

Groundwater salinity within the application area is mapped as less than 500 total dissolved solids, milligrams per litre. This level of groundwater salinity is classified as 'fresh' and therefore, noting the purpose of clearing is for silvicultural thinning, the proposed clearing is not likely to increase groundwater salinity.

Given the above the proposed clearing is not likely to cause deterioration in the quality of surface or groundwater and is therefore not likely to be at variance to this principle.

Methodology GIS Databases:
Hydrography, linear
Hydrography, hierachy
Groundwater salinity

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments **Proposed clearing is not likely to be at variance to this Principle**
Given the porous nature of the mapped soils and the low mapped (<3 per cent for the majority of the application area) flood risk (Schoknecht et al., 2004), the proposed clearing is not likely to increase the incidence or intensity of flooding.

The proposed clearing is not likely to be at variance to this principle.

Methodology References:
Schoknecht et al. (2004)

Planning instruments and other relevant matters.

Comments On 17 July 2017 the Shire of Denmark issued Development Approval for this project (Shire of Denmark, 2017).

The Shire has stated that under the Shire's Bushfire Regulations Notice 2016/2017, there is no requirement to clear the vegetation for bushfire hazard reduction purposes (Shire of Denmark, 2017). In response to this comment the applicant provides the following comment (Clarke, 2017):

Silvicultural thinning and fire control go hand in hand for this small landowner. It is very difficult to carry out a fuel reduction burn in a small area of dense, regrowth karri forest without firstly opening up the forest by thinning and associated scrub rolling. The thinning operation will result in four outcomes which help facilitate safe fuel reduction burning for small landowners:

1. It allows removal of woody material (ie logs) which provides an income to help fund fuel reduction burning activity;
2. It allows removal of flammable woody material (ie logs) which reduces the total fuel load per hectare;
3. It results in the creation of extraction tracks through the patch of forest to facilitate the safe lighting (of a fuel reduction burn) after harvesting;
4. It allows harvesting slash and scrub to dry out more than surrounding forest (ie to the west and south), thus providing a moisture differential which is very important when carrying out fuel reduction burning in wet sclerophyll forests.

The application was advertised online on 19 April 2017 for a 21 day submission period. A publication summary was advertised in *The West Australian* on Monday 24 April 2017. No submissions were received in relation to this application.

On 26 March 2009 a clearing permit (CPS 2987/1) was issued for 16.42 hectares on the same property (overlaps current application area) for the purpose of silvicultural thinning and bushfire fuel management. No clearing under this permit was conducted prior to it expiring on 26 April 2017.

A small strip of the southern end of the application area is mapped as an Aboriginal Sites of Significance, being Frankland River. The applicant is advised to contact the Department of Aboriginal Affairs regarding its obligations under the *Aboriginal Heritage Act 1972*.

Methodology References:
Clarke (2017)
Shire of Denmark (2017)

4. References

- Brown A., Thomson-Dans C. and Marchant N. (1998). Western Australia's Threatened Flora, Department of Conservation and Land Management, Western Australia.
- Clarke (2017) Response to the Shire of Denmark's planning advice (DER Ref: A1422560).
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- Commonwealth of Australia (2012). EPBC Act referral guidelines for three threatened black cockatoo species. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.
- Department of Environment and Conservation (DEC) (2009) Advice to Assessing Officer, Site Inspection Report and Regional Advice, Department of Environment and Conservation South West Region, unpublished document, DOC79249.
- Department of Parks and Wildlife (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed April 2017.
- Department of Parks and Wildlife (2015a) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Perth, Western Australia.
- Department of Parks and Wildlife (2015b) 2015 South West Forest and Swan Coastal Plain Vegetation Complex Statistics: a report prepared for the Department of Environment Regulation. Current as of March 2015. Department of Parks and Wildlife, Perth, Western Australia.
- Government of Western Australia (2016). 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, Perth.
- 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, E.M. and Havel, J.J. (1998) Vegetation Complexes of the South-west Forest Region of Western Australia. Maps and report prepared as part of the Regional Forest Agreement, Western Australia for the Department of Conservation and Land Management and Environment Australia.
- Molloy, S., Wood, J., Hall, S., Wallrodt, S. and Whisson, G. (2009). South West Regional Ecological Linkages Technical Report. Western Australian Local Government Association and Department of Environment and Conservation.
- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Shire of Denmark (2017) Notice of Determination on Application for Development Approval. Received on 18 July 2017 (DER Ref: A1479032).