



GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 7579/1

File Number: 2015/000438-1

Duration of Permit: 20 November 2017 to 20 November 2019

PERMIT HOLDER

David Brinley Reid

LAND ON WHICH CLEARING IS TO BE DONE

Lot 4156 on Deposited Plan 207767

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 16.13 hectares of native vegetation within the area cross hatched yellow on attached Plan 7579/1.

CONDITIONS

1. Vegetation management – conservation

Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall finalise the transfer of the area cross hatched red on attached Plan 7579/1b to the Department of Biodiversity Conservation and Attractions, for management as a conservation reserve.

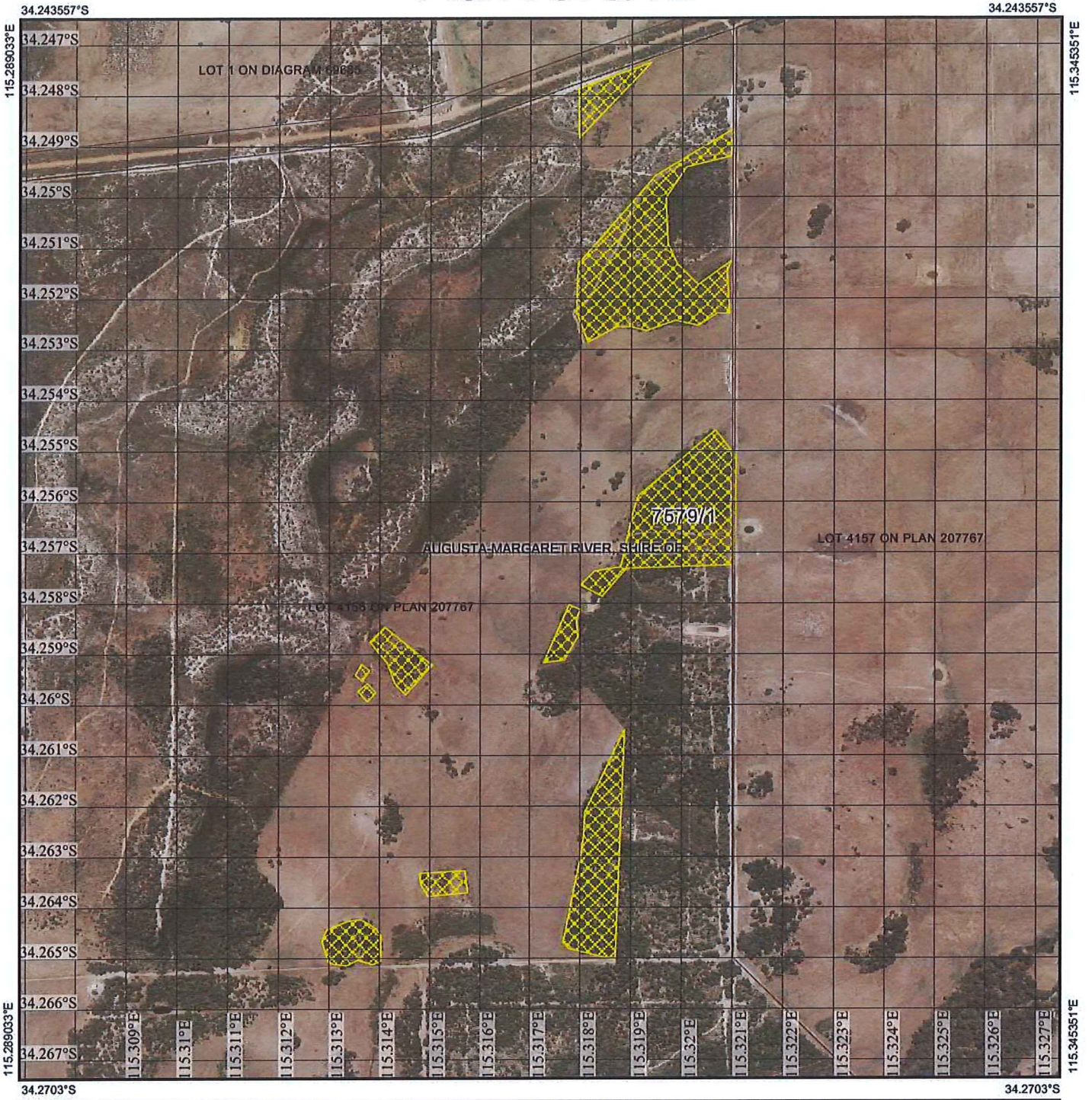
A handwritten signature in blue ink, appearing to read 'J Widenbar', written over a horizontal line.

James Widenbar
A/SENIOR MANAGER
CLEARING REGULATION

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

16 October 2017

Plan 7579/1 a



Legend

-  Imagery
-  Clearing Instruments Activities
-  Local Government Authority



1:10,000
 (Approximate when reproduced at A4)
 GDA 94 (Lat/Long)
 Geocentric Datum of Australia 1994

Jmm Date *16/10/17*

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

Plan 7579/1 b



Legend

-  Clearing Instruments Offsets
-  Clearing Instruments Activities
-  Roads
-  Cadastre
- Virtual Mosaic



1:10,000

MGA 94

Geocentric Datum of Australia 1994

S. Williams Date *16/10/17*

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



**GOVERNMENT OF
WESTERN AUSTRALIA**



1. Application details

1.1. Permit application details

Permit application No.: 7579/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: David Brinley Reid

1.3. Property details

Property: LOT 4156 ON DEPOSITED PLAN 207767 (Lot No. 4156 GOVERNOR BROOME SCOTT RIVER 6288)
Local Government Area: Shire of Augusta-Margaret River

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
16.13	-	Mechanical Removal	Grazing and Pasture

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 16 October 2017

Reasons for Decision: The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the Environmental Protection Act 1986, and it has been concluded that the proposed clearing is at variance to principle's (a), (b), (d), (e), (f) and (h), may be at variance to principle's (c), (g) and (i) and is not likely to be at variance to principle (j). This application was received on 1 May 2017.

The applicant has previously applied for two clearing permits over this property, both significantly larger in size than the current application area. Both were refused based on potential significant environmental impacts. This current application area has been significantly reduced and is limited to smaller more degraded isolated remnants and the edges of larger remnants.

The Delegated Officer had regard for expert advice obtained from the former Department of Parks and Wildlife, in relation to biodiversity values and from the Commissioner of Soil and Land Conservation, in regard to land degradation risks.

The Delegated Officer noted that potential impacts have to a degree been avoided and minimised, as the areas proposed to be cleared are limited to smaller more degraded isolated remnants and fall on the edge of the larger remnants on the property. The Delegated Officer considers that managing the adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The vegetation in the application area has been mapped as Matisse vegetation complexes (Matisse and Havel, 1998):

- Swi which is described as, Closed heath of Myrtaceae-Proteaceae spp. and tall shrubland of *Viminaria juncea* on flats and depressions in the perhumid zone.
- Sd which is described as low open forest and low woodland of *Eucalyptus marginata* subsp. *marginata*-*Corymbia calophylla*-*Agonis flexuosa* with some *Eucalyptus patens* and *Banksia* spp. on low dunes to low woodland of *Melaleuca preissiana*-*Banksia littoralis* on inter-dune depressions in hyperhumid and perhumid zones; and
- Swd which is described as, mosaic of sedgeland of Restionaceae-Cyperaceae spp. and closed heath of Myrtaceae-Proteaceae spp. with occasional *Banksia illicifolia* on swampy depressions and stunted *Eucalyptus marginata* subsp. *marginata*-*Banksia attenuata*-*Xylomelum occidentale* on low sandy rises in hyperhumid and perhumid zones.

The former Department of Parks and Wildlife (Parks and Wildlife) has described the vegetation within the location as (Parks and Wildlife, 2017):

Community 3 - Jarrah, Marri forest on subsoil saturated brown to orange loamy soils. The dominant community found on these soils is a low closed forest of *Eucalyptus marginata*, *Corymbia calophylla* within places emergent *Banksia littoralis* and *Melaleuca preissiana*, this community is found throughout the location on slight loamy rises and is commonly found fringing grey sand dunes.

Trees: *Eucalyptus marginata*, *Corymbia calophylla*, *Agonis flexuosa*, *Banksia littoralis*.
 Shrubs: *Xanthorrhoea preissii*, *Hakea ruscifolia*, *Acacia myrtifolia*, *Agonis parviceps*, *Dampiera heteroptera*, *D. trigona*, *Conospermum paniculatum*, *Adenanthos detmoldii*.
 Sedges: *Cyathochaeta avenacea*, *Tetraria octandra*, *Mesomelaena tetragona*.
 Herbs: *Anigozanthos flavidus*, *Dasypogon bromeliifolius*.

Community 7 - The central wetlands of the location are a mixed closed low heath, on sand to loam soils. Occurrences of this community on sand soils can range from damplands to saturated sands depending on the depth of soil over impeding layers, dominant species on the damplands includes species such as *Dasypogon bromeliifolius*, *Anarthria scabra*, *Hypocalymma ericifolium*, *Kunzea recurva*, *Melaleuca thymoides* sometimes with occasional Jarrah and Nuytsia. The saturated sands will often include *Evandra aristata*, *Melanostachya ustulata*, *Homalospermum firmum*, *Beaufortia sparsa*. The wetland vegetation when on loam soils will lack a number of these sand soils species and instead be more dominated by *Pericalymma elliptica*, *Hakea sulcata*, *H. linearis*, *Mesomelaena tetragona* and *Grevillea papillosa*.

The northern extent of this vegetation overlays relatively shallow ironstone rock and in places this influence can be seen in the plant community through large stands of *Calothamnus lateralis* var. *crassus*. While these areas have not been inspected in detail they appear to represent a form of Scott ironstone TEC; from the inspections undertaken it can be confirmed that none of this ironstone overlaying form of Community 7 is within the current 2017 clearing application.

Community 7 is a very broad community group predominantly a Closed Low Heath.

Trees: *Melaleuca preissiana*, *Banksia occidentalis*
 Shrubs: *Hypocalymma ericifolium*, *Beaufortia sparsa*, *Homalospermum firmum*, *Adenanthos detmoldii*, *A. obovatus*, *Hypocalymma cordifolium*, *Grevillea papillosa*, *Hakea ceratocarpa*, *H. varia*, *Melaleuca incana*, *Conospermum paniculatum*, *C. quadripetalum*, *Dampiera heteroptera*
 Sedges: *Evandra aristata*, *Anarthria scabra*, *Baxteria australis*, *Mesomelaena tetragona*, *Leptocarpus/Meeboldina* sp.

Community 8 - Small areas of deep seasonal inundation that have a plant community dominated by Restionaceae sedge species with an overstorey of *Taxandria inundata* and/or *Melaleuca raphiophylla* with some *M. preissiana*.

Taxandria inundata, *Melaleuca raphiophylla* inundated wetlands
 Trees: *Melaleuca raphiophylla*, *M. preissiana*
 Shrubs: *Taxandria inundata*
 Sedges: *Lepidosperma longitudinale*, *Restionaceae* spp. mix
 Tree species in this community are generally found on the periphery of the plant community.

Clearing Description	Vegetation Condition	Comment
To clear 16.13 hectares of native vegetation within Lot 4156 on Deposited Plan 207767, Scott River, for cropping and grazing.	Pristine: No obvious signs of disturbance (Keighery, 1994). To Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition and description was determined through site inspections undertaken by former Department of Environment and Conservation staff in June and September 2010, 25 June 2013 (Parks and Wildlife, 2013), the former Department of Environment Regulation on 2 March 2016 and Parks and Wildlife in 2017 (Parks and Wildlife, 2017).

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 at variance to this Principle**
 The application is to clear 16.13 hectares of native vegetation within Lot 4156 on Deposited Plan 207767, Scott River, for cropping and grazing. The vegetation applied to clear is contained within seven patches of remnant vegetation (Figure 1) and is on the edge of the larger remnants on the property.

The majority of the vegetation within the application area is in a very good (Keighery, 1994) or better condition. The application area falls on the Scott Coastal Plain which has been identified as an area holding national estate significance due to its high species richness, unusually high diversity of vegetation complexes, a concentration of rare restricted and threatened communities, its narrowly endemic plants, relict plants, plants with disjunct populations and wetlands of national importance (Government of Western Australia, 2001; EPA; 2000). A significant amount of native vegetation has been cleared on the Scott Coastal Plain including the majority of the wetland vegetation types which have been converted to agricultural purposes (Government of Western Australia, 2001).

The local area (10 kilometre radius) surrounding the application area retains 78.26 per cent native vegetation. As assessed under Principle (e), a majority of this vegetation falls to the south of the Scott River and the Scott Coastal Plain has been highly cleared for agriculture.

The application area forms part of an ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy *et al.*, 2009). This linkage connects the application area to reserves north and significant remnant vegetation to the south. A second linkage is mapped adjacent to the southern portion of the Lot and connects it to reserves east and west. Ecological linkages have been defined 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' (Molloy *et al.*, 2009).

In the context of the vegetation on the whole property (both that under and not under application) Parks and Wildlife (2013) advised that the diverse range of plant communities intermingled and transitional with the ironstone found in the location is not represented elsewhere. This transitional and diverse succession of vegetation communities leading north from the Scott River through the application area and the chain of almost unbroken vegetation leading from the Southern Ocean (approximately 3.5 kilometres south), through the application area to the forest vegetation of the Blackwood plateau to the north is unique. The majority of the application area is an upland vegetation type which does not support the majority of the conservation significant taxa which are typically associated with wetlands (Parks and Wildlife, 2017).

Site inspections within Lot 4156 identified one rare flora species and noted that following appropriate surveys, additional rare flora are highly likely to be found (Parks and Wildlife, 2013). The site inspections also recorded 12 Priority flora species. It was noted that a further seven priority flora species are likely to be confirmed within the lot given appropriate surveys (Parks and Wildlife, 2013). Parks and Wildlife inspections of the property recorded a number of other flora species, the extent and conservation status of which would require further study. The site inspections were limited by the large size of the survey area and flowering times of the flora (Parks and Wildlife, 2013).

As assessed under Principle (d), the application area falls within close proximity to a unique occurrence of the Scott River Ironstone Association threatened ecological community (TEC). Although the larger remnants encompassing the application area are aids in the buffering of TEC vegetation and in maintaining connectivity between remnants, subject to the remainder of the vegetation being appropriately managed as outlined in the conservation advice for the TEC (DotE, 2013a), the values of the TEC are not likely to be significantly impacted.

As assessed under Principle (b), the proposed clearing has the potential to impact on six fauna species listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act) and seven fauna species listed as priority by the Department of Biodiversity, Conservation and Attractions (DBCA)(DBCA, 2007-). However, as the areas proposed to be cleared fall on the edge of the larger remnants on the property, impacts to the ecological linkage and fauna habitat have been minimised.

Given the above, the proposed clearing is at variance to this clearing Principle. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

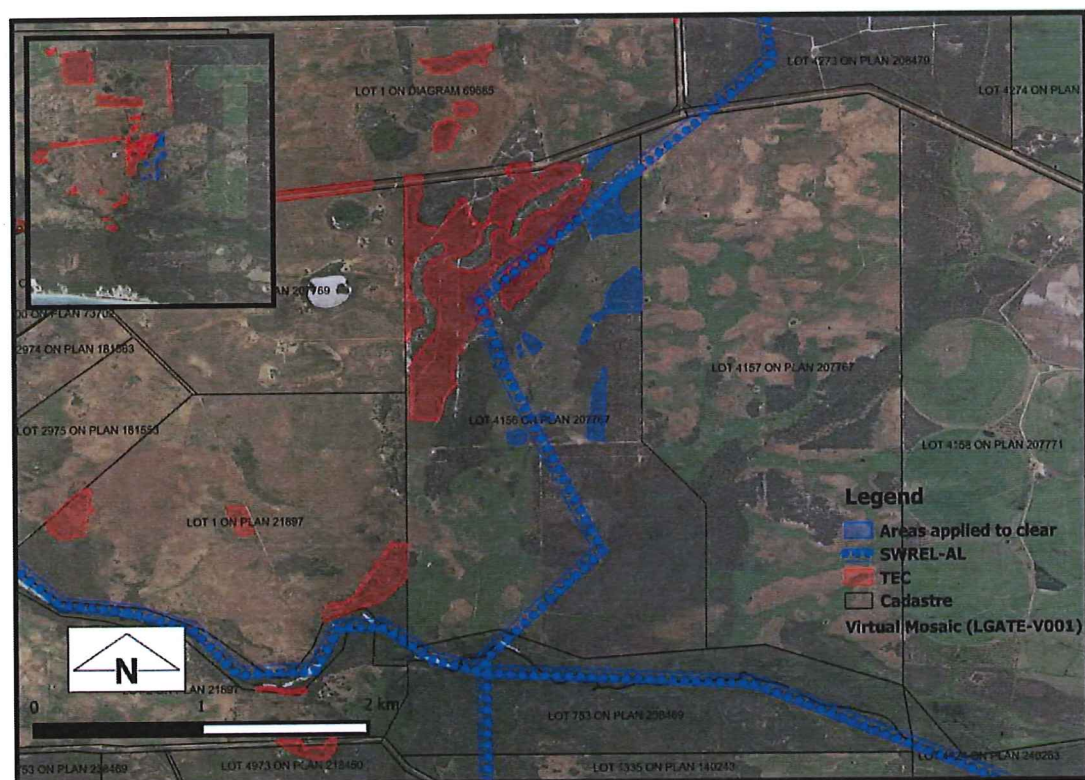


Figure 1: Location of application area within landscape and in relation to environmental values.

Methodology References:

DBCA (2007-)
DotE (2013a)
Environmental Protection Authority (2000)
Government of Western Australia (2001)
Keighery (1994)
Molloy et al. (2009)
Parks and Wildlife (2013)
Parks and Wildlife (2017)
GIS datasets:
Hydrography, linear
Pre-European vegetation
SAC Biodatasets
South West Regional Ecological Linkages

(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 at variance to this Principle

The application area occurs approximately 70 metres from the TEC, Scott River Ironstone Association. The Commonwealth, Department of the Environment's conservation advice for this vegetation association lists the forest red-tailed black cockatoo, Baudin's cockatoo, Carnaby's cockatoo and chuditch as species that may occur within the TEC (DotE, 2013a).

As assessed under Principle (a) and (e), the application area forms part of two ecological linkages, facilitating the movement of fauna and flora across a highly cleared landscape (Molloy *et al.*, 2009).

Fifteen non-marine fauna species listed as rare or likely to become extinct under the WC Act and nine species listed as priority by DBCA have been recorded within a 20 kilometre radius of the application area (DBCA, 2007-). Of these, noting the composition and condition of the vegetation under application, the proposed clearing may impact on six fauna species listed as rare or likely to become extinct under the WC Act and seven fauna species listed as priority by Parks and Wildlife.

Forest red-tailed black cockatoo, Baudin's cockatoo and Carnaby's cockatoo are listed as endangered and vulnerable under the WC Act respectively. Carnaby's cockatoo is listed as endangered while the forest red-tailed black cockatoo and Baudin's cockatoo are listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Black cockatoos nest in large hollows of eucalyptus trees and forage on the seeds, nuts and flowers of a large variety of plants including Eucalyptus and Banksia species (Shah, 2006).

The application areas contain a variety of vegetation types including jarrah, banksia and marri forests and seasonally inundated wetlands, with the vegetation predominantly in a very good (Keighery, 1994) or better condition (DER, 2016). The vegetation under application contains suitable foraging and roosting habitat for black cockatoo species however, is not likely to contain Eucalyptus species of a size or age as to contain suitable nesting habitat.

Western ringtail possum is listed as endangered under the WC Act and vulnerable under the EPBC Act. This species is restricted to the South West of Western Australia with *Agonis flexuosa* (peppermint) forming a core habitat requirement (DotE, 2013b). As the application area falls within the restricted distribution of this species and contains *Agonis flexuosa* (Parks and Wildlife, 2013), it represents potential habitat for this species.

Chuditch and quokka are listed as vulnerable under the WC Act and EPBC Act. Woylie is listed as critically endangered under the WC Act and endangered under the EPBC Act. The application area is consistent with their habitat requirements and given the location of the application area within the landscape, the application area may form habitat for these species (DEC, 2012a; DEC, 2013; Yeatman and Groom, 2012).

As assessed under Principle (g) and (i) the proposed clearing is not likely to significantly impact on the water quality of the Scott River and is therefore, not likely to impact on Balston's pygmy perch, Carter's freshwater mussel, White-bellied frog, orange-bellied frog, Mud minnow Pouched lamprey or Black-stripe minnow.

Mallee fowl and brush tailed phascogale are listed as vulnerable under the WC Act and EPBC Act. These species generally utilise dry sclerophyll forests (DotE, 2013c), therefore the application area is unlikely to form habitat for these species.

Western ground parrot have been adequately surveyed with all populations recorded significantly to the east of the application area, given this they are not likely to be impacted by the proposed clearing.

Quenda is listed as priority 5 by Parks and Wildlife. This species prefers dense often swampy vegetation, feeding within adjacent forest and woodland (DEC, 2012b). A site inspection report of the application area noted that this species has previously been recorded from within the application area and suitable habitat was observed (Parks and Wildlife, 2013).

Masked Owl is listed as priority 3 while short-nosed Snake and biting midge are listed as Priority 2 and blue-billed duck is listed as Priority 4 by Parks and Wildlife. As these species have been recorded within the local area, the vegetation under application may contain habitat for them.

Western brush wallaby is listed as priority 4 by Parks and Wildlife. As the habitat preferences for this species are present within the application area, it may contain significant habitat for this species.

Water-rat is listed as priority 4 by Parks and Wildlife. The habitat preferences for this species are present within vegetation adjoining the application (DEC, 2012c). Given this, the vegetation under application may be significant in the maintenance of habitat for the species.

Given the above, the vegetation under application contains significant habitat for endemic and conservation significant fauna. However, as the areas proposed to be cleared fall on the edge of the larger remnants on the property, impacts to the ecological linkage and fauna habitat have been minimised.

Given the above, the proposed clearing is at variance to this clearing Principle. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Methodology

References:

Commissioner of Soil and Land Conservation (2016)

DBCA (2007-)

DEC (2012a)

DEC (2012b)

DEC (2012c)

DEC (2013)

DER (2016)

DotE (2013a)

DotE (2013b)

DotE (2013c)

Gaeolotti et al. (2014)

Keighery (1994)

Molloy et al. (2009)

Parks and Wildlife (2013)

Shah (2006)

Yeatman and Groom (2012)

GIS Datasets:

Carnaby's cockatoo feeding habitat

Pre-European vegetation

South West regional Ecological Linkages

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

Comments **Proposed clearing may be at variance to this Principle**

The flora habitat types present within the application area are assessed under section 1.5.1. Seven rare flora species have been recorded within the local area (10 kilometre radius) and given the similar mapped soil and vegetation types, may be present within the application area.

Site inspections of Lot 4156 confirmed the presence of one rare flora species and given the observed vegetation type, it is highly likely to contain another (Parks and Wildlife, 2013). Due to the relatively large size of the remnants, inspections undertaken were preliminary only and following appropriate surveys, additional rare flora species are likely to be found (Parks and Wildlife, 2013).

As assessed under Principle (a) and (e), the application area forms part of two ecological linkages, facilitating the movement of fauna and flora across a highly cleared landscape (Molloy *et al.*, 2009).

Ecological linkages have been defined 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" (Molloy *et al.*, 2009). As the application area is likely to support rare flora populations, it may also be significant in the conservation status of rare flora outside of the application area through the dispersal of genetic material.

The area under application falls in close proximity to the third largest (and unique) occurrence of the Scott River Ironstone Association TEC. The Scott River Ironstone Association is known to support the rare flora species *Banksia nivea subsp. uliginosa*, *Darwinia ferricola* and *Lambertia orbifolia* subsp. Scott River Plains. Of these, *Darwinia ferricola* and *Lambertia orbifolia* subsp. Scott River Plains are largely restricted to this ecological community (DotE, 2013a). As the application area is in close proximity to TEC vegetation, contains similar, contingent vegetation and is connected via a recognised biological linkage, these species may also occur within the application area.

Parks and Wildlife (2017) have advised that as a majority of the application area is dominated by upland vegetation types and adjoins further vegetation, overall impacts to listed wetland species of the location by the proposed clearing is likely to be minimal. As the areas proposed to be cleared fall on the edge of the larger remnants on the property, impacts to potential rare flora habitat have been minimised.

Given the above, the proposed clearing may include rare flora and therefore, may be at variance to this clearing Principle. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Methodology Reference:
DotE (2013a)
Parks and Wildlife (2013)
Parks and Wildlife (2017)
Molloy et al. (2009)
Western Australian Herbarium (1998-)

GIS Datasets:
Pre European Vegetation
SAC Bio Datasets (accessed December 2015)
South West Regional Ecological Linkages

(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 at variance to this Principle

The Scott River Ironstone Association is described as a low to tall seasonally inundated shrubland or heathland, occurring on patches of shallow soils over massive ironstone formations of the Scott Coastal Plain in south-west Western Australia (DotE, 2013a). It is listed as endangered under the EPBC Act and the WC Act.

Site inspections undertaken by the former Department of Environment and Conservation in June and September 2010, as well as, 25 June 2013 (Parks and Wildlife, 2013) confirmed the mapped presence of the Scott River Ironstone Association within Lot 4156, as well as, potential unmapped occurrences across the property. Due to relatively large size of the application area, the exact locations of the TECs were not able to be determined and the entire property was not able to be inspected (Parks and Wildlife, 2013).

The north-western portion of Lot 4156 that is representative of Scott River Ironstone Association vegetation, as well as a 50 metre buffer, meets the Department of the Environment's (DotE) criteria for areas "critical to the survival of this ecological community" (DotE, 2013a). The conservation advice for this community also states "Additional areas such as adjoining native vegetation ... may be critical to the survival of the ecological community depending on factors such as presence of key functional, threatened, or rare species, their size and shape, linkages to other patches and landscape position" (DotE, 2013a).

As assessed under Principle (a) and (e), the application area forms part of two ecological linkages, facilitating the movement of fauna and flora across a highly cleared landscape (Molloy *et al.*, 2009). Further occurrences of the TEC are also located along this ecological linkage within two kilometres north and east of the application area, accounting for almost all of the known Scott River Ironstone Association vegetation. Given this, clearing the vegetation under application may impact on the transfer of genetic material between remnant patches of TEC vegetation.

The DotE (2013a) conservation advice for this TEC lists land clearing and grazing as major threats. It also lists the priority recovery and threat abatement actions which include:

- Avoid clearance of native vegetation within the ecological community and its surrounds (at least within a buffer zone of 50 metres from the edge of a given patch);
- Avoid any changes to hydrology that may result in changes to the natural hydrological regime of patches of the community, groundwater water table levels and subsequent increase or decrease in run-off, salinity, or pollution;
- Minimise disruptions to the local landscape that would influence the pattern of winter rain inundation, such as smoothing out depressions or creating banks/levees to store water;
- Ensure that development activities minimise direct impacts to the ecological community and indirect effects on its ecological function;
- Investigate formal conservation arrangements, management agreements and covenants on private land, and for crown and private land investigate inclusion in reserve tenure if possible;
- Develop and implement best practice standards and regimes for management of remnants on private and public lands to maintain the biodiversity, including threatened species, of the ecological community;
- Recognise and implement appropriate management regimes to maintain distinctive biodiversity elements, such as threatened species as identified in national and state recovery plans and the connected landscapes and focal areas as identified through recovery planning processes,
- Ensure that networks of patches of the community that serve as refuge or linkages for wildlife and their habitat are maintained across the landscape; and
- Ensure that an appropriate management regime that is not detrimental to the ecological community is

in place where stock access patches of the ecological community.

The Commissioner of Soil and Land Conservation (2013; 2016; 2017) identified that the soil types identified have a low phosphorus holding ability for which there is an increased risk of eutrophication especially when the soils become waterlogged. Given this, clearing vegetation in close proximity to the TEC may change the hydrology of the immediate area and adversely impact on TEC representative vegetation.

As the vegetation under application aids in the buffering of TEC vegetation and aids in maintaining connectivity between remnants, it comprises part of an area necessary for the maintenance of a TEC and the proposed clearing is at variance to this clearing Principle.

However, as the areas proposed to be cleared fall on the edge of the larger remnants on the property impacts to TEC vegetation have been minimised. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Methodology

References:

Commissioner of Soil and Land Conservation (2013)
Commissioner of Soil and Land Conservation (2016)
DotE (2013a)
Molloy et al. (2009)
Parks and Wildlife (2013)

GIS Datasets:

Pre European Vegetation
SAC Bio Datasets (accessed December 2015)
South West Regional Ecological Linkages

(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 at variance to this Principle

The application area is located within the Warren Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion retains approximately 79.2 per cent of its pre-European vegetation extent (Government of Western Australia, 2016).

The application area is mapped as Mattiske vegetation complexes Sd, Swd and Swi. These vegetation associations retain approximately 45.1, 68.2 and 16.5 per cent of their pre-European extent, respectively (Government of Western Australia, 2017).

Mattiske vegetation complex Swi is naturally highly restricted and retains 271.8 hectares of native vegetation. The application area is mapped over 0.4 hectares of mapped Swi vegetation, representing 0.15 per cent of the remaining Swi vegetation. Approximately 88.8 hectares of Swi vegetation is mapped within the north western remnant on the property, accounting for 32.6 per cent of the remaining mapped vegetation. Given this, clearing 0.4 hectares of the vegetation association is not likely to be significant provided that the remaining 88.8 hectares is appropriately managed.

The local area (10 kilometre radius) retains 78.3 per cent vegetation. The majority of this vegetation falls to the south of the application area and within reserves to the north, while the Scott Coastal Plain has almost entirely been cleared for agriculture.

The national objectives and targets for biodiversity conservation in Australia has 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). Ecological communities that are naturally rare or restricted may also require substantially greater than 30 per cent of their pre-European extent to be retained for effective representation and ecological viability.

The majority of the application area is in a very good (Keighery, 1994) or better condition. The vegetation is considered to be exceptionally diverse containing numerous priority and rare flora. The succession of plant communities leading from the Scott River, through the Scott Coastal Plain to the vegetation north of the application area is not represented elsewhere (Parks and Wildlife, 2013).

The application area forms part of two ecological linkages, defined by the South West Regional Ecological Linkage Report (Molloy et al., 2009). Given this and the condition of the vegetation, the application area is likely to form significant habitat for the dispersal of fauna and flora through the landscape.

As the vegetation north of the Scott River has been highly cleared for agriculture, as identified by the Government of Western Australia (2001), and the application area contains one of the last intact vegetation remnants on the Scott River Plain, the application falls within a highly cleared area. This is supported by the mapping of the application area as part of a north south ecological linkage.

Given the above, the proposed clearing is at variance to this clearing Principle however, as the areas proposed to be cleared fall on the edge of the larger remnants on the property impacts associated with clearing within a highly cleared landscape have been minimised. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion*				
Warren	833,985.6	660,309.7	79.2	84.5
Shire*				
Augusta Margaret River	431,369	156,394	36	26
South West Forest Vegetation Association**				
Sd	37,716.90	17,020.04	45.1	65.5
Swd	10,381.7	7,083.0	68.2	81.4
Swi	1,645.7	271.8	16.5	37.0
Local area (10 km radius)				
	30,792.9	14,861.7	78.3	-

Methodology References:
 Commonwealth of Australia (2001)
 Government of Western Australia (2001)
 * Government of Western Australia (2016)
 ** Government of Western Australia (2017)
 Keighery (1994)
 Molloy et al. (2009)
 Parks and Wildlife (2013)

GIS Datasets:
 Pre-European Vegetation
 South West Regional Ecological Linkages

(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**
 The application area falls within an extensive palusplain wetland (seasonally waterlogged flat) and within the flood plain of the Scott River. Site inspections of the property undertaken in 2010 to 2013 identified diverse wetland dependent vegetation (Parks and Wildlife, 2013).

A site inspection including the application area undertaken on 2 March 2016 recorded wetland vegetation in numerous areas (DER, 2016).

Given the above, the proposed clearing is at variance to this Principle.

Parks and Wildlife (2017) have advised that as a majority of the application area is dominated by upland vegetation types and adjoins further vegetation, overall impacts to listed wetland species of the location by the proposed clearing is likely to be minimal. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Methodology References:
 DER (2016)
 Parks and Wildlife (2013)
 Parks and Wildlife (2017)
 GIS Datasets:
 Geomorphic Wetlands Augusta to Walpole
 Hydrography, linear

(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 falls within an extensive palusplain wetland (seasonally waterlogged flat) and within the flood plain of the Scott River. Site inspections of the application area recorded diverse wetland dependent vegetation (Parks and Wildlife, 2013; DER, 2016).

The application areas generally occupy the lower slope position in the landscape and are situated near a 1000 millimetre isohyet.

The application area has been mapped within the following land sub-systems (Schoknecht *et al.*, 2004):

- SrSRwi subsystem is described as, poorly drained flats with shallow sands over laterite (bog iron ore).
- SrSRd2 subsystem is described as, low dunes and rises with deep bleached siliceous sands.
- SrSRd subsystem is described as, flats with high winter water tables and deep bleached siliceous sands.
- SrSRwd subsystem is described as, poorly drained flats with deep organic stained siliceous sands.

The cleared area has been mapped within the land degradation risk categories outlined in table 2 below.

A site inspection of Lot 4156 undertaken by the former Department of Agriculture and Food WA (Commissioner of Soil and Land Conservation, 2017) described the soil complexes within the application area as poorly drained flats, with high winter water tables and bleached siliceous sands, wet and semi-wet soils and pale deep sands and sandy rises, low dunes and wet sandy depressions on Quaternary deposits over Perth Basin sediments.

Considering the position of the proposed clearing within the landscape and the retention of adjoining vegetation, clearing the native vegetation under application is not likely to cause land degradation in the form of salinisation or wind erosion. The risk of water erosion is also low due to the present slope of the land (Commissioner of Soil and Land Conservation, 2017).

The Commissioner of Soil and Land Conservation (2013; 2015; 2016; 2017) advised that the identified soil types have a low phosphorus holding ability and there is an increased risk of eutrophication especially when the soils become waterlogged. Flooding events will also increase the risk of off-site eutrophication directly into the Scott River. However, as a majority of the area proposed to be cleared are not likely to become inundated, the risk of eutrophication on and off site is reduced.

The Commissioner of Soil and Land Conservation (2017) has advised that, "the land degradation risks associated with this proposed land clearing is assessed to be low".

Given the above and the mapped land degradation risk categories, the proposed clearing may be at variance to this clearing Principle. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Table 2: Land Degradation Risk Categories (Schoknecht *et al.*, 2004).

Risk categories	SrSRwi	SrSRd	SrSRd2	SrSRwd
Wind erosion	10-30% of map unit has a high to extreme wind erosion risk	30-50% of map unit has a high to extreme wind erosion risk	>70% of map unit has a high to extreme wind erosion risk	10-30% of map unit has a high to extreme wind erosion risk
Water erosion	10-30% of map unit has a high to extreme water erosion risk	3-10% of map unit has a high to extreme water erosion risk	<3% of map unit has a high to extreme water erosion risk	3-10% of map unit has a high to extreme water erosion risk
Salinity	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline	30-50% of map unit has a moderate to high salinity risk or is presently saline
Subsurface Acidification	30-50% of map unit has a high subsurface acidification risk or is presently acid	3-10% of map unit has a high subsurface acidification risk or is presently acid	3-10% of map unit has a high subsurface acidification risk or is presently acid	30-50% of map unit has a high subsurface acidification risk or is presently acid
Flood risk	10-30% of the map unit has a moderate to high flood risk	3-10% of the map unit has a moderate to high flood risk	<3% of the map unit has a moderate to high flood risk	3-10% of the map unit has a moderate to high flood risk
Water logging	>70% of map unit has a moderate to very high waterlogging risk	>70% of map unit has a moderate to very high waterlogging risk	<30-50% of map unit has a moderate to very high waterlogging risk	>70% of map unit has a moderate to very high waterlogging risk
Phosphorus export risk	30-50% of map unit has a high to extreme phosphorus export risk	>70% of map unit has a high to extreme phosphorus export risk	>70% of map unit has a high to extreme phosphorus export risk	>70% of map unit has a high to extreme phosphorus export risk

References:

- Commissioner of Soil and Land Conservation (2013)
 Commissioner of Soil and Land Conservation (2015)
 Commissioner of Soil and Land Conservation (2016)

Commissioner of Soil and Land Conservation (2017)
DER (2016)
Parks and Wildlife (2013)
Schoknecht et al. (2004)

GIS Datasets:
Geomorphic Wetlands Augusta to Walpole
Hydrography linear

(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 at variance to this Principle

The C class nature reserve R42377 occurs approximately 1.4 kilometres to the north of the application area and a Crown reserve, vested with DBCA, occurs approximately three kilometres north. These two reserves encompass occurrences of the Scott River Ironstone Association, threatened ecological community.

Gingilup Swamps Nature Reserve occurs approximately 2.2 kilometres, along the Scott River, to the east of the application area. Scott National Park occurs approximately four kilometres from the application area, along the Scott River to the west. Pagett Nature Reserve (A class) occurs approximately 4.2 kilometres to the north of the application area. This reserve adjoins the South Blackwood State Forest and Blackwood River National Park.

As assessed under Principle (a), the application area falls on the Scott Coastal Plain which has been identified as an area holding national estate significance due to its high species richness, unusually high diversity of vegetation complexes, a concentration of rare restricted and threatened communities, its narrowly endemic plants, relict plants, plants with disjunct populations and wetlands of national importance (Government of Western Australia, 2001).

The application area forms part of an ecological linkage, defined by the South West Regional Ecological Linkage Report (Molloy *et al.*, 2009). This linkage connects the application area to reserves north and significant remnant vegetation to the south. A second linkage is also mapped adjacent to the southern portion of the application area and connects it to the reserves east and west of the application.

An ecological linkage has been defined 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" (Molloy *et al.*, 2009). As the application area forms part of two ecological linkages it assists in the maintenance of the ecological process of conservation reserves within the local area. This value is heightened by its unique assemblage of flora and high fauna habitat value that assists in the maintenance of these species within the connected reserves.

As assessed under Principle (d), the application area occurs within 70 metres of the third largest (and unique) occurrence of the Scott River Ironstone Association TEC. The DotE (2013a) conservation advice for this TEC lists land clearing and grazing as major threats. It also lists the priority recovery and threat abatement actions which include ensuring that networks of patches of the community that serve as refuge or linkages for wildlife and their habitat are maintained across the landscape. The degradation of this mapped TEC vegetation and linkage through direct and indirect impacts could therefore, effect the viability of other remnants within local conservation reserves.

Given the above, the vegetation within the location is significant in the movement of biological material across the landscape and through conservation reserves. However, the areas proposed to be cleared fall on the edge of the remnants and may not impact on the biological diversity of the remnant vegetation or value as an ecological linkage. This determination is based on the remaining vegetation within the location retaining its current condition post clearing, which is likely to require management as outlined in the priority recovery and threat abatement actions for the TEC.

Given the above, the proposed clearing is at variance to this clearing Principle. However, as the areas proposed to be cleared fall on the edge of the larger remnants on the property, impacts to the ecological linkage and fauna habitat have been minimised.

Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Methodology References:
DotE (2013a)
Government of Western Australia (2001)
Molloy et al (2009)
Keighery (1994)
GIS Datasets:
DPaW Tenure
SAC Bio Datasets

(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 may be at variance to this Principle

The application area falls approximately 1500 metres from the main channel of Scott River and is mapped within a palusplain wetland (seasonally waterlogged flat). The Scott River is estimated to contribute approximately 60 per cent of the phosphorus delivered into the Hardy Inlet. Following intensification of agriculture on the Scott Coastal Plain in the mid-1990s phosphorus concentrations within the Inlet have risen markedly and algal blooms have become a regular occurrence (Commissioner of Soil and Land Conservation, 2014).

The water table within the vicinity of the application area is shallow, therefore nutrients are likely to be transported via surface water flows.

As assessed under Principle (g), in relation to the property, the Commissioner of Soil and Land Conservation (2013; 2015) advised that the identified soil types have a low phosphorus holding ability and there is an increased risk of eutrophication especially when the soils become waterlogged. Flooding events will also increase the risk of off-site eutrophication directly into the Scott River. Taking the current application area into account however, the Commissioner of Soil and Land Conservation has advised that, "the land degradation risks associated with this proposed land clearing is assessed to be low".

Given the above and the mapped land degradation risk categories (table 2), the proposed clearing may be at variance to this clearing Principle. However, as the areas proposed to be cleared fall on the edge of the larger remnants on the property, impacts to the ecological linkage and fauna habitat have been minimised. Conditioning a clearing permit to manage adjoining vegetation for conservation is likely to mitigate impacts identified by retaining the most biodiversity rich areas of the property.

Methodology References:

Commissioner of Soil and Land Conservation (2013)
Commissioner of Soil and Land Conservation (2014)
Commissioner of Soil and Land Conservation (2015)
Commissioner of Soil and Land Conservation (2017)

GIS Datasets:

Groundwater salinity, statewide
Hydrography, linear

(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

The application area falls approximately 1500 metres from the main channel of the Scott River. The application area is mapped within a palusplain wetland (seasonally waterlogged flat).

Given the size of the application area, it is not likely to be of a size as to cause, or exacerbate, the incidence or intensity of flooding.

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

Methodology GIS Datasets:

- Hydrography, linear
- Topographic Contours, Statewide

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

Comments The applicant has previously applied for two clearing permits over the property, CPS 5630/1 and CPS 6516/1. CPS 5630/1 was originally for 154 hectares of native vegetation and was amended to 123 hectares in order to remove known occurrences of Scott River Ironstone vegetation. The application was refused on 4 April 2014 due to the significant environmental impacts of the proposed clearing.

CPS 6516/1 was originally for 55 hectares of native vegetation and was amended to 40.9 hectares in order to reduce the environmental impact of the clearing. The application was refused on 16 May 2016 due to the significant environmental impacts of the proposed clearing.

The application area is zoned general agriculture under the Local Town Planning Scheme Zone. On 25 August 2017, the Shire of Augusta Margaret River has advised that "on balance, the Shire sees this as a significant conservation outcome and is prepared to support the clearing", (Shire of Augusta Margaret River, 2017)

The application was advertised in *The West Australian* newspaper on 22 May 2017 with a 21 day submission period. No submissions from the public have been received.

No Aboriginal Sites of Significance have been mapped within the application area.

On 23 August 2017, a Delegated Officer wrote to the applicant providing a draft permit for comment and requesting advice on the status of the planning approval required from the Shire of Augusta Margaret River. It is noted that the applicant objected to a draft condition requiring fencing of a portion of remnant vegetation nearby the application area. On review, the Delegated Officer considered, in this instance, a fencing condition is not required and protection of significant environmental values can be adequately managed under the current clearing provisions of the *Environmental Protection Act 1986*. The applicant is advised that grazing stock on native vegetation may be considered clearing and require a clearing permit.

Methodology References:
DER (2016)
Shire of Augusta Margaret River (2017)

GIS Datasets:
Aboriginal Sites of Significance
Town Planning Scheme Zone

4. References

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Agriculture and Food. June 2001.

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