



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 7079/1
File Number: 2016/000749-1
Duration of Permit: From 4 March 2017 to 4 March 2019

PERMIT HOLDER

Mr Sandford James Sherlock
Mrs Danielle Maree Sherlock

LAND ON WHICH CLEARING IS TO BE DONE

Lot 63 on Deposited Plan 66536, Cowaramup

AUTHORISED ACTIVITY

The Permit Holder must not clear more than 0.648 hectares of native vegetation within the area cross-hatched yellow on attached Plan 7079/1.

CONDITIONS

1. Avoid, minimise etc. clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the impact of clearing on any environmental value.

2. Dieback and weed control

When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- (c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

3. Fauna management

- (a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *fauna specialist* to conduct a *fauna survey* of the Permit Area to identify hollow bearing trees being utilised by fauna species listed below:
- (i) Carnaby's cockatoo (*Calyptorhynchus latirostris*);
 - (ii) Baudin's cockatoo (*Calyptorhynchus baudinii*);
 - (iii) forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*); and
 - (iv) southern brush-tailed phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*).
- (b) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall provide the results of the *fauna survey* in a report to the CEO.
- (c) The *fauna survey* report must include the following:
- (i) the location of the hollow bearing trees being utilised by the identified fauna species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) the name and amount of each fauna species identified;
 - (iii) the methodology used to survey the Permit Area; and
 - (iv) a description of the hollow bearing trees being utilised by the identified fauna species.
- (d) where fauna are identified under condition 3(a) of this Permit, the Permit Holder shall ensure that no clearing within 10 metres of hollow bearing trees being utilised by the identified fauna occurs, unless first approved by the CEO.

DEFINITIONS

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

dieback means the effect of *Phytophthora* species on native vegetation;

fauna specialist: means a person who holds a tertiary qualification specialising in environmental science or equivalent, and has a minimum of 2 years work experience in fauna identification and surveys of fauna native to the region being inspected or surveyed, or who is approved by the CEO as a suitable fauna specialist for the bioregion, and who holds a valid fauna licence issued under the *Wildlife Conservation Act 1950*;

fauna survey: means a field-based investigation, including a review of established literature, of the biodiversity of fauna and/or fauna habitat of the Permit Area. Where conservation significant fauna are identified in the Permit Area, the survey should also include sufficient surrounding areas to place the Permit Area into local context;

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation; and

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Parks and Wildlife Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



James Widenbar
A/ SENIOR MANAGER
CLEARING REGULATION





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

2 February 2017

Plan 7079/1



Legend

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




0  100m

1:2,000

(Approximate when reproduced at A4)

GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

 Date 2/2/17
James Widenbar

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.: 7079/1

Permit type: Area Permit

1.2. Applicant details

Applicant's name: Mrs Danielle Maree Sherlock
Mr Sandford James Sherlock

1.3. Property details

Property: Lot 63 on Deposited Plan 66536, Cowaramup

Local Government Authority: Shire of Augusta-Margaret River

DER Region: Greater Swan

DPaW District: Blackwood

Localities: Cowaramup

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.648		Mechanical Removal	Extractive industry and agriculture

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 2 February 2017

Reasons for Decision: On 12 May 2016 the applicant applied to clear 1.9 hectares of native vegetation. The clearing permit application was amended to 0.648 hectares to reduce impacts to fauna habitat and an ecological linkage.

The clearing application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the *Environmental Protection Act 1986*, and it has been concluded that the proposed clearing may be at variance to Principles (b) and (e), and is not likely to be at variance to the remaining clearing Principles.

The Delegated Officer determined that the application area may contain habitat for the southern brush-tailed phascogale and nesting habitat for black cockatoos. It was also identified that the proposed clearing may impact an ecological linkage through the spread of weeds and dieback.

The Delegated Officer has granted the permit subject to conditions requiring a fauna survey of the application area prior to clearing to identify hollow bearing trees being utilised by black cockatoos or the brush-tailed phascogale, and weed and dieback management measures.

In deciding to grant a clearing permit, the Delegated Officer also had regard to the advice that an extractive industry licence was granted by the Shire of Augusta-Margaret River.

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
Mapped Beard vegetation association 3 is described as medium forest; jarrah-marri (Shepherd et al., 2001).	The application is for the clearing of 0.648 hectares of native vegetation within Lot 63 on Deposited Plan 66536, Cowaramup, for the purpose of gravel extraction and agriculture.	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); To: Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).	The condition and description of the vegetation within the application area was determined by a site inspection undertaken by DER (DER, 2016).
Mapped Mattiske vegetation complex C2 consists of open forest of <i>Eucalyptus marginata</i> subsp. <i>marginata</i> (jarrah)- <i>Corymbia calophylla</i> (marri)- <i>Banksia grandis</i> on lateritic uplands in perhumid and humid zones. (Mattiske and Havel, 1998).			

A site inspection of the application area was conducted by officers from the Department of Environment Regulation (DER) on 5 July 2016 (DER, 2016). The application area was found to consist of an overstorey of jarrah and marri, with a midstorey consisting of *Banksia grandis* and *Podocarpus drouynianus*. *Xylomelum occidentale* (woody pear) was identified within the south west corner of the application area. *Macrozamia* sp., *Xanthorrhoea* sp. and *Pteridium esculentum* were identified within the understorey, with some annuals emerging (DER, 2016).

The ground cover had a very dense leaf litter, with no obvious signs of disturbance observed (DER, 2016).

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 application is for the clearing of 0.648 hectares of native vegetation within Lot 63 on Deposited Plan 66536, Cowaramup, for the purpose of gravel extraction and agriculture.

The application area is located along the western boundary of a larger remnant four hectares in size. The local area (10 kilometre radius) has been extensively cleared for agriculture, with approximately 30 per cent of pre-European native vegetation remaining. A small remnant 0.7 hectares in size is located 30 metres west of the application area, and a 4.9 hectare remnant is located 100 metres east of the application area.

A site inspection conducted by DER officers on 5 July 2016 found that the application area consists of an overstorey of jarrah and marri, with a midstorey consisting of *Banksia grandis* and *Podocarpus drouynianus*. *Xylomelum occidentale* was identified within the south west corner of the application area. *Macrozamia* sp., *Xanthorrhoea* sp., *Pteridium esculentum* and emergent annuals were identified within the understorey (DER, 2016). The ground cover had a very dense leaf litter, with no obvious signs of disturbance observed (DER, 2016).

The application area ranges from good to very good (Keighery, 1994) condition and is predominantly in a very good (Keighery, 1994) condition (DER, 2016).

There have been no flora or fauna surveys conducted within the application area.

As assessed under Principle (b), the application area may provide foraging habitat and nesting habitat for the forest red-tailed black cockatoo (*Calyptorhynchus banksii* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and Carnaby's cockatoo (*Calyptorhynchus latirostris*) (collectively referred to as black cockatoos) (DER, 2016). Hollow-bearing trees within the application area may also provide habitat for the southern brush-tailed phascogale (*Phascogale tapoatafa* subsp. *tapoatafa*; rare or likely to become extinct under the WC Act) (Parks and Wildlife, 2015a).

Six rare flora and 33 priority flora species have been recorded within the local area. The application area does not contain suitable habitat for the six rare flora species (Western Australian Herbarium, 1998-; DER, 2016). The application area may contain suitable habitat for six of the 33 priority flora recorded within the local area (DER, 2016). Given all of these species have moderate to large distributions, the proposed clearing of 0.648 hectares within a four hectare remnant is not likely to impact the conservation status of any priority flora if they occur within the application area.

One threatened ecological community (TEC) and four priority ecological communities (PEC) have been recorded within the local area, the closest being a priority 1 PEC located approximately six kilometres from the application area. A site inspection identified that the application area is not representative of any TECs or PECs (DER, 2016). The application area is not likely to be necessary for the maintenance of a TEC or PEC.

Parks and Wildlife advised that the vegetation is not an example of currently listed TEC or PEC and would be unlikely to support any rare or priority flora (Parks and Wildlife, 2016).

The application area occurs along the western boundary of a four hectare remnant of native vegetation. The proposed clearing may impact the biodiversity of the remnant through edge effects and the spread of weeds and dieback.

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

Impacts to biodiversity may be minimised by the implementation of weed and dieback management practices.

Potential impacts to threatened fauna may be minimised by ensuring all hollow bearing trees are surveyed for black cockatoos and the southern brush-tailed phascogale prior to clearing, and avoiding the clearing of any hollow bearing trees being used by these species.

Methodology **References:**
Commonwealth of Australia (2012)
DER (2016)
Keighery (1994)
Molloy et al. (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2015a)
Parks and Wildlife (2016)
Western Australian Herbarium (1998-)

GIS Datasets:
- SAC Bio Datasets - accessed January 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 may be at variance to this Principle**

The application area is located on along the western boundary of a four hectare remnant of native vegetation. The local area has been extensively cleared, with approximately 30 per cent native vegetation remaining. The remnant within which the application area is located is 30 metres from a 0.7 hectare remnant and 100 metres from a 4.9 hectare remnant. Surrounding cleared areas are primarily used for agriculture.

An ecological linkage identified in the South West Regional Ecological Linkage Technical Report (Molloy et al., 2009) intersects the southern portion of the remnant within which the application area occurs. The remnant is classed as 1a in the report, which represents native vegetation touching, or less than 100 metres from, an ecological linkage. These linkages are recognised for their significance in facilitating indigenous fauna movement across the landscape (Molloy et al., 2009). The proposed clearing of 0.648 hectares along the western boundary of this remnant is not likely to impact its function within the ecological linkage through a direct loss of native vegetation, however the quality of the linkage may be impacted by edge effects such as weed and dieback spread resulting from the clearing activities.

Eight fauna species listed as rare or likely to become extinct under the WC Act have been recorded within the local area, being the forest red-tailed black cockatoo, Baudin's cockatoo, Carnaby's cockatoo, chuditch (*Dasyurus geoffroii*), southern brush-tailed phascogale, western ringtail possum (*Pseudocheirus occidentalis*), western whiplbird (*Psophodes nigrogularis* subsp. *nigrogularis*) and quokka (*Setonix brachyurus*) (Parks and Wildlife, 2007-).

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 nest in large live or dead hollow-bearing trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powderbark, bullich and blackbutt, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). A site inspection undertaken by DER Officers identified a number of trees within the application area and elsewhere within the four hectare remnant that fit the criteria for black cockatoo nesting habitat, having a diameter at breast height of more than 50 centimetres. A number of these contained hollows that may provide suitable nesting habitat for the black cockatoos (DER, 2016).

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 application area contains an overstorey of jarrah and marri and a midstorey dominated by *Banksia grandis* (DER, 2016). These species provide suitable foraging habitat for black cockatoos (DER, 2016).

Parks and Wildlife advised that the application area may provide foraging, nesting and roosting habitat for black cockatoos (Parks and Wildlife, 2016).

The chuditch currently inhabits most kinds of wooded habitat within its current range, including eucalypt forest (Department of the Environment and Energy, 2016a). In jarrah forests, chuditch populations occur in both moist, densely vegetated, steeply sloping forest and drier, open, gently sloping forest (Department of the Environment and Energy, 2016a). Three records of this species have been recorded within the local area dated 1907 and 1965. Given the historical nature of records found within the local area, this species is not likely to use habitat within the application area.

In southwest Western Australia, the southern brush-tailed phascogale has been observed in dry sclerophyll forests and open woodlands that contain hollow-bearing trees (Parks and Wildlife, 2012). Suitable habitat for this species may be located within hollow-bearing trees identified within the application area (DER, 2016). Previous advice received from Parks and Wildlife regarding the southern brush-tailed phascogale notes that "any tree species with hollows may be used by phascogales, they are not dependent on eucalypts, and hollows can be small in size or with small entrances...Nest sites include tree hollows/hollow tree limbs [and] rotten stumps" (Parks and Wildlife, 2015a).

The western whipbird inhabits dense heath-like shrubby thickets on coastal dunes, and mallee woodland or shrubland with an open upperstorey above a dense shrubby understorey (Department of the Environment and Energy, 2016b). Suitable habitat for this species was not identified within the application area (DER, 2016).

The western ringtail possum is listed as vulnerable under the EPBC Act. This species has a preference for near coastal *Agonis flexuosa* forest and *Eucalyptus gomphocephala* dominated forest with an *Agonis flexuosa* understorey (Department of the Environment and Energy, 2016c). The western ringtail possum is usually associated with stands of myrtaceous trees growing near swamps, water courses or floodplains (Department of the Environment and Energy, 2016c). Significant habitat for this species was not identified within the application area (DER, 2016).

The quokka's main habitat for mainland populations is dense riparian vegetation (Department of the Environment and Energy, 2016d). Significant habitat for this species was not identified within the application area (DER, 2016).

The applicant has decreased the application area from 1.9 hectares to 0.648 hectares within the four hectare remnant to minimise impacts to black cockatoo habitat. The proposed clearing of 0.648 hectares within a four hectare remnant is not likely to have a significant impact on the availability of black cockatoo foraging or roosting habitat. Should the application area be used for nesting by black cockatoo species, it may represent significant habitat for these species given the availability of nearby foraging habitat and water sources, with five water bodies occurring within one kilometre of the application area. If eucalypt trees within the amended application area provide habitat for the southern brush-tailed phascogale, the proposed clearing may also have a significant impact on this species on a local scale.

Given the application area may provide nesting habitat for black cockatoos and the southern brush-tailed phascogale, the proposed clearing may be at variance to this Principle.

Potential impacts to threatened fauna may be minimised by ensuring all hollow bearing trees are surveyed for black cockatoos and the southern brush-tailed phascogale prior to clearing, and avoiding the clearing of any hollow bearing trees being used by these species.

Methodology

References:

Commonwealth of Australia (2012)
DER (2016)
Department of the Environment and Energy (2016a)
Department of the Environment and Energy (2016b)
Department of the Environment and Energy (2016c)
Department of the Environment and Energy (2016d)
Molloy et al. (2009)
Parks and Wildlife (2007-)
Parks and Wildlife (2012)
Parks and Wildlife (2015a)
Parks and Wildlife (2016)

GIS Datasets:

- SAC Bio Datasets – accessed January 2017

(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

Six rare flora species have been recorded within the local area. The closest rare flora record is located approximately 7.3 kilometres from the application area. This species is found on shallow red clay-loam or grey sand, ironstone in gullies and edges of flats (Western Australian Herbarium, 1998-). A site inspection identified that the application area does not contain suitable habitat for this species (DER, 2016).

Suitable habitat for the five additional rare flora species recorded within the local area was not identified during a site inspection of the application area (DER, 2016).

Parks and Wildlife advised that the vegetation within the application area is unlikely to support any rare flora (Parks and Wildlife, 2016).

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

Methodology References:
DER (2016)
Parks and Wildlife (2016)
Western Australian Herbarium (1998-)

GIS Datasets:
- SAC Bio Datasets – accessed January 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

One threatened ecological community (TEC) has been recorded within the local area, being 'shrublands on southern Swan Coastal Plain ironstones' recorded approximately 7.2 kilometres from the application area.

A site inspection identified that the application area is not representative of this TEC (DER, 2016).

Given the distance to the closest TEC, the application area is not likely to be necessary for the maintenance of a TEC.

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

Methodology References:
DER (2016)

GIS Datasets:
- SAC Bio Datasets – accessed January 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 may at variance to this Principle

The area under application is located within the Jarrah Forest Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 54 per cent of its pre-European vegetation extent remaining (Government of Western Australia, 2015).

The local area has been cleared for agricultural land uses, and retains approximately 30 per cent of its pre-European native vegetation. The proposed clearing of 0.648 hectares represents 0.006 percent of native vegetation of the local area. Native vegetation within the local area has been highly fragmented, with 88 per cent of remnants under 10 hectares in size and 78 per cent of remnants under five hectares in size. Given this, the local area is considered to be extensively cleared.

As discussed in Principle (b), the application area is located within an ecological linkage identified in the South West Regional Ecological Linkage Technical Report (Molloy et al., 2009). The proposed clearing of 0.648 hectares along the western boundary of this remnant will reduce its area from four hectares to 3.352 hectares. The proposed clearing may impact the quality of the linkage by edge effects to the remnant, such as weed and dieback spread resulting from the clearing activities.

Vegetation within the application area is in good to very good (Keighery, 1994) condition, contains suitable foraging habitat and potential nesting habitat for black cockatoos, and potential habitat for the southern brush-tailed phascogale (DER, 2016). The proposed clearing of 0.648 hectares along the western boundary of the application area may impact black cockatoos if nesting trees occur within the application area, and may impact the southern brush-tailed phascogale on a local scale if this species is utilising hollows within the application area.

The vegetation within the application area is mapped as Beard vegetation association 3 and Matisse vegetation complex C2, which retain approximately 67 and 33 per cent of their pre-European vegetation extents within the Jarrah Forest bioregion, respectively (Government of Western Australia, 2015; Parks and Wildlife, 2015b). The application area is located within Shire of Augusta-Margaret River, which retains approximately 62 per cent of its pre-European vegetation extent (Government of Western Australia, 2015).

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001). Neither of the mapped vegetation types occur at less than 30 per cent of their pre-European extent.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in Parks and Wildlife Managed Lands (%)
IBRA Bioregion* - Jarrah Forest	4,506,660	2,422,783	54	69
Shire* - Shire of Augusta - Margaret River	211,680	131,716	62	75
Beard vegetation association in Bioregion*				
3	2,390,591	1,611,061	67	80
Mattiske vegetation complex in Bioregion**				
C2	13,688	4,457	33	6

The application area is part of an ecological linkage, contains vegetation in very good (Keighery, 1994) condition (DER, 2016), and contains potential nesting habitat for black cockatoos.

Given the potential for impacts to an ecological linkage, the presence of vegetation in good to very good (Keighery, 1994) condition and the potential for fauna nesting trees to occur within the application area, the proposed clearing may be at variance to this Principle.

Edge effects to the remnant may be minimised by the implementation of weed and dieback management practices.

Potential impacts to threatened fauna may be minimised by ensuring all hollow bearing trees are surveyed for black cockatoos and the southern brush-tailed phascogale prior to clearing, and avoiding the clearing of any hollow bearing trees being used by these species.

Methodology References:
Commonwealth of Australia (2001)
DER (2016)
Keighery (1994)
*Government of Western Australia (2015)
**Parks and Wildlife (2015b)

GIS Datasets:
- Imagery
- Pre-European Vegetation
- 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 not likely to be at variance to this Principle**
No wetlands or watercourses are mapped within the application area. The closest mapped watercourse is Wilyabrup Brook, located approximately 1.5 kilometres from the application area. No waterbodies were observed during the site inspection (DER, 2016).

Given the distance to the closest watercourse, vegetation within the application area is not considered to be growing in, or in association with, a wetland or watercourse.

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

Methodology References:
DER (2016)

GIS Databases:
- Hydrology, linear

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

Comments **Proposed clearing is not likely to be at variance to this Principle**
The application area is mapped as soil type MT8, which is described as gently undulating terrain of broad shallow valleys and low ridges with moderate amounts of laterite and lateritic (ironstone) gravel. Chief soils of the broad shallow valleys are acid grey earths sometimes containing ironstone gravels (Northcote et al., 1960 - 68).

There are no wetlands or watercourses located within or immediately adjacent to the application area. Topography within the application area is flat.

Given the topography, absence of waterbodies and the soil types present within the application area, the proposed clearing is not likely to cause appreciable land degradation in the form of wind or water erosion, waterlogging or eutrophication.

Groundwater salinity is mapped between 1000 - 3000 total dissolved solids (milligrams per litres). The application area is part of a larger remnant of native vegetation four hectares in size. Given the relatively small size of the application area (0.648 hectares), the proposed clearing is not likely to contribute to the rise of groundwater causing salinity.

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

Methodology References:
Northcote et al. (1960-68)

GIS Datasets:
- Groundwater salinity statewide
- Hydrography, linear
- Remnant vegetation
- Soils statewide
- Topographic contours statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments **Proposed clearing is not likely to be at variance to this Principle**
Eight conservation areas are located within the local area, the closest being Walburra Nature Reserve located approximately 4.5 kilometres north of the application area.

As discussed in Principle (b), the application area is located within an ecological linkage identified in the South West Regional Ecological Linkage Technical Report (Molloy et al., 2009). These linkages are recognised for their significance in facilitating indigenous fauna movement across the landscape, and the linkage is likely to aid the movement of species between conservation areas in the region (Molloy et al., 2009). The proposed clearing may impact the quality of the linkage by edge effects to the remnant, such as weed and dieback spread resulting from the clearing activities.

Given the above, the proposed clearing is not likely to be at variance to this Principle. Edge effects to the remnant may be minimised by the implementation of weed and dieback management practices.

Methodology References:
Molloy et al (2009)

GIS Datasets:
- Parks and Wildlife tenure

(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**
No wetlands or watercourses have been recorded within the application area. The closest mapped watercourse is Wilyabrup Brook located approximately 1.5 kilometres from the application area. Given the distance to the closest watercourse, the proposed clearing is not likely to cause deterioration in the quality of surface water.

Groundwater salinity is mapped between 1000-3000 total dissolved solids (milligrams per litres). Given the relatively small area under application (0.648 hectares), the proposed clearing is not likely to cause deterioration in the quality of groundwater.

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

Methodology GIS Databases:
- Hydrology, linear
- 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**
The application area does not contain any watercourses or wetlands, and occurs over an area of relatively flat topography.

The mapped soil type within the application area is described as containing broad shallow valleys of acid grey earths sometimes containing ironstone gravels, and low ridges with moderate amounts of laterite and lateritic (ironstone) gravel (Northcote et al., 1960 - 68). This soil type is not likely to cause or exacerbate flooding following the removal of vegetation.

Given the mapped soil type, topography and absence of waterbodies, the proposed clearing is not likely to be at variance to this Principle.

Methodology References:
Northcote et al. (1960-68)

GIS Datasets:
- Hydrography, linear
- Soils, statewide
- Topographic contours, statewide

Planning instruments and other relevant matters.

Comments The application was advertised in *The West Australian* newspaper on 10 June 2016 for a 21 day public submission period. No submissions have been received in relation to this application.

On 31 August 2016, a Delegated Officer wrote to the applicant advising that a preliminary assessment of the application identified potential significant impacts to black cockatoo and southern brush-tailed phascogale habitat, an ecological linkage, and a significant remnant within an extensively cleared area. The applicant was invited to provide additional advice on how impacts will be avoided and mitigated, and whether a fauna survey would be undertaken. A copy of the extractive industry licence (EIL) was also requested.

On 17 December 2016, the applicant advised that the EIL had been granted, and requested to reduce the application area from 1.9 hectares to 0.648 hectares. On 20 December 2016, the applicant provided a copy of the EIL to DER.

The EIL was granted by the Shire of Augusta-Margaret River on 15 December 2016. This EIL expires on 15 December 2021, and is subject to conditions of which the following are considered to be a relevant matter to this application:

- extraction activities are prohibited within 15 metres of any native tree crown drip zone;
- extraction is limited to one cell at a time. Rehabilitation of a cell shall commence prior to moving on to the next cell and shall be completed within a reasonable time to the satisfaction of the Shire; and
- excavation areas are to be rehabilitated to the satisfaction of the Shire within 12 months from the expiry date of the EIL.

The applicant has advised that the extraction areas will be rehabilitated to pasture.

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

Methodology GIS Databases:
- Aboriginal Sites of Significance

4. References

- 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, Canberra.
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