



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 6894/1
File Number: DER2015/002971-1
Duration of Permit: From 11 June 2016 to 11 June 2024

PERMIT HOLDER

Joy Irene Muir
Valerie May Siegmund
Kenneth John Moore

LAND ON WHICH CLEARING IS TO BE DONE

Lot 9990 on Deposited Plan 203138, Boorara Brook
Lot 9991 on Deposited Plan 203138, Boorara Brook

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 73.7 hectares of native vegetation within the combined areas shaded yellow and shaded red on attached Plan 6894/1.

CONDITIONS

1. Purpose for which clearing may be done

- (a) Clearing for the purposes of silvicultural thinning and fire salvage within the areas shaded yellow on attached Plan 6894/1.
- (b) Clearing for the purpose of *Agonis flexuosa* removal within the area shaded red on attached Plan 6894/1.

2. 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.

3. Dieback and weed control

When undertaking any clearing 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;
- (c) only move soils in *dry conditions*; and
- (d) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

4. Vegetation management - watercourse

The Permit Holder shall not clear native vegetation within 30 metres of the *riparian vegetation* of any *watercourse* or *wetland*.

5. Type of clearing authorised

The Permit Holder may only undertake the following clearing activities within the areas shaded yellow on attached Plan 6894/1:

- (a) *thinning* of Jarrah (*Eucalyptus marginata*), Marri (*Corymbia calophylla*) and Karri (*Eucalyptus diversicolor*) trees;
- (b) *culling* and burning of unsaleable trees;
- (c) clearing for the establishment of *log landings* no larger than 0.1 hectares in size; and
- (d) clearing and burning of *understorey* where undertaken in association with the activities described under conditions 5(a), (b) or (c).

6. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 11 June 2020.

7. Vegetation management

In relation to the areas shaded yellow on attached Plan 6894/1, the Permit Holder must:

- (a) retain a minimum of 2 *habitat trees* per hectare;
- (b) retain a minimum of 14-16m² per hectare *basal area*;
- (c) by no later than 11 July 2020, rehabilitate any *log landings* established by scarifying the soil surface to reduce compaction and facilitate natural regeneration; and
- (d) within two years of 11 July 2020, engage an *environmental specialist* to determine the species composition, structure and density of the *understorey*.

8. Exclusion of stock

The Permit Holder shall ensure that for the period of the Permit *stock* are excluded from the Permit Area.

9. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the date that the area was cleared; and
 - (iii) the size of the area cleared (in hectares).
- (b) In relation to vegetation management pursuant to condition 7 of this Permit:
 - (i) the species and number per hectare of *habitat trees* retained;
 - (ii) the location of *habitat trees* retained, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) monitoring undertaken to ensure that the specified minimum *basal area* is retained;
 - (iv) the number of *log landings* established and their location, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (v) the date(s) the *log landings* were rehabilitated;
 - (vi) the *environmental specialist's* report documenting the species composition, structure and density of the *understorey*; and
 - (vii) photographs of the *understorey* taken at one year, two years and three years after completing clearing authorised under this Permit.

10. 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 9 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 11 March 2024, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(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, whose diameter is measured at 1.5 metres above the ground, is expressed as square metres per hectares of land area;

culled/ing means the selective removal and/or killing of unsaleable trees for *thinning*, using methods including notching, felling or machine pushing;

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

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

environmental specialist: means a person 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, or who is approved by the CEO as a suitable environmental specialist;

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

habitat tree(s) means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 50 centimetres or greater, that contains or has the potential to develop hollows or roosts suitable for native fauna;

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

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;

riparian vegetation has the meaning given to it in Regulation 3 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*;

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;

watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*;

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.

wetland/s means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary.



Simon Weighell
A/MANAGER
CLEARING REGULATION

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

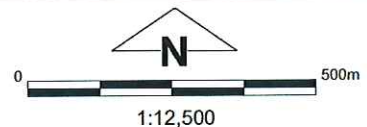
12 May 2016

Plan 6894/1



Legend

-  Imagery
-  Area approved to clear
-  Roads
-  Local Government Authority
-  Area approved to clear



(Approximate when reproduced at A4)
GDA 94 (Lat/Long)
Geocentric Datum of Australia 1994

S. Weighell Date *12/5/16*

Simon Weighell

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



1. Application details

1.1. Permit application details

Permit application No.: 6894/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Mrs Joy Irene Muir
Mr Kenneth John Moore
Ms Valerie May Siegmund

1.3. Property details

Property: LOT 9991 ON PLAN 203138, BOORARA BROOK
LOT 9990 ON PLAN 203138, BOORARA BROOK
Local Government Authority: MANJIMUP, SHIRE OF
DER Region: SOUTH COAST
DPaW District: DONNELLY
Localities: BOORARA BROOK

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 12 May 2016
Reasons for Decision: 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* (EP Act), and it has been concluded that the proposed clearing may be at variance to clearing principle (h) and is not likely to be at variance to the remaining clearing principles.

Through assessment it has been determined that the proposed clearing may impact the environmental values of nearby state forests and national parks through impacts to fauna corridors and possibly the introduction or spread of weeds and dieback. Weed and dieback management measures will minimise impacts to these areas.

Given the proposed clearing is for thinning and the local area is highly vegetated, the clearing is unlikely to have any other significant environmental impacts.

An Agreement to Reserve (ATR) under section 30(b) of the *Soil and Land Conservation Act 1945* occurs over the properties under application. The ATR requires 12.6 hectares of vegetation within Lot 9990 on Deposited Plan 203138 and 40.6 hectares of vegetation within Lot 9991 on Deposited Plan 203138, to be retained in perpetuity. The Deputy Commissioner of Soil and Land Conservation has approved the proposed clearing within these areas in accordance with section 51D(2) of the EP Act.

State policies and other relevant policies have been taken into consideration in the decision to grant a clearing permit.

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 1144 is described as tall forest; karri & marri (<i>Corymbia calophylla</i>) (Shepherd et al. 2001).	Clearing of 73.7 hectares of native vegetation within Lots 9990 and 9991 on Deposited Plan 203138, Boorara Brook, for the purpose of silvicultural thinning, fire salvage and <i>Agonis flexuosa</i> removal.	Very Good; Vegetation structure altered; obvious signs of disturbance (Keighery 1994).	The condition and description of the vegetation were determined by aerial imagery and a native forest property management plan provided by the applicant (Muir and Muir 2015).
Mapped Matisse vegetation complex CRb is described as tall open forest of <i>Corymbia calophylla-Eucalyptus diversicolor</i> on upper slopes with		To Degraded; Structure severely disturbed; regeneration to good	The vegetation under application is comprised primarily of a tall open Karri (<i>Eucalyptus diversicolor</i>) forest with sheoak (<i>Allocasuarina</i> sp.), with some areas of Jarrah (<i>Eucalyptus</i>

Allocasuarina decussata-*Banksia grandis* on upper slopes in hyperhumid and perhumid zones (Mattiske and Havel 1998).

Mapped Mattiske vegetation complex Vh2 is described as tall open forest of *Eucalyptus diversicolor*-*Eucalyptus patens* on slopes with *Agonis flexuosa*-*Allocasuarina decussata* - *Callistachys lanceolata* on valley floors in hyperhumid and perhumid zones (Mattiske and Havel 1998).

condition requires intensive management (Keighery 1994).

marginata) and Marri (*Corymbia calophylla*), and an understorey of scattered regenerating *Lepidosperma* sp., bracken, and *Trymalium* sp. (Muir and Muir 2015). There is a thicket of *Agonis flexuosa* (Peppermint) growing within the application area (Muir and Muir 2015).

The vegetation under application was severely burnt in a fire in February 2015. The overstorey canopy is scorched and there is currently minimal understorey.

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 selectively thin native vegetation within an area of 70.3 hectares within Lots 9990 and 9991 on Deposited Plan 203138, Boorara, for the purpose of silviculture and fire salvage. The applicant also proposes to remove an area of *Agonis flexuosa* thicket 3.4 hectares in size to allow the area to be restored to Karri forest.

The vegetation under application is comprised primarily of a tall open Karri (*Eucalyptus diversicolor*) forest with sheoak (*Allocasuarina* sp.), with some areas of Jarrah (*Eucalyptus marginata*) and Marri (*Corymbia calophylla*), and an understorey of scattered regenerating *Lepidosperma* sp., bracken, and *Trymalium* sp. (Muir and Muir 2015). There is also a thicket of *Agonis flexuosa* (Peppermint) growing within the application area (Muir and Muir 2015).

The vegetation under application was severely burnt in a fire in February 2015. The overstorey canopy is scorched and there is currently minimal understorey (Muir and Muir 2015).

Seven priority flora species and two rare flora species have been recorded in the local area (10 kilometre radius). Five of these priority species and one rare flora species occur along river banks and in swamps (Western Australian Herbarium 1998-; Henwood 2013). There are several minor, non-perennial watercourses intersecting the application area, however the applicant has committed to avoiding clearing within 30 metres of the riparian vegetation of any watercourse (Muir and Muir 2015). The other rare flora species and one priority flora species occur in association with granite outcrops (Western Australian Herbarium 1998-). Given there are no granite outcrops within the application area, these species are not likely to occur.

Hemigenia rigida, priority one, occurs on sandy and lateritic gravelly soils on hillslopes, granite outcrops, flats and ironstone ridges (Western Australian Herbarium (1998-). *Hemigenia rigida* is known from only two locations near Wagin (Guerin 2013). *Hemigenia pritzelii*, a common species found throughout the south west, has commonly been misidentified as *Hemigenia rigida* resulting in numerous incorrect records (Guerin 2013). The records of *Hemigenia rigida* within the local area are unlikely to represent the priority species.

There are no threatened ecological communities (TECs) or priority ecological communities (PECs) mapped within the application area. The vegetation within the application area is unlikely to represent a PEC or TEC.

Eight fauna species of conservation significance have been mapped within 10 kilometres of the application area (Parks and Wildlife 2007-), and based on the vegetation type present, the application area may provide suitable habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*), all listed as rare or likely to become extinct under the *Wildlife Conservation Act 1950* (WC Act). Given the local area has approximately 80 per cent vegetation remaining and contains similar fauna habitat to that proposed to be cleared, no significant impacts to fauna are expected.

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

Methodology

References:
Guerin (2013)
Henwood (2013)
Muir and Muir (2015)
Parks and Wildlife (2007-)
Western Australian Herbarium (1998-)

GIS Databases:
- SAC bio datasets accessed April 2016
- Virtual mosaic

(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

Eight fauna species of conservation significance have been mapped within 10 kilometres of the application area (Parks and Wildlife 2007-) and the application area also occurs within the modelled distribution of forest red-tailed black cockatoo. Based on the vegetation type present, the application area may provide suitable habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and forest red-tailed black cockatoo (*Calyptorhynchus banksia naso*), all listed as rare or likely to become extinct under the WC Act. Carnaby's cockatoo is listed as endangered and Baudin's cockatoo and forest red-tailed black cockatoo are listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

Carnaby's cockatoos were once abundant in Western Australia; however since the late 1940s the species has suffered a 30 per cent contraction in range, a 50 per cent decline in population and, between 1968 and 1990, disappeared from more than a third of its breeding range (Saunders 1990; Saunders and Ingram 1998; Shah 2006; Garnett et al. 2011).

The Carnaby's cockatoo recovery plan (Parks and Wildlife 2013) summarises habitat critical to the survival for this species as:

- The eucalypt woodlands that provides nest hollows used for breeding, together with nearby vegetation that provides feeding, roosting and watering habitat that supports successful breeding;
- Woodland sites known to have supported breeding in the past and which could be used in the future, provided adequate nearby food and/or water resources are available or are re-established; and
- In the non-breeding season the vegetation that provides food resources as well as the sites for nearby watering and night roosting that enable the cockatoos to effectively utilise the available food resources.

Carnaby's cockatoo forage on the seeds, nuts and flowers of a large variety of plants including proteaceous and eucalyptus species, allocasuarina, *Corymbia calophylla*, and a range of introduced species (Valentine and Stock 2008). Baudin's cockatoos forage in eucalypt woodlands and proteaceous woodland and heath (Commonwealth of Australia 2012). The application area comprises vegetation that may be used by both species for feeding.

Breeding habitat for the black cockatoos is defined as trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow.

Quokka (*Setonix brachyurus*), listed as rare or likely to become extinct under the WC Act, utilise areas with dense, low, riparian vegetation (DotE 2016a). The local area remains highly vegetated (approximately 80 per cent vegetation remaining) and nearby state forests and national parks are likely to contain higher quality habitat for this species.

Western mud minnow (*Galaxiella munda*), Balston's pygmy perch (*Nannatherina balstoni*), both listed as rare or likely to become extinct under the WC Act, pouched lamprey (*Geotria australis*), listed as priority one, black-stripe minnow (*Galaxiella nigrostriata*), listed as priority three, and water rat (*Hydromys chrysogaster*), listed as priority four, have been mapped within the local area (10 kilometre radius). Given these species are aquatic or rely on riparian vegetation, and the applicant has committed to avoiding clearing within 30 metres of the riparian vegetation of any watercourse (Muir and Muir 2015), the proposed clearing is not likely to impact these species.

Whilst the vegetation under application may provide suitable habitat for Carnaby's cockatoo and Baudin's cockatoo, given the local area remains highly vegetated (approximately 80 per cent vegetation remaining) and the presence of nearby state forests and national parks, the vegetation is not likely to be significant habitat for these species. In addition, the clearing is for thinning and the applicant has committed to retaining a 14 – 16 m²/hectare basal area and at least two habitat trees per hectare (Muir and Muir 2015).

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

Methodology

References:

Commonwealth of Australia (2012)
DotE (2016a)
Garnett et al. (2011)
Muir and Muir (2015)
Parks and Wildlife (2007-)
Parks and Wildlife (2013)
Saunders (1990)
Saunders and Ingram (1998)
Shah (2006)
Valentine and Stock (2008)

GIS Databases:

- Parks and Wildlife tenure
- Virtual mosaic

(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**
 There are two rare flora species mapped within 10 kilometres of the application area. The first species occurs on and near granite outcrops (DotE 2016b). Given there are no granite outcrops within the application area, this species is not likely to occur within the application area. The second species grows in association with drainage lines and creeks (Western Australian Herbarium 1998-). There are several minor, non-perennial watercourses intersecting the application area, however the applicant has committed to avoiding clearing within 30 metres of the riparian vegetation of any watercourse (Muir and Muir 2015).

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

Methodology References:
 DotE (2016b)
 Muir and Muir (2015)
 Western Australian Herbarium (1998-)

GIS Databases:
 - SAC bio datasets accessed April 2016
 - Virtual mosaic

(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**
 There are no TECs mapped within 10 kilometres of the application area. The vegetation within the application area is unlikely to represent a TEC.

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

Methodology GIS Databases:
 - SAC bio datasets accessed April 2016

(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 local area (10 kilometre radius) has approximately 80 per cent vegetation remaining.

The area under application is located within the Warren Interim Biogeographic Regionalisation of Australia (IBRA) bioregion. This IBRA bioregion has approximately 79 per cent of its pre-European vegetation extent remaining (Government of Western Australia 2014).

The vegetation under application is mapped as Beard vegetation association 1144 of which there is approximately 80 per cent of pre-European extent remaining within the Warren bioregion (Government of Western Australia 2014). The vegetation is mapped as Mattiske vegetation complexes CRb and Vh2, which retain approximately 86 and 85 per cent of their respective pre-European extents (Parks and Wildlife 2015).

The area under application is located within the Shire of Manjimup, which retains approximately 84 per cent pre-European extent (Government of Western Australia 2014).

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).

The local area, Shire and mapped vegetation associations/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	660 315	79	85
Shire*				
Shire of Manjimup	697 368	586 852	84	94
Beard Vegetation Association in Bioregion*				
1144	159 668	128 191	80	92

Mattiske Vegetation Complex**				
CRb	52 753	45 393	86	82
Vh2	9 968	8 446	85	73
*Government of Western Australia (2014)				
** Parks and Wildlife (2015)				

Methodology References:
Commonwealth of Australia (2012)
Government of Western Australia (2014)
Parks and Wildlife (2015)

GIS Databases:
- Mattiske vegetation complexes
- NLWRA, current extent of native vegetation
- Pre-European vegetation
- Visual mosaic

(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**
There are several minor, non-perennial watercourses intersecting the application area. Boorara Brook, a major perennial watercourse intersects a small section of the application area. No wetlands are mapped within the application area.

The applicant has committed to avoiding clearing within 30 metres of the riparian vegetation of any watercourse (Muir and Muir 2015).

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

Methodology References:
Muir and Muir (2015)

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 is not likely to be at variance to this principle**
The application area is mapped as two soil landscape map units (DCSLC 2016). The map unit 254PvV2, Major Valleys V2 subsystem (Pimelia), is described as Major Valleys 20 – 40 deep on weathered mantle over gneiss with loamy gravels, duplex sandy gravels and friable red/brown earth. The map unit 254PvCRb, Crowea (Pimelia), is described as consisting of broad ridge crests on a weathered mantle over gneiss with loamy gravels, deep red loamy duplexes and friable red/brown loamy earths. These soils have a moderate to high capability for the intended land use (DCSLC 2016a).

The Deputy Commissioner of Soil and Land Conservation has advised that given the proposed clearing is for selective thinning and vegetation will be retained, the risk of salinity, eutrophication, wind erosion, water erosion and water logging causing land degradation is low (DCSLC 2016a).

Therefore the application is not likely to be at variance to this principle.

Methodology References:
DCSLC (2016a)

(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 may be at variance to this principle**
The application area is adjacent to Shannon State Forest and is connected to Boorara-Gardner National Park, located approximately 600 metres from the application area, via continuous native vegetation.

The vegetation under application separates the state forest from cleared agricultural land and as such acts as a protective buffer for this conservation area. The disturbance caused by the proposed clearing may increase the risk of weeds and dieback spreading into the adjacent vegetation.

The application area is likely to act as a fauna corridor between the vegetation within the state forest and national park and vegetation south of the application area. Given the vegetation under application will only be thinned, it is likely that the vegetation remaining will continue to be used for fauna movement.

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

Weed and dieback management conditions will assist in mitigating the impacts of the proposed clearing.

Methodology GIS Databases:
- Parks and Wildlife Tenure
- Virtual mosaic

(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**
There are several minor, non-perennial watercourses intersecting the application area. Boorara Brook, a major perennial watercourse intersects a small section of the application area. The applicant has committed to avoiding clearing within 30 metres of the riparian vegetation of any watercourse (Muir and Muir 2015) and therefore the proposed clearing is unlikely to cause deterioration in the quality of surface water.

The groundwater salinity within the application area is mapped as 500 - 1000 milligrams per litre of total dissolved solids. This level of groundwater salinity is considered to be marginal.

The application area does not occur within a *Country Areas Water Supply Act 1914* area or a Public Drinking Water Source Area.

Given the application is predominantly for thinning with cleared areas to be left to regenerate, deterioration in groundwater quality is unlikely to occur.

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

Methodology References:
Muir and Muir (2015)

GIS Databases:
- Country Areas Water Supply Act (Part IIA) – Clearing Control Catchments
- Groundwater Salinity, Statewide
- Hydrography, Linear
- Hydrography, Hierarchy
- Public Drinking Water Source Areas

(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 Department of Agriculture and Food Western Australia has mapped the flood risk for the application area as less than three per cent of the map unit having a moderate to high flood risk, the lowest risk category. The Deputy Commissioner of Soil and Land Conservation has advised the risk of flooding causing land degradation is low (DCSLC 2016a).

Given the low flooding risk rating, the proposed clearing is unlikely to cause or exacerbate flooding and is therefore not likely to be at variance to this principle.

Methodology References:
DCSLC (2016a)

GIS Databases:
- Flood Risk
- Soils, Statewide

Planning instruments and other relevant matters.

- Comments** The applicant has developed a native forest property management plan outlining the property's management history and the objectives and procedure for the proposed thinning (Muir and Muir 2015).
- A Commercial Producer's (PN) licence under the WC Act will be required in order to sell any timber or harvested logs that are cleared.
- An Agreement to Reserve (ATR) under section 30(b) of the *Soil and Land Conservation Act 1945* is registered on the certificates of title for the properties under application. The ATR requires 12.6 hectares of vegetation within Lot 9990 on Deposited Plan 203138 and 40.6 hectares of vegetation within Lot 9991 on Deposited Plan 203138, to be retained in perpetuity and managed in such a way as to retain and promote the growth of native vegetation. The Deputy Commissioner of Soil and Land Conservation has approved the proposed clearing within the portions of the application area that are subject to the ATR (DCSLC 2016b). The area of *Agonis flexuosa* thicket proposed to be cleared does not occur within an area subject to the ATR.
- The proposed clearing is zoned priority agriculture under the Shire of Manjimup's Local Planning Scheme No. 4. The Shire of Manjimup (2016) has advised that the proposed clearing does not require planning approval and they have no objection to the proposed clearing.
- There are no Aboriginal Sites of Significance mapped within the application area.
- No public submissions have been received in relation to this application.
- Methodology** References:
DCSLC (2016b)
Muir and Muir (2015)
Shire of Manjimup (2016)
- GIS Databases:
- Aboriginal Sites Register System
- Town Planning Scheme Zones

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
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