



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 8460/1
Permit Holder:	Daniel Christopher Collins
Duration of Permit:	8 April 2020 – 8 April 2030

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

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of fire mitigation and forest management (thinning)

2. Land on which clearing is to be done

Lot 5038 on Plan 229254, Eastbrook

3. Area of Clearing

The Permit Holder must not selectively clear more than 40 hectares of native vegetation within the area hatched yellow on attached Plan 8460/1.

4. Period in which clearing is authorised

The Permit Holder shall not clear any native vegetation after 8 April 2025.

5. Application

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

6. Type of clearing authorised

To the extent authorised under condition 3 of this Permit, the Permit Holder may undertake the following activities within the area cross-hatched yellow on Plan 8460/1:

- thinning* of Karri (*Eucalyptus diversicolor*) and Marri (*Corymbia calophylla*) trees;
- culling* and burning of unsaleable trees;
- clearing for the establishment of a *log landing* no larger than 0.3 hectares in size; and
- clearing and burning of *understorey* where undertaken in association with the activities described under conditions 6(a), (b) or (c).

PART II –MANAGEMENT CONDITIONS

7. Avoid, minimise and reduce the impacts and extent of 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.

8. 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 known *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.

9. Vegetation management – thinning

In relation to the areas hatched yellow on attached Plan 8460/1, the Permit Holder must:

- (a) retain a minimum of 2 *habitat trees* per hectare;
- (b) retain a minimum of 16-18 m²/hectare *basal area*;
- (c) by no later than 8 April 2025, rehabilitate and *log landings* established by scarifying the soil surface to reduce compaction and facilitate natural regeneration; and
- (d) within 2 years of 8 April 2025, engage an *environmental specialist* to determine the species composition, structure and density of the *understorey*.

10. Vegetation management – watercourse or wetland

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

11. Directional clearing

The permit holder must conduct clearing activities in a slow, progressive manner from north to south to allow fauna to move into adjacent native vegetation ahead of the clearing activity.

PART III - RECORD KEEPING AND REPORTING

12. 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;
 - (iii) the size of the area cleared (in hectares);
 - (iv) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 7 of this Permit;
 - (v) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 8 of this Permit; and
 - (vi) actions taken to avoid clearing native vegetation within 30 metres of the *riparian vegetation* of any *watercourses* or *wetland*.

- (b) In relation to vegetation management pursuant to condition 9 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) 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.

13. 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 12 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 8 January 2030, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(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 punching;

dieback means the effect of *Phytophthora* species of 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 an external person with 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;

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

habitat tree(s) means trees that have a diameter, measured at 1.5 meters from the base of the tree, of 50 centimeters 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 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*;

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 Biodiversity, Conservation and Attractions regional species-led ecological impact and invasiveness ranking 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.



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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

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

9 March 2020

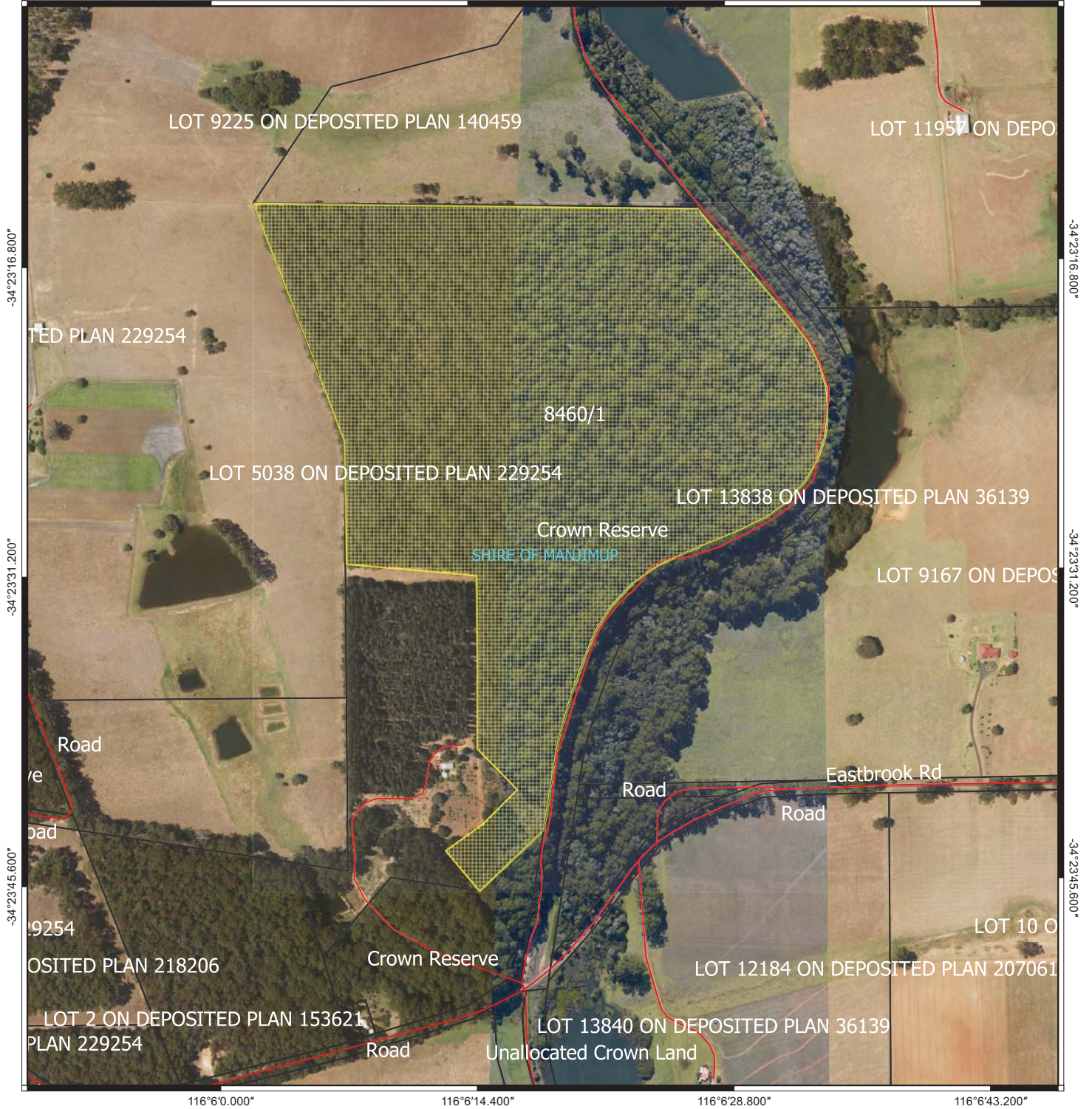
Plan 8460/1

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Legend

-  CPS areas approved to clear
-  Local Government Authorities
-  Roads
- Image



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Geocentric Datum of Australia 1994

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



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WESTERN AUSTRALIA
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Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8460/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Mr Daniel Christopher Collins
Application received date: 12 April 2019

1.3. Property details

Property: Lot 5038 on Plan 229254, Eastbrook
Local Government Authority: Shire of Manjimup
Localities: Eastbrook

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
40		Mechanical Removal	Hazard reduction or fire control

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 9 March 2020

Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is at variance with principle (f), may be at variance with principle (b), (g) and (h), and is not likely to be at variance with the remaining principles.

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

It has been identified that a portion of the application area is mapped in a palusvale. A condition has been added to the permit to ensure that no clearing occurs within 30 metres of the identified wetland.

It has also been determined that the proposed clearing may cause land degradation in form of water erosion, however, no significant impacts to the environment are expected given the purpose of the clearing is thinning and deeply rooted vegetation will remain.

Standard silviculture thinning conditions have also been added to the permit requiring; the retention of two habitat trees per hectare and a minimum basal area of 16-18 m²/hectare.

In determining to grant a clearing permit subject to conditions, the Delegated Officer determined that the proposed clearing is not likely to have any unacceptable impacts to the environment.

2. Site Information

Clearing Description The application proposes to clear 40 hectares of native vegetation within Lot 5038 on Deposited Plan 229254, Eastbrook, for the purpose of fire mitigation and forest management (thinning) (Figures 1- 3).

Vegetation Description The application area is mapped in the 'Warren' region of the Interim Biogeographic Regionalisation for Australia (IBRA), and is mapped as the following South West Forest vegetation complexes (Mattiske and Havel, 1998):

- WH1 (approximately 48 per cent) described as tall open forest of *Eucalyptus diversicolor-Corymbia calophylla* on slopes and tall open forest of *Eucalyptus patens* on valley floor in perhumid and humid zones;
- CRb (approximately 30 per cent) described as tall open forest of *Corymbia calophylla-Eucalyptus diversicolor* on upper slopes with *Allocasuarina decussata-Banksia grandis* on upper slopes in hyperhumid and perhumid zones; and
- PM1 (approximately 22 per cent) described as tall open forest of *Eucalyptus diversicolor* with mixtures of *Corymbia calophylla* on valley slopes and low forest of *Agonis juniperina-Banksia seminuda-Callistachys lanceolata* on valley floors in the perhumid zone.

A site inspection of the application area was conducted by officer's from the Department of Water and Environmental Regulation (DWER) on 15 May 2019. The site inspection identified that vegetation within the application area comprises of a mixture of *Eucalyptus marginata*, *Eucalyptus diversicolor* and *Corymbia calophylla* woodland over open native heath. Of these, jarrah woodland over open heath is the dominant vegetation type. Other species observed were *Agonis flexuosa* and *Eucalyptus* sp., *Pteridium esculentum*, *Bossiaea aquifolium*, *Leucopogon verticillatus* and *Macrozamia riedlei*, Blackberry (*rubus laudatus*) scattered throughout the application area. A portion of the application area (approximately 5 hectares) located in the south-western portion of the application area appears to have been a pine plantation in the past with primarily bracken fern returning to the understorey.

Vegetation Condition

The condition of the vegetation within the application area is considered to be:

- Very Good: Vegetation structure altered; obvious signs of disturbance. (Keighery, 1994);
- to
- Degraded: structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

The condition of the vegetation was determined based on DWER's site inspection (DWER, 2019).

Soil type

The application area is mapped as the following land subsystems (Department of Primary Industries and Regional Development (DPIRD), 2019):

- Wheatley Subsystems (Pimelia), which covers approximately 50 per cent of the application area, and is described as shallow (20-40 m) minor valleys with low sideslopes (5-20%), and narrow swampy floors with a slightly incise stream channel. Soils are loamy gravels, sandy gravels and loamy earths;
- Crowea (Pimelia) subsystem, is mapped across approximately 30 per cent of the application area and is described as brown duplex Phase subsystem is described as Brown gravelly duplex soils and red earths; karri-marri forest; and
- Pemberton Subsystem (Pimelaia) subsystem, which covers approximately 20 per cent of the application area and is described as 20 to 40 m deep, flat to gently sloping floors. Few channels. 3 to 10 deg. Smooth slopes. Red or yellow gradational soils, not calcareous with some red duplex soils.

Comments

The local area is comprises a 10 kilometre radius of the application area.

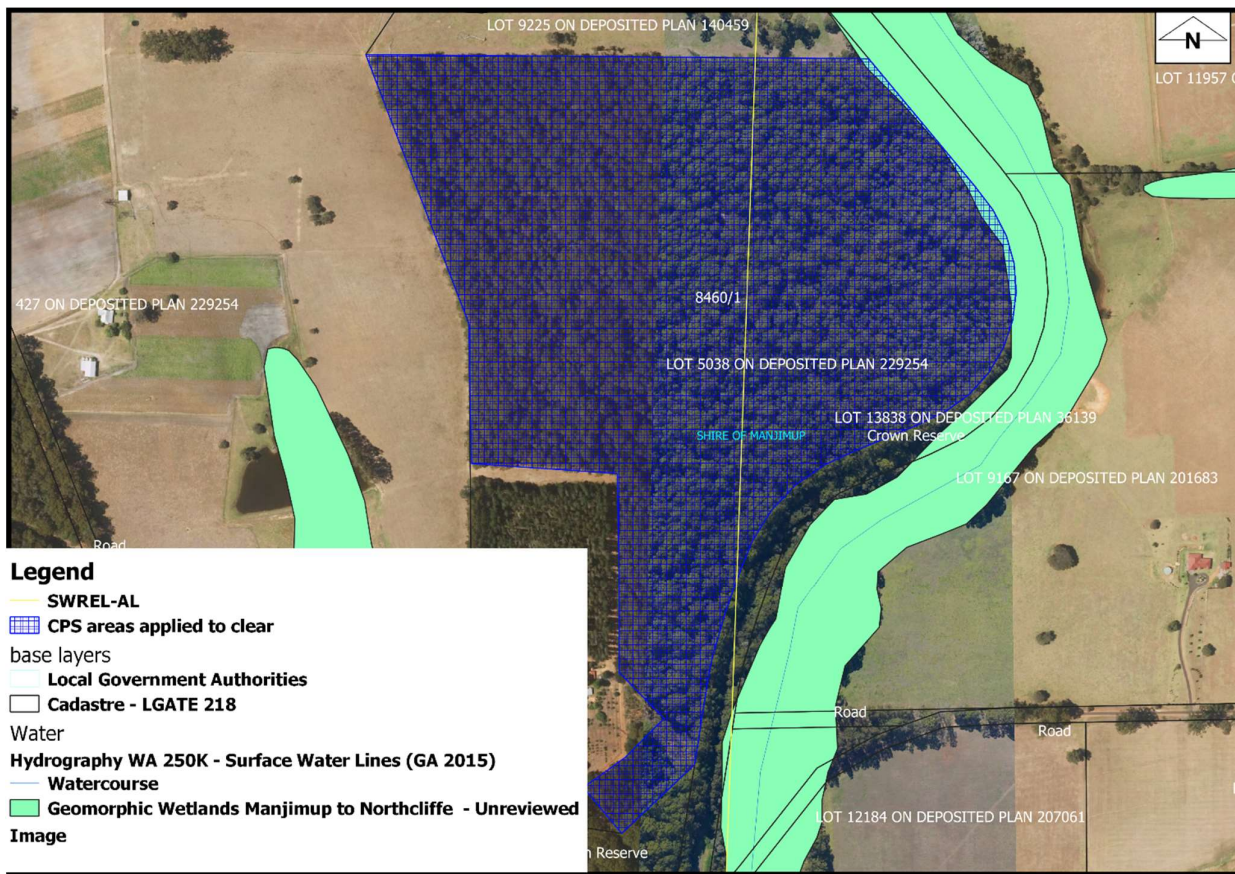


Figure 1 - Application area cross-hatched blue



Figure 2 - Vegetation within the central portion of the application area (DWER, 2019)



Figure 3 - Vegetation within the north-western portion of the application area (DWER, 2019)

3. Minimisation and mitigation measures

In relation to whether alternatives have been considered that would avoid or minimise the need for clearing, the applicant has advised: "Could leave undisturbed, however, present forest density has prevented cool autumn burns. Further, thinning is required, to promote health tree growth and silviculture" (Applicant, 2019).

4. Assessment of application against clearing principles

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

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

One priority and two threatened flora species have been recorded within the local area. Threatened flora are discussed in Principle (c). The recorded priority flora species *Xanthoparmelia xanthomelanoides* (P2) is known from 5 records from the Shire of Manjimup, Shire of Ravensthorpe, Shire of Coolgardie, Shire of Northampton and Shire of Wiluna. The closest record has been recorded approximately 2.9 kilometres northeast of the application area on undulating plain, littered, gravelly, brown clay loam, laterite soils in open marri-jarrah forest (WA Herbarium, 1998). Given the vegetation and soil type within the application area, this species is unlikely to occur within the application area.

As discussed in Principle (b), the application area may contain both breeding and foraging habitat for black cockatoo, and western ringtail possum (WRP) (*Pseudocheirus occidentalis*), Chuditch (*Dasyurus geoffroi*), Quokka (*Setonix brachyurus*) and Quenda (*Isodon fusciventer*) may occur within the application area. Whilst the vegetation under application may provide suitable habitat for these species, given the local area remains highly vegetated 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 16 – 18 m²/hectare basal area and at least two habitat trees per hectare (Applicant, 2019d).

As discussed in Principle (c), the application area is not likely to include, or be necessary for the continued existence of, threatened flora.

According to available databases, no Commonwealth listed threatened ecological community (TEC) or State listed priority ecological communities (PEC) are mapped within the local area. However, the Department of Biodiversity, Conservation and Attractions (DBCA) (2019) advised that 'Epiphytic cryptogams of the karri forests' (Cryptogams) listed as Priority 3 ecological community may occur within the WH1 vegetation type within the application area. This community is known to comprise liverworts, mosses and lichens found on the bark of mature (plants greater than 15 years old and prior to senescence at about age 50) of *Trymalium odoratissimum* subsp. *odoratissimum* and *Chorilaena quercifolia* in the karri forest of south-west Western Australia (DBCA, 2017). The DWER site inspection did not identify any of the abovementioned species within the application area and noting that a majority of the vegetation has been impacted from historical grazing and fire, and appears to be less than 15 years old, the proposed clearing is not likely to impact this PEC.

The disturbance caused by the proposed clearing may impact adjacent native vegetation through an increase in weeds and potential spread of dieback. Weed and dieback management practices will assist in mitigating this risk.

While the vegetation within the application area may comprise habitat for conservation significant fauna, given the application is not likely to comprise habitat for conservation significant flora, PEC's or TEC's, the application area is not likely to comprise a high level of biological diversity. Given the above, the proposed clearing is not likely to be at variance with this Principle.

(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.

Proposed clearing may be at variance with this Principle

According to available databases, twenty four fauna species listed as being of conservation significance under the *Biodiversity Conservation Act 2016* (BC Act) within the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* have been recorded within the local area. Noting the habitat requirements of these species, and the mapped vegetation type and the condition of the vegetation within the application area, the application area is likely to comprise suitable habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus banksia* subsp. *naso*), Baudin's cockatoo (*Calyptorhynchus baudinii*), Chuditch (*Dasyurus geoffroi*), Quenda (*Isodon fusciventer*), Quokka (*Setonix brachyurus*) and Western Ringtail Possum (WRP) (*Pseudocheirus occidentalis*) (DBCA, 2007).

The WRP Recovery Plan (Department of Parks and Wildlife, 2014) states that WRP forages predominantly on leaves of Peppermint (*Agonis flexuosa*), Marri (*Corymbia calophylla*), and Jarrah trees (*Eucalyptus marginata*). Ideal habitat is described as long unburnt mature remnants of peppermint woodlands with high canopy continuity and high foliage nutrients; other habitats comprises of jarrah/marri forests and woodlands with adequate hollows, coastal heath, myrtaceous heaths and Shrublands, Bullich (*Eucalyptus megacarpa*) dominated riparian zones and karri forests. Current distribution of WRP in the south-west of Western Australia is limited to three management zones: Swan Coastal Plain, Southern Forest and South Coast zone. These are areas known to, or previously known to support large numbers of western ringtail possums. Within the Southern Forest zone, WRP typically occupy jarrah forests near Manjimup where peppermint is generally absent (Department of Parks and Wildlife, 2014). DBCA (2019) advised that WRP is likely to be present within the application area. Considering this, the vegetation in the application area may contain suitable habitat for WRP. However, the application is for thinning and therefore the proposed clearing is not likely to significantly impact habitat for WRP.

Black cockatoos breed in large hollow-bearing trees, generally within woodlands or forests or in isolated trees (Commonwealth of Australia, 2012). These species nest in hollows in live or dead trees of karri, marri, wandoo, tuart, salmon gum, jarrah, flooded gum, York gum, powder bark, bullich and blackbutt (Commonwealth of Australia, 2012). Potential nesting trees for black cockatoos are 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. For most tree species, suitable DBH is 500 millimetres". The site inspection conducted by DWER officers (2019) identified that the application area appears to be regrowth from an historical clearing event and a majority of the trees are younger trees that are not likely to be suitable for breeding black cockatoos. The site inspection observed many tall karri trees but no hollows were observed. It is noted that given the large size of the application area, the site inspection did not cover the entire application area. Noting the vegetation present within the application, it is likely that suitable habitat trees may occur. Considering this, the application area may contain breeding habitat for black cockatoos. However, the clearing is for thinning and the applicant has committed to retaining 16 – 18 m²/hectare basal area and at least two habitat trees per hectare. Noting this, the proposed clearing is not likely to significantly impact on black cockatoo breeding habitat.

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). Noting the vegetation types present within the application area, the application area comprises of suitable foraging habitat for black cockatoos. Foraging habitat for black cockatoos within 7 kilometres of a breeding site is important to adequately support breeding pairs, and individual night roosting site need food and water within 6 kilometres (Environmental Protection Authority (EPA), 2019). Overlapping foraging ranges within 12 kilometres also support roosting sites and maintain habitat connectivity and movement across the landscape (EPA, 2019). According to available databases, there are no confirmed roosting sites within

either a 6 kilometre radius of the application area, or 12 kilometres radius, and the closest record of a roosting site is located approximately 16 kilometres from the application area.

Evidence of Black cockatoo foraging was observed during site inspection (DWER, 2019) by the way of chewed marri nuts. Presence of Black cockatoos was also confirmed by the applicant who stated that the earth dam located in the south-western portion of the application area is utilised by these species. Considering this, the application contains foraging habitat for black cockatoos. However, noting the local area is highly vegetated and based on the location of the confirmed roosting sites, it is likely that black cockatoos only utilise the application area intermittently. In addition, the proposed clearing is for thinning, and therefore, the proposed clearing is not considered to significantly impact on the availability of food sources for black cockatoos.

Quokka is listed as threatened under the BC Act within the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*. In the southern forest, quokkas occupy a range of forest, woodlands and wetland ecotypes and their potential habitat is more continuous. A low density of near-surface fuel, a complex vegetation structure and a varied fire-age mosaic best predict the probability of occupancy of quokka in the southern forest (Department of Environment and Conservation, 2013). DBCA (2019) advised that the Quokka is likely to be transient through the application area. The application area is not likely to provide critical habitat for the Quokka.

The chuditch is listed as vulnerable under both BC Act and the EPBC Act. Chuditch are now only present in approximately five per cent of their pre-European range. Most chuditch are now found in varying densities throughout the jarrah forest and south coast of Western Australia. Chuditch use a range of habitats including forest, mallee shrublands, woodland and desert. The densest populations have been found in riparian jarrah forest (Department of Environment and Conservation, 2012a). DBCA advised that chuditch is possible to be present in the application area. Noting this, the habitat requirements and the vegetation in the application area, the application may be a suitable habitat for chuditch. Noting, the purpose of the application is thinning, the proposed clearing is not likely to significantly impact on chuditch habitat.

Quenda is listed as priority 4 and are known to inhabit scrubby, swampy vegetation with low, dense understorey, located nearby water courses, pasture, or forest/woodland that is regularly burnt and is in areas of pasture and cropland lying close to dense cover. Populations inhabiting Jarrah and Wandoo forests are usually associated with watercourses (DEC, 2012b). DBCA (2019) advised that Quenda is likely to be present in the application area. Noting the vegetation within the application area, the vegetation within the application area may be suitable habitat for Quenda, however the proposed thinning is not likely to significantly impact on Quenda habitat.

Whilst the vegetation within the application area may provide suitable habitat for WRP, black cockatoo, chuditch, quokka and quenda, given the local area remains highly vegetated (approximately 56 per cent vegetation remaining) and the presence of nearby state forest and national parks, the application area is not likely to be significant habitat for these species. In addition, the clearing is for thinning and the applicant has committed to retain a 16-18m²/hectare basal area and at least two habitat trees per hectare (Applicant, 2019d). These actions together with the requirement to undertake clearing in a progressive manner from north to south, will mitigate the likelihood of fauna being injured during the clearing process.

Given the above, the proposed clearing may be at variance with this Principle.

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

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

According to available databases, two threatened flora species have been recorded within the local area:

- *Commersonia apella* is known to occur within tall Shrublands (Department of Parks and Wildlife, 2016). The species flowers in October, November or December (Western Australia Herbarium, 1998) and is known from 8 records, with the closest record being recorded approximately 8.8 kilometres southwest of the application area. Noting the vegetation type identified during the site inspection (DWER, 2019), the application area is not likely to contain suitable habitat for these species;
- *Caladenia christineae* is described as a tuberous, perennial herb found within margins of winter-wet flats, swamps and freshwater lakes. This species is known from 49 records, with the closest record recorded approximately 4.5 kilometres southwest of the application area. (Western Australia Herbarium, 1998). Noting the vegetation type identified during the site inspection (DWER, 2019), the application area is not likely to contain suitable habitat for these species.

Considering the vegetation type within the application area and the distance of the recorded threatened flora species to the application area, the application area is not likely to include, or be necessary for the continued existence of, threatened flora including the abovementioned conservation significant species.

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

(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.

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

According to available databases, no State listed TEC are known to occur within the local area. The closest TEC is the 'Scott Ironstone Associations' located approximately 49 kilometres west of the application area.

Noting the vegetation type within the application area and the distance to the closest known TEC, the application area is unlikely to comprise the whole or part of, or be necessary for the maintenance of a TEC.

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

(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.

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

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 application area is located within the 'Warren' IBRA bioregion. This IBRA bioregion has approximately 79 per cent of its pre-1750 vegetation extent remaining (Government of Western Australia, 2019).

The application area is also mapped in the following South West vegetation complexes:

- PM1, which is mapped across approximately 22 per cent of the application area, and retains approximately 65 per cent pre-European vegetation;
- WH1, which is mapped across approximately 48 per cent of the application area, and retains approximately 81 per cent pre-European vegetation; and
- CRb, which is mapped across approximately 30 per cent of the application area, and retains approximately 87 per cent pre-European vegetation.

The local area retains approximately 56.62 per cent native vegetation (approximately 19,635 hectares). Therefore the application is not located within an extensively cleared area.

Noting the vegetation extent in the local area and that the application area is not likely to provide significant habitat for fauna species and it is not likely to comprise a high level of biological diversity, the application area is not considered to be a significant remnant of native vegetation.

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

Table 1 Vegetation extents

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DBCA Managed Lands (%)
IBRA Bioregion*				
Warren	833,985.56	659,432.21	79.07	66.97
South West vegetation complex **				
PM1	25,801.16	16,661.53	64.58	58.22
WH1	20,321.02	16,400.37	80.71	73.57
CRb	52,753.26	45,425.07	86.11	81.77

* Government of Western Australia. (2019). 2018 South West Vegetation Complex Statistics. Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions, Perth, <https://catalogue.data.wa.gov.au/dataset/dbca>

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Proposed clearing is at variance with this Principle

According to available databases, a palusvale (ID 147) is mapped along the eastern boundary of the application area, and partially within the application area (Figure 1). Although the site inspection (DWER, 2019) did not observe any riparian vegetation within this portion of the application area, there may be some vegetation growing in association with this palusvale. Noting the small amount of vegetation to be cleared, the impacts are not likely to be significant.

The closest watercourse is a minor, non-perennial watercourse which occurs approximately 90 metres east from the application area. No riparian vegetation in the application area was observed to be growing in association with this watercourse. The DWER site inspection (2019) also identified an earth dam located approximately 150 metres southwest from the application area, however it was observed that the vegetation growing in association with this dam comprises predominantly weeds and bracken fern.

Given some of the vegetation is growing in an environment associated with a wetland, the proposed clearing is at variance with this principle. However, noting the small amount of vegetation to be cleared the impacts are not likely to be significant.

The applicant has committed to avoiding clearing within 30 metres of the riparian vegetation of any watercourse or wetland (Applicant, 2019). The requirement to retain a 30 metre buffer to any riparian vegetation associated with the wetland will ensure that vegetation growing in association with this wetland is not disturbed.

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

Proposed clearing may be at variance with this Principle

Primary soils within the application area are mapped by DPIRD (2019) and described as:

- Wheatley Subsystems (Pimelia), which covers approximately 50 per cent of the application area, and is described as shallow (20-40 m) minor valleys with low sideslopes (5-20%). and narrow swampy floors with a slightly incise stream channel. Soils are loamy gravels, sandy gravels and loamy earths;

- Crowea (Pimelia) subsystem covers approximately 30 per cent of the application area, and is described as brown duplex Phase subsystem is described as Brown gravelly duplex soils and red earths; karri-marri forest; and
- Pemberton Subsystem (Pimelaia) subsystem, which is mapped across approximately 20 per cent of the application area, and is described as 20 to 40 m deep. Flat to gently sloping floors. Few channels. 3 to 10 deg. Smooth slopes. Red or yellow gradational soils, not calcareous with some red duplex soils.

Table 2 - Land degradation summary

Risk categories	Pemberton Subsystem (Pimelaia)	Crowea (Pimelia) subsystem, brown duplex Phase	Wheatley Subsystems (Pimelia)
Wind erosion	<3% of map unit has a high to extreme wind erosion risk	10-30% of map unit has a high to extreme wind erosion risk	<3% of map unit has a high to extreme wind erosion risk
Water erosion	30-50% of map unit has a high to extreme water erosion risk	10-30% of map unit has a high to extreme water erosion risk	50-70% 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
Subsurface Acidification	<3% of map unit has a high subsurface acidification risk or is presently acid	<3% of map unit has a high subsurface acidification risk or is presently acid	<3% of map unit has a high subsurface acidification risk or is presently acid
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% of the map unit has a moderate to high flood risk
Waterlogging	3-10% of map unit has a moderate to very high waterlogging risk	<3% of map unit has a moderate to very high waterlogging risk	<3% 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	10-30% of map unit has a high to extreme phosphorus export risk	50-70% of map unit has a high to extreme phosphorus export risk

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

Approximately 50-70 per cent of Wheatley Subsystems (Pimelia) soil subsystem, which is mapped across approximately 50 per cent of the application area, has a high to extreme water erosion and eutrophication risk. During the DWER site inspection (2019) it was noted that the landscape within this area is steeply hilly. Despite the relatively high risk of water erosion the applicant will be required to retain a 16-18 m²/hectare basal area which will reduce the risk of water erosion.

Similarly, noting that the purpose of the clearing is to selectively thin native vegetation and the deep-rooted vegetation will still remain, the clearing is not likely to lead to an increase in salinity or phosphorus export.

Given the above, the proposed clearing may be at variance with this Principle.

(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.

Proposed clearing may be at variance with this Principle

According to available datasets, a number of conservation areas have been recorded within the local area. The closest conservation area is an Un-named Nature Reserve (Class A) located approximately 210 metres from the application area. Noting the distance, the proposed clearing may impact on the environmental values of this conservation area through the potential introduction of weeds and dieback. Weed and dieback management conditions will assist in mitigating the impacts of the proposed clearing.

An ecological linkage, defined by Molloy et al. (2009) in the South West Regional Ecological Linkage (SWREL) report 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”, is mapped through the application area (ID 142). The linkage runs through the application area north-south and follows a large tract of remnant vegetation within conservation estate. The proposed clearing of 40 hectares will impact on this significant linkage by reducing the habitat and limiting interaction between populations of fauna and flora (Molloy et al., 2009). “Where remnant vegetation is degraded to the point where it is significantly reduced in structure only a reduced number of native species will use these areas for dispersal between more suitable patch or habitat purposes (Molloy et al., 2009). In addition, noting the cleared landscape within the close proximity of the application area, it is considered that the application area provides values as a stepping stone between existing landscape remnants for ground dwelling and arboreal fauna.

However, considering that that the purpose of clearing is thinning, the proposed clearing as such is unlikely to reduce the effectiveness of the linkage and it is likely that the vegetation remaining will continue to be used for fauna movement.

Given the above, the proposed clearing may be at variance with this Principle.

(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.

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

According to available databases, a palusvale (ID 147) is mapped along the eastern boundary of the application area and partially within the application area, and a watercourse is mapped approximately 90 metres east from the application area (Figure 1). The proposed clearing may increase run-off and sedimentation into this wetland, however this impact is likely to be minimal and short term.

As discussed in Principle (g), 30-50 per cent of the application area has a moderate to high salinity risk or is presently saline. Groundwater salinity within the application area is mapped between 500 – 1000 milligrams per litre total dissolved solids which is considered to be marginal (Mayer, Ruprecht, & Bari, 2005). Considering this, and that the proposed clearing is for thinning and the deep rooted vegetation will still remain, the proposed clearing is not likely to cause deterioration in the quality of underground water in the form of salinity.

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

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

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

Less than 3 per cent of the Crowea (Pimelia) subsystem and Wheatley Subsystems (Pimelia) map units, and between 3-10 percent of the Pemberton Subsystem (Pimelaia) have a moderate to high flood risk (DPIRD, 2019). Noting this, the proposed clearing is not likely to cause or exacerbate, the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

The proposed clearing is for selective thinning to 16 square metres basal area/hectare (machine harvesting) (Applicant, 2019a). The applicant advised that he is not proposing broadscale clearing, but limited thinning for the purposes of fire and forest management, and mitigation of threat to human life and neighbouring property damage (Applicant, 2019c). The applicant further advised (2019b) that “preparation of the forest for a control burn also requires thinning of marri and undergrowth, and removal of coarse woody debris. We propose thinning operations would consist of logging saleable timber, chipping that is not saleable, and using as much of the residue for biomass as is possible, to reduce damage to remaining trees by burning of excessive flammable material. The intent is to get optimum airflow for a cool burn that will proceed slowly but effectively through the entire forest”. During the DWER site inspection the applicants verbally advised they want to retain large trees in the application area and no other work is intended to be done following the burn.

The Applicant (2019d) has developed a Native Forest Property Management Plan outlining the property’s management history and the objectives and procedure for the proposed thinning.

In relation to the proposed impacts on SWREL the Applicant (2019d) has advised: “Usual harvesting protocols will apply, with minimisation of vehicle access and disturbance of native vegetation, use of existing access tracks where possible, only one landing required in native vegetation, provision to the contractor with threatened species identikit, and cessation or work in the event of threatened species being encountered and resumption only when the species has moved on.”

A Private Land Supplier’s licence under the Regulation 63 of the *Biodiversity Conservation Regulations 2018* will be required in order to sell any timber or harvested logs that are cleared. On 4 February 2020, DBCA advised that no application from Mr Collins had been received (DBCA, 2020).

On 13 May 2019, the Shire of Manjimup advised that the Shire have no objections and that there are no planning or other matters which would affect the proposal. The Shire further advised that the land is zoned by Local Planning Scheme No. 4 as “Priority Agriculture” and planning approval for clearing of vegetation is not required (Shire of Manjimup, 2019).

No Aboriginal sites of significance have been mapped within the application area.

The clearing permit application was advertised on the DWER website on 7 May 2019 with a 21 day submission period. No public submissions have been received in relation to this application.

5. References

- Applicant (2019a). Application form in relation to clearing permit application CPS 8460/1. DWER Ref: A1783685.
- Applicant (2019b). Supporting documents in relation to clearing permit application CPS 8460/1. DWER Ref: A1789947.
- Applicant (2019c). E-mail correspondence with applicant in relation to clearing permit application CPS 8460/1. DWER Ref: A1790605.
- Applicant (2019d). *Native Forest Property Management Plan*. Forest management plan prepared in relation to clearing permit application CPS 8460/1. DWER Ref: A1856034.
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GIS databases:

- CPS Areas applied to clear
- NatureMap (conservation significant fauna)
- DAFWA Subsystems V5
- Soils of WA
- Vegetation Complexes – Swan Coastal Plain
- Managed Tenure
- Environmentally Sensitive Areas
- TPFL Data October 2019
- WAHerb Data October 2019
- Aboriginal Sites Register
- IBRA Vegetation WA
- WA TECPEC
- Land Degradation Hazards