



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 8478/1
File Number: DWERVT2721
Duration of Permit: From 18 December 2019 to 18 December 2021

PERMIT HOLDER

Shire of Gingin

LAND ON WHICH CLEARING IS TO BE DONE

Orange Springs Road road reserve (PIN 11673675, 11673674), Cowalla
Orange Springs Road road reserve (PIN 11168460, 1168464), Moore River National Park
Orange Springs Road road reserve (PIN 11168462, 11168463, 1226181, 1226182), Orange Springs

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than clear 2.13 hectares of native vegetation within the area cross hatched yellow on attached Plan 8478/1a, Plan 8478/1b and Plan 8478/1c.

CONDITIONS

1. 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.

2. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation to the extent that the Permit Holder has the power to carry out works involving clearing for those activities under the *Local Government Act 1995* or any other written law.

3. 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.

4. Weed control and dieback

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.

5. Flora management

When undertaking any clearing authorised under this Permit, the Permit Holder must not clear within 10 metres of *priority flora* species *Dodonaea hackettina* (P4); *Isopogon panduratus* subsp. *palustris* (P3) and *Calytrix ecalycata* subsp. *Brevis* (P3).

6. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit, in relation to the clearing of native vegetation authorised under this Permit:

- (a) the location where the clearing occurred, recorded using a GPS unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 3 of this Permit; and
- (e) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 4 of this Permit.

7. Reporting

The Permit Holder must provide to the *CEO* the records required under condition 6 of this Permit, when requested by the *CEO* or delegated officer

DEFINITIONS

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

CEO means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the *Environmental Protection Act 1986*.

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

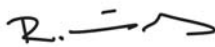
fill means material used to increase the ground level, or fill a hollow;

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;

priority flora means those plant taxa described as priority flora classes 1, 2, 3, 4 or 5 in the *Department of Biodiversity Conservation and Attractions Threatened and Priority Flora List for Western Australia* (as amended);

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 species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
- (c) not indigenous to the area concerned.

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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION



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

18 November 2019

Plan 8478/1a



Legend

-  Imagery
-  Clearing Instruments Activities



(Approximate when reproduced at A4)
GDA 94 (Lat/Long)
Geocentric Datum of Australia 1994
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Officer with delegated authority under Section 20 of the Environmental Protection Act 1986



Plan 8478/1b



Legend

-  Imagery
-  Clearing Instruments Activities



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Plan 8478/1c



Legend

-  Imagery
-  Clearing Instruments Activities



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GDA 94 (Lat/Long)

Geocentric Datum of Australia 1994

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3. Application details

3.1. Permit application details

Permit application No.: 8478/1
Permit type: Area Permit

3.2. Applicant details

Applicant's name: Shire of Gingin

3.3. Property details

Property: Orange Springs Road road reserve (PIN 11673675, 11673674), Cowalla
Orange Springs Road road reserve (PIN 11168460, 1168464), Moore River National Park
Orange Springs Road road reserve (PIN 11168462, 11168463, 1226181, 1226182), Orange Springs

Local Government Authority: Shire of Gingin
Localities: Orange Springs

3.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
2.13		Mechanical Removal	Road upgrades

3.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 18 November 2019

Reasons for Decision: The clearing permit application was received on 30 April 2019 and has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986*. It has been concluded that the proposed clearing may be at variance with principle (h) and is not likely to be at variance with any or the remaining clearing principles.

The Delegated Officer noted that the proposed clearing may increase the risk of weeds and dieback being introduced or spread into adjacent areas, including the Moore River National Park. Weed and dieback management measures will minimise this risk.

2. Site Information

Clearing Description: The application is to clear up to 2.13 hectares of native vegetation within the road reserve along Orange Springs Road. The proposed clearing will occur over a linear length of 17.4 kilometres, for the purpose of road upgrades.

Vegetation Description: The application area is mapped as three Heddle vegetation complexes:

- Moore River: *Fringing woodland of Eucalyptus rudis* (Flooded Gum) - *Melaleuca rhapsiophylla* (Swamp Paperbark);
- Bassendean Complex-North: Vegetation ranges from a low open forest and low open woodland of Banksia species *Eucalyptus todtiana* (Pricklybark) to low woodland of Melaleuca species and sedgelands which occupy the moister sites; and
- Bassendean Complex-North Transition: A transition complex of low open forest and low woodland of Banksia species - *Eucalyptus todtiana* (Pricklybark) on a series of high sand dunes. The understorey species reflect similarities with both the Bassendean-North and Karrakatta-North vegetation complexes (Heddle et al., 1980).

A flora and vegetation survey was undertaken by Ecoedge in September 2018. The total area surveyed was 85.7 hectares, of which 43.2 hectares comprised of native vegetation (Ecoedge, 2019a). The 2.13 hectares of vegetation under application falls within the survey area. A total of four vegetation types were identified during the survey, all of which occur within the application area (Ecoedge, 2019a).

Vegetation Type	Vegetation Description
<i>Eucalyptus todtiana</i> - <i>Banksia attenuata</i> - <i>B. menziesii</i> woodland	Woodland of <i>Banksia menziesii</i> and <i>B. attenuata</i> (sometimes with <i>Callitris pyramidalis</i> or <i>B. ilicifolia</i> in damper areas) over sparse tall shrubland of <i>Adenanthos cygnorum</i> , <i>Jacksonia floribunda</i> , <i>J. sternbergiana</i> , <i>Kunzea glabrescens</i> and <i>Xanthorrhoea preissii</i> over low shrubland of

	<i>Bossiaea eriocarpa</i> , <i>Eremaea pauciflora</i> , <i>Leucopogon sprengelioides</i> , <i>Stirlingia latifolia</i> and open sedgeland of <i>Lyginia barbata</i> , <i>Alexgeorgea nitens</i> and <i>Mesomelaena pseudostygia</i> over sparse hermland of <i>Dampiera linearis</i> , <i>Patersonia occidentalis</i> and <i>Phlebocarya ciliata</i> . (On gently undulating sandplain).
<i>Banksia attenuata</i> - <i>B. menziesii</i> woodland	Woodland of <i>Banksia menziesii</i> and <i>B. attenuata</i> (with scattered <i>Eucalyptus todtiana</i>) over sparse tall shrubland of <i>Adenanthos cygnorum</i> , <i>Jacksonia floribunda</i> and <i>Xanthorrhoea preissii</i> over low shrubland of <i>Bossiaea eriocarpa</i> , <i>Eremaea pauciflora</i> , <i>Leucopogon sprengelioides</i> , <i>Stirlingia latifolia</i> and open sedgeland of <i>Lyginia barbata</i> , <i>Alexgeorgea nitens</i> and <i>Mesomelaena pseudostygia</i> over sparse hermland of <i>Phlebocarya ciliata</i> , <i>Drosera erythrorhiza</i> and <i>Dampiera linearis</i> . (On undulating terrain of sandhills and swales).
<i>Eucalyptus rudis</i> - <i>Melaleuca preissiana</i> woodland	Woodland of <i>Eucalyptus rudis</i> over <i>Banksia littoralis</i> and <i>Melaleuca preissiana</i> over tall shrubland of <i>Acacia saligna</i> , <i>Adenanthos cygnorum</i> , <i>Jacksonia sternbergiana</i> over shrubland of <i>Acacia huegelii</i> , <i>Bossiaea eriocarpa</i> , <i>Daviesia incrassata</i> and <i>Hypocalymma angustifolium</i> . (Fringing vegetation to seasonal wetlands)
Degraded <i>Banksia</i> woodland	Scattered trees of <i>Banksia attenuata</i> , <i>B. menziesii</i> or <i>Eucalyptus todtiana</i> or open shrubland of <i>Adenanthos cygnorum</i> , <i>Jacksonia floribunda</i> over grassland dominated by <i>Eragrostis curvula</i> . (Note: This mapping unit also includes the road and cleared verge).

Vegetation Condition: Excellent; Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species (Keighery, 1994).
To
Completely Degraded; No longer intact, completely/almost completely without native species (Keighery, 1994).

The condition and structure of the vegetation under application was determined from a flora and vegetation survey (Ecoedge, 2019a). It should be noted that the flora survey covered all the vegetation present within the road reserves, with the vegetation condition ranging as per the table below;

Vegetation Condition	Excellent	Very Good	Good	Degraded	Completely Degraded	Total
Area (ha)	0.84	0.22	0.14	0.91	0.02	2.13

Soil and Landform Type: The application area is mapped within the following land subsystems:

- Bassendean System (Map Unit 212Bs): Swan Coastal Plain from Busselton to Jurien. Sand dunes and sandplains with pale deep sand, semi-wet and wet soil. Banksia-paperbark woodlands and mixed heath; and
- Moore River System (Map Unit 212Mo): Alluvial flats; Swan Coastal Plain west of Gingin; wet soil, semi-wet soil, pale and yellow deep sands; Woodlands and heaths (Schoknecht et al., 2004).

As indicated above, the application areas comprises of two land subsystems, however, 80 percent of the application area falls within the Bassendean System.

Comment: The local area referred to in this assessment is defined as the area within a 10 kilometre radius from the perimeter of the application area. Aerial imagery indicates that the local area retains approximately 75 per cent native vegetation cover.

Figure 1: Western section of the application area



Figure 2: Central section of the application area

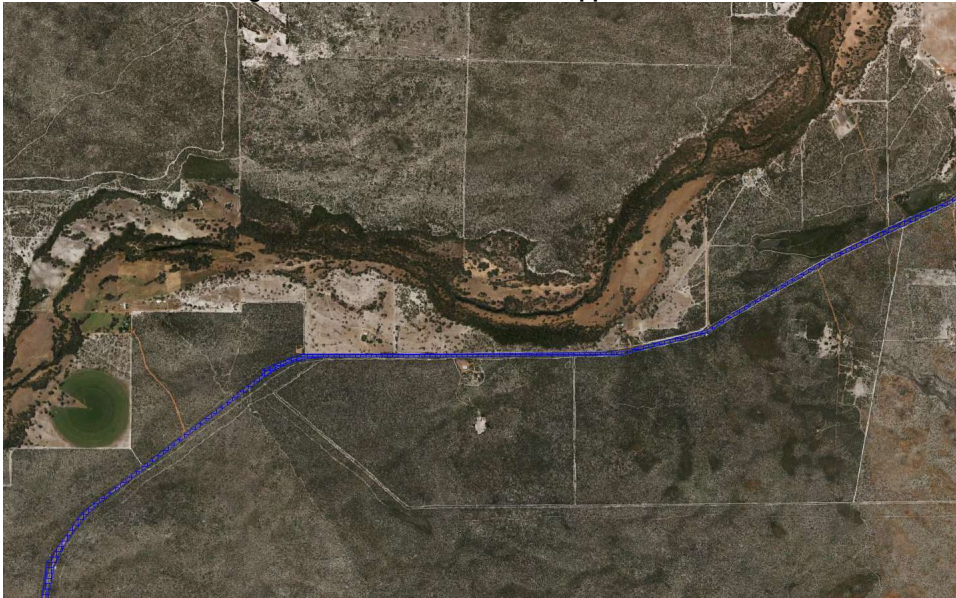


Figure 3: Eastern section of the application area.



Photographs of vegetation within the application area



Photo 1: Vegetation (shrub regrowth) that will be impacted upon by the proposed clearing.



Photo 2: Vegetation (Coastal blackbutt) within close proximity of the existing road seal.



Photo 3: Taken from the centre of a straight section of the road. The photo indicates that very little vegetation will need to be cleared to create the new road formation



Photo 4: Recruitment vegetation (regrowth) within the road reserve

3. Minimisation and mitigation measures

The applicant has committed to designing the road to avoid impacts to priority flora species *Dodonaea hackettina* (P4), *Isopogon panduratus subsp. palustris* (P3) and *Calytrix ecalycata subsp. Brevis* (P3), that occur within the road reserve. A condition on the permit will impose the requirement that no clearing occurs within 10 metres of individuals of any of the three abovementioned species.

4. Assessment of application against clearing principles

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

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

As discussed in Section 2, a total of four vegetation types were recorded during the flora survey, all of which occur within the proposed clearing area. The condition of the vegetation within the application area ranges from excellent to completely degraded (Keighery, 1994; Ecoedge, 2019a).

According to available databases received from the Department of Biodiversity, Conservation and Attractions (DBCA), 27 priority flora species and four threatened flora species have been recorded within the local area. Threatened flora are discussed under Principle (c). Of the priority flora listed in the local area, the flora and vegetation survey identified three priority flora species; (*Dodonaea hackettina* (P4), *Isopogon panduratus subsp. palustris* (P3) and *Calytrix ecalycata subsp. Brevis* (P3) occurring within the road reserve, however none of these were recorded within the proposed clearing footprint (Ecoedge, 2019a). The flora and vegetation survey of the application area did not identify any other priority flora within the proposed clearing area (Ecoedge, 2019a). Taking into consideration that the flora survey was undertaken at an appropriate time of year and that no priority flora were recorded within the proposed clearing area, the proposed clearing is not likely to impact on priority flora known to occur within the local area. Despite no priority flora being recorded within the proposed clearing footprint, a flora management condition has been placed on the permit to ensure that the priority flora species identified within the survey area are not impacted upon by the proposed clearing.

According to available databases, four fauna species specially protected under the *Biodiversity Conservation Act 2016*, (DBCA, 2007-) and four priority fauna have been recorded within the local area. Of the fauna recorded within local area, it is considered that the application area is unlikely to comprise of significant fauna habitat for conservation significant fauna species in the local area. This is discussed further under Principle (b).

According to available databases, several occurrences of the Federally listed Threatened Ecological Community (TEC) 'Banksia woodlands of the Swan Coastal Plain' occur within the local area, including having been mapped as occurring within the application area. This ecological community is listed as a Priority 3 Priority Ecological Community (PEC) by the Department of Biodiversity, Conservation and Attractions (DBCA) and as a TEC under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Approved Conservation Advice for the TEC states that to be considered representative of the TEC, a remnant in the Swan Coastal Plain bioregion must include at least one of four *Banksia* species being candlestick banksia, *Banksia menziesii* (firewood banksia), *Banksia prionotes* (acorn banksia) and/or *Banksia ilicifolia* (holly-leaved banksia); must include an emergent tree layer often including marri, jarrah, or tuart, and other medium trees including *Eucalyptus tottiana* (pricklybark), *Nuytsia floribunda* (WA Christmas tree), western sheoak, *Callitris arenaria* (sandplain cypress), *Callitris pyramidalis* (swamp cypress) or *Xylomelum occidentale* (woody pear); and must include an often highly species-rich understorey (Threatened Species Scientific Committee, 2016).

Condition thresholds provide guidance on when a patch of an ecological community retains sufficient conservation values to be considered a 'Matter of National Environmental Significance', as defined under the EPBC Act, and to be considered as part of the TEC minimum patch sizes by condition (Keighery, 1994) are 'pristine' – no minimum patch size applies; 'excellent' – 0.5 hectares; 'very good' – 1 hectare; 'good' – 2 hectares (Threatened Species Scientific Committee, 2016).

Based upon this and the specifications around the minimum patch size, this portion of the TEC mapped within the application areas forms part of a broader area of the mapped TEC to the north and south of the application area which meets the criteria as being representative of the TEC. The patch size of the mapped TEC is over 50,000 hectares which includes sections within the application area. Notwithstanding, noting the size of the mapped TEC that occurs within the application area and that this has been previously disturbed through the initial road construction, the proposed clearing is unlikely to have a significant residual impact on the remaining occurrence of this TEC in the local area. It is also considered that based on the historical disturbance and that the proposed clearing adjoins an existing sealed road, the application area is not likely to comprise a high level of biological diversity.



Figure 4: The green area represents the amount of mapped Banksia woodlands of the Swan Coastal Plain TEC within the vicinity of the proposed clearing area (blue line)

Given the above, the application area is unlikely to comprise a high level of biological diversity. 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 indigenous to Western Australia.

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

According to available databases, four fauna species specially protected under the *Biodiversity Conservation Act 2016*, and four priority fauna have been recorded within the local area (DBCWA, 2007-). Based on the findings of the site inspection and the flora and vegetation survey, the following conservation significant fauna species have the potential to occur within the application area;

- Carnaby's cockatoo (*Calyptorhynchus latirostris*)
- Woolybush bee (*Hylaeus globuliferus*)
- Short-tongued bee (*Leioproctus contrarius*)
- Western brush wallaby (*Notamacropus irma*)

Black cockatoo species nest in hollows in live or dead trees of *Eucalyptus gomphocephala* (tuart), *Eucalyptus marginata* (jarrah), *Corymbia calophylla* (marri), *Eucalyptus diversicolor* (karri), *Eucalyptus wandoo* (wandoo), *Eucalyptus salmonophloia* (salmon gum), *Eucalyptus rudis* (flooded gum), *Eucalyptus loxophleba* (York gum), *Eucalyptus accedens* (powder bark), *Eucalyptus megacarpa* (bullich) and *Eucalyptus patens* (blackbutt) (Commonwealth of Australia, 2012). Black cockatoos have a preference for foraging habitat that includes jarrah and marri woodlands and forest heathland and woodland dominated by proteaceae plant species such as *Banksia* sp., *Hakea* sp. and *Grevillea* sp. (Commonwealth of Australia, 2012).

The site inspection (DWER, 2019) and fauna assessment report noted the application area provides foraging habitat for Carnaby's cockatoo with evidence of foraging (chewed Coastal blackbutt nuts and Banksia cones) by Carnaby's cockatoo occurring within the application area (Ecoedge, 2019b). Based on vegetation mapping, a large amount of similar habitat (approximately 37,600 hectares) will remain within the local area, including 16,000 hectares in secure tenure (Conservation Areas) (Ecoedge, 2019b). The flora and vegetation survey identified 2.10 hectares of vegetation within the application area, comprising of either *Eucalyptus todtiana-Banksia attenuata-B. menziesii* woodland or *Banksia attenuata-B. menziesii* woodland (Ecoedge, 2019a). This type of vegetation is foraging habitat for Carnaby's cockatoo. Noting the extensive amount of similar vegetation occurring within the local area, the proposed clearing of 2.10 hectares of foraging habitat for Carnaby's cockatoo represents a reduction 0.0056 per cent of foraging habitat in the local area. While the application area does provide foraging habitat for Carnaby's cockatoo, it is considered that the proposed clearing will not have a significant residual impact on the availability of other foraging sources within the local area. The proposed clearing is linear in nature over a distance of 17.4 kilometres, with large sections of the application area comprising of regrowth vegetation. As a consequence, the vegetation proposed to be cleared is assessed as having lower foraging value than other areas of better quality habitat outside the application area.

A fauna assessment of the application area noted 15 trees within the survey area to be of an appropriate size for breeding purposes by Carnaby's cockatoo, however 13 of the recorded trees did not contain any hollows (Ecoedge, 2019b). Two trees were recorded as having hollows, however, they were assessed as being unsuitable for black cockatoos to use for nesting due to being too small (Ecoedge, 2019b). There are several Carnaby's cockatoo breeding areas within 10 kilometres of the application area. Noting the presence of nearby suitable breeding areas for Carnaby's cockatoo and that the application area does not contain suitable breeding trees for Carnaby's cockatoos, the application area is not considered to be significant breeding habitat for Carnaby's cockatoo.

The optimum habitat for Western brush wallaby is open forest or woodland, particularly favouring open, seasonally-wet flats with low grasses and open scrubby thickets (DEC, 2012). It is also found in some areas of mallee and heath-land (DEC, 2012). There are only a few old documented records of this species nearby but the presence of suitable habitat (woodland) suggests it may occur albeit on a temporary basis only (Ecoedge, 2019b). However, distribution of this species is wide ranging and considering its preference for multiple habitat types, the proposed clearing is not likely to impact on significant habitat for this species.

The Woollybush bee and Short-tongued bee is thought to favour flowers of *Adenanthos cygnorum* and *Banksia attenuata* for feeding which are known to be within the application area (Ecoedge, 2019b). There are only a few old documented records of these species occurring near the application area. Whilst it is considered that the application area provides suitable habitat for these species, the habitat may be marginal in extent/quality as the species may only visit the area for short periods, or as rare/uncommon vagrants (Ecoedge, 2019b).

Noting the above, the application area is not considered to be significant habitat for conservation significant fauna species that are known to occur within the local area. The proposed clearing is not likely to be at variance with this Principle.

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

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

According to available databases, four threatened flora species have been recorded within the local area. The closest record of a threatened flora species is approximately 1.6 kilometres from the application area. Noting the known ranges of these species and their preferred habitats, including soil and vegetation types, the application area may comprise suitable habitat for the following species.

- *Paracaleana dixonii* - Tuberous, perennial, herb, 0.09-0.2 metres high associated with grey sand over granite. There are 19 records of this species within Florabase, with the closest being 4.9 kilometres to the application area. The record was taken within the Moore River National Park within low lying banksia woodland (Western Australian Herbarium, 1998-).
- *Macarthuria keigheryi* - Erect or spreading perennial, herb or shrub, 0.2-0.4 metres high, 0.3-0.6 metres wide associated with white or grey sand. There are 28 records of this species within Florabase with the closest being approximately 9.4 kilometres to the application area. The record was taken within the Moore River National Park within banksia woodland in 2009, the area had been recently burnt (Western Australian Herbarium, 1998-).
- *Darwinia carnea* - Spreading shrub, 0.2-0.45 metres high associated with lateritic loam and gravel soils. There are 34 records of this species within florabase. The record within the closest proximity to the application area (1.6 kilometres) was recorded in 1965 and no other records have been recorded since this date (Western Australian Herbarium, 1998-).
- *Acacia denticulosa* - Erect, diffuse, spindly shrub, 1-4 metres high associated granite outcrops, rarely on sandplains. There are 38 records of this species within florabase. The record within closest proximity to the application area was recorded approximately 9.5 kilometres away within an open *Corymbia calophylla* woodland over open *Banksia attenuata* woodland over sparse *Xanthorrhoea preissii*, *Viminia juncea* and *Macrozamia riedlei*. (Western Australian Herbarium, 1998-).

The flora and vegetation survey identified 185 flora species (including 28 introduced species), within the survey area (Ecoedge, 2019a). No threatened flora, including the above listed flora species were recorded within the area surveyed. It is considered that the survey was undertaken at an appropriate time of year where the abovementioned species would have been identified within the survey area if present (Ecoedge, 2019a).

Noting the findings from the flora and vegetation survey, extensive representation of vegetation within the local area and the clearing approach over a linear distance of 17.4 kilometres that is adjacent to an existing road, the proposed clearing is not likely to impact on habitat necessary for the continued existence of threatened flora within the local area.

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, there are no state listed TEC's recorded within the local area. The nearest state listed TEC to the application area is SCP09, 'Dense shrublands on clay flats', located approximately 17 kilometres south of the application area. This TEC is listed as 'Vulnerable' under the *Biodiversity Conservation Act 2016*.

As noted under section 2, the flora and vegetation survey identified four vegetation types, none of which is representative of TEC SCP09.

Noting the above and the distance between the TEC and the application area, 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 2001-2005 include a target to have clearing controls in place that prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750 (i.e. pre-European settlement) (Commonwealth of Australia, 2001). This is the threshold level, below which species loss appears to accelerate exponentially.

In assessing the risk of further loss and subsequent cumulative effects, consideration has been given to the extent of native vegetation remaining, its condition and whether it is a representation of the mapped vegetation types:

- as indicated in Table 1, the current vegetation extent for mapped Heddle vegetation complexes are above the 30 per cent recommended threshold; and
- the local area retains approximately 75 per cent pre-European native vegetation cover.

Given the extent of native vegetation remaining within the local area and that the application area does not represent significant habitat for fauna and flora that occurs in the local area, the vegetation under application is not considered to be a significant remnant in an extensively cleared landscape.

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 (%)	Current Extent in DCBA Managed Lands (%)
IBRA Bioregion				
Swan Coastal Plain	1,501,221	579,813	38.5	15
Local government authority				
Shire of Gingin	319,676	176,727	55	26
Heddle vegetation complex				
Moore River	8,479	2,913	34.5	1.5
Bassendean Complex-North	79,057	56,659	71.5	38.5
Bassendean Complex-North Transition	20,856	18,552	89	54

(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 not likely to be at variance with this Principle

According to available databases, a number of wetlands and watercourses occur within the local area, including the following;

- a number of multiple use wetlands are mapped within close proximity of the application area, with the nearest being approximately 80 metres away;
- a number of conservation category wetlands (CCW) are mapped within close proximity of the application area, with the nearest being approximately 20 metres away;
- a resource enhancement wetland is mapped as occurring 180 metres away from the application area, with several other resource enhancement wetlands mapped within close proximity to the application area; and
- the Moore River runs parallel to the application area, being within 300 metres of the application area at its nearest point.

Multiple use wetlands are wetlands with few remaining important attributes and functions, development and management should be considered in the context of ecologically sustainable development and best management practice (Water and Rivers Commission, 2001). Noting the purpose of the application is for road upgrades in an established and existing road, it is unlikely the impacts associated with the works will further diminish any important attributes and functions of the multiple use wetland system occurring within close proximity to the application area.

Resource enhancement wetlands are wetlands that have been modified and do not have clearly recognised human uses in their urban or rural settings. Management objectives of these wetlands is to maintain and enhance the existing ecological functions.

The term resource enhancement has been used to indicate that opportunities may exist for commercial developments to enhance the conservation values of these wetlands (Water and Rivers Commission, 2001). Whilst it is acknowledged that resource enhancement wetlands do still have ecological values, the proposed clearing will not impact on the nearby resource enhancement wetlands values due to the distance between the known wetland and application area. Aerial imagery suggests that the wetland values have already been impacted with little native vegetation remaining, with the area appearing to be currently utilised for agricultural purposes (paddock).

Conservation category wetlands support a high level of ecological attributes and functions and are the highest priority for preservation, and buffers are designed to protect wetlands from potential impacts while helping to maintain ecological processes and functions within the wetland (Water and Rivers Commission, 2001). Where the CCW occurs in the vicinity of the application area, there is an existing firebreak (cleared area) that adjoins the CCW. It is acknowledged that the proposed clearing is within the buffer of the CCW, however, the proposed clearing occurs next to an already established road and firebreak and impacts to the CCW have already occurred through the initial road construction and creation of the firebreak (DWER, 2019). The new proposed road upgrade is unlikely to have any significant impacts on the ecological attributes and function of the CCW.

The site inspection of the application area noted the vegetation under application is not a representation of riparian vegetation and does not appear to be attributed to the nearby wetlands and Moore River (DWER, 2019).

The application is unlikely to impact on vegetation growing in association with a wetland, or watercourses in the local area.

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

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

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

As discussed in Section 2, the application area is located within two land subsystems with the most dominant being the Bassendean System which occupies approximately 80 per cent of the application area (Schoknecht et al., 2004).

The greatest risk of land degradation from the proposed clearing is wind erosion, with 95 per cent of the application area having a >70 per high to extreme wind erosion risk. Noting the sandy soils present within the application area, the proposed clearing may increase the risk of wind erosion. Notwithstanding, any land degradation impacts are not likely to be appreciable given the linear configuration of the application area over a 17.4 kilometre stretch of pre-existing road.

Given the above, the proposed clearing is not likely to 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, most notably:

- Moore River National Park, adjacent to the application area along a 3.5 kilometres length section of the road reserve;
- Nabaroo Nature Reserve, located 2.6 kilometres west of the application area;
- Namming Nature Reserve, located 3.5 kilometres north of the application area; and
- Unnamed Nature Reserve, located 6.3 kilometres east of the application area.

Noting the close proximity of the application area to the Moore River National Park, the disturbance caused by the proposed clearing may increase the risk of weed and dieback being spread into the National Park. Hygiene management conditions have been imposed on the clearing permit to mitigate the risk of weeds and dieback being spread into nearby conservation areas.

The application area may be considered an ecological linkage noting its proximity to nearby conservation areas. An ecological linkage is defined as a series of both contiguous and non-contiguous patches of vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and movement of organisms within, and across a landscape (Molloy et al., 2009). Noting that the application area is a part of a patch of contiguous and non-contiguous vegetation that connects conservation areas in the local area, the proposed clearing could degrade the quality of the linkage. However the proposed clearing will not sever this linkage and noting the linkage is surrounded by vegetation in good or better condition, it is unlikely the proposed clearing will significantly impact on the values of this linkage.

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

As discussed under Principle (f), the Moore River and a number of wetlands are mapped within close proximity to the application area, however, these do not intersect with the application area. The site inspection did not observe any wetlands or watercourses within the road reserve (DWER, 2019). Noting the application area does not contain wetlands and watercourse, the proposed clearing is unlikely to cause deterioration to the water quality within nearby wetlands and watercourses.

The application area has relatively flat topography, an average rainfall of 400 millimetres per annum and groundwater salinity mapped at 500-1,000 total dissolved solids (milligrams per litre). Noting the area appears previously disturbed from the initial road construction and that the majority of the vegetation within the road reserve is intact, the proposed clearing is not likely to deteriorate the quality of surface or groundwater.

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

As discussed under Principle (f), the Moore River and a number of wetlands are mapped within close proximity to the application area. As observed during the site inspection and considering the vegetation types recorded within the survey, the application area is unlikely to be subject to inundation during the wet season (winter). Given the extent of the proposed clearing, the linear configuration of the application area and that the application area is to some extent disturbed and adjoins an existing road, 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 application was advertised on the Department of Water and Environmental Regulation's website on 28 May 2019 for a 21 day submission period. One submission was received in relation to the application, raising the following concerns:

- the proposal will result in clearing of vegetation from the Banksia Woodlands of the Swan Coastal Plain TEC;
- the applicant has not justified the clearing;
- the applicant has not considered options to avoid and minimise clearing;
- there are many alternatives to the proposed clearing;
- the applicant has not offered any offset for the proposed clearing.

In relation to the above matters, the first dot point has been addressed within the above assessment report based on information obtained from a vegetation and flora survey. In relation to the other concerns, dot points two and four are considered to be outside of the scope of the assessment against the clearing principles, while dot point three will be addressed through the permit conditions. In relation to the last dot point, the assessment determined that significant residual environmental impacts were unlikely to result from the proposed clearing, therefore an offset was not deemed to be required.

No registered Aboriginal Sites of Significance occur within the application area.

5. 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. Department of Sustainability, Environment, Water, Populations and Communities, Canberra.
- Department of Biodiversity Conservation and Attractions (DBCA) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed August 2019
- Department of Environment and Conservation (DEC) (2012) Fauna profiles, Western Brush Wallaby, *Notamacropus irma*. Department of Environment and Conservation, Western Australia.
- Department of Water and Environmental Regulation (20109). Site Inspection Report for Clearing Permit Application CPS 8478/1 – Shire of Gingin. DWER Ref:A1837955
- Ecoedge (2019a). Orange Springs Road Vegetation and Flora Assessment Report. Prepared for the Shire of Gingin January, 2019. (DWER Ref:A1784161)
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- Hedde, E. M., Loneragan, O. W., and Havel, J. J. (1980) Vegetation Complexes of the Darling System, Western Australia. In Department of Conservation and Environment, Atlas of Natural Resources, Darling System, Western Australia.
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- Schoknecht, N., Tille, P. and Purdie, B. (2004) Soil-landscape mapping in South-Western Australia – Overview of Methodology and outputs' Resource Management Technical Report No. 280. Department of Agriculture.
- Submission (2019) Submission received from the Wildflower Society of Western Australia. Comments provided in relation to Clearing Permit Application CPS 8478/1 – Shire of Gingin (DWER Ref:A197790).
- Threatened Species Scientific Committee (2016). Approved Conservation Advice (incorporating listing advice) for the Banksia Woodlands of the Swan Coastal Plain Ecological Community. Canberra: Department of the Environment and Energy. Available from: <http://www.environment.gov.au/biodiversity/threatened/communities/pubs/131-conservation-advice.pdf>
- Water and Rivers Commission (2001) Position Statement: Wetlands, Water and Rivers Commission, Perth.
- Western Australian Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. <http://florabase.dpaw.wa.gov.au/> (Accessed October 2019).

GIS Databases:

- Aboriginal Sites of Significance
- Acid Sulfate Soil Risk Map, Swan Coastal Plain
- DBCA Managed Estate
- Directory of Important Wetlands
- Groundwater salinity, Statewide
- Hydrography, hierarchy
- Hydrography, linear
- Land Degradation datasets
- NLWRA, Current Extent of Native Vegetation
- SAC Bio Datasets
- Soils, Statewide
- Topographic contours
- Vegetation Complexes SCP
- Wetlands, Swan Coastal Plain