



GOVERNMENT OF
With Parliament
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 9227/1
File Number: DWERVT7603
Duration of Permit: From 24 October 2021 to 24 October 2028

PERMIT HOLDER

Shire of Kulin

LAND ON WHICH CLEARING IS TO BE DONE

Yealering-Kulin Road reserve (PINs 11584031 and 11577076), Kulin West
Unnamed Road Reserve (PIN 11577075), Kulin West

AUTHORISED ACTIVITY

The permit holder must not clear more than 0.14 hectares of *native vegetation* within the area cross-hatched yellow in Figure 1 of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The permit holder must not clear any native vegetation after 24 October 2023.

2. Avoid, minimise, and reduce impacts and extent of clearing

In determining the *native vegetation* authorised to be cleared under this permit, the permit holder must apply the following principles, set out in descending 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. Weed management

When undertaking any clearing authorised under this permit, the permit holder must take the following measures to minimise the risk of introduction and spread of *weeds*.

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no known *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.

4. Directional clearing

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

5. Revegetation and revegetation requirements

The permit holder shall take the following actions for the purpose of *revegetation*;

- (a) retain the vegetative material and topsoil removed by clearing authorised under this permit and stockpile the vegetative material and topsoil in an area that has already been cleared within the area cross-hatched red on Figure 1 of Schedule 1;
- (b) prior to October 2023, commence *revegetating* and *rehabilitating* the areas cross-hatched red on Figure 1 of Schedule 1, by way of:
 - (i) laying the vegetative material and topsoil retained under condition 5 (a);
 - (ii) ripping the ground on the contour to remove soil compaction;
 - (iii) at an *optimal time* deliberately *planting* tube stock and salvaged *native vegetation* that will result in similar species composition, structure and density of native vegetation to the *reference sites*; and
 - (iv) ensuring only *local provenance* seeds and propagating material are used to *revegetate* and *rehabilitate* the area.
- (c) water planted vegetation between December and April for the first two years post planting as required;
- (d) undertake *weed* control activities on an ‘as needs’ basis to maintain a minimum 90 per cent weed free state for the duration of this permit;
- (e) achieve the completion criteria specified in Schedule 2 after the five-year monitoring period for areas *revegetated* and *rehabilitated* under this permit;

- (f) undertake remedial actions for the area *revegetated* and *rehabilitated* where monitoring indicates that revegetation has not met the completion criteria, outlined in 5 (e), including:
- (i) revegetate the area by deliberately planting *native vegetation* that will result in the minimum target in 5 (e), and ensuring only *local provenance* seeds and propagating material are used;
 - (ii) undertake further *weed* control activities;
 - (iii) undertake further watering activities; and
 - (iv) annual monitoring of each *revegetated* and *rehabilitated* site, until the completion criteria, outline in 5 (e), are met.

6. Records that must be kept

The permit holder must maintain records relating to the listed relevant matters in accordance with the specifications detailed in Table 1.

Table 1: Records that must be kept

No.	Relevant matter	Specifications
1.	In relation to the authorised clearing activities generally	<ul style="list-style-type: none"> (a) the species composition, structure, and density of the cleared area; (b) 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; (c) the date that the area was cleared; (d) the direction that clearing was undertaken; (e) the size of the area cleared (in hectares); (f) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 2; and (g) actions taken to minimise the risk of the introduction and spread of <i>weeds</i> in accordance with condition 3.
2.	In relation to revegetation of areas pursuant to condition 5	<ul style="list-style-type: none"> (a) a description of the <i>revegetation</i> and <i>rehabilitation</i> activities undertaken; (b) the size of the area <i>revegetated</i> and <i>rehabilitated</i> (in hectares); (c) the date that the area was <i>revegetated</i> and

No.	Relevant matter	Specifications
		<i>rehabilitated</i> ; and (d) a description of the monitoring and remedial activities undertaken within the <i>revegetation</i> and <i>rehabilitation</i> area.

7. Reporting

- (a) The Permit Holder must provide to the *CEO* on or before 30 June of each year, a written report:
- (i) the records required under condition 6 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, 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 24 July 2028, the permit holder must provide to the *CEO* a written report of records required under condition 6 of this Permit where these records have not already been provided under condition 7(a) of this Permit.

DEFINITIONS

In this permit, the terms in Table have the meanings defined.

Table 2: Definitions

Term	Definition
CEO	Chief Executive Officer of the department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> .
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this clearing permit is subject under section 51H of the EP Act.
department	means the department established under section 35 of the <i>Public Sector Management Act 1994</i> (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
EP Act	<i>Environmental Protection Act 1986</i> (WA)
local provenance	means native vegetation seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared.
native vegetation	has the meaning given under section 3(1) and section 51A of the

Term	Definition
	EP Act.
optimal time	means the period from May to July for undertaking planting and seeding.
reference sites	three 10 m x 10 m quadrats (each sitting within a 20 m x 20 m quadrat for large shrub and tree species) assessed within Maia Environmental Consultancy Pty Ltd (2021) <i>Shire of Kulin: CPS 9227-1; Revegetation Plan for Sections of Road at the Junction of Yealering-Kulin Road with Orchard and Clayton Roads.</i>
rehabilitate	means actively managing an area containing native vegetation in order to improve the ecological function of that area.
rehabilitation /revegetate	means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.
weeds	means any plant – <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; 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.

END OF CONDITIONS



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION

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

30 September 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the map below (Figure 1).

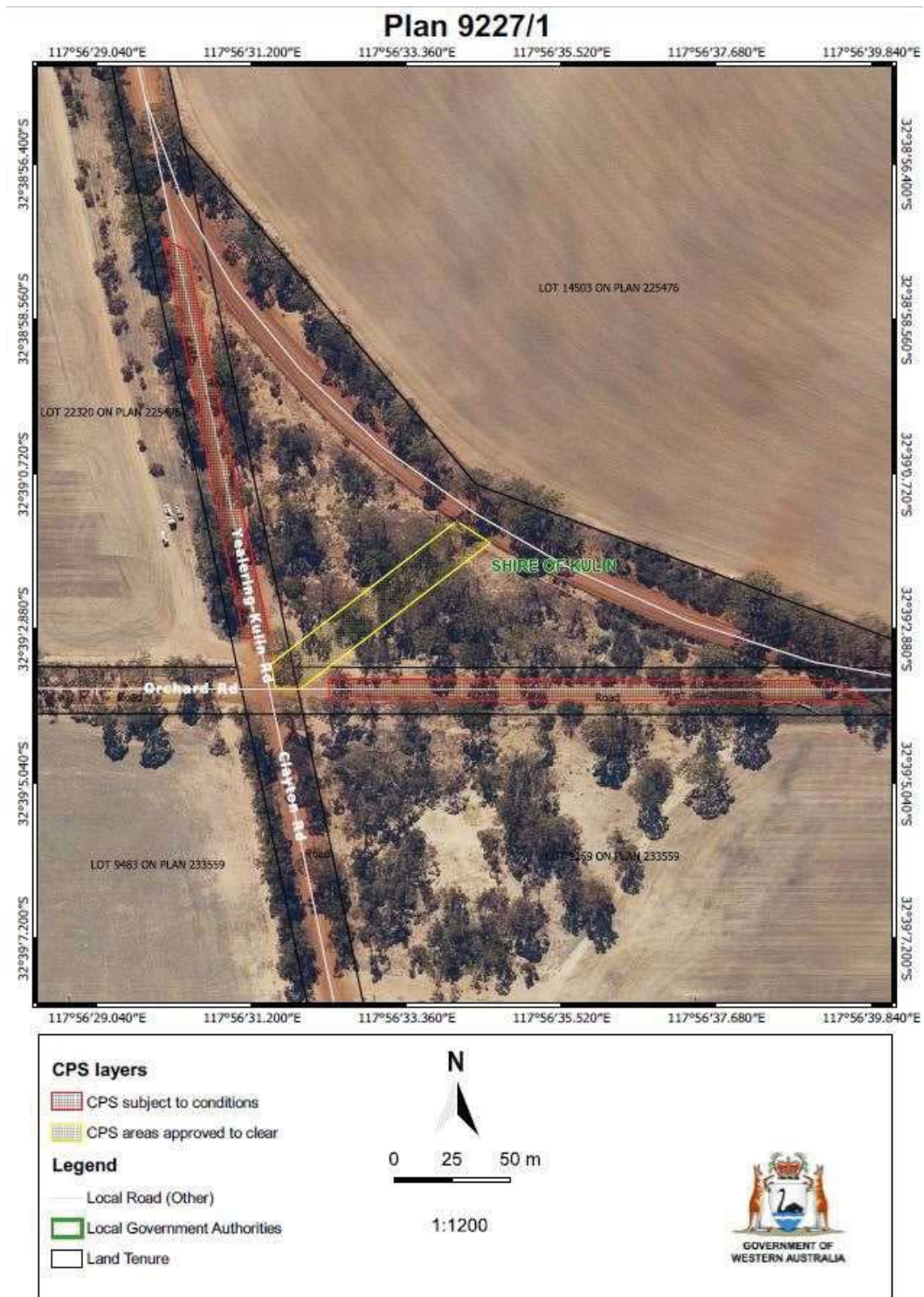


Figure 1: Map of the boundary of the area within which clearing may occur.

The area crosshatched yellow indicate the area authorised to be cleared. Cross-hatched red indicate *revegetation* areas in relation to condition 5 of this permit.

Schedule 2

Completion Criteria

No.	Baseline floristic data	Completion targets	Completion criteria	Monitoring
A(i)	Site species richness is 18 (excluding weed species).	Minimum of 60% of native species returned, based on reference sites	Eleven species based on a minimum of 60% of native species returned.	Annually in Spring until completion criteria has been met and maintained for two years.
A(ii)	10 m x 10 m reference site quadrats was 10, 10 and 16 and the average was 12 native species.	Minimum of 60% of native species returned, based on reference sites.	A minimum of 7 native species should be recorded in each 10 m x 10 m quadrat assessed.	Annually in Spring until completion criteria has been met and maintained for two years.
A(iii)	Three dominant tree species occur in the vegetation – <i>Eucalyptus salmonophloia</i> , <i>Eucalyptus phenax</i> subsp. <i>phenax</i> and <i>Eucalyptus loxophleba</i> .	Return dominant tree species present at reference sites.	(<i>Eucalyptus salmonophloia</i> , <i>Eucalyptus phenax</i> subsp. <i>phenax</i> and <i>Eucalyptus loxophleba</i> subsp. <i>lissophloia</i>) should be recorded in the revegetation area.	Annually in Spring until completion criteria has been met and maintained for two years.
A(iv)	Shrub species richness is 8.	Minimum of 60% of native species returned, based on reference sites.	The revegetation site needs a minimum of 5 shrub species.	Annually in Spring until completion criteria has been met and maintained for two years
B(i)	Common tree species are <i>Eucalyptus phenax</i> subsp. <i>phenax</i> (158 stems/ha); <i>Eucalyptus salmonophloia</i> (100 stems/ha); <i>Eucalyptus loxophleba</i> (25 stems/ha)	Minimum of 60% of stems/ha for dominant tree species returned, based on reference sites.	The revegetation site needs a minimum of 95 <i>Eucalyptus phenax</i> subsp. <i>phenax</i> stems/ha, 60 <i>Eucalyptus salmonophloia</i> stems/ha and 15 <i>Eucalyptus loxophleba</i> stems/ha.	Annually in Spring until completion criteria has been met and maintained for two years
B(ii)	Shrub species by dominance are <i>Lomandra effusa</i> 700 stems/ha, <i>Olearia muelleri</i> 233 stems/ha, <i>Acacia erinacea</i> 100 stems /h	Minimum of 60% of stems/ha for dominant shrub species returned, based on reference sites.	The revegetation sites need a minimum of 420 <i>Lomandra effusa</i> stems/ha, 140 <i>Olearia muelleri</i> stems/ha and 60 <i>Acacia erinacea</i> stems/ha.	Annually in Spring until completion criteria has been met and maintained for two years
C	Average percentage cover at the reference sites is 1%	Minimum of the overall average of	The revegetation sites need a	Annually in Spring until completion

No.	Baseline floristic data	Completion targets	Completion criteria	Monitoring
	for herbs and 5% for grasses. The average cover for all herbs and grasses is 3%. No sedges were recorded.	3% for total herb and grass percentage cover returned based on reference sites.	minimum of 3% cover for herbs and grasses, as recorded at the reference sites.	criteria has been met and maintained for two years
D(i)	Maximum weed cover recorded at the reference quadrats is 2%. The average for the three quadrats is 1%.	Weed cover should be no greater than that at the reference sites.	The revegetation sites should have no greater than the 2% maximum weed cover recorded at one of the reference sites.	Annually in Spring until completion criteria has been met and maintained for two years
D(ii)	No declared weeds are present.	Managed as required by the Biosecurity and Agriculture Management Regulations 2013.	Absent.	Annually in Spring until completion criteria has been met and maintained for two years
E	The bare ground average for the reference sites is 18%.	No more than 5% greater than in the reference sites.	Revegetation site average bare ground is to be no more than 23%, based on the average for the reference sites.	Annually in Spring until completion criteria has been met and maintained for two years



Clearing Permit Decision Report

1 Application details and outcome

1.1. Permit application details

Permit number:	CPS 9227/1
Permit type:	Area permit
Applicant name:	Shire of Kulin
Application received:	4 March 2021
Application area:	0.14 hectares of native vegetation
Purpose of clearing:	Road upgrades
Method of clearing:	Mechanical
Property:	Yealering-Kulin Road Reserve (PINs 11584031 and 11577076) Unnamed Road Reserve (PIN 11577075)
Location (LGA area/s):	Shire of Kulin
Localities (suburb/s):	Kulin West

1.2. Description of clearing activities

The vegetation proposed to be cleared is contained within a single contiguous area approximately 15 metres by 100 metres long (see Figure 1, Section 1.5). The clearing is to facilitate the upgrade of the intersection of the relevant roads. The proposed clearing is for building a bypass road to improve road safety (Shire of Kulin, 2021a).

1.3. Decision on application

Decision:	Granted
Decision date:	30 September 2021
Decision area:	0.14 hectares of native vegetation, as depicted in Section 1.5, below.

1.4. Reasons for decision

This clearing permit application was submitted, accepted and assessed and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Water and Environmental Regulation (DWER) advertised the application for public comment for 21 days and one submission was received. The submission raised concern of the need for the clearing in an extensively cleared landscape. Consideration of matters raised in the submission is summarised in Appendix B.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix C), relevant datasets, the Clearing Principles set out in Schedule 5 of the EP Act (see Appendix D), relevant planning instruments, and any other pertinent matters they deemed relevant to the assessment (see Sections 3). The Delegated Officer also took into consideration the purpose of the clearing is to improve road safety.

The assessment identified that:

- the clearing is not likely to have a significant impact on populations of conservation significant fauna or flora within the local area (20 kilometre radius);

- the clearing is not likely to have a significant impact on the “Eucalypt Woodlands of the Western Australian Wheatbelt” (Wheatbelt Woodland) threatened ecological community (TEC) (see Section 3.2.2); and
- the proposed clearing will lead to an overall reduction of native vegetation in an extensively cleared landscape.

After consideration of the available information, as well as the applicant’s avoidance, minimisation and mitigation measures (Section 3.1), the Delegated Officer considered that the proposed clearing can be managed to unlikely lead to an unacceptable risk to environmental values. The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise and reduce the impacts and extent of clearing;
- implementation suitable weed management practices that are appropriate to mitigate the impact of spreading weeds into adjacent vegetation (see Section 3.2.1);
- undertake slow, progressive, one directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity; and
- undertake the deliberate planting of at least 0.3 hectares of native vegetation in the adjacent redundant road reserve with similar species composition to the adjacent woodland.

The Delegated Officer considered that the revegetation of 0.3 hectares of the redundant road reserve within an extensively cleared landscape was adequate and did not result in a net loss of native vegetation. It was considered that the mitigation measure was sufficient to not warrant an offset for the proposed clearing of a significant remnant within an extensively cleared landscape.

1.5. Site map

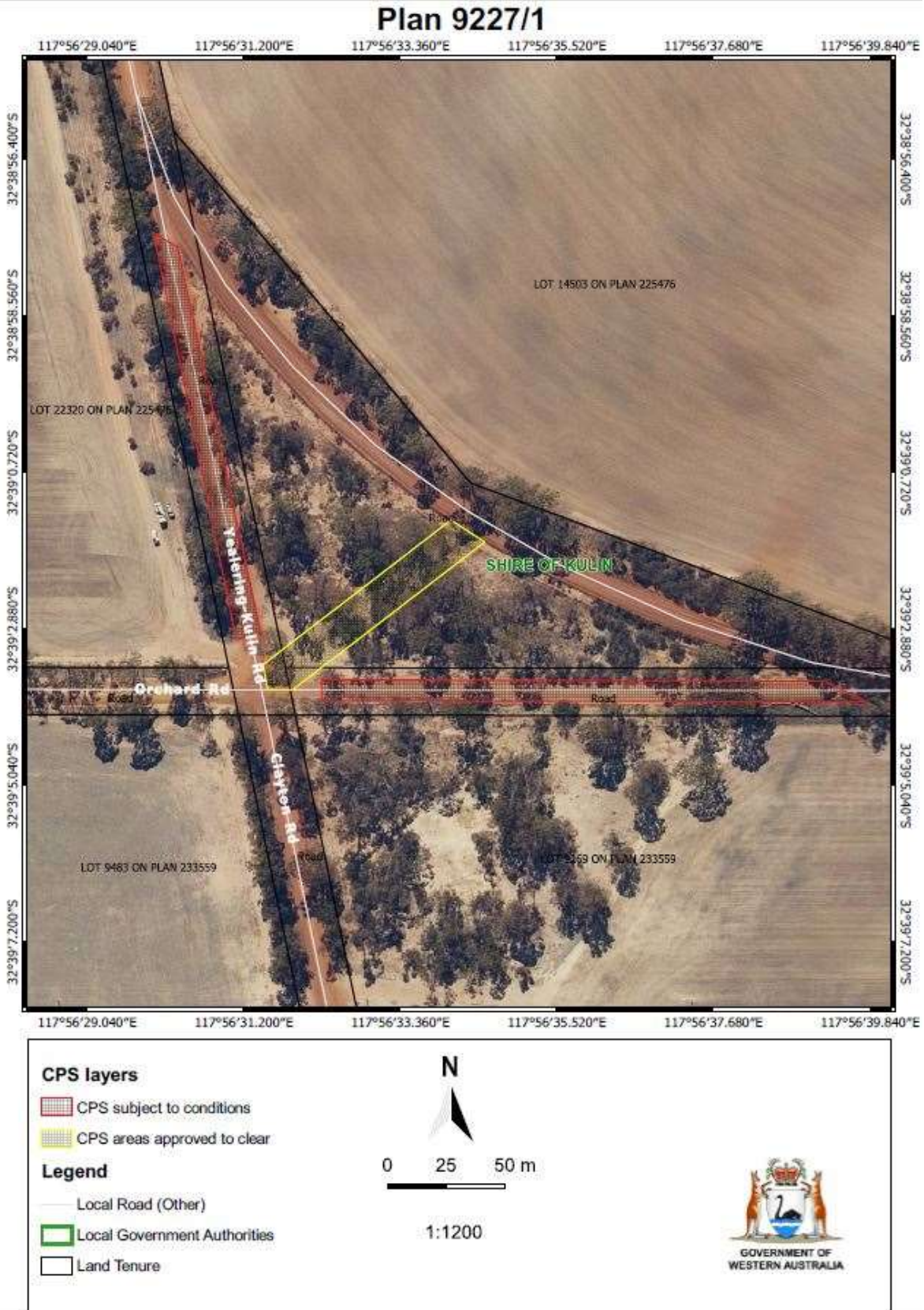


Figure 1 Map of the application area, the area crosshatched yellow indicate the area authorised to be cleared under the granted clearing permit. Cross-hatched red indicate areas within which specific conditions apply.

2 Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)

Relevant policies considered during the assessment include:

- *Environmental Offsets Policy* (2011)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)
- *Procedure: Native vegetation clearing permits* (DWER, October 2019)
- *Environmental Offsets Guidelines* (August 2014)

3 Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant advised that the clearing is necessary as there are safety issues with the existing intersection; it is a poor-quality junction with loose surfaces, narrow culverts, loose narrow horizontal curve, poor signage and dangerous slip lanes onto the adjoining roads, and as such an upgrade to the intersection is required (Shire of Kulin, 2021a).

The applicant advised that the proposed alignment was chosen to minimise clearing of significant trees and understorey (Shire of Kulin, 2021a). It is noted that the application area excludes all potential black cockatoo habitat trees (i.e., trees having diameter at breast height of greater than 30 centimetres) identified in a fauna survey (Ecoedge, 2020a). The alignment of the application area also includes 0.03 hectares of degraded vegetation, (refer to Figure 5, Appendix F), further reducing the impact of clearing.

In addition, the applicant has proposed the revegetation of two sections of road (refer to Figure 4, Appendix A), that will become redundant once the bypass road is constructed. Revegetation will include:

- The rehabilitation and revegetation of 0.3 hectares of native vegetation with similar species composition to the adjacent woodland;
- Mitigate fragmentation by connecting vegetation within Yealering-Kulin Road reserve to an adjacent patch of similar woodland to the south; and
- connect roadside vegetation to the west (Shire of Kulin, 2021b).

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid, minimise and mitigate potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

In assessing the application in accordance with section 51O of the EP Act, the Delegated Officer has examined the application and site characteristics (Appendix C) and considered whether the clearing poses a risk to environmental values. The assessment against the Clearing Principles is contained in Appendix D.

This assessment identified that the clearing may pose a risk to the environmental value of significant remnant vegetation, fauna and biodiversity and that this required further consideration. The detailed consideration and assessment of the clearing impacts against the specific environmental values is provided below.

Where the assessment found that the clearing presents a risk to environmental values, conditions aimed at controlling and/or ameliorating the impacts have been imposed under sections 51H and 51I of the EP Act. These are also identified below.

3.2.1. Biological values (fauna) - Clearing Principles (b)

Assessment:

Calyptorhynchus latirostris (Carnaby's cockatoo)

Of the ten conservation significant fauna species recorded within the local area, Carnaby's cockatoo has the nearest record to the application area and is the second most frequently recorded species (see fauna analysis table in section C 4). Since the late 1940's, there has been a contraction of 50 percent in Carnaby's cockatoo populations and has retracted from more than a third of its breeding range including the central Wheatbelt (Department of Parks and Wildlife, 2013). Subsequently, application area falls outside the main breeding range of Carnaby's cockatoo, which currently extends to the western edge of the wheatbelt region along the margins of the jarrah forest (Australian Government, 2017). A fauna survey of the road reserve comprising the application area identified 11 trees of suitable size (with a diameter above 30 centimes diameter at breast height (DBH)) to potentially provide habitat for Carnaby's cockatoo (Ecoedge, 2020a). Of the 11 trees, only two hollows were observed on a single tree, both hollows were determined to be too small for Carnaby's cockatoo. Although the aforementioned tree does occur on the boundary of (see figure 2) the application area, the applicant has committed to avoiding this tree.

As all large trees will be avoided, the application area represents a limited amount of foraging habitat for Carnaby's cockatoo. Smaller trees and shrubs such as *Allocasuarina* spp. and *Grevillea* spp. may be impacted, however due to the small size of the application area (0.14 hectares) and shrubs, the proposed clearing is unlikely to significantly impact Carnaby's cockatoo foraging habitat. In addition, the applicant has committed to mitigate the loss of fauna habitat through the revegetation of 0.3 hectares of a redundant road reserve (see section 3.2.2 below).



Figure 2 The application area (blue crosshatch) in relation to the survey area, and potential habitat trees with a diameter above 30 centimes DBH. The tree marked with the yellow circle indicates the location of the tree found to contain two small hollows. Shape files provided by Ecoedge (2020a)

Leipoa ocellata (Malleefowl)

Historically, malleefowl were found in the semi-arid mallee shrublands and woodlands across southern Australia in New South Wales, Victoria, South Australia, Northern Territory and Western Australia. Though the species is still found across its range, there have been local extinctions in the NT, northern SA and far south-west WA, and its remaining populations are highly fragmented due to extensive land clearing. Malleefowl is recorded within a 10-kilometre radius of the proposed clearing, and this species may range through the area, as it is well connected via remanent roadside vegetation forming links to larger patches of remanent vegetation (refer to Figure 3). The fauna survey did not record any malleefowl mounds, or secondary evidence such as tracks, scats or feathers (Ecoedge, 2020a). The fauna survey also determined that the application area and adjacent vegetation represent suboptimal foraging for this species and due to the small patch size is unlikely to provide suitable nesting habitat (Ecoedge, 2020a). Therefore, it is unlikely the proposed clearing will significantly impact the malleefowl population in the local area.

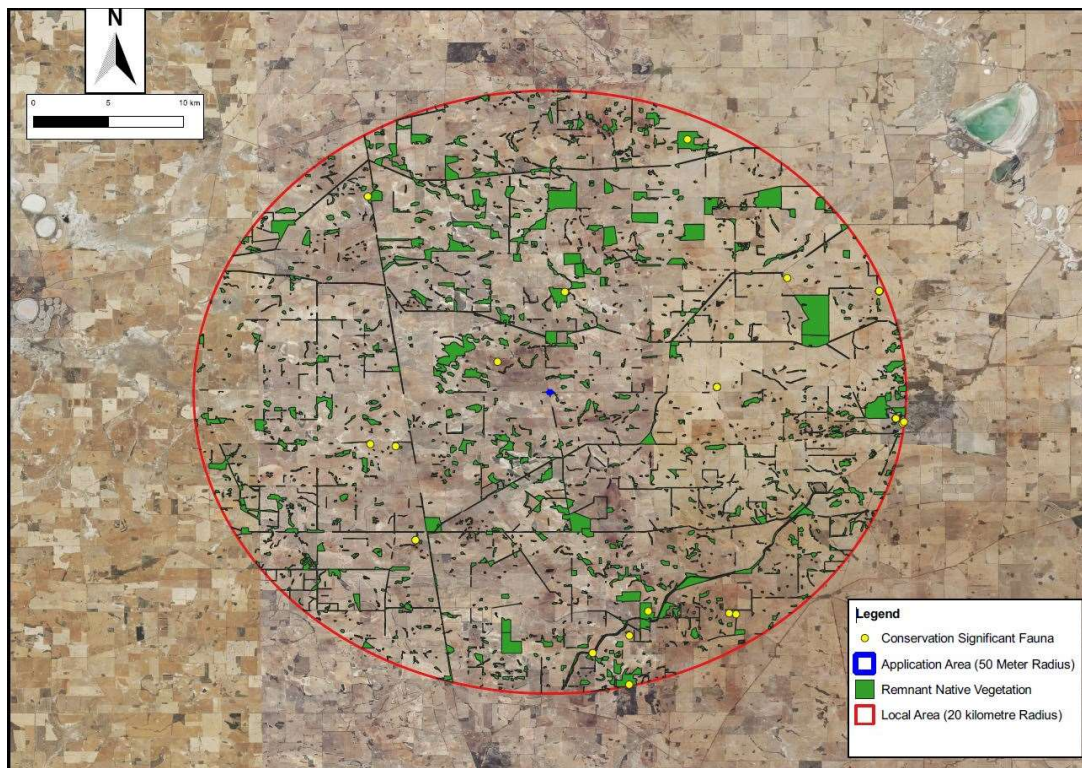


Figure 3 The distribution of conservation significant fauna records and remnants of native vegetation within the local area. Yellow dots may represent records for multiple species.

Other conservation significant fauna species

The remnant vegetation comprising the application area and adjoining vegetation with the Road Reserves of Orchard, Clayton and Yealering-Kulin roads, may be utilised by fauna to navigate between remnant patches of native vegetation. With the absence of large trees, habitats within the application area are either unsuitable or too small to support any of the species recorded in the local area, including, *Dasyurus geoffroii* (Chuditch), *Myrmecobius fasciatus* (Numbat), *Notamacropus eugenii derbianus* (Tammar Wallaby), *Notamacropus irma* (Western Brush Wallaby) and *Phascogale calura* (Red-tailed Phascogale). The fauna survey carried out by Ecoedge (2020a), did not record any evidence of conservation significant fauna species within the application area. Available datasets, indicated that conservation significant fauna was most frequently recorded in larger native vegetation remnants, as mapped in Figure 3. The proposed clearing will sever any ecological linkages within the local area. No conservation significant invertebrate fauna was recorded in the local area.

According to available datasets *Cacatua pastinator pastinator* (Muir's corella) was recorded within periphery of the local area (refer to Appendix C. 4). Muir's corella is also dependent on tree hollows for nesting and feeds on a wide variety of corms, tubers and seeds from both introduced and native plant species, and insect larvae. Its long bill is efficient for digging corms and tubers from the ground (Department of Parks and Wildlife, 2015). With the protection efforts, Muir's corella has recovered from a population as low as 100 birds in the 1940s to over 20,000 birds in 2014 (Department of Parks and Wildlife 2015). Given the broader feeding habits of this species and that no large trees will be impacted within the application area, the proposed clearing is unlikely to significantly impact Muir's corella

Conclusion

Based on the above assessment, given the small size of the proposed clearing area and the avoidance of large habitat trees, and the revegetation of redundant road sections, the proposed clearing will not result in a significant loss of habitat for the above -mentioned fauna species. The potential direct impact to fauna present at the time of clearing may be managed by the implementation of a fauna management condition. Weed management will also assist in ensuring that the adjacent fauna habitat is not impacted by the proposed clearing.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- Clearing shall be undertaken in a slow, progressive manner in one direction to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity.
- Implement weed management measures to mitigate impacts to adjacent vegetation.

3.2.2. Biological values (biodiversity and extensively cleared) - Clearing Principles (a) and (e)

Assessment

The vegetation within the application is described as a Salmon Gum woodland in Excellent (Keighery, 1994) condition (Ecoedge, 2020b), comprising key diagnostic species that indicate the Federally listed Wheatbelt Woodland TEC and the State Priority 3 listed priority ecological community. The minimum patch width for roadside vegetation to be considered the TEC is five meters (Department of the Environment and Energy, 2015). Although the vegetation within the application area possesses key floristic characteristics of the Wheatbelt Woodlands, the size of the proposed clearing is not considered to trigger the requirement for an offset for impacts to the TEC.

No threatened or priority flora were identified within the application area (Ecoedge, 2020b).

The Avon Wheatbelt represents a highly cleared landscape and vegetation within road reserves present the only remaining example of the original vegetation types within the landscape. Conservation advice from Department of Biodiversity, Conservation and Attractions (DBCA, 2019) recognises the importance of native vegetation remnants along road reserves and their value as wildlife corridors, particularly if they link to roadside vegetation remnants and habitat for threatened species (DBCA, 2019).

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 (i.e. pre-European settlement) (Commonwealth of Australia, 2001). This is the threshold level below which species loss appears to accelerate exponentially at an ecosystem level.

As indicated in Appendix C-2, the Avon Wheatbelt IBRA region retains approximately 18.51 per cent of its pre-European native vegetation extent (Government of Western Australia 2018). The mapped vegetation type 1023 currently retains approximately 10.48 per cent of its pre-European native vegetation extent (Government of Western Australia 2019). A review of available datasets determined the local area retains approximately 11.57 per cent of its pre-European native vegetation extent. Considered the above, the application area is located within an extensively cleared landscape. The presence of the Wheatbelt Woodlands TEC and potential foraging habitat for fauna suggests the application area is a part of a significant remnant.

To mitigate the impact of clearing a significant remnant of native vegetation in a highly cleared landscape, the applicant has proposed to revegetate 0.3 hectares comprised of two sections of redundant road on Orchard Road and Clayton Road that will be closed off and no longer used once the new road has been constructed (Shire of Kulin, 2021b; Figure 4). Revegetation in this area will connect the remnant patch of Wheatbelt Woodland within the Yealering-Kulin Road reserve to an adjacent patch of similar woodland to the south and connect roadside vegetation to the west.

Conclusion

Based on the above assessment, the proposed clearing will result in the clearing of 0.14 hectares of native vegetation that is considered to be a significant remnant of native vegetation within an extensively cleared landscape.

It is considered that the impacts of the proposed clearing can be managed by revegetating two sections of redundant road reserve, resulting in improved connectivity of the remaining vegetation in Yealering-Kulin Road reserve and result in a net increase in vegetation cover.

Conditions

To address the above impacts, undertaking the deliberate planting of at least 0.3 hectares of native vegetation in the adjacent redundant road reserve with similar species composition to the adjacent woodland will be required as a condition on the clearing permit.

3.3. Relevant planning instruments and other matters

The local area falls with the Ballardong People Indigenous Land Use Agreement (LGATE-067). It is the permit holder's responsibility to comply with the *Aboriginal Heritage Act 1972 (WA)* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

End

Appendix A. Additional information provided by applicant

The applicant has stated that all trees with the Yealering-Kulin Road reserve area can be avoided (Shire of Kulin 2021a). In addition the applicant proposed the following mitigation measures (Shire of Kulin 2021b):

- Revegetate the sections of Orchard Road and Clayton Road that will be closed off and no longer used once the new road has been constructed; the two areas total approximately 0.3 hectares (refer to Figure 4).
- To support the above proposal, the applicant submitted a revegetation plan: *Revegetation Plan for Sections of Road at the Junction of Yealering-Kulin Road with Orchard and Clayton Roads* (Maia, 2021)



Figure 4 Areas outlined in green represent two sections of road proposed to be revegetated following construction of a new section of road (Shire of Kulin, 2021b).

Appendix B. Details of public submissions (Submission, 2020)

Summary of comments	Consideration of comment
The area proposed to be cleared is in a highly cleared area with the highly cleared Wheatbelt region. A significant reason to conduct the clearing should therefore be required.	DWER requested further information from the applicant to justify the need for the proposed clearing. In response the applicant advised that; clearing is necessary as there are safety issues with the existing intersection: it is a poor-quality junction with loose surfaces, narrow culverts, loose narrow horizontal curve, poor signage and dangerous slip lanes onto the adjoining road. For safety reasons, the Shire of Kulin (the Shire) needs to upgrade the junction of Yealering-Kulin Road with Orchard and Clayton Roads. The Shire has received blackspot funding for this work (Shire of Kulin, 2021a).
Remaining patches of vegetation in the vicinity are quite fragmented and to further fragment a patch such as this could have significant impacts.	The proposed clearing area of 0.1 ha (noting that 0.04 ha within the application area is already cleared) is 15 m wide and will fragment an approximately 1 ha area of vegetation into two areas. It is considered unlikely that that this degree of fragmentation would significantly impact the movement of birds, insects and reptiles. Furthermore, it is considered unlikely that ground dwelling mammals are likely to inhabit this vegetation given the small size of the existing patch (refer to Section 3.2.1). In addition, the Shire has proposed the rehabilitation of 0.3 hectares of redundant road reserve. This will result in a net increase in vegetation within the local area and increase connectivity of remanent vegetation (refer to Appendix A).
Proposed clearing area is within a “node” of vegetation and is therefore more significant to fauna than roadside vegetation.	The effects of the clearing on conservation significant species has been considered in Section 3.3.1-2. The clearing of 0.14 ha of vegetation is considered unlikely to significantly impact fauna species utilising this vegetation, given that 0.9 ha of surrounding vegetation will remain.
Some fauna (e.g. birds, insects) may be able to use this vegetation as part of an ecological corridor.	It is acknowledged that birds and insects may use vegetation within the proposed clearing area, noting the mobility of these fauna groups. However, the proposed clearing is unlikely to inhibit the function of potential ecological corridors for birds and insects.
The vegetation proposed to be cleared is part of an ecological community (Eucalypt Woodlands of the Western Australian Wheatbelt) and any clearing can put the whole community at risk, not just the threatened fauna or flora within it.	It is considered that the clearing of 0.14 ha of vegetation within the patch of the Wheatbelt Woodlands TEC is unlikely to significantly impact the ecology of this vegetation type. No Salmon gum trees with a DBH of greater than 30 cm will be cleared, no threatened or priority flora or fauna were identified within the patch (Ecoedge, 2020a; 2020b) and a revegetation plan (Maia, 2021) is proposed to mitigate the impacts to this ecological community.
Short range endemic/insect fauna are not mentioned in the fauna survey.	No known records of conservation significant terrestrial invertebrates are present within a 50 km radius of the application area. It is therefore considered unlikely that conservation significant invertebrates is present within the application area, or likely to use vegetation within the application area as habitat. The proposed clearing of 0.14 ha of vegetation is considered unlikely to have a significant impact on other invertebrate species.

Appendix C. Site characteristics

The information provided below describes the key characteristics of the area proposed to be cleared and is based on the best information available to DWER at the time of this assessment. This information was used to inform the assessment of the clearing against the Clearing Principles, contained in Appendix D.

C.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared is part of an approximately 1.1 hectare patch of native vegetation surrounded by agricultural land in the intensive land use zone of Western Australia.</p> <p>Spatial data indicates the local area (10-kilometre radius from the centre of the area proposed to be cleared) retains approximately 11.57 per cent of the original native vegetation cover.</p>
Ecological linkage	<p>The proposed clearing area does not form part of a mapped ecological linkage.</p> <p>However, the application area occurs within a patch of remanent woodland adjoined by strips of roadside vegetation. The adjoining vegetation strips form part of an informal ecological corridor connecting to other local patches of vegetation.</p>
Conservation areas	<p>The nearest conservation area to the proposed clearing area is an unnamed Nature Reserve approximately 3.2 km north.</p>
Vegetation description	<p>A vegetation survey (Ecoedge, 2020b) indicates that 0.1 hectares of the proposed clearing area contains salmon gum woodland, described as woodland of <i>Eucalyptus salmonophloia</i> over low open woodland of <i>E. phenax</i> subsp. <i>phenax</i> and <i>Allocasuarina campestris</i> over very open shrubland of <i>A. humilis</i>, <i>Eremophila decipiens</i>, <i>Grevillea paniculata</i>, <i>G. pectinata</i> and <i>Westringia rossii</i> over low very open shrubland of <i>Dampiera lavandulacea</i>, <i>Hibbertia acerosa</i>, <i>Olearia muelleri</i>, <i>O. ramosissima</i> and very open grassland of <i>Austrostipa elegantissima</i>, <i>A. flavescens</i> and <i>Rytidosperma setaceum</i> and scattered herbs of <i>Dianella revoluta</i>, <i>Enchylaena tomentosa</i> and <i>Lomandra effusa</i> and sedges of <i>Lepidosperma resinosum</i> on yellow-brown loam. The remaining 0.04 hectares is cleared.</p> <p>Representative photos and maps are available in Appendix F.</p> <p>This is consistent with the mapped vegetation type Corrigin 1023, which is described as medium woodland; York gum, wandoo and salmon gum (<i>Eucalyptus salmonophloia</i>) (Shepherd et al., 2001).</p> <p>The mapped vegetation type retains approximately 10.84 per cent of the original extent (Government of Western Australia, 2019).</p>
Vegetation condition	<p>A vegetation survey (Ecoedge, 2020b) indicates the vegetation within the proposed clearing area is in Excellent (Keighery, 1994) condition, described as vegetation structure intact, with disturbance affecting individual species.</p> <p>The full Keighery (1994) condition rating scale is provided in 0.</p> <p>Representative photos and mapping are available in Appendix F.</p>
Climate	<ul style="list-style-type: none"> • Mean annual rainfall: 355.6 millimetres • Temperature (mean annual minimum): 10.0 degrees centigrade • Temperature (mean annual maximum): 23.8 degrees centigrade
Topography	<p>Colluvial and residual mantle, gently undulating slopes.</p>
Soil description	<p>The soil is mapped as Corrigin 3 undifferentiated phase (259Co_3u), described as Colluvial and residual mantle, gently undulating slopes, with acid to neutral duplexes under mallee on upper to mid slopes and Mallee, Gimlet and Salmon Gum vegetation on neutral to alkaline duplexes and clays in lower positions.</p>

Characteristic	Details
Land degradation risk	<ul style="list-style-type: none"> Flood risk: <3% of map unit has a moderate to high flood risk Waterlogging risk: 10-30% of map unit has a moderate to very high waterlogging risk Salinity risk: 10-30% of map unit has a moderate to high salinity risk or is presently saline Phosphorus export risk: 3-10% of map unit has a high to extreme phosphorus export risk Subsurface acidification risk: 50-70% of map unit has a high subsurface acidification risk or is presently acid Water erosion risk: 3-10% of map unit has a high to extreme water erosion risk Wind erosion risk: 10-30% of map unit has a high to extreme wind erosion risk
Waterbodies	The closest mapped watercourse to the application area is a minor non-perennial watercourse, part of the Lockhart River catchment, approximately 350 m southeast. The closest mapped wetland to the application area is a reservoir approximately 5.4 km south.
Hydrogeography	Hydrogeology: Rocks of Low Permeability, Fractured and Weathered Rocks - Local Aquifers (gneiss, migmatite lithology) Groundwater salinity: 7000-14,000 mg/L TDS
Flora	There are records of 9 priority and 1 threatened flora species within the local area. The the closest of which to the application area is <i>Banksia meganotia</i> , 3.8 km northeast. A vegetation survey (Ecoedge, 2020b) of the application area found no threatened or priority flora.
Ecological communities	One priority ecological community, Eucalypt woodlands of the Western Australian Wheatbelt is recorded within the local area, the closest record of which is 0.66 kilometres northeast. This is synonymous with the federally listed Wheatbelt Woodlands TEC
Fauna	According to available databases, a total of 10 conservation significant fauna species have been recorded in the local area. The nearest record is for the endangered <i>Calyptorhynchus latirostris</i> (<i>Carnaby's</i> cockatoo), occurring 3.6 kilometres north west of the application area. Black cockatoo breeding and roosting habitat was not recorded in the local area. Due to the site context (road reserve) and the limited extent of the clearing (0.14 hectares), the application area has been determined to be unsuitable to support species with larger space requirements, such as <i>Notamacropus irma</i> (Western brush wallaby) and <i>Myrmecobius fasciatus</i> (Numbat). Habitat suitability analysis is provided in Appendix C 4.

C.2. Vegetation extent

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA managed land
IBRA bioregion*					
Avon Wheatbelt	9,517,109.95	1,761,187.42	18.51	174,980.68	1.84
Vegetation complex					
Beard vegetation association Corrigin 1023	1,522,680.40	165,123.60	10.84	17,277.64	1.13
Local area calculation					
10km radius	126,082.7	14,595.14	11.57	-	-

Government of Western Australia (2019)

C.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix H.1), and biological survey information, impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
<i>Banksia meganotia</i>	3	Y	Y	Y	3.8	3	Y
<i>Eucalyptus erythronema</i> subsp. <i>inornata</i>	3	Y	Y	N	5.4	1	Y
<i>Lechenaultia pulvinaris</i>	4	Y	Y	N	7.8	3	Y
<i>Microcorys cephalantha</i>	3	Y	Y	N	9.3	4	Y
<i>Rhizanthella gardneri</i>	T	N	N	N	9.6	1	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

C.4. Fauna analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix H.1), and biological survey information, impacts to the following conservation significant fauna required further consideration.

Species name	Conservation status	Suitable habitat features?	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
<i>Cacatua pastinator pastinator</i> (Muir's corella)	CD	Y	19.6	3	Y
<i>Calyptorhynchus latirostris</i> (Carnaby's cockatoo)	EN	Y	3.6	7	Y
<i>Dasyurus geoffroii</i> (Chuditch)	VU	Y	19.6	2	Y
<i>Leipoa ocellata</i> (Malleefowl)	VU	Y	9.4	8	Y
<i>Myrmecobius fasciatus</i> (Numbat)	VU	Y	19.7	2	Y
<i>Notamacropus eugenii derbianus</i> (Tammar Wallaby)	P4	Y	6.7	1	Y
<i>Notamacropus irma</i> (Western Brush Wallaby)	P4	Y	17.7	2	Y
<i>Phascogale calura</i> (Red-tailed Phascogale)	VU	Y	10.7	9	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, CD conservation dependent

C.5. Ecological community analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix H.1), and biological survey information, impacts to the following conservation significant ecological communities required further consideration.

Community name	Conservation status	Suitable habitat features?	Suitable vegetation type?	Suitable soil type?	Distance of closest record to application area (km)	Number of known records in local area	Are surveys adequate to identify?
Eucalypt woodlands of the Western Australian Wheatbelt	P3	Y	Y	Y	0.66	270	Y

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

Appendix D. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u> A portion of the application area is mapped as the ‘Eucalypt woodlands of the Western Australian Wheatbelt’ (Priority 3) priority ecological community (PEC).</p>	May be at variance	Yes <i>Refer to 3.2.2 above</i>
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared may contain habitat for conservation significant fauna species.</p>	May be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u> A flora survey carried out in October 2020 (Ecoedge, 2020b) did not identify any Threatened flora. Therefore, the area proposed to be cleared is unlikely to contain threatened flora.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u> The area proposed to be cleared does not contain species indicative of a threatened ecological community listed by the Western Australian Minister for Environment.</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u> The extent of the mapped vegetation type and native vegetation in the local area are inconsistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is considered to be a significant remnant within an extensively cleared landscape.</p>	At variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u> No water courses or wetlands are recorded within the application area, and the vegetation proposed to be cleared is not indicative of riparian vegetation.</p>	Not likely to be at variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u> The mapped soils are highly susceptible to subsurface acidification, however noting the extent of the application area and nature of the proposed clearing, the proposed clearing is not likely to have an appreciable impact on land degradation.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (i)</u>: <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.”</i></p> <p><u>Assessment</u>: Given the distance to the closest surface waterbody and the extent of the proposed clearing, the proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No
<p><u>Principle (j)</u>: <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment</u>: The mapped soils and topographic contours in the surrounding area do not indicate the proposed clearing is likely to contribute to increased incidence or intensity of flooding.</p>	Not likely to be at variance	No

Appendix E. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Keighery (1994).

Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Appendix F. Biological survey information excerpts and photographs of the vegetation

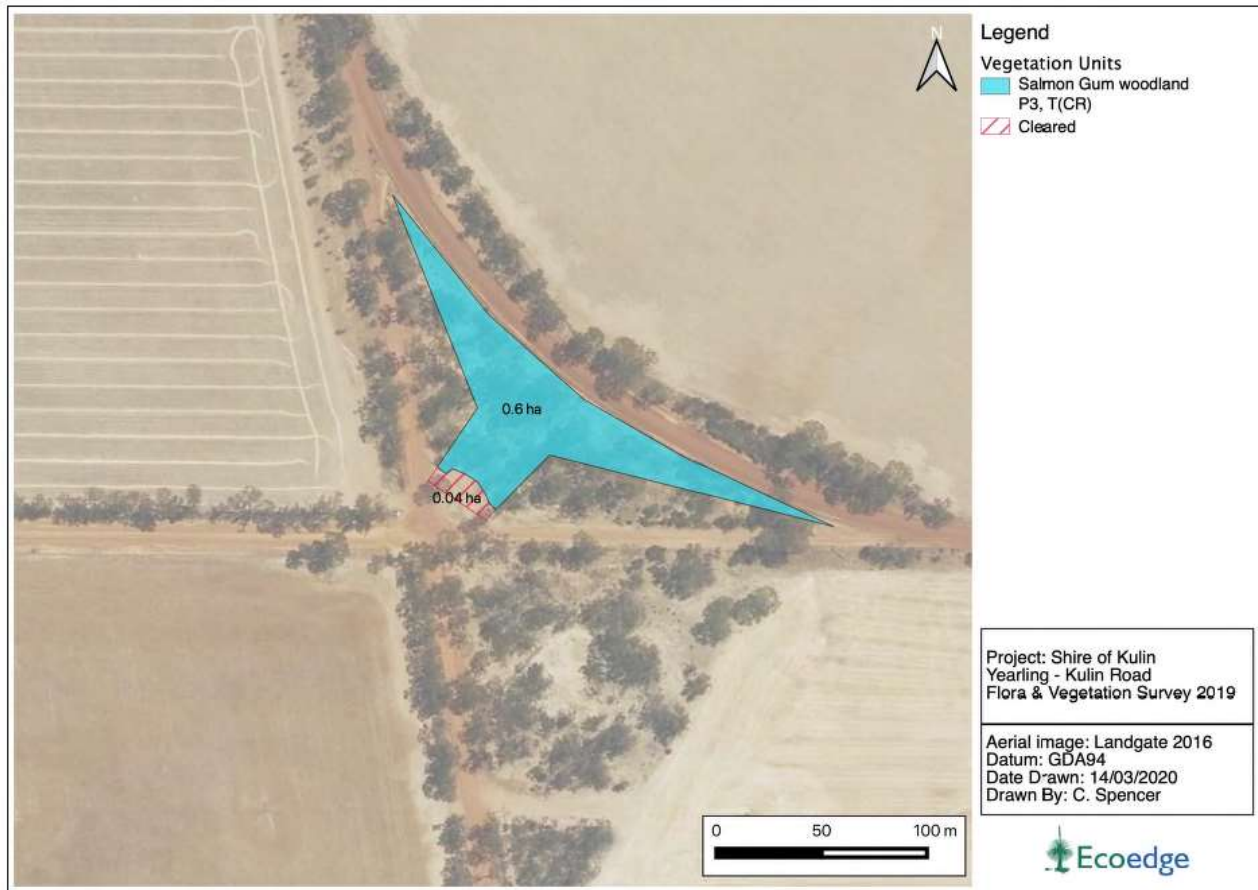


Figure 5 – Vegetation units mapped within application area (Ecoedge, 2020b).



Figure 6 – Vegetation condition mapped within application area (Ecoedge, 2020b).



Figure 7– Salmon gum woodland vegetation within the application area (Ecoedge, 2020b).

Appendix H. Sources of information

H.1. GIS databases

Publicly available GIS Databases used (sourced from www.data.wa.gov.au):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Aboriginal Heritage Places (DPLH-001)
- Cadastre (LGATE-218)
- Cadastre Address (LGATE-002)
- Contours (DPIRD-073)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography – Inland Waters – Waterlines
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Imagery
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Offsets Register – Offsets (DWER-078)
- Pre-European Vegetation Statistics
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available
- Soil Landscape Mapping – Systems
- Wheatbelt Wetlands Stage 1 (DBCA-021)

Restricted GIS Databases used:

- ICMS (Incident Complaints Management System) – Points and Polygons
- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

H.2. References

Australian Government (2017), Department of Environment and Energy, *Revised draft referral guideline for three threatened black cockatoo species: Carnaby's Cockatoo (Endangered) Calyptorhynchus latirostris Baudin's Cockatoo (Vulnerable) Calyptorhynchus baudinii Forest Red-tailed Black Cockatoo (Vulnerable) Calyptorhynchus banksii naso*, accessed 24/09/2021.

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

- Department of Biodiversity, Conservation and Attractions (2019) Advice received regarding the 'Eucalypt woodlands of the Western Australian Wheatbelt Priority Ecological Community'. Maintained on DWER's internal achieve system (A1781620).
- Department of the Environment and Energy (2015). Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt. Available from <https://www.environment.gov.au/system/files/resources/27022643-7a75-47bf-95b1-66d36bff9109/files/guide-eucalypt-woodlands-wa-wheatbelt.pdf>
- Department of Parks and Wildlife (Parks and Wildlife) (2015) *Muir's corella management, wildlife management program No.61*.
- Department of Parks and Wildlife (Parks and Wildlife) (2013) Carnaby's cockatoo (*Calyptorhynchus latirostris*) Recovery Plan. Department of Parks and Wildlife, Perth, Western Australia.
- Department of Water and Environmental Regulation (DWER) (2019). *Procedure: Native vegetation clearing permits*. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.PDF.
- Ecoedge (2020a) *Clearing permit application CPS 9227/1*, received 4 March 2021. *Fauna Assessment Proposed Clearing Permit Area Intersection Orchard, Clayton and Yealerin Kulin Roads Shire of Kulin*. Report compiled for the Shire of Kulin (DWER Ref: DWERDT423420).
- Ecoedge (2020b) *Clearing permit application CPS 9227/1*, received 4 March 2021 *Reconnaissance and Targeted Flora and Vegetation Survey Orchard Road & Clayton Road, Kulin*. Report compiled for the Shire of Kulin (DWER Ref: DWERDT423420).
- Government of Western Australia. (2019) *2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019*. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Keighery, B.J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Maia Environmental Consultancy Pty Ltd (2021) *Shire of Kulin: CPS 9227-1; Revegetation Plan for Sections of Road at the Junction of Yealering-Kulin Road with Orchard and Clayton Roads*. Report compiled for the Shire of Kulin (DWER Ref: A2039368).
- Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) *Native Vegetation in Western Australia, Extent, Type and Status*. Resource Management Technical Report 249. Department of Agriculture, Western Australia.
- Shire of Kulin (2021a). *Additional information for clearing permit application CPS 9227/1*, received 14 April 2021 (DWER Ref: A1996776).
- Shire of Kulin (2021b). *Additional information for clearing permit application CPS 9227/1* received 11 June 2021 (DWER Ref: DWERDT464241).
- Submission (2020) *Public submission in relation to clearing permit application CPS 9227/1*, received 01 April 2021 (DWER Ref: DWERT435444).
- Valentine, L.E. and Stock, W. (2008) *Food Resources of Carnaby's Black Cockatoo (Calyptorhynchus latirostris) in the Gnangara Sustainability Strategy Study Area*. Edith Cowan University and Department of Environment and Conservation. December 2008.
- Western Australian Government (2015) *Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt, Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*.