GOVERNMENT OF
With PaWESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: CPS 8560/1

File Number: DWERVT2981

Duration of Permit: From 4 June 2021 to 4 June 2028

PERMIT HOLDER

Shire of Wyalkatchem

LAND ON WHICH CLEARING IS TO BE DONE

Cunderdin-Wyalkatchem Road reserve (PINs 1299019, 1298978, 11717431)

AUTHORISED ACTIVITY

The Permit Holder must not clear more than 11 native trees within the area cross-hatched yellow in Figure 1a, Figure 1b and Figure 1c of Schedule 1.

CONDITIONS

1. Period during which clearing is authorised

The Permit Holder must not clear any native trees after 4 June 2023.

2. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for the activities described in condition 1 of this Permit 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 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.

4. Weed and dieback 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* and *dieback*:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(b) ensure that no known dieback or weed-affected soil, mulch, fill, or other material is brought into the area to be cleared; and

(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

5. Revegetation and rehabilitation

The Permit Holder must within 12 months of undertaking clearing authorised under this Permit:

(a) Undertake deliberate *planting* of at least eight *Eucalyptus capillosa* (inland wandoo), seven *E. erythronema* and seven *E. subangusta* ssp *subangusta* within the area cross-hatched green in Figure 2 of Schedule 1;

(b) Ensure *planting* is undertaken at the *optimal time*;

(c) Ensure *plantings* are of a suitable size, preferable at least one metre in height;

(d) Undertake weed control and watering of plants for at least three years post *planting*;

(e) The Permit Holder must within 24 months of activities undertaken under condition 5(a) of this Permit:

  (i) Engage an *environmental specialist* to make a determination that the eight *Eucalyptus capillosa* (inland wandoo), seven *E. erythronema* and seven *E. subangusta* ssp *subangusta* will survive.

  (ii) If the determination made by the *environmental specialist* under condition 5(e)(i) that the eight *Eucalyptus capillosa* (inland wandoo), seven *E. erythronema* and seven *E. subangusta* ssp *subangusta* will not survive, the Permit Holder must *plant* additional *Eucalyptus capillosa* (inland wandoo), *E. erythronema* and *E. subangusta* ssp *subangusta* that will result in eight *Eucalyptus capillosa* (inland wandoo), seven *E. erythronema* and seven *E. subangusta* ssp *subangusta* persisting within area cross-hatched green in Figure 2 of Schedule 1.

(f) Where additional planting of *Eucalyptus capillosa* (inland wandoo), *E. erythronema* and *E. subangusta* ssp *subangusta* is undertaken in accordance with condition 5(e), the Permit Holder must repeat the activities required by condition 5(b), 5(c) and 5(d) of this Permit.

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	(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 size of the area cleared (in trees); (e) actions taken to avoid, minimise, and reduce the impacts and extent of clearing in accordance with condition 3; (f) actions taken to minimise the risk of the introduction and spread of *weeds* and *dieback* in accordance with condition 4 of this Permit; and (g) actions taken in accordance with condition 5 of this Permit.

7. Reporting

(a) The Permit Holder must provide to the *CEO*, on or before 31 December of each calendar year, a report containing:

(i) The records required to be kept under condition 6 of this Permit; and

(ii) Records of activities undertaken by the Permit Holder under this Permit between 1 July of the preceding calendar year and 30 June of the current calendar year.

(b) If no clearing authorised under this Permit has been undertaken, a written report confirming that no clearing under this Permit has been undertaken, must be provided to the *CEO* on or before 31 December of each calendar year.

(c) The Permit Holder must provide to the *CEO*, by 4 March 2028, a written report of records required under condition 6, 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 *Environmental Protection Act 1986*.
clearing	has the meaning given under section 3(1) of the EP Act.
condition	a condition to which this Permit is subject under section 51H of the EP Act.
dieback	means the effect of *Phytophthora* species on native vegetation.
department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
environmental specialist	means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of 2 years work experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the *CEO* as a suitable environmental specialist.
EP Act	*Environmental Protection Act 1986* (WA)
fill	means material used to increase the ground level, of 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.
native vegetation	has the meaning given under section 3(1) and section 51A of the EP Act.
optimal time	means the period from June to July for undertaking *planting*.
weeds	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.

END OF CONDITIONS

Ryan Mincham
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Ryan Mincham
MANAGER
NATIVE VEGETATION REGULATION

Officer delegated under Section 20
of the Environmental Protection Act 1986

12 May 2021

SCHEDULE 1

The boundary of the area authorised to be cleared is shown in the maps below.

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

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

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

Figure 2: Map of the boundary of the area within which revegetation must occur

Government of Western Australia
Department of Water and Environmental Regulation

Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8560/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Shire of Wyalkatchem

1.3. Property details

Property: Cunderdin-Wyalkatchem Road reserve (PINs 1299019, 1298978, 11717431)
Local Government Authority: Shire of Wyalkatchem
Locality: Wyalkatchem

1.4. Application

Initial Clearing Area (ha)	Revised Clearing Area (No. Trees)	Method of Clearing	For the purpose of:
3.8	11	Mechanical Removal	Road construction or upgrades

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 12 May 2021
Reasons for Decision: The clearing permit application has been assessed against the clearing principles, planning instruments and other matters in accordance with section 51O of the *Environmental Protection Act 1986* (EP Act). It has been concluded that the proposed clearing is at variance with principle (e), may be at variance with principle (b) and is not likely to be at variance with the remaining principles.

The Delegated Officer considered the following:

- avoidance, minimisation and mitigation actions implemented by the applicant. The Delegated Officer determined that all reasonable measures, which would minimise the need for clearing, were undertaken
- the proposed clearing will result in the loss of 11 native trees in an extensively cleared landscape which may function as an ecological linkage enabling fauna to move between areas of remnant vegetation. To mitigate the potential residual impacts, the applicant has committed to planting 22 replacement trees (a ratio 2:1) at the same general location within the Cunderdin – Wyalkatchem Road reserve.
- most suitable replacement tree species have been selected based on the vegetation and soils identified within the proposed revegetation area (Copeland & Fry, 2020a). The Delegated Officer determined that given *Eucalyptus capillosa* (inland wandoo), *E. erythronema* and *E. subangusta* ssp *subangusta* already occur within the revegetation area, planting of additional trees of these species will most likely achieve long-term environmental benefits.

The Delegated Officer considered that the impacts of the proposed clearing are unlikely to have any long-term adverse impacts on the environmental values in the local area and that the planting of replacement trees will mitigate any potential impacts. This has been conditioned on the clearing permit.

2. Site Information

Clearing Description: The initial application was for the proposed clearing of 3.8 hectares of native vegetation within Cunderdin-Wyalkatchem Road reserve (PINs 11717466, 1260106, 1260107, 11717431 and 11717465), Wyalkatchem, for the purpose of road widening and construction (Figure 1). The road provides access to the Standard Gauge Railway and a link from Great Eastern Highway to Goomalling-Merredin Road (Main Roads, 2015).

Vegetation Description: The application area is mapped within the following Beard vegetation associations:

- 1049, which is described as medium woodland; wandoo, York gum, salmon gum, morrel and gimlet (Shepherd et al., 2001); and
- 1062, which is described as succulent steppe with open woodland and thicket; York gum over *Melaleuca thyoides* and samphire (Shepherd et al., 2001).

A site inspection (Department of Water and Environmental Regulation (DWER), 2019) identified that the vegetation within the application area comprises of the following vegetation types (Figures 2-6 below);

- *Eucalyptus* sp. over mixed grasses;

- Mixed grasses and/or canola;
- *Eucalyptus* woodland; and
- Samphire shrubland.

Vegetation Condition: The condition and description of the vegetation within the application area was determined via a site inspection (DWER, 2019). The vegetation within the application area is considered to be in good to completely degraded (Keighery, 1994) condition, described as:

- Good: structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994); to
- Completely degraded; No longer intact, completely/almost completely without native species (Keighery, 1994).

Soil Type: The application area has been mapped by the Department of Primary Industries and Regional Development (DPIRD, 2018) as the following soil types:

- Kellerberrin, Belka Subsystem, which is described as broad, flat valleys of the central and eastern Wheatbelt containing sand over clay soils (Schoknecht et al., 2004);
- Tandegin, Collgar Subsystem, which is described as gentle, lower slopes containing sandy surfaced duplex or "mallee soils" (Schoknecht et al., 2004);
- Wallambin, Baandee Subsystem, which is described as salt lakes, channels, flats and associated dunes. Salt lake, red and grey calcareous loamy earths, saline wet soil (Schoknecht et al., 2004);
- Tandegin, Booraan Subsystem, which is described as hillslopes predominantly containing hardsetting, grey to brownish sandy loam over clay soils (Schoknecht et al., 2004);
- Tandegin, Ulva Subsystem, which is described as yellow sandplain and gravel plain of the Eastern Wheatbelt. This unit contains small areas of pale sand (Schoknecht et al., 2004); and
- Tandegin, Danberrin Subsystem, which is described as areas of rocky, red and greyish brown loamy sands and sandy loams formed from freshly exposed bedrock. Rock outcrop is common (Schoknecht et al., 2004).

Comment The local area referred to in the assessment of this application is defined as a 20 kilometre radius measured from the perimeter of the application area. The local area retains approximately 8.6 per cent native vegetation cover.

Figure 1: Original application area (hatched blue)

Figure 2: *Eucalyptus* sp. over mixed grasses (DWER, 2019)

Figure 3: Samphire shrubland (DWER, 2019)

Figure 4: *Eucalyptus loxophleba* over mixed grasses (DWER, 2019)

Figure 5: Parts of the application area contain only weeds or crops (DWER, 2019)

Figure 6: Parts of the application area are representative of the federally listed threatened ecological community (TEC) 'Eucalypt Woodlands of the Western Australian Wheatbelt' (DWER, 2019)

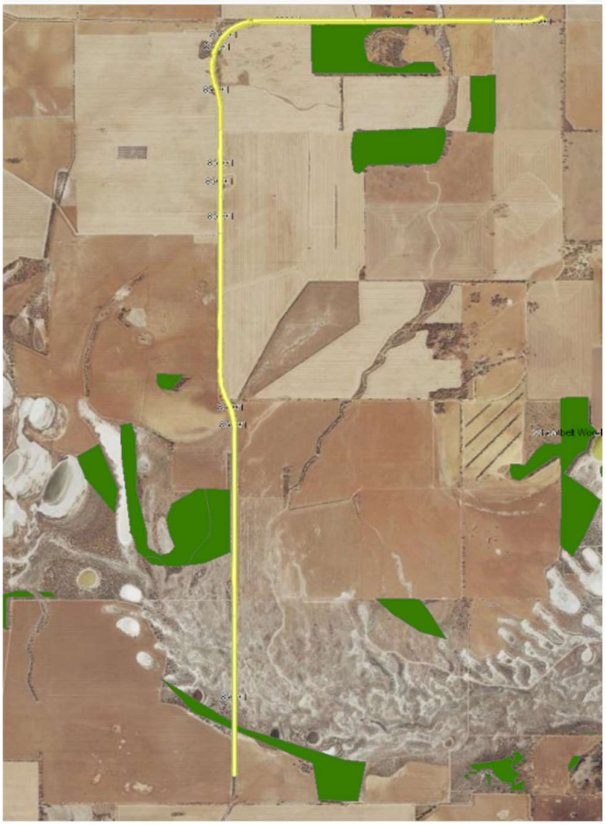

Figure 7: Aerial image showing the original application area (in yellow) and the mapped locations of 'Eucalypt Woodlands of the Western Australian Wheatbelt' TEC (in green).

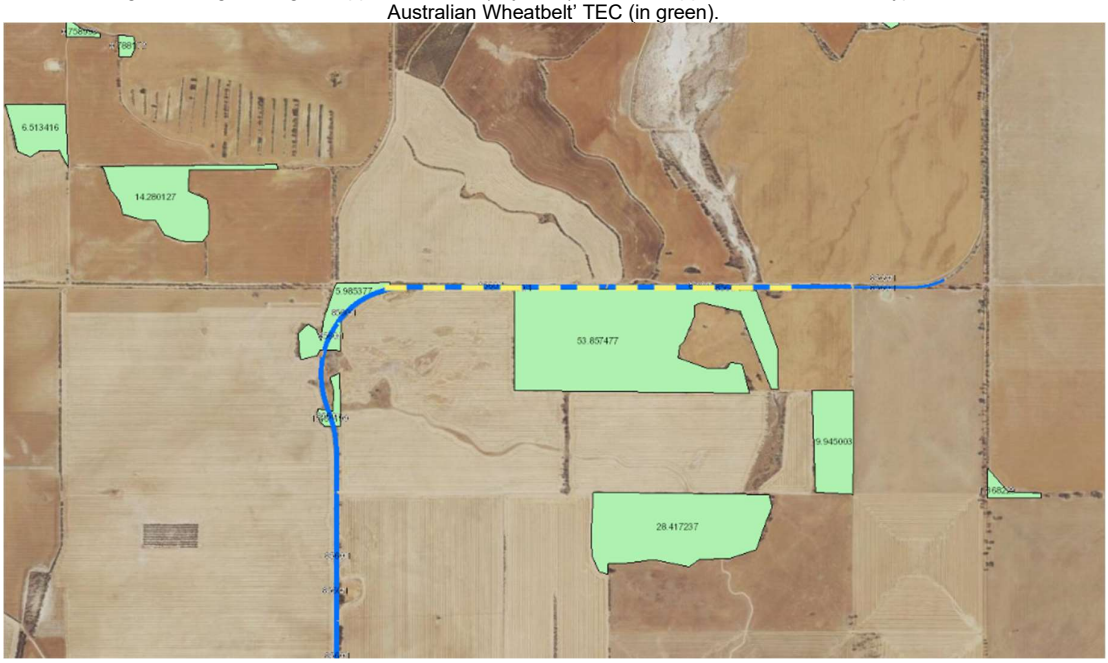

Figure 8: Aerial image showing the original application area (in blue), mapped remnant vegetation (in green) and the area providing ecological linkage between remnants (in yellow dashed line)

3. Minimisation and mitigation measures

On 13 November 2019, DWER wrote to the applicant advising that the proposed clearing had the potential to impact on a number of environmental values, including threatened and/or priority flora, TECs, significant remnant of native vegetation in an extensively cleared landscape and ecological linkages.

The applicant subsequently commissioned Mr Dylan Copeland of Wheatbelt Revegetation and Carbon, who, together with Mr Steve Fry of Santaleuca Consulting undertook a flora and vegetation survey (hereafter referred to as the Flora survey) of the whole Cunderdin – Wyalkatchem Road reserve, which included the application area. The Flora survey did not identify any threatened or priority flora (Copeland & Fry, 2020a). Additional information confirmed that no native vegetation within the survey area met the key diagnostic criteria of Wheatbelt Woodland TEC (Copeland & Fry, 2020b).

On 1 December 2020, DWER advised the applicant that although the application area does not contain threatened and priority flora or native vegetation commensurate with TECs, given the extensively cleared landscape, the vegetation proposed to be cleared was considered significant as an ecological linkage and remnant of native vegetation. Additional information to mitigate impacts to these environmental values was requested.

In response, the applicant revised the design of the proposed works which resulted in the reduction of the application area from 3.8 ha to 11 native trees scattered along a portion of the Cunderdin – Wyalkatchem Road reserve north of the application area (Figure 9). Representative photos of the trees proposed to be cleared are in Attachment 1.

Figure 9: Revised application area

To mitigate the loss of 11 native trees considered significant in an extensively cleared landscape, the applicant has committed to planting 22 replacement trees (a ratio of 2:1) at the same general location within the Cunderdin – Wyalkatchem Road reserve.

The nominated revegetation area, which occurs within road reserves managed by the applicant, has been survey by Copeland and Fry (2020a) who described the site as a complete patch of bush with little weed burden in very good (Keighery, 1994) condition. A comprehensive list of flora species which occur at this site was provided. Noting the findings of the survey, the Delegated Officer considered that the proposed area for planting of 22 replacement trees is suitable for achieving long-term environmental benefits.

The following assessment is a preliminary assessment of the original area of 3.8 ha. Section 5 outlines the modifications made by the applicant and the consideration of the variances made in response to these modifications.

4. Assessment of application against clearing principles

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

Proposed clearing may be at variance with this Principle

The vegetation within the application area is considered to be in good to completely degraded (Keighery, 1994) condition, with the vegetation type transitioning throughout the application area. The majority of the application area comprises of *Eucalyptus camaldulensis/Eucalyptus loxophleba/Eucalyptus oldfieldii* over mixed grasses and occasional shrubs and a large area of

samphire vegetation growing in association with the salt lakes. The application area intersects three patches of mapped TEC 'Eucalyptus woodlands of Western Australian Wheatbelt' (DWER, 2019).

According to available datasets, seven threatened flora species and 27 priority flora species (listed by the Department of Biodiversity, Conservation and Attractions (DBCA)) have been recorded within the local area (Western Australian Herbarium, 1998-). None of these records occur within the application area. Based on the habitat preferences of these species, the application area may contain habitat for the following species:

- *Verticordia mitchelliana* subsp. *mitchelliana* (Priority 3 (P3));
- *Acacia campylophylla* (P3);
- *Urodon capitatus* (P3);
- *Phebalium drummondii* (P3);
- *Boronia ericifolia* (P2);
- *Podotheca pritzelii* (P3); and
- *Daviesia smithiorum* (P2).

As assessed under Principle (c), the application area may contain, or provide suitable habitat for four threatened flora species recorded within the local area. No flora surveys have been completed within the application area. Noting that threatened and priority flora species may occur within the application area, an appropriately timed targeted flora survey is required to determine the presence of conservation significant flora species.

According to available datasets, there are several occurrences of the 'Eucalypt Woodlands of the Western Australian Wheatbelt' ecological community within the local area, which is recognised by the State (as listed by the Department of Biodiversity, Conservation and Attractions (DBCA) as a Priority 3 Priority Ecological Community and federally as Critically Endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Three occurrences of this TEC intersect the application area. Part of the vegetation within the application area may be considered to be representative of this ecological community (DWER, 2019), and the proposed clearing may impact on the occurrences of this community. A survey is required to determine if the parts of the application area are representative of this TEC. State listed TEC's are discussed under Principle (d).

As assessed under Principle (b), portions of the application area may provide suitable foraging habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*). Noting that suitable foraging habitat is limited to scattered areas of *Eucalyptus loxophleba* woodland, the application area is unlikely to provide significant foraging habitat for Carnaby's cockatoo. A site inspection of the application area did not identify suitable current breeding habitat for this species (DWER, 2019). Vegetation within the application area may provide habitat that facilitates the movement of some ground dwelling species.

As discussed under Principle (f), parts of the application area contain riparian species.

Noting the condition of the vegetation within the application area, that the application area may contain priority or threatened flora,may comprise in-part of a TEC and may also function as an ecological corridor, the application area may comprise an area of high biodiversity. Based on the above, the proposed clearing may be at variance with this Principle.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

Proposed clearing is at variance with this Principle

According to available datasets, there are eleven records of conservation significant fauna species within the local area, being;

- *Aganippe castellum* (Tree-stem Trapdoor Spider) (listed as Priority 4 by DBCA);
- *Apus pacificus* (Fork-tailed Swift, Pacific Swift) (Migratory birds protected under an international agreement);
- *Idiosoma nigrum* (Shield-backed Trapdoor Spider) (vulnerable under the EPBC Act, endangered under the *Biodiversity Conservation Act 2016* (BC Act);
- *Leipoa ocellata* (Malleefowl) (vulnerable under the EPBC Act and the BC Act);
- *Cacatua pastinator* subsp. *pastinator* (Muir's Corella, Western Corella) (listed as conservation dependent fauna under the Wildlife Conservation (Specially Protected Fauna Notice 2018));
- *Calidris ruficollis* (Red-necked Stint) (Migratory birds protected under an international agreement);
- *Calyptorhynchus latirostris* (Carnaby's Cockatoo) (endangered under the EPBC Act and the BC Act);
- *Egernia stokesii* subsp. *badia (*Western Spiny-tailed Skink, Gidgee Skink) (endangered under the EPBC Act, vulnerable under the BC Act);
- *Gelochelidon nilotica* (Gull-billed Tern) (Migratory birds protected under an international agreement);
- *Macrotis lagotis* (Bilby, Dalgyte, Ninu) (vulnerable under the EPBC Act, and the BC Act); and
- *Thinornis rubricollis* (Hooded Plover, Hooded Dotterel) (listed as Priority 4 by DBCA).

The species *Thinornis rubricollis, Apus pacificus, Calidris ruficollis* and *Gelochelidon nilotica* are known to have a wide distribution but are found around freshwater swamps, estuaries and other waterbodies. While this habitat type does intersect the application area in part, the proposed removal of the samphire vegetation on the roadside is not considered to have a significant impact on these species as vast amounts of the samphire vegetation habitat remain within the local area and are likely to be in better condition due to the absence of roads.

'Breeding habitat' for Carnaby's cockatoo is defined as trees of species known to support breeding within the range of the species which either have a suitable nest hollow or are of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). The application area does not appear to include trees containing hollows suitable for breeding for Carnaby's cockatoo (DWER, 2019).

Carnaby's cockatoo forage on the seeds, nuts and flowers of a large variety of plants including Proteaceous species (*Banksia*, *Hakea*, *Grevillea*), Eucalypts, *Corymbia* species and a range of introduced species (Valentine and Stock, 2008). The application area contains some suitable foraging habitat for Carnaby's cockatoo, largely in the form of scattered *Eucalyptus loxophleba* trees (DWER, 2019). Noting the largely scattered occurrence of suitable foraging habitat, and that the majority of proposed clearing does not contain suitable foraging habitat or suitable breeding habitat, the application area is not likely to comprise significant foraging habitat for Carnaby's cockatoo.

The application area may provide some suitable habitat for the smaller ground dwelling species such as *Aganippe castellum* and *Idiosoma nigrum,* but this would be limited to areas with leaf litter and sufficient cover in the form of understory. The larger portions of vegetation within the local area that remain in better condition than the application area provide better habitat requirements for these species. These species are not known to disperse over large distances so it is considered that these species would not be impacted by the proposed clearing.

The species *Egernia stokesii* subsp. *badia* is known from 314 recordings within Western Australia. The species has a wide distribution and has been recorded within the local area. The area of Eucalyptus woodlands within the application area is likely to provide suitable habitat for this species. The vegetation within the application area between Borgward Road and Byrne Road may facilitate the movement of this species between the larger patches of remnant vegetation within the landscape including areas of the mapped TEC (Figure 8).

The species *Leipoa ocellata* is a ground dwelling species found in semi-arid to arid shrublands and low woodlands, especially those dominated by mallee eucalypts on sandy soils (Department of Parks and Wildlife 2016). Recordings of this species within the local area have occurred in larger patches of vegetation such as the nature reserves, however, the species is known to utilise strips of native vegetation along roadsides for dispersal (Benshmesh, 2007). The majority of application area is unlikely to provide habitat for this species or habitat that facilitates the movement of this species as the historical clearing has removed understory and middle storey in vast patches which has degraded the ecological linkage values of the area. In addition to this, there are portions within the application area which contain annual crops in the absence of native vegetation. It is considered that within the lifecycle of the crops, these areas would become completely bare and remove any linkage values. The vegetation between Borgward Road and Byrne Road may facilitate the movement of this species between the larger patches of remnant vegetation within the landscape including areas of the mapped TEC (Figure 8). The roadside vegetation within this area is mostly contiguous and contains vegetation cover that may act as an ecological linkage.

The species *Macrotis lagotis* is a ground dwelling species with habitat preferences that include tall shrublands and open woodlands in semi-arid regions. While historical records for the species exist within the local area, there are no recent recordings and it is considered not likely that the proposed clearing would impact on habitat for this species.

The local area has been extensively cleared (refer to Principle (e)). Aerial imagery indicates that part of the application area may function as an ecological linkage between areas of remnant vegetation in the local area, and this may facilitate landscape connectivity and contribute to fauna dispersal between larger isolated bushland fragments in an extensively cleared landscape.

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

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

Proposed clearing may be at variance with this Principle

According to available datasets, there are seven threatened flora species mapped within the local area (Western Australian Herbarium, 1998-):

- *Acacia volubilis* (critically endangered under the BC Act, endangered under the EPBC Act;
- *Daviesia cunderdin* (critically endangered under the BC Act and endangered under the EPBC Act);
- *Grevillea dryandroides* subsp. *hirsuta* (vulnerable under the BC Act and endangered under the EPBC Act);
- *Guichenotia seorsiflora* (critically endangered under the BC Act and the EPBC Act);
- *Melaleuca sciotostyla* (endangered under the BC Act and the EPBC Act);
- *Tetratheca nephelioides* (endangered under the BC Act and critically endangered under the EPBC Act); and
- *Verticordia hughanii* (endangered under the BC Act and the EPBC Act).

An assessment of the habitat requirements of the species listed above has indicated that the vegetation types and soil type present in the application area may provide suitable habitat for some of the threatened species recorded within the local area, in particular; *Acacia volubilis, Daviesia cunderdin, Guichenotia seorsiflora* and *Verticordia hughanii.*

Given the above, an appropriately timed targeted flora survey is required to determine the presence of threatened flora.

Given the above, the proposed clearing may 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

There are no state listed TECs recorded within the local area.

Given the above the application area is not likely to comprise the whole or a part of, or be necessary for the maintenance of a state listed TEC and 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 at variance with this Principle

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application area is located within the Avon Wheatbelt Interim Biogeographic Regionalisation of Australia (IBRA) Bioregion which retains approximately 18.5 per cent of its pre-European vegetation extent (Government of Western Australia, 2019). The mapped Beard vegetation association 1049 retains approximately 6.79 per cent of its pre-European vegetation extent within the Avon Wheatbelt Bioregion and the mapped Beard Vegetation association 1062 retains 47.24 per cent of its pre-European vegetation extent within the Avon Wheatbelt Bioregion (Table 1).

The local area retains approximately 8.6 per cent vegetation cover, which the application area representing approximately 0.03 per cent of the remaining vegetation within the local area.

Noting the current vegetation extents for the bioregion and the mapped Beard vegetation association 1049 are below the 30 per cent threshold, and that the application area may contain the presence of a TEC and conservation significant flora, and may contribute to an ecological linkage the application area is considered to be a significant remnant within an extensively cleared area.

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

Table 1: Bioregion and vegetation extent statistics (Government of Western Australia, 2019)

	Pre-European extent (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed lands (ha)	Current extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA bioregion:					
Avon Wheatbelt	9,517,110	1,763,063	18.5	174,980.68	1.84
Beard vegetation association in IBRA bioregion:					
1049	833,384.77	56,618.34	6.79	3,375.83	0.41
1062	22,527.45	10,641.74	47.24	1,683.99	7.48

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

Proposed clearing is at variance with this Principle

The application area is intersected by a channel located in the southern part of the application area. There are no other wetlands or major watercourses mapped within the application area. The channel is a part of a connected system of wetland environments that extends east-west across the landscape.

Riparian vegetation in the form of samphire shrubs were identified growing in association with low-lying areas surrounding the channel (DWER, 2019). The application area contains vegetation growing in association with a watercourse (DWER, 2019). It is noted that the samphire shrub community extends east and west across the wetland area.

Given the above, the proposed clearing is at variance with this principle. The vegetation associated with these watercourses is considered to be in a degraded to completely degraded (Keighery, 1994) condition, and noting that the proposed clearing will be limited to approximately two meters on both sides of the road at these locations, with existing culverts in place, impacts to riparian habitats within the local area are expected to be minimal.

(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

The application area has been mapped by DPIRD within the following land unit subsystems, described in more detail within Section 2 (Schoknecht et al., 2004):

- Kellerberrin, Belka Subsystem;

- Tandegin, Collgar Subsystem;
- Wallambin, Baandee Subsystem;
- Tandegin Danberrin Subsystem;
- Tandegan, Ulva Subsystem; and
- Tandegin Booraan Subsystem.

A site inspection identified that the soils within the application area comprised of loamy soils, sandy soils and gravel, (DWER, 2019) which varied throughout the landscape. Table 2 below describes land degradation risks within the soil types that are mapped over the majority of the application area.

Table 2: Land Degradation risks for mapped soil units (DPIRD, 2019)

Risk categories	Tandegan, Ulva Subsystem	Kellerberrin, Belka Subsystem	Wallambin, Baandee Subsystem
Wind erosion	50-70% of the map unit has a high to extreme hazard	30-50% of the map unit has a high to extreme hazard	10-30% of the map unit has a high to extreme hazard
Water erosion	<3% of the map unit has a very high to extreme hazard	<3% of the map unit has a very high to extreme hazard	<3% of the map unit has a very high to extreme hazard
Salinity	<3% of the map unit has a moderate or high hazard or is presently saline	<3% of the map unit has a moderate or high hazard or is presently saline	>70% of the map unit has a moderate or high hazard or is presently saline
Subsurface Acidification	>70% of the map unit has a high susceptibility	>70% of the map unit has a high susceptibility	10-30% of the map unit has a high susceptibility
Flood risk	<3% of the map unit has a moderate to high hazard	<3% of the map unit has a moderate to high hazard	<3% of the map unit has a moderate to high hazard
Water logging	<3% of the map unit has a moderate to very high to risk	30-50% of the map unit has a high to extreme hazard	>70% of the map unit has a moderate to very high to risk
Phosphorus export risk	3-10% of the map unit has a high to extreme hazard	>70% of the map unit has a high to extreme hazard	>70% of the map unit has a high to extreme hazard

It is noted in Table 2 above, that the Wallambin Bandee Subsystem has high risk for some of the land degradation categories. This is due to the subsystems alignment with the waterbodies throughout the land. Noting the condition of the vegetation, extent of proposed clearing and clearing would be confined to the roadside, the proposed clearing is not likely to cause appreciable land degradation in the forms of salinity, wind or water erosion.

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 is not likely to at variance with this Principle

There are numerous conservation areas within the local area, with the closest being Derdibin Rock Nature Reserve and Dingo Well Nature reserve located approximately 3.7 kilometres east and 4.8 kilometres north west of the application area respectively.

Noting the distance between the application area and the closest conservation areas, it is not likely that the proposed clearing would impact of the environmental values of these conservation areas.

The proposed clearing is not likely to 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 application area intersects a channel. A site inspection identified that the vegetation within the application area surrounding these watercourses is in a degraded (Keighery, 1994) condition (DWER, 2019) with other vegetation in the immediate surrounds of channels (areas not within the road reserve) in better condition.

Noting the condition of the vegetation surrounding these watercourses, and the minimal extent of vegetation proposed for clearing within close proximity to these watercourses, the proposed clearing is not likely to further deteriorate the quality of surface water.

Groundwater salinity over the application has been mapped greater than 35,000 milligrams per litre total dissolved solids (within the channel area and between 14,000 and 35,000 milligrams per litre per total dissolved solids within the remaining area). Noting the condition and extent of clearing along an existing road, the proposed clearing is not likely cause deterioration of 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

The mean annual rainfall of the local area is 400 millimetres per annum. The topography of the application area ranges from 250 to 290 metres above sea level with the lower lying portions associated with the channel area. The soils identified within the application area, are not considered a high risk for flooding given their moderate permeability.

Noting the soil type, vegetation condition, extent of the proposed clearing, size of the application area and relatively low annual rainfall of the local area, 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 27 July 2019, with a 21 day submission period. Two public submissions were received during the submission period.

One submission opposed the proposed clearing and raised the following concerns (Submission, 2019a):

- The applicant has not considered alternatives that avoid or minimise the proposed clearing. The existing roadside shoulders could be sealed without widening the maintenance corridor. Much of the vegetation within the application area is low growing and the lines of sight are excellent, there is little or no risk that requires to be addressed by removing the vegetation. If clearing is required, it should only be on the side of the road with the poorest quality vegetation.
- No flora surveys on the area have been completed. The proposed clearing is within a highly cleared landscape which has not been adequately surveyed. The proposed clearing may contain priority flora species and may contain the TEC Eucalypt Woodlands of the Wheatbelt. A flora survey is necessary should clearing be required.
- The Roadside Conservation Committee has surveyed much of the roads within the Shire of Wyalkatchem and notes the varying conservation values. The area of vegetation between Byrne Road and to the intersection of Davies South Road is considered to be some of the best vegetation along the road. There should be no clearing within this stretch of road.
- The proposed clearing intersects two wetlands. The proposed clearing may be at variance with Principle (f).
- The proposed clearing is within an extensively cleared area. The proposed clearing may be at variance with Principle (e)
- The vegetation may be the only vegetation corridor in many parts of the corridor. The proposed clearing may be at variance to Principle (b). A fauna survey is necessary should clearing be required.
- The Shire of Wyalkatchem and surrounds are saline affected and have shallow water tables. The proposed clearing is likely to be at variance to Principle (i).

A second submission raised the following concerns (Submission, 2019b):

- The Wheatbelt is extensively cleared and is still being cleared for facilitation of machinery, fire risk or other reasons without consideration to alternatives.
- The deterioration of the Wheatbelt is a product of clearing, use of chemicals, weeds and salinity and disregard to environmental protection.
- Approvals have set precedence for subsequent approvals without scrutiny.
- Information of the extent of native vegetation should be available to the public as a part of consultation process.
- A review of all past clearing within Wheatbelt Shires should be completed.

The concerns raised within the submissions above that relate to biodiversity values have been addressed during the assessment of the clearing principles.

Given the second submission did not raise specific concerns related to this clearing permit application but focused on generic clearing of native vegetation in the Avon Wheatbelt bioregion, the Minister for the Environment decided to address the submitters concerns separately. The Minister sent a letter to the submitter on 3 September 2019.

The document *A Guide to the Assessment of Applications to Clear Native Vegetation under Part V of the Environmental Protection Act 1986* (December 2014) (the Guide) outlines the Department's considerations in undertaking an assessment of a clearing permit application in more detail. The Department's role is to conduct an assessment of the proposed clearing area, identify the environmental values and potential impacts from clearing, and impose conditions to mitigate and limit these impacts. It is the Department's expectation that the applicant contemplates such matters when considering new developments.

In relation to precedence and past clearing within Wheatbelt Shires, in its assessments of clearing permit applications, DWER considers the cumulative impacts of clearing at the local and regional scale. These impacts are considered under Clearing Principle (e) which aims to maintain sufficient native vegetation in the landscape for the maintenance of ecological values (Department of Environmental Regulation 2014). This Principle also recognises the need to protect ecological communities that have been extensively cleared and to retain a representation of each ecological community throughout its pre-European range (Department of Environmental Regulation 2014).

The Guide describes the aim of Principle (e) as maintaining sufficient native vegetation in the landscape for the maintenance of ecological values. It is through this Principle that the cumulative impact of clearing within a particular area is considered.

There are no Aboriginal Sites of Significance mapped within the application area.

On 29 March 2021, DWER re-advertised the application for an additional 14 days following the reduction in the application area and changes in the clearing location. No additional public submissions were received.

5. Consideration of variances following the provision of further information

Principle (a)

The proposed clearing is not likely to be at variance with this Principle
According to the findings of the Flora survey (Copeland & Fry, 2020a) and additional information provided by Copeland and Fry (2020b), the application area does not contain threatened or priority flora species, or native vegetation which is representative of priority ecological communities listed by DBCA or federally listed TECs.

Principle (b)

The proposed clearing may be at variance with this Principle
Given the local area has been extensively cleared, the vegetation within the application area is considered important in supporting fauna movement across remnants of native vegetation within the local area. To mitigate the impacts on environmental linkage function, under the conditions of the clearing permit, the applicant will be required to plant replacement trees at a ratio 2:1.

Noting the application is to clear 11 scattered trees, the application area does not comprise a significant habitat for ground dwelling fauna. According to Copeland and Fry (2020c), the application area does not comprise black cockatoo nesting trees.

Noting the application is to clear 11 trees scattered across an approximately 4.2 kilometre linear section of Cunderdin – Wyalkatchem Road, the proposed clearing is unlikely to significantly reduce the amount of foraging resources available within the local area. The reduction in foraging resources will be temporary and conditions imposed on the permit will require the Shire to undertake tree revegetation at a replacement ratio of 2:1; i.e. 22 replacement trees required for the removal of 11 cleared trees.

Principle (c)

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

The application area does not comprise threatened flora listed under the BC Act (Copeland & Fry, 2020a).

Principle (f)

The proposed clearing is not likely to be at variance with this Principle
The 11 trees proposed to be cleared are not mapped within wetlands. A review of the photographs of the trees did not identify any species which grow in association with a watercourse or wetland.

Outcome:
Having re-assessed the reduced application area, the proposed clearing may be at variance with principle (b) and is not likely to be at variance with principles (a), (c) and (f). There is no change to the remaining clearing principles following the modification of the application area.

6. References

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

Commonwealth of Australia (2012) EPBC Act referral guidelines for three threatened black cockatoo species, Canberra.

Copeland D. and Fry S. (2020a) *Cunderdin – Wyalkatchem road survey report.* Flora and Vegetation survey undertaken on behalf of the Shire of Wyalkatchem for the clearing permit application CPS 8560/1. Received by DWER on 2 November 2020. DWER Ref: A1948947.

Copeland D. and Fry S. (2020b) Additional information in relation to presence/absence of TECs within the Cunderdin – Wyalkatchem Road reserve. Received by DWER on 12 November 2020. DWER Ref: A1953284.

Copeland D. and Fry S. (2020c) Additional information in relation to presence/absence of black cockatoo nesting trees within the Cunderdin – Wyalkatchem Road reserve. Received by DWER on 25 November 2020. DWER Ref: A1957615.

Department of Water and Environmental Regulation (DWER) (2019) Site Inspection Report for Clearing Permit Application CPS 8560/1. DWER Ref A1831817

Department of Parks and Wildlife (Parks and Wildlife) (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: http://naturemap.dpaw.wa.gov.au/. Accessed June 2017.

Government of Western Australia (2019). 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. WA Department of Parks and Wildlife, Perth.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Main Roads Western Australia (2015) Roads 2030: Regional Strategies for Significant Local Government Roads, Wheatbelt North. 2013 (Amended 2015). Published by the Government of Western Australia.

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 Wyalkatchem (2019) Clearing Permit Application CPS 8560/1. DWER reference: A1798472

Submission (2019a). Submission received for Clearing Permit Application CPS 8560/1. DWER Reference: A1816075

Submission (2019b). Submission received for Clearing Permit Application CPS 8560/1. DWER Reference: A1823383

The applicant (2021) Representative photos of the vegetation proposed to be cleared under clearing permit CPS 8560/1. Additional supporting information received by DWER on 16 March 2021. DWER Ref: A1988939.

Threatened Species Scientific Committee (TSSC) (2015). Approved Conservation Advice (including listing advice) for the Eucalypt Woodlands of the Western Australian Wheatbelt. Department of the Environment, Canberra. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/128-conservation-advice.pdf.

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 Herbarium (1998-) FloraBase - The Western Australian Flora. Department of Parks and Wildlife. http://florabase.dpaw.wa.gov.au/ (Accessed April 2021).

GIS Databases:

- Groundwater salinity
- SAC Bio Datasets (Accessed April 2021)
- Hydrography, linear
- Remnant vegetation
- Department of Agriculture and Food Western Australia Subsystems
- DBCA Tenure
- Aboriginal Sites of Significance
- Rainfall – Annual Mean
- Topographical Contours.
- Soils, Statewide
- Topographic contours
- Wetlands

Attachment 1 – Representative photos of the vegetation proposed to be cleared (the applicant, 2021)