



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 7868/1
Permit Holder:	Mr Mark Aldridge
Duration of Permit:	30 June 2018 – 30 June 2023

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

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of farming improvements, grazing and fire hazard reduction.

2. Land on which clearing is to be done

Lot 6148 on Deposited Plan 225758, Catterick.

3. Area of Clearing

The Permit Holder must not clear more than 39 hectares of native vegetation within the areas cross-hatched yellow on attached Plan 7868/1.

4. Application

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

PART II – MANAGEMENT CONDITIONS

5. Avoid, minimise and reduce the impacts and extent of clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

6. Fauna management

The Permit Holder shall retain all *habitat trees* found within the areas cross hatched yellow on attached Plan 7868/1.

7. Dieback and weed control

When undertaking any clearing authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds* and *dieback*:

- clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
- restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

PART III - RECORD KEEPING AND REPORTING

8. Records must be kept

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

- (a) 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;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and extent of clearing in accordance with condition 5 of this Permit;
- (e) the number of habitat trees retained under condition 6; and
- (f) actions taken to minimise the risk of the introduction and spread of *dieback* and *weeds* in accordance with condition 7 of this Permit.

9. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 8 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January to 31 December of the preceding calendar year.
- (b) If no clearing authorised under this Permit was undertaken between 1 January to 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the CEO on or before 30 June of each year.
- (c) Prior to 30 March 2023, the Permit Holder must provide to the CEO a written report of records required under condition 8 of this Permit, where these records have not already been provided under condition 9(a) of this Permit.

DEFINITIONS

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

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

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

habitat tree(s): means trees that have a diameter, measured at 1.5 metres from the base of the tree, of 500 millimetres or greater;

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;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Abbie Crawford
A/MANAGER
CLEARING REGULATION


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

1 June 2018

Plan 7868/1



Legend

-  Areas approved to clear
-  Roads
-  LGA cadastre
-  Cadastre
- WANow_Imagery

700



700 m

MGA 94
Geocentric Datum of Australia 1994

Clive Bond Date: 1/6/18

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



GOVERNMENT OF
WESTERN AUSTRALIA



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7868/1
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Mr Mark Aldridge
Application received date: 13 November 2017

1.3. Property details

Property: Lot 6148 on Deposited Plan 225758
Local Government Authority: Shire of Bridgetown-Greenbushes
Localities: Catterick

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 1 June 2018

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 may be at variance to Principle (b) and is not likely to be at variance to any of the remaining clearing principles

During the assessment of the application, the applicant amended the application area from 61 hectares to 52.1 hectares and has provided a commitment to retaining habitat trees to minimise environmental impacts. The applicant then further amended the application area to 39 hectares, excluding the highest quality vegetation (see Section 3 below).

Based on the assessment of the application area, the Delegated Officer determined that the application area provides suitable habitat for Camaby's cockatoo (*Calyptorhynchus latirostris*), forest red-tailed black cockatoo (*Calyptorhynchus banksii*), Baudin's cockatoo (*Calyptorhynchus baudinii*), masked owl (southwest) (*Tyto novaehollandiae* subsp. *novaehollandiae*), south-western brush-tailed phascogale (*Phascogale tapoatafa* subsp. *wambenger*) and chuditch (*Dasyurus geoffroii*).

To minimise impacts to the conservation significant fauna species, the clearing permit has been conditioned requiring the retention of all habitat trees, which are defined as trees that have a diameter at breast height of greater than 500 millimetres (as committed to by the applicant).

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent vegetation. To minimise this impact, a condition has been placed on the permit requiring the implementation of weed and dieback management measures.

In determining to grant a clearing permit subject to conditions, the Delegated Officer found that the proposed clearing is unlikely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description

The application is to clear 39 hectares of native vegetation within Lot 6148 on Deposited Plan 225758, Catterick, for the purpose of farming improvements, grazing and fire hazard reduction. The application area comprises two proposed clearing areas, one larger portion comprising 24.6 hectares, and a smaller portion slightly north west comprising 14.4 hectares (see blue hatched areas within figure 1 below).

Vegetation Description

The following vegetation complexes are mapped over the application area (Government of Western Australia, 2018):

- **Grimwade (GR)** (mapped over approximately 33 hectares of the application area) which is described as tall open forest to open forest of *Corymbia calophylla* and *Eucalyptus marginata* with *Eucalyptus patens* on slopes and *Eucalyptus rudis* over *Agonis flexuosa* on lower slopes in the humid zone; and

- **Dwellingup (D1)** (mapped over approximately six hectares of the application area) which is described as open forest of *Eucalyptus marginata* subsp. *marginata* and *Corymbia calophylla* on lateritic uplands in mainly humid and subhumid zones.

A site inspection undertaken by officers of the Department of Water and Environmental Regulation (DWER) identified that the application area is largely comprised of jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) open forest (DWER, 2017).

Vegetation Condition

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).

The site inspection identified that the application area is in a good to completely degraded (Keighery, 1994) condition, with the majority of the application area in a degraded to good (Keighery, 1994) condition (DWER, 2017). The completely degraded areas are largely restricted to the boundaries and north western portion of the application area, whereby there is historical farming infrastructure, planted pine species and greater edge effects associated with agricultural practices (DWER, 2017).

Soil type

The application area is dominated by the Grimwade Subsystem Landform Map Unit (255LvGR) which is described as moderately incised valleys on lateritic colluvium over granite and gneiss. The soils of this landform typically comprise loamy gravels, friable red/brown loamy earths, brown loamy earths and brown deep loamy duplexes (CSLC, 2017).



Figure 1. Application Area

3. Minimisation and mitigation measures

The applicant initially applied to clear 61 hectares of native vegetation within Lot 6148 on Deposited Plan 225758, Catterick. On 29 March 2018, DWER wrote to the applicant to advise that the application area provides significant habitat for a number of conservation significant fauna (consistent with those mentioned in section 1.5 above), and included ecological linkage values. On 5 April 2018 the applicant requested to amend the application area from 61 hectares to 52.1 hectares. The applicant also provided a commitment to retaining trees which had a diameter at breast height of greater than 500 millimetres, to reduce potential impacts to conservation significant fauna habitat.

On 18 May 2018 DWER wrote to the applicant to advise that while it was acknowledged that the proposed amendment reduced the extent of impacts to conservation significant fauna, it was considered that the amended application area still provided significant habitat for conservation significant fauna, on the basis of the size and condition of the application area, and its value as an ecological linkage.

On 24 May 2018, the applicant requested to further amend the application area to 39 hectares, excluding a band of higher quality vegetation (which included vegetation in a very good (Keighery, 1994) condition), bordering the southern portion of the

property. It is considered that the amendment has adequately minimised impacts to conservation significant fauna, on the basis that:

- The amendment has excluded a band of vegetation that provides east to west ecological linkage values;
- The amendment has excluded the highest quality vegetation within property, and now includes vegetation that has undergone historical disturbance and is in a degraded to good (Keighery, 1994) condition;
- The application area has been reduced by 22 hectares; and
- Large trees with a diameter at breast height of greater than 500 millimetres (habitat trees) will be retained.

The applicant has also advised that some additional trees (not including habitat trees) would likely be retained within the application area, as the intention is to parkland clear, rather than broad scale clear.

4. Assessment of application against clearing principles

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

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

As discussed under Section 2, a site inspection of the application area undertaken by DWER officers identified that the application area is in a good to completely degraded (Keighery, 1994) condition, with the majority of the application area in a degraded to good (Keighery, 1994) condition (DWER, 2017).

The application area is largely comprised of jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) open forest (DWER, 2017). The application area shows evidence of historical logging practices, however there are some large older growth trees present, several of which contain sizeable hollows (DWER, 2017). The application area is not fenced and cattle are free to graze throughout, hence varying levels of disturbance are evident within the understorey, with sparse areas common. Where present, the understorey vegetation includes *Xanthorrhoea* sp., *Daviesia cordata*, *Acacia celastrifolia*, *Hakea prostrata*, *Leucopogon capitellatus*, *Lepidosperma* sp., *Acacia celastrifolia*, *Tetraria* sp. Jarrah Forest (R. Davis 7391), *Ptilotus manglesii* and occasional *Macrozamia riedlei* and *Banksia Grandis* (DWER, 2017). *Acacia pulchella* and *Pteridium esculentum* occur within various portions of the application area that have experienced the highest level of disturbance. Weed species were present at varying densities throughout (DWER, 2017).

The application area is on undulating topography, which generally slopes from north to south, with the highest area in the south east portion of the application area. The soils largely comprise gravelly loams and gravelly duplex soils (DWER, 2017), which is consistent with the mapped Grimwade Subsystem Landform (referred to under Section 2).

The local area considered in the assessment of this application is defined as a 10 kilometre radius surrounding the application area. The local area retains approximately 54.7 per cent native vegetation cover (23,333.5 hectares).

As discussed under Principle (c), according to available datasets there are no records of rare flora within the local area, and the proposed clearing is not likely to impact on any species of rare flora.

There are two priority flora species recorded within the local area, being *Melaleuca viminalis* (Priority 2) and *Grevillea ripicola* (Priority 4), located approximately 7.8 kilometres south west and 9.5 kilometres west of the application area respectively. The records for *Melaleuca viminalis* indicate that this species prefers moist sites, within damp soils or clays. Similarly, *Grevillea ripicola* commonly grows within sandy clay, clay or gravelly loam within swampy flats and along watercourses (Western Australian Herbarium, 1998-). Noting that no wetlands or watercourses were identified within the application area (DWER, 2017), it is unlikely to include occurrences of either species.

The Department of Biodiversity, Conservation and Attractions (DBCA) provided comment on the proposed clearing and advised that "The vegetation [under application]... is unlikely to support any currently [conservation] listed flora and/or vegetation" (DBCA, 2018). Noting this advice, and that the application area has been subject to consistent cattle grazing, the proposed clearing is not likely to impact on any priority flora species.

There are no threatened ecological communities (TEC's) or priority ecological communities (PEC's) mapped within the local area, and the application area is not considered to be representative of any TEC's or PEC's.

As discussed under Principle (b), the application area contains suitable habitat for Carnaby's cockatoo (*Calyptorhynchus latirostris*), Baudin's cockatoo (*Calyptorhynchus baudinii*) and forest red-tailed black cockatoo (*Calyptorhynchus banksii*) (collectively known as black cockatoos), masked owl (southwest) (*Tyto novaehollandiae subsp. novaehollandiae*), south-western brush-tailed phascogale (*Phascogale tapoatafa subsp. wambenger*) and chuditch (*Dasyurus geoffroi*). (DWER, 2017).

The requirement to retain trees with a diameter at breast height of greater than 500 millimetres will assist in minimising impacts to breeding habitat for black cockatoos and to habitat for the masked owl and south-western brush-tailed phascogale and chuditch.

Noting that the application area is not representative of any TEC's or PEC's, is not likely to contain rare or priority flora, and has been historically grazed, it is not likely to contain a high level of biological diversity.

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

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

Proposed clearing may be at variance to this Principle

There are records of 11 fauna species of conservation significance within the local area, which include, Carnaby's cockatoo, Baudin's cockatoo, forest red-tailed black cockatoo, chuditch, numbat (*Myrmecobius fasciatus*), western ringtail possum (*Pseudocheirus occidentalis*), masked owl, Dell's skink (*Ctenotus delli*), quenda (*Isoodon obesulus subsp. Fusciventer*), western brush wallaby (*Macropus irma*), and south-western brush-tailed phascogale (DBCA, 2018).

Carnaby's cockatoo and Baudin's cockatoo are classified as 'fauna that is rare or is likely to become extinct as endangered fauna' under the *Wildlife Conservation (Specially Protected Fauna) Notice 2017* (WC Notice). The forest red-tailed black cockatoo is classified as 'Fauna that is rare or is likely to become extinct as vulnerable fauna' under the WC Notice.

Black cockatoos forage on the seeds, nuts and flowers of a large variety of plants including proteaceous species (*Banksia*, *Hakea*, *Grevillea*), as well as *Allocasuarina* and *Eucalyptus* species, *Corymbia calophylla* and a range of introduced species (Valentine and Stock, 2008). The application area largely comprises jarrah (*Eucalyptus marginata*) and marri (*Corymbia calophylla*) open forest (DWER, 2017), and therefore provides suitable foraging habitat for black cockatoos.

The local area retains approximately 54.7 per cent native vegetation cover (23,333.5 hectares), of which the application area comprises 0.17 per cent. Noting this, and that the application area is within 500 metres of the Wilga State Forest and two kilometres of Greenbushes State Forest, which comprise approximately 54,179 and 5,957 hectares of native vegetation respectively, that is likely to be of higher quality than the consistently grazed application area, it is considered that the application area is unlikely to comprise significant foraging habitat for black cockatoos.

To be suitable as a black cockatoo breeding site, trees require a suitable nest hollow or need to be of a suitable diameter at breast height (DBH) to develop a nest hollow. For most tree species, a suitable DBH is 500 millimetres (Commonwealth of Australia, 2012). A site inspection of the application area identified potential black cockatoo nesting trees with hollows, which occurred throughout the application area (DWER, 2017). It is therefore considered that the application area provides suitable breeding habitat for black cockatoos.

Chuditch are classified as 'fauna that is rare or is likely to become extinct as vulnerable fauna' under the WC Notice. Chuditch have a preference for eucalypt forest (especially *Eucalyptus marginata*), dry woodland and mallee shrublands and utilise large horizontal hollow logs as dens or refuge. To be suitable as den sites, logs must have a diameter of at least 30 centimetres (usually larger), a hollow diameter of 7 to 20 centimetres and are generally one metre long (DotE, 2014). The application area contains several large hollow horizontal logs, and therefore provides suitable habitat for this species.

The masked owl is classified as a Priority 3 species by DBCA. This species also requires hollows for breeding and/or roosting, and noting the presence of hollow bearing trees, the application area contains suitable habitat for this species. A site inspection of the application area identified one species of owl (possibly *Ninox boobook* which is not recognised as conservation significant), roosting in a tree within the application area (DWER, 2017).

The southern brush-tailed phascogale is classified as 'fauna that is of special conservation need as conservation dependent fauna' under the WC Notice. This species inhabits dry sclerophyll forests and open woodlands that contain hollow-bearing trees (DEC, 2012). Noting that the application area contains several hollow bearing trees, it may be utilised by the southern brush-tailed phascogale, and may therefore be significant for this species.

DBCA provided comment on the proposed clearing (for the initial 61 hectare area), and in relation to fauna impacts advised that "... the applied area is substantial and would definitely have the potential to be providing ... breeding habitat to black cockatoo species. In addition to this, such a substantial area also has the potential to support chuditch and brush-tail phascogales" (DBCA, 2018).

The applicant has provided a commitment to retaining trees with a diameter at breast height of greater than 500 millimetres (herein referred to as habitat trees). This commitment will be a condition of the clearing permit and will ensure that black cockatoo breeding habitat, and masked owl, south-western brush-tailed phascogale and chuditch habitat, is not significantly impacted by the proposed clearing.

There is one numbat record within the local area, which was recorded in 2006 approximately nine kilometres west of the application area within Greenbushes State Forest. Noting the lack of recent records within close proximity to the application area, and lack of dense native understorey (DWER, 2017) that would afford predator protection for this species, the application area is not likely to provide significant habitat for this species.

The western ringtail possum is classified as 'fauna that is rare or likely to become extinct as critically endangered fauna' under the WC Notice. This species has been recorded twice within the local area, with both records approximately eight kilometres west of the application area. This species utilises a variety of shelters including dreys (within *Agonis flexuosa*), tree hollows and forks, grass trees (*Xanthorrhoea* spp.), hollow logs, rabbit burrows and forest debris (Shedley and Williams, 2014). Studies have shown that the rate of sighting for the species correlates with the abundance of *Agonis flexuosa* and presence of hollow bearing trees (Shedley and Williams, 2014). A review of the total records of this species indicates that it has a relatively sparse distribution within the Shire of Bridgetown-Greenbushes, with larger populations recorded closer to Busselton and Bunbury to the west and Manjimup to the south. Noting this, the absence of *Agonis flexuosa*, and that the applicant will be required to retain habitat trees, the application area is not likely to provide significant habitat for this species.

Noting the lack of protective dense understorey vegetation (DWER, 2017), the application area is not likely to provide significant habitat for Dells skink, quenda and western brush wallaby.

The eastern portion of the northern application area intersects a mapped ecological linkage identified within the South West Regional Ecological Linkages (SWREL) technical report (Molloy et al., 2009). Ecological linkages have been defined as "a series of (both contiguous and non-contiguous) patches of native vegetation which, by virtue of their proximity to each other, act as stepping stones of habitat which facilitate the maintenance of ecological processes and the movement of organisms within, and across, a landscape" (Molloy et al., 2009). The larger southern portion of the application area occurs approximately 100 metres from the mapped linkage. While the application area may contribute to the values of the mapped linkage, it is considered that the retention of habitat trees, and maintenance of the southern portion of the of the larger remnant within the applicants property (excluded from the initial application area), which contributes towards an east west landscape linkage, will contribute towards the movement of fauna throughout the landscape. Given the above, the proposed clearing is not likely to significantly impact on the movement of fauna throughout the landscape.

Given the above, the proposed clearing may be at variance to this Principle. Noting that the applicant will be required to retain habitat trees, it is considered that the proposed clearing is not likely to have a significant impact on fauna indigenous to Western Australia.

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

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

According to available databases, there are no species of rare flora recorded within the local area. The closest recorded rare flora species is *Caladenia harringtoniae* located approximately 11 kilometres from the application area. This species is a tuberous, perennial herb that grows within sandy loam on winter-wet flats, on the margins of lakes, creeklines and granite outcrops (Western Australian Herbarium, 1998-).

Noting that no wetlands or watercourses were identified within the application area (DWER, 2017), it is unlikely to include this species.

As discussed under Principle (a), DBCA provided comment on the application and advised that "the vegetation [under application]... is unlikely to support any currently [conservation] listed flora and/or vegetation" (DBCA, 2018). Noting this, and that the understorey vegetation within the application area has been consistently grazed, the proposed clearing is not likely to impact on any rare flora.

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

According to available datasets, there are no threatened ecological communities (TEC's) mapped within the local area. The closest TEC to the application area is known as the 'Blackwood Alluvial Flats' which comprises the alluvial soils of the upper Blackwood River. This TEC is mapped approximately 40 kilometres east of the application area.

Noting that the application area occurs more than 10 kilometres from the Blackwood River, the proposed clearing is not likely to comprise of, or be necessary for the maintenance of this TEC.

The application area is not considered to be representative of any other state or federally listed TEC's, and the proposed clearing is not likely to be at variance to this Principle.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Proposed clearing is not likely to be at variance to 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 percent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

As indicated in table 1, the application area occurs within the Jarrah Forest Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, which retains approximately 53.4 per cent of its pre-European vegetation extent (Government of Western Australia, 2018). The application area is mapped as Mattiske vegetation complexes D1 and GR, which retain approximately 86.6 and 50.3 per cent of their pre-European vegetation extents within the IBRA bioregion respectively (Government of Western Australia, 2018). These figures are all greater than the abovementioned 30 per cent threshold.

The local area (10 kilometre radius) retains approximately 54.7 per cent native vegetation cover (23,333.5 hectares). The application area represents approximately 0.17 per cent of the remaining native vegetation within the local area and the proposed clearing would reduce the extent of native vegetation within the local area to 23,294.5 hectares.

The application area is considered to be significant as a remnant as it provides habitat for conservation significant fauna species, however, given that all of the remaining vegetation extents outlined above are greater than the abovementioned 30 per cent threshold, the application area is not considered to be within an extensively cleared area.

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

Table 1. Vegetation Extents

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Current Extent in all DBCA managed lands (ha)	Extent remaining in all DBCA managed lands (proportion of Pre-European extent) (%)
IBRA Bioregion*					
Jarrah Forest	4,506,660	2,406,938	53.4	1,673,352.8	37.1
Mattiske Vegetation Complex**					
D1	208,490.9	180,683.4	86.6	171,201.7	82.11
GR	22,046.6	11,092.4	50.3	9,556.6	43.35

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

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

The closest watercourse to the application area is a non-perennial creek, which is located in close proximity to the western and northern extents of the larger application area (at varying distances between 15 and 70 metres from the application area). Three other minor non perennial watercourses are mapped nearby, at distances between 80 and 150 metres from the application area.

A site inspection of the application area identified that the vegetation within close proximity to the watercourse had undergone significant historical disturbance via cattle grazing, and was in a degraded to completely degraded (Keighery, 1994) condition (DWER, 2017). The watercourse was fringed with occasional *Eucalyptus rudis*, which is considered to be riparian, however these trees were recorded outside of the boundary of the application area. No other riparian flora species were recorded within the application area, and the proposed clearing is unlikely to impact on riparian vegetation (DWER, 2017).

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

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

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

The application area generally occupies the mid and upper slope positions in the landscape and is dominated by the Grimwade Subsystem Landform Map Unit (255LvGR). The Grimwade Subsystem is described as moderately incised valleys on lateritic colluvium over granite and gneiss in the south-western Darling Range.

The soils of this landform typically comprise loamy gravels, friable red/brown loamy earths, brown loamy earths and brown deep loamy duplexes (CSLC, 2018). A site inspection of the application area confirmed the presence of loamy gravels and duplex soils (DWER, 2017).

A land degradation assessment of the application area undertaken by the Department of Primary Industries and Regional Development (DPIRD) identified that the risk of salinity, eutrophication, wind erosion, water erosion, waterlogging and flooding causing land degradation as a result of the proposed clearing is low (CSLC, 2018).

The CLSC concluded that the risk of land degradation occurring as a result of the proposed land clearing and subsequent land use is low, and that the proposed clearing is unlikely to cause appreciable land degradation (CSLC, 2018).

Noting this advice, the proposed clearing is not likely to be at variance to 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 be at variance to this Principle

The closest conservation area to the application area is the Wilga State Forest, which at its closest point is approximately 500 metres west of the application area. A separate portion of Wilga State Forest is located approximately 900 metres north of the application.

Given the distance to Wilga State Forest, the proposed clearing is not likely to impact on the environmental values of this conservation area.

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

As discussed under Principle (f), the closest watercourse to the application area is a non-perennial creek, which is largely adjacent to the western and northern extents of the larger area under application.

The proposed clearing may result in some minor sedimentation of this watercourse, particular should any rainfall occur immediately post clearing when soils are bare. However, noting that the areas fringing the watercourse are already heavily disturbed via cattle grazing, and the CSLC's advice which identified that the risk of water erosion, wind erosion and flooding is low, the proposed clearing is unlikely to result in a significant increase in sediment levels, and is therefore not likely to deteriorate the quality of water within this creek.

Groundwater salinity within the application area is mapped at between 500 and 1000 milligrams per litre total dissolved solids, which is considered marginal. A site inspection of the application area did not identify any evidence of salinity (DWER, 2017). Given this, and noting the advice from the CSLC, which identifies that the risk of salinity causing land degradation is low, the proposed clearing is not likely to deteriorate the quality of surface and/or underground water via increased salinity.

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

The application area is considered to occupy the mid to upper slope positions in the landscape. The region experiences an average rainfall of 900 millimetres per annum, the majority of which occurs during winter months between June and August.

As discussed under Principle (g), a land degradation assessment undertaken by DPIRD identified that the risk of flooding, water erosion and waterlogging causing land degradation as a result of the proposed clearing is low (CSLC, 2017).

Noting the position of the application area in the landscape, whereby there is little potential for water to pool, and findings of the land degradation assessment, the proposed clearing is unlikely to cause or exacerbate the incidence or intensity of flooding.

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

Planning instruments and other relevant matters.

The clearing permit application was advertised on the DWER website on 8 December 2017 with a 21 day submission period. No public submissions have been received in relation to this application.

No Aboriginal Sites of Significance are mapped within the application area.

The Shire of Bridgetown – Greenbushes provided comment on the proposed clearing and advised that Lot 6148 on Deposited Plan 225758 is zoned 'Rural 2 – General Agriculture' under the Shire of Bridgetown – Greenbushes Town Planning Scheme No. 4 (TPS4) and has a total area of 151.2826 hectares.

The Shire advised that whilst development approval from the Shire is not required for the clearing of native vegetation, the shire does not raise any objections to the proposed vegetation clearing given evident disturbance of the understorey (Shire of Bridgetown – Greenbushes, 2017).

5. References

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