



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 7912/1
File Number: DER2017/002173
Duration of Permit: From 5 May 2019 to 5 May 2021

PERMIT HOLDER

Ms Anne Frances Buegge

LAND ON WHICH CLEARING IS TO BE DONE

Lot 5486 on Deposited Plan 229282, Glenoran.

AUTHORISED ACTIVITY

The Permit Holder shall not clear more than 4.7 hectares of native vegetation within the area hatched yellow on attached Plan 7912/1.

CONDITIONS

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

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

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

2. Dieback and weed control

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

- (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
- (b) ensure that no *dieback* or *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared;
- (c) restrict the movement of machines and other vehicles to the limits of the area to be cleared; and
- (d) only move soils in *dry conditions*.

RECORD KEEPING AND REPORTING

3. Records to be kept

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

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
- (b) the date that the area was cleared;
- (c) the size of the area cleared (in hectares);
- (d) actions taken to avoid, minimise and reduce the impacts and the extent of clearing in accordance with condition 1 of this Permit; and
- (e) actions taken to minimise the introduction and spread of *weeds* and *dieback* in accordance with condition 2 of this Permit.

4. Reporting

The Permit Holder must provide to the *CEO* the records required under Condition 3 of this Permit, when requested by the *CEO*.

DEFINITIONS

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

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

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

dry conditions means when soils (not dust) do not freely adhere to rubber tyres, tracks, vehicle chassis or wheel arches;

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

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s means any plant -

- (a) that is a declared pest under section 22 of the *Biosecurity and Agriculture Management Act 2007*; or
- (b) published in a Department of Biodiversity, Conservation and Attractions Regional Weed Rankings Summary, regardless of ranking; or
- (c) not indigenous to the area concerned.



Mathew Gannaway
MANAGER
NATIVE VEGETATION REGULATION



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

5 April 2019

Plan 7912/1



Legend

-  CPS areas approved to clear
-  Cadastre
- Image



MGA 94
Geocentric Datum of Australia 1994

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



GOVERNMENT OF
WESTERN AUSTRALIA



1. Application details

1.1. Permit application details

Permit application No.: 7912/1
Permit type: Area Permit

1.2. Applicant details

Applicant's name: Ross Joseph Buegge
Application received date: 13 December 2017

1.3. Property details

Property: Lot 5486 On Deposited Plan 229282
Local Government Authority: Shire Of Manjimup
Localities: Glenoran

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
4.7 hectares (originally 20.706 hectares of clearing sought).		Mechanical Removal	Dam construction or maintenance

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 5 April 2019

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 to principles (f) and (g) and is not likely to be at variance to any of the remaining clearing principles.

The Delegated Officer determined that the proposed clearing may increase the spread of weeds and dieback into adjacent vegetation. To minimise this risk, 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 not likely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description This application is for the clearing of up to 4.7 hectares of native vegetation within Lot 5486 on Deposited Plan 229282, Glenoran, for the purposes of creating a dam to support agricultural developments. The application area was originally 20.706 hectares in size and was reduced down to its current size by the applicant on 27 February 2019.

Vegetation Description The application area is situated within the following mapped vegetation complex's (Mattiske et al. 1980):

- 167: Tall open forest of *Eucalyptus diversicolor* (Karri) - *Corymbia calophylla* (Marri) on slopes and low woodland of *Agonis juniperina* - *Callistachys lanceolata* (Wonnich) on lower slopes in hyperhumid and perhumid zones; and
- 221: Tall open forest of *Eucalyptus diversicolor* (Karri) with mixtures of *Corymbia calophylla* (Marri) on valley slopes and low forest of *Agonis juniperina* - *Banksia seminuda* (River Banksia) - *Callistachys lanceolata* (Wonnich) on valley floors in the perhumid zone.

A targeted flora and vegetation survey of a 4.7 hectare area consistent with the application area agreed to by the applicant on 27 February 2019, was undertaken by Bio Diverse Solutions on 10 October 2018. The flora was systematically recorded and collections of plant specimens were made where further identification was required (Biodiverse Solutions 2018). For species which were not be able to be identified during the survey due to an absence of fruiting material, potential habitat was used as an indication of the likelihood of the species occurrence (Biodiverse Solutions 2018). The plant communities occurring within the survey area were mapped and described in detail using opportunistic mapping and collections, as well as fifteen 10 metre by 10 metre quadrants that were positioned in a manner representative of the different vegetation units and their varying condition (Biodiverse Solutions 2018). Two distinct vegetation units were identified during the survey which are described below (Biodiverse Solutions 2018).

- Overstorey of *Eucalyptus diversicolour* (Karri), with *Corymbia calophylla* (Marri), *Agonis flexuosa* (Peppermint) and *Trymalium odoratissimum* subsp. *trifidum* also present within the overstorey. There is a small pocket of vegetation within the south east of the survey area where *Corymbia calophylla* (Marri) is the more dominant overstorey species. The midstorey is characterised by *Agonis flexuosa* (Peppermint), *Trymalium odoratissimum* subsp. *trifidum*, *Chorilaena quercifolia*, *Callistachys lanceolata* (Wonnich) and *Bossiaea aquifolium* (Water Bush). The survey area typically had a very open midstorey, and some areas contain a collapsed / collapsing midstorey. Understorey species consist of *Agonis flexuosa* (Peppermint), **Asparagus asparagoides* (Bridal Creeper), *Bossiaea aquifolium* (Water Bush), *Bossiaea linophylla*, *Clematis pubescens* (Common Clematis), *Gahnia decomposita*, *Hovea elliptica* (Tree Hovea), *Lepidosperma effusum* (Spreading Sword-sedge), *Lepidosperma tetraquetrum*, *Leucopogon capitellatus*, *Macrozamia riedlei* (Zamia), *Opercularia hispidula* (Hispid Stinkweed), *Pteridium esculentum* (Bracken), **Rubus ulmifolius* (Blackberry), *Tremandra stelligera*, *Trymalium odoratissimum* subsp. *trifidum* and **Urospermum picroides* (False Hawkbit). The groundcovers consisted of **Asparagus asparagoides* (Bridal Creeper), *Adiantum aethiopicum* (Common Maidenhair), **Arctotheca calendula* (Cape Weed), **Briza maxima* (Blowfly Grass), **Cenchrus clandestinus* (Kikuyu Grass), *Clematis pubescens* (Common Clematis), *Cryptostylis ovata* (Slipper Orchid), **Disa bracteata*, *Drosera modesta* (Modest Rainbow), *Hardenbergia Comptoniana* (Native Wisteria), **Hypochaeris glabra* (Smooth Cats-ear), **Hypochaeris radicata* (Flat Weed), **Lysimachia arvensis* (Pimpernel), *Opercularia hispidula* (Hispid Stinkweed), *Pteridium esculentum* (Bracken), **Rubus ulmifolius* (Blackberry), *Scaevola microphylla* (Small-leaved Scaevola), **Solanum nigrum* (Black Berry Nightshade), *Trifolium* sp., **Urospermum picroides* (False Hawkbit) and **Zantedeschia aethiopica* (Arum Lily);
- Existing cleared area's with a species composition comprising **Cenchrus clandestinus* (Kikuyu Grass), **Lysimachia arvensis* (Pimpernel), **Hypochaeris radicata* (Flat Weed), **Hypochaeris glabra* (Smooth Cats-ear), **Rubus ulmifolius* (Blackberry), **Zantedeschia aethiopica* (Arum Lily) and **Disa bracteata*. There is an occurrence of cultivated *Eucalyptus* sp. (Blue Gum) situated within the north eastern corner of the application area.

Vegetation Condition

The application area was inspected by Officers from the Department of Water and Environmental Regulation (DWER) on 22 March 2018. The application area was inspected as part of the inspection of the original 20.706 hectare clearing area sought by the applicant. This inspection and results from the flora survey determined the proposed clearing area to be in a completely degraded to excellent condition, described as (DWER 2018; Biodiverse Solutions 2018):

- Excellent: Vegetation structure intact, disturbance affecting individual weed species and weeds are non-aggressive species (Keighery 1994);
to
- Completely Degraded: The structure of the vegetation is no longer intact and the area is completely or almost completely without native species (Keighery 1994).

The cover of introduced species in the surveyed area ranged from 55% up to 95% (Bio Diverse Solutions 2018). Vegetation within the northern and eastern portion of the survey area was classified as being in Excellent condition (Bio Diverse Solutions 2018). Within this area, there are areas where the vegetation structure is somewhat altered (such as an open midstorey and understorey), however overall it is in Excellent condition (Bio Diverse Solutions 2018). The remaining areas of vegetation have been classified as Good, Degraded and Completely Degraded (Bio Diverse Solutions 2018). Good and Degraded areas have been classified as such based on the percentage of weed coverage and degree of alteration to the vegetation structure (Bio Diverse Solutions 2018). The areas classified as Completely Degraded are the existing tracks, cleared areas and the large proportion of vegetation along the southern boundary where only small islands of remnant vegetation are present (Bio Diverse Solutions 2018). Areas that have been classified as Completely Degraded had the highest proportion of weeds within them (Bio Diverse Solutions 2018).

Soil type

The application area is mapped as occurring within the following land systems, as mapped by the Department of Primary Industries and Regional Development (2017);

- Lefroy Subsystem (Pimelia): Valleys 40 to 60 metres deep. Slopes smooth, 10 to 20 degrees. Narrow terrace. Red gradational soils, not calcareous with some red and brown duplex profiles; and
- Pemberton Subsystem (Pimelaia): 20 to 40 metres deep. Flat to gently sloping floors. Few channels. 3 to 10 degrees. Smooth slopes. Red or yellow gradational soils, not calcareous with some red duplex soils.

Comments

The local area referred to in the following assessment is defined as the area within a 10 kilometre radius of the application area.



Figure 1: The application area (shown in blue), depicted in the context of surrounding lot boundaries (shown in yellow).

3. Minimisation and mitigation measures

The applicant originally sought approval for 20.706 hectares of clearing within Lot's 467, 5486 and 5487 on Deposited Plan 229282 and Lot 680 on Deposited Plan 301860, Glenoran. In correspondence dated 27 February 2019, the applicant agreed to reduce the application area to 4.7 hectares of clearing on Lot 5486 on Deposited Plan 229282, to ensure consistency with the area surveyed for flora and vegetation values by Bio Diverse Solutions (2018).

4. Assessment of application against clearing principles

The application area is situated within a property with a history of livestock grazing. The property has been de-stocked and has been utilised for some years to support plantations of *Eucalyptus globulus* (Tasmanian Blue Gum).

A review of available databases determined that four flora species of conservation significance have been recorded in the local area, comprising one Priority 4 flora species, one Priority 3 flora species, one Priority 1 flora species and one Threatened flora species. No occurrences of the above species have been recorded within the application area. The flora survey undertaken by Bio Diverse Solutions (2018) identified 36 flora species within the surveyed area, comprising 23 families and 33 genera. The most common families identified within the survey area were *Fabaceae*, *Asteraceae*, *Cyperaceae* and *Myrtaceae* (Bio Diverse Solutions 2018). The flora species identified within the surveyed area comprised 24 native species and 12 introduced species. Of the 12 introduced species identified within the surveyed area, three are declared pests under the *Biosecurity and Agriculture Management Act 2007*, with two of these three species classified as a high priority for control in the Environmental Weeds Strategy for Western Australia (Bio Diverse Solutions 2018). No conservation significant flora species were identified within the survey area (Bio Diverse Solutions 2018). When the above is considered alongside the extent of the application area, that the local area retains over 76 per cent of its pre-European vegetation clearing extent and that over 72 per cent of the local area is represented in conservation estate, the application area is not likely to comprise significant habitat for flora species of conservation significance.

A review of available databases determined that 13 fauna species of conservation significance have been recorded within the local area (Department of Biodiversity, Conservation and Attractions 2007-). When the habitat requirements of these species were compared to the habitat identified in the application area during the inspection undertaken by DWER Officers (Department of Water and Environmental Regulation 2018) and the flora and vegetation survey undertaken by Bio Diverse Solution's (2018), the application area was considered likely to provide suitable habitat for 10 fauna species of conservation significance. These species comprise:

- *Calyptorhynchus banksii* subsp. *naso* (Forest Red-tailed Black Cockatoo) (listed as 'Vulnerable' under the *Biodiversity Conservation Act 2016* (BC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- *Calyptorhynchus baudinii* (Baudin's Cockatoo) (listed as 'Endangered' under the BC Act and the EPBC Act);

- *Calyptorhynchus latirostris* (Carnaby's Cockatoo) (Listed as 'Endangered' under the BC Act and the EPBC Act);
- *Pseudocheirus occidentalis* (Western Ringtail Possum) (listed as 'Critically Endangered' under the BC Act and the EPBC Act);
- *Falsistrellus mackenziei* (Western False Pipistrelle) (Priority 4);
- *Isodon fusciventer* (Southwestern Brown Bandicoot) (Priority 4);
- *Myrmecobius fasciatus* (Numbat) (Listed as 'Endangered' under the BC Act and under the EPBC Act);
- *Notamacropus irma* (Western Brush Wallaby) (Priority 4);
- *Phascogale tapoatafa* subsp. *wambenger* (South-western Brush-tailed Phascogale) (Listed as 'Fauna that is of special conservation need as conservation dependant fauna' under the BC Act); and
- *Setonix brachyurus* (Quokka) (Listed as 'Vulnerable' under the BC Act and the EPBC Act).

The site inspection undertaken by DWER Officers (DWER 2018) determined that the application area had the potential to provide foraging habitat for Black Cockatoo species (*Calyptorhynchus* sp.), however Black Cockatoo nesting habitat was not identified during the course of this inspection (DWER 2018). No Western Ringtail Possum dreys were identified during the course of the above inspection. The *Western Ringtail Possum (Pseudocheirus occidentalis) Recovery Plan* identifies that the highest densities of the Western Ringtail Possum occur in the Swan Coastal Plain and South Coast Management Zone, which stretches from Walpole to east of Albany (Department of Parks and Wildlife 2017). The application area is inside the Southern Forest Management Zone identified within the above recovery plan (Department of Parks and Wildlife 2017). The number of Western Ringtail Possums in the Southern Forest Management Zone is considered to have ranged between tens and low hundreds of thousands prior to 2002, and is thought to have been the largest population of this species (Department of Parks and Wildlife 2017). A severe decline in the Western Ringtail Possum population in the order of greater than 95% has occurred in this population between 1998 and 2009, with this decline represented in all inland forest monitoring sites (Department of Parks and Wildlife 2017). Today, the Ludlow-Busselton area in the Swan Coastal Plain and South Coast Management Zone are considered strongholds for this species (Department of Parks and Wildlife 2017).

The woodland environment of the application area likely corresponds with habitats utilised by the Western False Pipistrelle (Australian Museum 2018), the Southwestern Brown Bandicoot (Department of Environment Conservation 2012), the Numbat (Department of Biodiversity, Conservation and Attractions 2017), the Western Brush Wallaby (Department of Biodiversity, Conservation and Attractions 2019a), the South-western Brush-tailed Phascogale (Department of Biodiversity, Conservation and Attractions 2019b) and the Quokka (Department of Biodiversity, Conservation and Attractions 2019c). Given the above, the application area likely provides suitable habitat for fauna species of conservation significance. The local area retains over 76 per cent of its pre-European vegetation extent and the proposed clearing is anticipated to reduce the local areas pre-European vegetation extent by approximately 0.01 per cent. In addition, over 72 per cent of the local area is represented in the conservation estate. It is therefore anticipated that better quality fauna habitat to that found in the application area is available in the local area. When the above is considered alongside the extent of the proposed clearing, the proposed clearing is not likely to result in the loss of significant habitat for any fauna species of conservation significance.

Bio Diverse Solutions (2018) advised that based on their findings within the survey area and their follow-up correspondence with the Department of Biodiversity, Conservation and Attractions (DBCA), they suspected an occurrence of the Priority 3 Priority Ecological Community (PEC) 'The Epiphytic Cryptograms of the Karri Forest of South Western Australia' could be present within the survey area. The potential occurrence of this PEC identified within the survey area was identified on both *Trymalium odoratissimum* subsp. *trifidum* and *Agnois flexuosa* (Biodiverse Solutions 2018). Advice received from the DBCA advised that some attributes of the above PEC are present within the survey area, however given the marginal habitat found in the application area, it would not be managed as a full community (Department of Biodiversity, Conservation and Attractions 2019d). Therefore, the proposed clearing is not anticipated to adversely impact any known occurrences of this PEC (Department of Biodiversity, Conservation and Attractions 2019d). The nearest recorded occurrence of a PEC to the application area is an occurrence of the 'Low forest of *Melaleuca cuticularis* with *Banksia occidentalis* over Low Scrub of *Acacia saligna* and *Rhadinothamnus anceps*' Priority 1 PEC situated approximately 42 kilometres southwest of the application area. No impacts to this PEC are anticipated to result from the proposed clearing due to the separation distance between the application area and the above recorded PEC occurrence.

No threatened ecological communities (TEC) are recorded from within the local area. A review of available databases determined the application area is situated 37 Kilometres north east from the nearest TEC, the 'Scott River Ironstone Association', which is listed as 'Endangered' under the BC Act and EPBC Act. Due to the separation distances between the application area and recorded occurrences of this TEC, no impacts to this TEC are expected to result from the proposed clearing activities. No TECs were recorded within the application area during the flora survey (Biodiverse Solutions 2018).

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 forms part of the 'Warren' IBRA region. This IBRA region retains over 79 per cent of its pre-European clearing extent (Government of Western Australia 2018a). Vegetation complex's 167 and 221 currently retain over 81 and 64 per cent of their pre-European clearing extent, respectively (Government of Western Australia 2018b). The area of clearing is anticipated to reduce the remaining extents of each of the above mapped vegetation associations by less 0.02 per cent. In addition, the local area retains over 76 per cent of its pre-European clearing extent. When the above is considered, the proposed clearing activities are not anticipated to result in the loss of a significant remnant of native vegetation.

A review of available databases has found that no wetlands exist within or in close proximity to the application area. The database review determined that a minor non-perennial watercourse traverses through the application area. This watercourse branches off the Donnelley River and concludes in a dam on a nearby freehold lot. Consequently vegetation growing in association with a watercourse may be cleared as a result of the proposed clearing activities. The proposed clearing therefore is at variance to principle (f). A review of aerial photography of the local area found that the vegetation associated with the above watercourse has undergone disturbance to support agricultural development downstream of the application area. Therefore, while the clearing of the application area will likely result in the loss of vegetation growing in association with a watercourse, when consideration is

given to the disturbed nature of the watercourse, it is not likely the clearing activities will adversely impact the ecological values of riparian vegetation. Given the extent of remnant vegetation in the local area and the extent of the local area retained in the conservation estate, the proposed clearing is not likely to significantly impact the extent of riparian vegetation associations remaining in the local area.

No land degradation impacts were identified within the application area during the inspection of the original application area undertaken by DWER Officers (2018). The original application area was also inspected by the Office of the Commissioner of Soil and Land Conservation (OCSLC) on 15 May 2018 to assess the potential for land degradation to result from the clearing activities. This inspection determined that, due to the soil type present and the slope length and gradient of the application area, the removal of native vegetation is likely to present a high to very high risk of water erosion (Department of Primary Industries and Regional Development 2018). The OCSLC concluded that the proposed clearing may not be suitable due to the high to very high risk of land degradation occurring (Department of Primary Industries and Regional Development 2018). Given the above, the proposed clearing is at variance to principle (g).

As discussed in Section 2 of this report, the application area has been substantially reduced by the applicant since the inspection was undertaken by the OCSLC. In addition, the clearing activities will be undertaken to facilitate the construction of a dam and a review of available databases and the inspection of the application area undertaken by DWER Officers (Department of Water and Environment Regulation 2018) found that no permanent water sources exist in the revised application area. Therefore, while the clearing activities would likely result in land degradation impacts through water erosion, if undertaken during wet weather conditions, these impacts would be temporary in nature and would be anticipated to cease once the dam was constructed. Undertaking the clearing activities during dry weather conditions will mitigate the risk of water erosion occurring during the clearing activities.

As discussed above, the clearing activities would likely result in water erosion if undertaken during wet weather conditions, which could lead to the sedimentation of surface water flows during the initial clearing phase. The construction of the dam would be anticipated to inhibit surface water flows downstream of the clearing area and therefore, any sedimentation of surface water flows resulting from the clearing activities would be anticipated to be a temporary occurrence. Undertaking clearing in dry weather conditions should mitigate the impact of water erosion occurring from clearing activities on surface water quality.

A review of available databases determined that local groundwater resources have been mapped as having a total dissolved solids content of between 500 – 1,000 milligrams per litre. The inspection undertaken by the OCSLC determined that the risk of salinity impacts arising from clearing is low (Department of Primary Industries and Regional Development 2018). The inspection undertaken by the OCSLC determined that the proposed clearing is not likely to alter the local flooding regime (Department of Primary Industries and Regional Development 2018).

The application areas western border is situated adjacent to an unnamed conservation reserve. The proposed clearing activities have the potential to adversely impact the vegetation within this reserve through the introduction and spread of weeds and dieback. Weed and dieback management practices will assist in managing impacts to the adjacent vegetation.

The application area is also situated approximately 1 kilometre north of the Donnelly State Forest, approximately 3.2 kilometres north east of the Barlee Brook State Forest, approximately 3.5 kilometres south of the North Donnelly State Forest, 86 metres south east of the South East Nannup State Forest, approximately 1.3 kilometres south east of the Donnelly River Nature Reserve and approximately 7.1 kilometres north of the Greater Beedelup National Park. With the exception of the aforementioned unnamed conservation reserve, when consideration is given to the separation distances between the application area and the above conservation areas, no adverse impacts to these conservation areas are expected to result from the proposed clearing activities. Given the local area retains over 76 per cent of its pre-European native vegetation extent, the proposed clearing activities are not anticipated to result in the loss of ecological linkages promoting species diversity and recruitment within the above conservation areas.

Given the above, the proposed clearing is at variance to principle's (f) and (g), and is not likely to be at variance to any of the remaining clearing principles.

Planning instruments and other relevant matters

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

The clearing permit application was advertised on the DWER website on 27 February 2018 with a 21 day submission period. No public submissions have been received in relation to this application.

On 27 February 2018, DWER received advice from the Shire of Manjimup (the Shire) advising that the application area is zoned by Local Planning Scheme No. 4 as "Priority Agriculture" and planning approval for the clearing of vegetation is not required in this zone. The Shire noted that the purpose of the clearing is for dam construction. If the edge of the dam and / or a dam wall is less than 20 metres from any lot boundary, Shire planning approval for the dam works will be required. On 25 May 2018, the Shire provided development approval for a setback variation for a dam on Location 5486 on Graphite Road, Glenoran.

The Department's South West Region noted the applicant had stated in their application to the Shire that the dam capacity was 300 kilolitres. The South West Region advised that this capacity may be significantly larger than this, at 300 megalitres. The South West Region also advised that the proposed dam is being assessed under the *Rights in Water and Irrigation Act 1914* (RIWI Act) for a permit to interfere with bed and banks and a licence to take surface water. The dam is located within the 'Priority Not Assigned' Donnelly River Water Reserve Public Drinking Water Source Area (PDWSA). The Shire's Local Planning Scheme No. 4' (8 December 2010) shows the land to be zoned as 'Priority Agriculture' and as such, in accordance with Water Quality Protection Note (WQPN) 25 – '*Land use compatibility tables for public drinking water source areas (April 2016)*', this PDWSA is potentially a 'Priority 3 (P3) Classification Area' due to the intensive use zoning. This WQPN states that Priority 3 classification areas are managed to maintain the quality of the drinking water source for as long as possible, with the objective of risk management.

The South West Region advised that the main risks associated with the clearing are related to erosion, sediment transport and associated turbidity. The main risk associated with the dam land use is the input of pesticides (including other orchard related chemicals) and nutrients from the plantation land use. To minimise the risk to the water resource, the South West Region provided the following advice:

- In accordance with the above water quality protection note, pesticides should be applied in accordance with best management practices (i.e. in accordance with label directions). The applicant should also be aware of the Shire's *Note 104: Aerial spraying of crops with pesticides*, the *Liquid chemicals on agricultural land* brochure, the Department of Health's *A guide to the use of pesticides in Western Australia* and *Circular no. PSC88: Use of herbicides in water catchment areas*;
- In accordance with Water Quality Protection Note 53 '*Dam construction and operation in rural areas (May 2014)*', to manage the erosion risk, the South West Region encourage the use of shallow-rooted vegetation cover (such as endemic species of perennial shrubs or grasses) on the dam embankments and bunds where appropriate. Deep rooted vegetation on the dam wall must be avoided due to the potential for the roots to interfere with the structural integrity of the dam wall; and
- That the applicant be guided by the best practice measures contained in Water Quality Protection Note 34 - *Orchards Near Sensitive Water Resources* (Nov 2006), where relevant.

5. Applicant's Submissions

On 18 May 2018, DWER wrote to the applicant advising that flora species of conservation significance, including the threatened flora species *Caladenia harringtoniae*, the Priority 4 flora species *Stylidium ireneae* and the Priority 3 flora species *Pultenaea pinifolia* and the Priority 3 Ecological Community "Epiphytic cryptogams of the Karri forest of South Western Australia" could occur within the application area. The Delegated Officer requested targeted threatened and priority flora surveys and a targeted level two vegetation survey be undertaken by a suitably qualified botanist, to determine if conservation significant flora species and ecological communities were present within the application area.

On 26 October 2018, the applicant provided the requested flora and vegetation survey report, as prepared by Bio Diverse Solutions (2018). The outcomes of this survey are detailed earlier in this report.

6. References

- Australian Museum (2018) Western False Pipistrelle, Scientific name: *Falsistrellus mackenziei*. Available from: <https://australianmuseum.net.au/learn/animals/bats/western-false-pipistrelle/>. Accessed February 2019.
- Bio Diverse Solutions (2018) Targeted Threatened Flora and Priority Ecological Community Survey Report. Prepared by Bio Diverse Solutions, dated 18 October 2018.
- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra. Department of Biodiversity, Conservation and Attractions (2007-) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife. URL: <http://naturemap.dpaw.wa.gov.au/>. Accessed November 2018.
- Department of Biodiversity, Conservation and Attractions (2017) Fauna Profile: Numbat – *Myrmecobius fasciatus*, Conservation Status: Endangered. Available from: https://www.dpaw.wa.gov.au/images/documents/plants-animals/animals/animal_profiles/numbat_fauna_profile.pdf.
- Department of Biodiversity, Conservation and Attractions (2019a) Western Brush Wallaby; *Macropus irma* (Jourdan, 1837). Available from: <https://library.dbca.wa.gov.au/static/FullTextFiles/071535.pdf>.
- Department of Biodiversity, Conservation and Attractions (2019b) Brush-tailed Phascogale; *Phascogale tapoatafa* (Meyer, 1793). Available from: <https://library.dbca.wa.gov.au/static/FullTextFiles/071549.pdf>.
- Department of Biodiversity, Conservation and Attractions (2019c) Fauna Profile: Quokka; *Setonix brachyurus*. Available from: https://www.dpaw.wa.gov.au/images/documents/plants-animals/animals/animal_profiles/quokka_fauna_profile.pdf.
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- South West Forests – Vegetation complex mapping
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- WA TEC PEC Boundaries