

# Revegetation Management Plan

Lot 1113 West Break Road, Myalup

SEPTEMBER 2024



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# 1 Introduction

## 1.1 Project Background

The proponent, Patane Farms Pty Ltd, proposes to clear 0.99 hectares of native vegetation within Lot 8 (Diagram 78649) Rigg Road, Myalup (Figure 1, Appendix A). Clearing is for the purpose of horticulture. The total proposed cropping area will cover approximately 12.9 ha (Figure 2, Appendix A). A 3.19 ha site has been proposed as an environmental offset to the project, located at Lot 1113 West Break Road, Myalup (Figure 3, Appendix A).

Vegetation within the Lot 8 proposed cropping area consists of mostly *Corymbia calophylla* (Marri) and some *Agonis flexuosa* (Peppermint) paddock trees with no native understory and little midstorey remaining within the project area. The native vegetation within the proposed clearing area is in a Completely Degraded condition (EPA, 2016). A reduction in the proposed crop areas would render the project unviable.

Lot 8 is zoned General Farming under the Shire's District Planning Scheme No. 1 (Scheme). Development Approval from the Shire as Viticulture/Horticulture is an "AA" use under the Scheme, meaning that it is a discretionary use. On 25 March 2022, the Shire of Harvey approved the Development Application, subject to conditions (Application No: P125/21).

Exemptions are relevant for this project. There are no Environmentally Sensitive Areas (ESA's) mapped within the project site. The following exemptions apply, as prescribed in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations)*, under section 51B of the *Environmental Protection Act 1986* (EP Act), and are excluded:

- 0.05 ha Clearing for fence lines (Regulation 5, Item 10)
- 0.05 ha Clearing of isolated trees (Regulation 5 Item 19)

Patane Farms Pty Ltd has applied to the Department of Water and Environmental Regulation (DWER) for an Area Permit under section 51E(1) of the *Environmental Protection Act 1986* (the EP Act), to clear the residual 0.90 hectares of native vegetation within Lot 8 for the purpose of horticulture. The area under application (0.90 ha) has been subject to preliminary assessment by DWER through CPS 9881/1 and advised that the clearing would be at variance to 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*. Form offsets (revegetation) would be required to counterbalance the significant residual impact of the proposed clearing.

A 3.19 ha offset site has been proposed for revegetation, located at Lot 1113 West Break Road, Myalup (Figure 3, Appendix A). This Revegetation Management Plan (RMP) has been prepared to meet offset requirements of Principle b), providing recommendations for successful RMP implementation at the offset site. Successful revegetation of the site would create long-term black cockatoo<sup>1</sup> foraging (and eventually breeding) habitat, along with the introduction of species that may be utilised by the Western Ringtail Possum (*Pseudocheirus occidentalis*) (Critically Endangered). This would be for the purpose of offsetting residual impacts to existing habitat posed by clearing at Lot 8 Rigg Road, Myalup.

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<sup>1</sup> Collectively referring to the Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii subsp. naso*) (Vulnerable), Baudin's Cockatoo (*Zanda baudinii*) (Endangered) and Carnaby's Black Cockatoo (*Zanda latirostris*) (Endangered), herein referred to as black cockatoos.

## 1.2 The Study Area

Both the vegetation under application and the proposed offset site are located within the rural locality of Myalup, on the southern Swan Coastal Plain, approximately 27 km north of Bunbury. The proposed offset site is located approximately one kilometre north of Lot 8, within Lot 1113 West Break, Myalup. Both Lot 8 (clearing) and Lot 1113 (offset site) are located within a broader coastal agricultural landscape within the Swan Coastal Plain. For the purpose of this RMP, the study area is defined as the 3.19 ha proposed offset site (Lot 1113), consisting of Completely Degraded to Degraded remnant native vegetation (EPA 2016).

The proposed clearing area and offset site is shown in Figures 1 and 2 (Appendix A). The RMP study area is shown in Figure 3 (Appendix A).

## 1.3 Purpose of the Plan

This RMP has been prepared to provide a framework and management document to formally capture the revegetation management commitments proposed by the Proponent, to enhance the existing ecological values of the study area through successful revegetation, improving black cockatoo habitat values over the long term and meeting offset requirements of Principle b).

In particular, the objectives of the Plan are to:

- Enhance the offset area by providing increased connectivity, along with the addition of flora species that will provide black cockatoos with foraging/breeding habitat, along with species that will also provide value to the Western Ringtail Possum.
- Implement successful revegetation by controlling present and ongoing risks to the site.

The Plan has been prepared with general reference to the Department of Environment and Regulation's (DER) publication: *A guide to preparing revegetation plans for clearing permits* (DER, 2013). In particular this Plan addresses 'on-site revegetation and rehabilitation', where the aim is *the deliberate establishment and management of native vegetation. The aim of revegetation is to re-create or improve a vegetation remnant or cleared area so that the species composition, structure and diversity are similar to the vegetation that existed prior to disturbance* (DER, 2013).

The offset site aims to be improved from Completely Degraded and Degraded condition to a condition that supports the objectives of the Plan. Following revegetation, the offset site will be placed under Conservation Covenant for long-term protection, committing to a 20-year target. The reintroduction of native vegetation through revegetation would improve site stabilisation, general ecosystem function and black cockatoo habitat value, along with other fauna, meeting offset requirements of Principle b), outlined following preliminary assessment by DWER through CPS 9881/1.

## 1.4 Persons Preparing the Plan

The Plan has been prepared by Shane Priddle (Principal, SW Environmental), Georgia Johnsen (Project Officer – Ecology, SW Environmental), and Greg Overton (Revegetation Specialist/Project Officer, SW Environmental). All individuals involved in plan compilation hold previous experience in the preparation of revegetation management plans and/or implementing revegetation programs.

## 1.5 Responsibilities

The Proponent, Patane Farms Pty Ltd, is responsible for the implementation of the RWMP.

## 2 Site Background

### 2.1 Property Details

The site is located within Lot 1113 West Break Road, Myalup within the Shire of Harvey. The site is freehold and currently owned by the Proponent, Patane Farms Pty Ltd. The land is zoned Priority Agriculture under the Shire of Harvey's District Planning Scheme No. 2 (Shire of Harvey, 2024).

### 2.2 Existing Values

#### 2.2.1 Climate, Landform and Soils

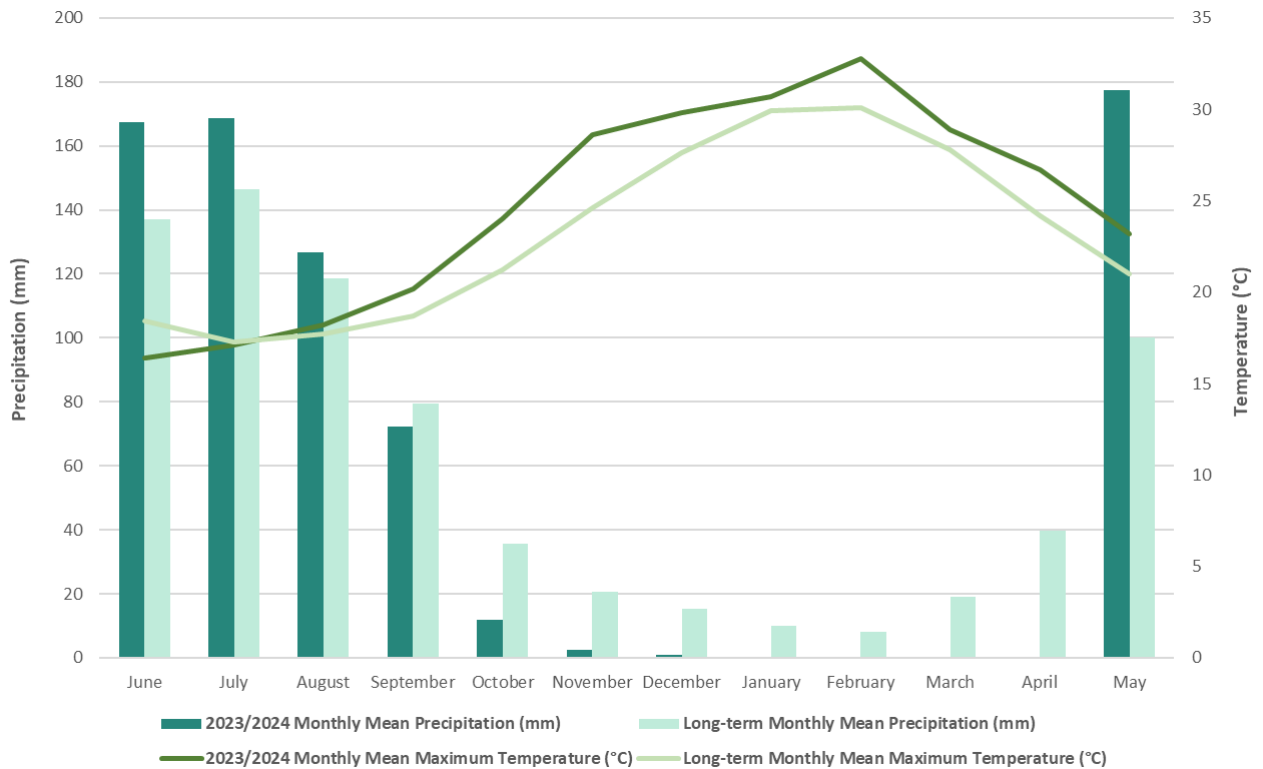
The study area is located within the Swan Coastal Plain (SWA02) IBRA subregion, an area composed of colluvial and aeolian sands, alluvial river flats and coastal limestone (Mitchell et al., 2002). Soils within the Lot 1113, as mapped by Department of Agriculture (now the Department of Primary Industries and Regional Development) (DPIRD, 2022), include

- 211Sp\_S1c Spearwood S1c phase - Dune ridges with deep bleached grey sands with yellow-brown subsoils, and slopes up to 15%.

Soils over the offset site are shown in Figure 4.

The SWA02 IBRA subregion is of a warm, Mediterranean climate, typically experiencing an annual average rainfall of 600 to 1,000 millimeters (mm) (Mitchell et al., 2002). **Graph 1** presents climatic information from the Bunbury Bureau station (station number 9965), the most relevant meteorological station to the study area, situated 28.7 km from Myalup Town. Long-term mean maximum temperatures range from 30.1°C in the hottest month of February, to 17.3°C in the coolest month of July. The long-term average annual rainfall is 729.8 mm, with 728.4 mm recorded between the months of June 2023 and May 2024. Precipitation is generally at its greatest between the months May to July (BoM, 2024).

Weather records from 2023/2024 indicate that temperatures have been above average, and precipitation has been substantially below average, with no rainfall recorded between months January and April 2024, and less than average rainfall recorded between September and December 2023 (**Graph 1**).



**Graph 1 Temperature and rainfall data from the Bunbury Bureau station (station number 9965) (BoM, 2024)**

### 2.2.2 Flora and Vegetation

Vegetation complexes (Webb et al., 2016) at the site are mapped in Figure 5 as:

- Karrakatta Complex – Central and South, System 49:** Predominantly open forest of *Eucalyptus gomphocephala* (Tuart) - *Eucalyptus marginata* (Jarrah) - *Corymbia calophylla* (Marri) and woodland of *Eucalyptus marginata* (Jarrah) - *Banksia* species. *Agonis flexuosa* (Peppermint) is co-dominant south of the Capel River.

Vegetation existing at Lot 1113 is in Completely Degraded to Degraded condition, on predominantly yellow sandy soils with a west-facing aspect. Limited remnant/naturally regenerated vegetation is evident at site, with few species concurrent with those that are characteristic of the Karrakatta Complex – Central and South. Much of the area has been extensively cleared, with topsoil removed. The site does not currently represent the mapped vegetation complex.

Limited areas of remnant vegetation consist of *Corymbia calophylla* and *Pinus* sp. open woodland on the eastern edge, to isolated trees of *C. calophylla* and *Agonis flexuosa* (Peppermint) on the western side of the lot. These species exist over *Hakea trifurcata* and *Kunzea glabrescens* isolated clumps of shrubs over *Eragrostis curvula* (African Lovegrass) and *Cynodon dactylon* (Couch Grass) other grasses. Additional species that were observed to be present in low numbers across the site include scattered *Allocasuarina fraseriana*, *Banksia grandis*, *Eucalyptus gomphocephala* (Tuart), *Acacia saligna* and *Jacksonia furcellata*.

Two Weeds of National Significance (WoNS) were observed during the site visit on the 13<sup>th</sup> of June 2024. These were *Asparagus asparagoides* (Bridal Creeper), and *Eragrostis curvula* (African Lovegrass) (Photo 2 a – c) (Weeds Australia, 2021). Of these species, *A. asparagoides* is considered as a Declared Pest under the *Biosecurity and Agriculture Management Act 2007* (DPIRD, 2024).



Both of these species are rated as being of high ecological impact and rapid invasiveness (DPaW, 2014). *Cynodon dactylon* (Couch Grass), whilst not a WoNS, is also of high ecological impact and rapid invasiveness (DPaW, 2014). Introduced *Pinus* sp. (Pine trees) were also evident at the site in varying stages of growth (Photo 2d). Both *Pinus pinaster* and *Pinus radiata* are rated with rapid invasiveness in the South West Region, with *P. pinaster* being of moderate ecological impact, and *P. radiata* of high ecological impact (DPaW, 2014). Various, scattered broadleaf weeds were also observed in limited numbers on site, such as *Arctotheca calendula* (Capeweed). *A. calendula* is considered to be of high ecological impact and rapid invasiveness in the Swan Parks and Wildlife Region, and medium ecological impact and moderate invasiveness in the South West Parks and Wildlife Region (DPaW, 2014).

Areas of Completely Degraded vegetation condition are present towards the western side of the site, where top soil is no longer present and no established, live vegetation is evident. In this area, the vegetation structure is no longer intact, and deceased plants exist within deteriorated plant guards from previously attempted revegetation (Photo 1a – d). Towards the eastern side of the site where the gradient of slope is less, Completely Degraded to Degraded remnant vegetation is present and topsoil has been retained (Photo 1e – f). Ground cover is predominantly bare across the western side of the offset site, tending towards a greater coverage where topsoil was not removed in the eastern, flatter area. Ground cover species present are predominantly invasive *E. curvula* and *C. dactylon*.



a)



b)



c)



d)



e)



f)

**Photo 1** Example of vegetation present at the site, demonstrating Completely Degraded areas of previous revegetation, with topsoil removed (a – d), and Completely Degraded – Degraded areas with topsoil retained (e – f).



a)



b)



c)



d)

**Photo 2. Introduced species *Eragrostis curvula* (African Lovegrass), *Cynodon dactylon* (Couch Grass) (a – b), *Asparagus asparagoides* (Bridal Creeper) and *Pinus* sp. (d) present at the site.**



### 2.2.3 Fauna

Fauna assemblages locally (including the clearing site in Lot 8) may include native animals including Threatened or Priority fauna such as the Western Ringtail Possum (*Pseudocheirus occidentalis*) (Critically Endangered), Quenda (*Isodon fusciventer*) (Priority 4), and Southern Brush-tailed Phascogale (*Phascogale tapoatafa*) (Critically Endangered), and foraging habitat for black cockatoos, herein collectively referring to Forest Red-tailed Black-Cockatoo (*Calyptorhynchus banksii subsp. naso*) (Vulnerable), Baudin's Cockatoo (*Zanda baudinii*) (Endangered) and Carnaby's Black Cockatoo (*Zanda latirostris*) (Endangered). Breeding habitat may also be present in hollow bearing trees. Only evidence of Forest Red-tailed Black-Cockatoo and Baudin's Cockatoo were found within the revegetation site.

Chewed Marri nuts demonstrated active foraging of the Forest Red-tailed Black Cockatoo (Photo 3a), and Baudin's Cockatoo (Photo 3b-c).



a)



b)



c)

**Photo 3 Evidence of black cockatoo foraging activity by a) Forest Red-tailed Black Cockatoos (*Calyptorhynchus banksii naso*) and b-c) Baudin's Cockatoo (*Zanda baudinii*).**

Numerous snakes, lizards, birds and other common animals may occur at both sites. The revegetation area is considered suitable habitat for Western Grey Kangaroos (*Macropus fuliginosus*) and introduced European Rabbits (*Oryctolagus cuniculus*). Evidence of rabbit activity was observed during the site visit.

## 2.3 Hydrology and Drainage

The revegetation area at Lot 1113 consists of steep sloping areas, with one gully evident. The sloped areas are unlikely to retain water. Depressions at the base of sandy slopes have been subject to invasion of predominantly grassy weeds, indicating that water may drain to these areas. No watercourses are present at the site. Evidence of erosion on sloping areas was not observed due to the well-drained, sandy soils.

## 2.4 Disturbances, Risks and Management

The Lot 1113 revegetation site, having been previously subject to disturbance activities, faces a number of risks requiring management. Evidence of a previous, failed revegetation attempt within the study area exist, with numerous deteriorated plant guards observed during the site visit. Ongoing risks identified at the study area include the steep gradient of slope where previous plantings have failed, the absence of topsoil, evidence of rabbit activity and the presence of weeds.

### 2.4.1 Site Slope

The steep slope present within the revegetation study area could present future erosion and moisture retention issues. To manage this risk, comprehensive site preparation is required. Ripping and furrowing of soil, although ideal, would likely be inappropriate due to significant erosion risk. With remnant areas of self-sown vegetation present along the sloped area, the use of a rotary hoe is instead recommended for the site. This could be achieved with the use of a rotary hoe attachment fitted to a Posi-Track. The Posi-Track could work across the contour of the slope, avoiding native remnant vegetation. This could increase moisture retention at the base of plants, and create a suitable seed bed for application of native seed.

### 2.4.2 Topsoil Absence

The absence of topsoil, despite being potentially associated with a lower invasive weed coverage, is generally associated with limitations in soil biology. Such limitations may reduce plant growth and seed germination success. This may have been a contributing factor to the failed previous revegetation attempt evident at Lot 1113. This risk may be managed with the introduction of microbial components such as bacteria, mycorrhizal fungi and carbon back into the soil during site preparation and planting activities. To introduce bacteria and carbon back into the soil during site preparation, Bactivate® in a liquid form is recommended to be sprayed at the site (as further detailed in Section 4). Ideally, carbon could further be reintroduced into the soil through the addition of mulch prior to utilisation of the rotary hoe, allowing for the mixing of carbon-containing mulch into the soil. This would be particularly valuable throughout areas where topsoil is absent.

### 2.4.3 Weed Presence

Invasive weeds are present on site, although these are not yet spread extensively across the study area. This may be due to the absence of intact topsoil, creating less favourable growing conditions. As outlined in Section 2.2.2, two WoNS (African Lovegrass and Bridal Creeper) were observed during the site visit, growing alongside other introduced species such as Couch Grass, Capeweed and Pine trees.

Weed presence is likely to require ongoing monitoring and maintenance. There is a potential for ongoing weed invasion from adjacent, open properties, however this may be managed through correct implementation of initial and follow-up weed control (as detailed in Section 5), along with successful establishment of native species. Overall, planting of native species sourced from local provenance will improve vegetation condition, habitat quality and connectivity within the site over the long term.



#### 2.4.4 Grazing Pressure

Western Grey Kangaroos (*Macropus fuliginosus*) and European Rabbits (*Oryctolagus cuniculus*) exert grazing pressure on native vegetation. With evidence of rabbit activity observed within the study area, it is likely that this pressure has contributed to the lack of understorey species throughout the site. No evidence of kangaroo activity was observed during the site visit, potentially due to the presence of adequate fencing on the western and eastern site boundaries.

Management strategies to exclude rabbit-induced grazing pressures include the installation of rabbit netting to all fence boundaries, in combination with rabbit baiting. To prevent future kangaroo grazing, it is recommended that vermin mesh is installed to upgrade eastern and northern fence boundaries. By ensuring that grazing species are completely excluded from site prior to the commencement of revegetation works, ongoing control efforts can be alleviated, along with the requirement for plant guards.

#### 2.4.5 Other

*Phytophthora cinnamomi* may exist on site. This – along with other pathogens – could be introduced through tubestock, or equipment used in rehabilitation (including on the clothes or person of site workers). This risk would be reduced by only using material from a NGIWA accredited nursery. Standard plant hygiene practices would also be utilised during revegetation, to minimise the risk of further spread (provided in Appendix D).

## 3 Management Commitments

### 3.1 Vision Statement and Objectives

The management vision for the site is:

*To enhance existing ecological values and improve ecological function of the study area, by controlling environmental weeds and revegetating the degraded and open areas.*

The vision, objectives and completion targets are consistent with the **SMART** principles (DER, 2013):

- **S**pecific
- **M**easurable
- **A**chievable
- **R**elevant
- **T**ime-bound

In view of the above, the key objectives associated with the revegetation works are to:

- Enhance the offset area with revegetation of species utilised for black cockatoo foraging and eventually breeding, along with those valuable to the Western Ringtail Possum
- Implement successful revegetation by controlling present and ongoing risks to the site
- meet the proposed project completion targets (provided in Section 3.2 below)

### 3.2 Completion Target

The target is to meet the objectives in Section 3.1, based on the species list in Appendix B. Table 3-1 summarises rehabilitation and revegetation targets for the site.

**Table 3-1 Rehabilitation targets**

Aspect	Attribute	Measure	Target
<b>Flora and vegetation</b>	Vegetation cover	Number of stems per hectare	2000/ha after 10 years
	Species richness	Number of species present (within each stratum layer)	50 % species richness after 10 years
	Weed species presence and abundance	List of weed species and approximate percentage cover	For number of weeds present to be no more prevalent than prior to revegetation.
<b>Flora/fauna</b>	Presence of species valued by target fauna for foraging and/or breeding habitat	Presence and growth of <i>Corymbia calophylla</i> , <i>Eucalyptus marginata</i> and <i>Agonis flexuosa</i> trees.	For trees with target fauna value to be present and growth rates of such to be increasing.
	Presence of target fauna species utilising revegetated area for foraging and/or breeding habitat	Number of target fauna species observed at site and/or presence of secondary evidence such as chewed nuts and/or presence of hollows.	For evidence that target fauna species are utilising revegetated area to be present on site.

## 4 Implementation Schedule

Recommended timing for implementation of primary weed control and initial planting activities are shown in Table 4-1. Implementation has been broken down into three phases, detailing the tasks to be undertaken:

- prior to **(Phase I)**,
- during **(Phase II)**,
- and following the completion of **(Phase III)** planting.

Actual implementation timing may be impacted by availability of seedlings, contractors and rainfall. The timing and extent of ongoing maintenance activities depend on monitoring findings (Section 8.1).

**Table 4-1 Implementation schedule for primary weed control and planting.**

Task	Timing	Process Notes
<b>Phase I</b>		
Sourcing of plant stock/seed	Immediately	<ul style="list-style-type: none"> <li>• Recommended use of native species stock sourced from local provenance</li> </ul>
Fencing upgrade	Immediately	<ul style="list-style-type: none"> <li>• As detailed in Section 5.1</li> </ul>
Rabbit control	Following upgrade of fencing, prior to seeding/planting.	<ul style="list-style-type: none"> <li>• As detailed in Section 5.2</li> </ul>
Removal of pre-existing plant guards	Prior to weed control, soil preparation and seeding	<ul style="list-style-type: none"> <li>• As detailed in Section 5.3</li> </ul>
Weed control - initial	May/June and September 1 year prior	<ul style="list-style-type: none"> <li>• As detailed in Section 5.4</li> </ul>
Soil preparation	After rain, just prior to seeding	<ul style="list-style-type: none"> <li>• As detailed in Section 5.5</li> </ul>
Seeding	Immediately following soil preparation, prior to rain	<ul style="list-style-type: none"> <li>• As detailed in Section 5.6</li> </ul>
Bacteria reintroduction	Following seeding	<ul style="list-style-type: none"> <li>• As detailed in Section 5.7</li> </ul>
<b>Phase II</b>		
Weed control – follow-up	May/June, prior to planting and August/September during year of installation	<ul style="list-style-type: none"> <li>• Grass-selective herbicide applied to remnant weeds following planting</li> </ul>
Planting	May/June when soil moisture levels are suitable (period when reasonable rainfall has occurred or is predicted to occur during planting)	<ul style="list-style-type: none"> <li>• As detailed in Section 7</li> </ul>

Watering	Not required if planting / seeding occurs during period of suitable soil moisture content	–
Plant protection	Not required if fencing is upgraded sufficiently	<ul style="list-style-type: none"> <li>Upgraded fencing and elimination - as opposed to control - of grazing pests should eliminate the requirement of plant guards</li> <li>Plant guards not required for germination of dispersed seed</li> </ul>
<b>Phase III</b>		
Monitoring	<p>To occur</p> <ul style="list-style-type: none"> <li>In spring following implementation of works</li> <li>Annually for two years following implementation</li> <li>5- and 10-years post completion</li> </ul> <p>To reduce ongoing costs, it is recommended that additional brief monitoring checks-ups are undertaken each month following implementation.</p>	<ul style="list-style-type: none"> <li>As detailed in Section 8</li> </ul>
Weed control – follow-up	Requirement as identified through monitoring	<ul style="list-style-type: none"> <li>Grass-selective herbicide applied to remnant weeds following planting</li> </ul>

## 5 Site Preparation

Site preparation activities are essential for this site to obtain the greatest chance of successful rehabilitation to meet completion requirements. Previous failure of revegetation efforts at Lot 1113 may have been attributed to insufficient site preparation. Recommendations for site and soil preparation to be carried out prior to revegetation within the study area are outlined in Table 4-1.

**Table 5-1 Summary of recommended tasks for site preparation within the study area, to be performed prior to revegetation.**

Task	Purpose	Process
<b>Fencing upgrade</b>	<ul style="list-style-type: none"> <li>Grazing exclusion</li> </ul>	<ul style="list-style-type: none"> <li>Installation of vermin mesh to existing fence on eastern and northern boundaries</li> <li>Installation of rabbit netting to all fence boundaries</li> </ul>
<b>Pest control</b>	<ul style="list-style-type: none"> <li>Rabbit-specific exclusion</li> <li>Remove the requirement for future rabbit control</li> <li>Remove the requirement for plant guards</li> </ul>	<ul style="list-style-type: none"> <li>Rabbit baiting</li> <li>Potential for warren fumigation</li> </ul>
<b>Plant guard removal</b>	<ul style="list-style-type: none"> <li>Allow for additional site preparation tasks</li> </ul>	<ul style="list-style-type: none"> <li>Remove and discard of plant guards present at Lot 1113</li> </ul>
<b>Weed control – initial</b>	<ul style="list-style-type: none"> <li>Remove invasive weeds</li> <li>Improve chances of growing success for native species (both regenerated and revegetated) by reducing competition</li> <li>Improve condition of site</li> </ul>	<ul style="list-style-type: none"> <li>General non-selective herbicide application for patches of mixed weeds</li> <li>Selective herbicide application for concentrated patches of same-type weeds</li> </ul>
<b>Soil preparation with rotary hoe</b>	<ul style="list-style-type: none"> <li>Soil aeration and turning</li> <li>Moisture retention</li> <li>Preparation of suitable seed bed</li> <li>Reintroduction of carbon into soil profile (if mulch added)</li> </ul>	<ul style="list-style-type: none"> <li>Posi-Track or similar fitted with rotary hoe to prepare suitable seed bed</li> <li>Addition of mulch prior to use of rotary hoe for mixing into soil</li> <li>Work across the contour, avoiding chances of erosion and disturbance of remnant and regenerative vegetation</li> </ul>
<b>Seeding</b>	<ul style="list-style-type: none"> <li>Adequate seed mix preparation to maximise chances of successful germination</li> </ul>	<ul style="list-style-type: none"> <li>Treat seed mix</li> <li>Prepare seed mix by adding a microbial inoculant such as</li> </ul>

	<ul style="list-style-type: none"> <li>• Spread of seed for implementation of revegetation</li> </ul>	<p>MycoApply® Maxx to reintroduce Mycorrhizal Fungi into the soil profile</p> <ul style="list-style-type: none"> <li>• Prepare seed mix by adding medium grade vermiculite granules to bulk up the seed for ease of even broadcasting.</li> <li>• Spreading of seed immediately following use of rotary hoe, prior to rain</li> </ul>
<p><b>Bacteria reintroduction</b></p>	<ul style="list-style-type: none"> <li>• Reintroduction of bacteria and carbon into soil profile</li> <li>• Enhance growing conditions revegetation</li> </ul>	<ul style="list-style-type: none"> <li>• Spraying of microbial inoculant such as Bactivate® (liquid form) across whole revegetation area, as per manufacturer guidance</li> <li>• Recommended use products Bactivate5 (containing bacteria), applied with Bactivate® BioBoost Enhance (containing carbon)</li> </ul>

## 5.1 Fencing Upgrade

For the purpose of grazing exclusion – as opposed to ongoing control – it is recommended that boundary fencing at Lot 1113 is upgraded adequately prior to revegetation. Currently, Lot 1113 is fenced on all sides. The western and southern boundaries are sufficiently fenced to prevent kangaroo access into site (Photo 4); however, the eastern and northern site boundaries could be upgraded to the same degree without difficulty. To achieve this, vermin mesh can be installed to eastern and northern fence lines.

It is recommended that rabbit netting is installed to all fence boundaries, at a height of ~ 600 mm attached to the existing fence, 300 mm folded to the ground acting as an impenetrable mat. This is required for the exclusion of rabbit grazing for revegetation success. It is to be noted that the installation of rabbit netting is also likely to inhibit the movement of small, ground-dwelling animals into site (such as the Quenda (*Isoodon fusciventer*) (P4)). Therefore, based on the results of ongoing monitoring, a decision can be made to remove the rabbit netting at a stage when revegetated plants are established.

To ensure that complete grazing exclusion is achieved, vermin mesh and rabbit netting must also be installed to site access gateways.

**Timing:** To be undertaken immediately



**Photo 4** Adequately fenced boundary present at Lot 1113.

## 5.2 Pest Control

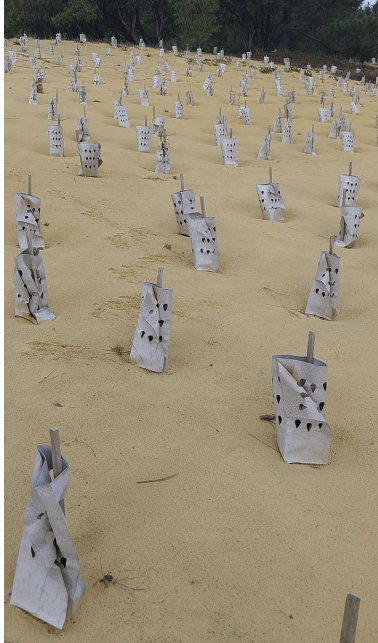
The revegetation area is considered suitable habitat introduced European Rabbits (*Oryctolagus cuniculus*), with evidence of rabbit activity observed on site. To ensure that rabbits are completely excluded from the site prior to the commencement of revegetation works, a combination of baiting and upgraded fencing is required. Baiting implementation can be carried out by a local contractor (with potential contractors outlined in Appendix C). Fumigation is also an option that can be carried out by contractors if warrens are observed within the study area. This would further ensure that rabbits are completely excluded.

**Timing:** To be undertaken following fencing upgrades

## 5.3 Plant Guard Removal

Evidence of a previous failed revegetation attempt at Lot 1113 has resulted in the presence of multiple deteriorated plant guards scattered across the sloped area at site (Photo 5). To ensure that soil preparation and revegetation works can progress efficiently, pre-existing plant guards are required to be removed from site prior to the commencement of these activities.

**Timing:** To be undertaken prior to weed control, soil preparation and seeding.



**Photo 5** Deteriorated plant guards from previous revegetation attempt at Lot 1113.

## 5.4 Weed Control – Initial

As detailed in Section 6, widespread, non-selective herbicide application is recommended to target large patches of mixed, invasive weed species. If concentrated patches of one weed type exist, selective herbicide application can be utilised for efficiency.

**Timing:** To be undertaken in or around May/June and August/September during the year prior to planting, prior to soil preparation and seeding.

## 5.5 Soil Preparation

Adequate soil preparation is essential for ensuring the maximum chances of revegetation success. Soil preparation is of particular importance for the study area, due to the absence of topsoil observed for the majority of the revegetation area. A Posi-Track fitted with a rotary hoe is recommended for soil turning across the revegetation area, able to work across the contour, avoiding remnant and regenerated vegetation.

For greatest chances of success, it is suggested that carbon is reintroduced into the soil profile (which is likely lacking with the absence of topsoil). This can be achieved by adding a layer of mulch to the revegetation area prior to undertaking soil turning with the rotary hoe. This would allow for the mulch – and therefore carbon – to be adequately mixed into the soil.

**Timing:** To be undertaken directly prior to seeding.



## 5.6 Seeding

Seed preparation is required prior to spreading. This is inclusive of appropriate seed treatment for the purpose of breaking seed dormancy and promote successful germination. Treatment types will vary based on the species of seed. Seed species and rates recommended for this site are detailed in Appendix B. Seed species are selected for their suitability to enhance black cockatoo foraging and breeding habitat, along with providing value to other fauna species. Species are additionally selected based on their suitability for the site soil type and surrounding/remnant native vegetation present on site.

It is recommended for this site that approximately 4 kg of seed is spread per hectare.

Seeds should be spread using direct seeding methodology, occurring immediately following the use of the rotary hoe. This would allow for greater chances of successful seed bedding after rain. By spreading seed directly following rotary hoe soil preparation, the seed is subject to better soil contact, as opposed to being spread on a flat, compact surface.

It is recommended that seed is mixed with a microbial inoculant to introduce fungi into the soil profile, such as MycoApply® Maxx. This would reintroduce Mycorrhizal Fungi into the soil. Vermiculite granules of medium size should also be added to the seed mix to increase moisture and nutrient retention for germination success.

**Timing:** To be undertaken immediately following soil preparation, prior to rain.

## 5.7 Bacteria Reintroduction

Bacteria can be reintroduced to the soil profile to promote plant growth. The product Bactivate® 5, applied with Bactivate® BioBoost Enhance can be sprayed in liquid form across the site to introduce bacteria, along with some carbon to the soil. This will increase chances of successful germination and plant growth.

**Timing:** To be undertaken following seeding, prior to Phase II processes and planting.

## 6 Weed Control

The implementation of a weed control program is essential as part of a revegetation plan to ensure the success of the plan and will enhance natural regeneration within areas not requiring revegetation. Control is inclusive of:

- Initial widespread/general control of grass and broadleaf weeds on first applications
- Targeted control of remnant weeds following planting
- Targeted control of remnant weeds identified during ongoing monitoring

Chemical weed control should be undertaken in accordance with the general guidelines for herbicide application included in Table 5-1.

**Table 6-1 Standard guidelines for herbicide application**

Standard	Detail
<b>Trained personnel and legal use</b>	Herbicide application should be undertaken by qualified personnel who are able to identify relevant weed species, follow legal requirements for application (including application in accordance with manufacturers' instructions and safety requirements).
<b>Monitor for weeds appearing later/not identified in survey</b>	Late spring and summer spraying may be necessary for weeds that were not present during initial treatment.
<b>Work planning/staging</b>	Weed control should generally commence in areas of best condition, moving next to areas in worse condition. This helps minimising the risk of transporting weeds from the low condition areas into better areas.
<b>Weather conditions</b>	Spray during still, dry conditions, when no rain is predicted within 12 hours. Conduct spraying to minimise spray drift that could affect non-target species.
<b>Timing of post-treatment planting</b>	Planting should not occur until at least two weeks after spraying, or once sprayed weeds are effectively dead.

### 6.1 Species-specific Control Methods

Note: Weed management methods should be checked and carried out by a suitably qualified weed contractor with specialist knowledge of weed control in natural areas.

#### 6.1.1 Perennial Grasses

The site has predominantly grassy perennial weeds throughout areas requiring revegetation, mainly *Eragrostis curvula* (African Lovegrass) and *Cynodon dactylon* (Couch Grass). Grasses are generally concentrated in patches, and very limited to no native remnant vegetation exists at the site. For initial control (May/June and August/September one year prior to planting), blanket weed control using non-selective herbicide such as Glyphosate is recommended for areas invaded with both grass and broadleaf weeds. Note that if areas present grassy-only weeds, grass-selective herbicide such as Haloxypop can also be used for efficiency.

For follow-up control (May/June just prior to planting and August/September following planting, plus ongoing), grass-selective herbicide can be again utilised to eliminate remaining invasive grasses.

**Control method:** For non-selective application, spray with Glyphosate (mixed as per label instructions) throughout areas requiring revegetation. For grass-selective application, spot-spray with a Haloxypop herbicide (mixed as per label instructions).

### 6.1.2 Broadleaf Weeds

Scattered broadleaf weeds were observed on site, including *Arctotheca calendula* (Capeweed). Presence of broadleaf weeds was limited, and these may be easily controlled through initial widespread application using non-selective herbicide, such as Glyphosate. If broadleaf weeds persist, selective herbicide can be applied, such as Lontrel.

**Control method:** For non-selective application, spray with Glyphosate (mixed as per label instructions) throughout areas requiring revegetation. For broadleaf-selective application, spot-spray with a Lontrel herbicide (mixed as per label instructions).

### 6.1.3 Invasive Herbs

One isolated observation of *Asparagus asparagoides* (Bridal Creeper) was recorded during the site visit (Photo 2c). Although the observed plant had not proliferated significantly, the species exists as a WoNS (Weeds Australia, 2021), and exclusion of *A. asparagoides* prior to planting would prevent the potential future management issues. The use of herbicides have been identified by Weeds Australia (2021) as the most effective control method for *A. asparagoides*. Non-selective application such as Glyphosate would be sufficient for control of the plant, with ongoing monitoring to be utilised as a measure of exclusion effectiveness. Glyphosate application can occur during both initial and follow-up control periods for the site.

**Control methods:** Spot-spray the isolated plant with Glyphosate (mixed as per label instructions).

## 6.2 Weed Control Schedule

Adequate weed control is essential prior to revegetation, soon after planting and then ongoing maintenance to ensure successful seedling establishment. Table 5-2 provides a guide to weed control implementation at Lot 1113. Ongoing maintenance weed control following revegetation will be required based on results from ongoing monitoring at the site.

**Table 6-2 Recommended weed control timeline within the study area.**

Timing		Control
<b>Phase I (prior to planting)</b>	May/June	Widespread control using generally non-selective herbicide
	August/September	Widespread control using generally non-selective herbicide,
<b>Phase II</b>	May/June	Non-selective herbicide at least 2 weeks prior to planting
	August/September	Selective herbicide for remnant invasive weeds
<b>Phase III (following revegetation)</b>	May/June or August/September	Non-selective or selective Herbicide where required, as dictated by site monitoring results

## 7 Planting

### 7.1 Revegetation Requirements

The revegetation area at Lot 1113 is approximately 3.19 ha in size (Figure 3 Appendix A). All areas of the site are of Completely Degraded to Degraded condition, with little to no native understorey vegetation present. Requirements for revegetation of the offset site are at variance to Principle b), with the primary aim of enhancing the area with black cockatoo foraging (and eventually breeding) habitat, along with the introduction of other flora species that may be utilised by the Western Ringtail Possum (*Pseudocheirus occidentalis*) (Critically Endangered).

### 7.2 Plant Stock

Seedlings may include tubestock, with a preference for forestry pots over small plant cells to maximise chances of success. Forestry pots are economical and are generally at a stage of growth that is able to establish successfully during revegetation.

Advanced 1 litre pots are recommended for planting of tree species. Benefits to utilising advanced plants include their ability to withstand erosion events better than seedlings, greater survival rates, their ability to gain better access to ground moisture when planted with an auger, therefore more effectively withstanding dry periods, and the requirement to use less plants to cover the revegetation area. If plants are subject to grazing pressures, they are additionally more resilient to rabbit and kangaroo damage.

Species to be used in site rehabilitation are listed in Appendix B. It is possible that not all species will be available for revegetation, and in this case additional numbers of listed species should be used rather than ordering of additional unlisted species. Where possible, seedlings should be sourced from suppliers that use local provenance propagation material, as these are more likely to be genetically similar to varieties that would naturally have occurred on the site, and also are more likely to be suited to site conditions. A list of local potential suppliers and revegetation contractors is provided in Appendix C.

Tubestock may help introduce microorganisms that have become depleted in the site soil, which can be beneficial to revegetation success. It is essential that plants are sourced from a reputable supplier and inspected for health prior to purchase and importation to the site. Stock must be sourced from accredited dieback free suppliers (refer to Appendix C for recommended suppliers).

### 7.3 Planting Density

Sufficient planting density for the study area is recommended, of at least 2500 – 3000 plants per hectare. The entirety of the site is to be treated as one management zone, and planting methodology should be consistent across the area. Professional revegetation practitioners should be engaged to oversee appropriate distribution of seedlings throughout the site. The recommended densities are aimed at achieving a target of 50% cover within two years of completion.

Plants should be randomly distributed, rather than evenly spaced, to achieve a natural effect. Grouping of several seedlings of the same species will also reflect a more natural distribution.

### 7.4 Planting Timing

Planting of seedlings across most of the site should occur between the months of or around May to June. This should occur when soil moisture levels are suitable, following a rainfall event.

Timing of planting must also give due consideration to weed control activities. For areas requiring control of grassy weeds and minor broadleaf weeds, weed control can effectively be done in the same year as planting. In this situation, spot-spraying of weeds for seedlings should take place at least one month prior to planting, and effectiveness of spot-spraying must be confirmed before planting.

## 7.5 Planting Methodology

All plants should be planted with the use of an Auger to ensure that sufficient planting depth is achieved, and a shallow basin is formed. Plant root balls should be loosened in soil during planting to overcome compaction and improve drainage. This will facilitate successful plant establishment. Plants are not required to be staked for support. Free standing plants generally have increased durability and strength in the long-term as opposed to staked plants.

For seedlings, low phosphorous fertiliser pills are recommended to be added at the time of planting (with the exclusion of Proteaceae spp.). For advanced plants, the addition of TerraCottem© soil conditioner granules is recommended during planting (or a similar product). This will increase the likelihood of successful plant growth in marginal soil conditions.

Plants should be placed in suitable locations based on individual species light requirements or growth habits.

## 7.6 Revegetation Maintenance

Revegetation works will require ongoing maintenance after planting, including:

- follow-up weed control as specified in Section 6, and
- replacement plantings.

It is expected that following revegetation there will be a maximum loss of about 50% of the original plantings. Subsequently, replacement plantings may be required to maintain the original planting numbers at a minimum of 50% survivorship, to achieve the target of a minimum of 50% permanent groundcover within 5 years of completion.

## 8 Monitoring and Maintenance

A program of revegetation monitoring is required to ensure that the revegetation objectives are achieved. Monitoring is recommended to be undertaken at the following intervals:

- In spring following implementation of works
- Annually in spring for the following two years
- After five years
- After 10 years

It is additionally recommended that regular (monthly) quick check-ups are undertaken during the initial monitoring interval to ensure that weed and pest control measures are acting effectively on the site. This may reduce long-term costs by decreasing the requirement for significant maintenance works down the track.

Recommended monitoring methodology is inclusive of two procedures:

- Overstorey monitoring utilising permanent 10 m x 10 m plots to sample tree density, height, and stem diameter at breast height (DBH) by species (for measuring growth rates)
- Understorey monitoring utilising permanent transects consisting of a line of 1 m x 1 m quadrats to sample native plant density (number of stems) and species present (for measuring species richness, along with presence of invasive species)

Graphing can then occur to illustrate vegetation cover, species richness and growth rates of trees containing fauna value. Evidence of fauna habitat utilisation and signs of pest activity may be opportunistically recorded during monitoring visits. Monitoring of the presence of weed species and pest activity should determine the control measures required at the site. Where weed and pest control issues are identified, reference should be made to control methodologies detailed in Section 6 and 5.2. If additional weed or pest species become established over time, advice must be sought from a suitably experienced contractor to determine suitable control methods.

Fence boundaries should also be inspected upon each monitoring visit to ensure that their integrity has not been compromised. If fencing becomes inadequate, maintenance activities should be undertaken. Once native plant species are suitably established, rabbit netting can be removed to allow the access of smaller native fauna species to utilise the revegetated habitat. Where planting is unsuccessful and does not meet completion targets, additional planting may be required. If the scale of additional planting required is significant, consideration should be given as to potential reasoning why seedling establishment was unsuccessful, and any issues should be addressed for subsequent plantings. Examples of problems may be:

- Grazing by fauna due to insufficiencies in fencing upgrade
- Competition with weeds
- Poor planting technique
- Excessive shading
- Localised conditions not suited to species
- Physical disturbance by humans

## 9 References

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## Appendix A    Figures

Figure 1 Location Map of Clearing and Offset Sites

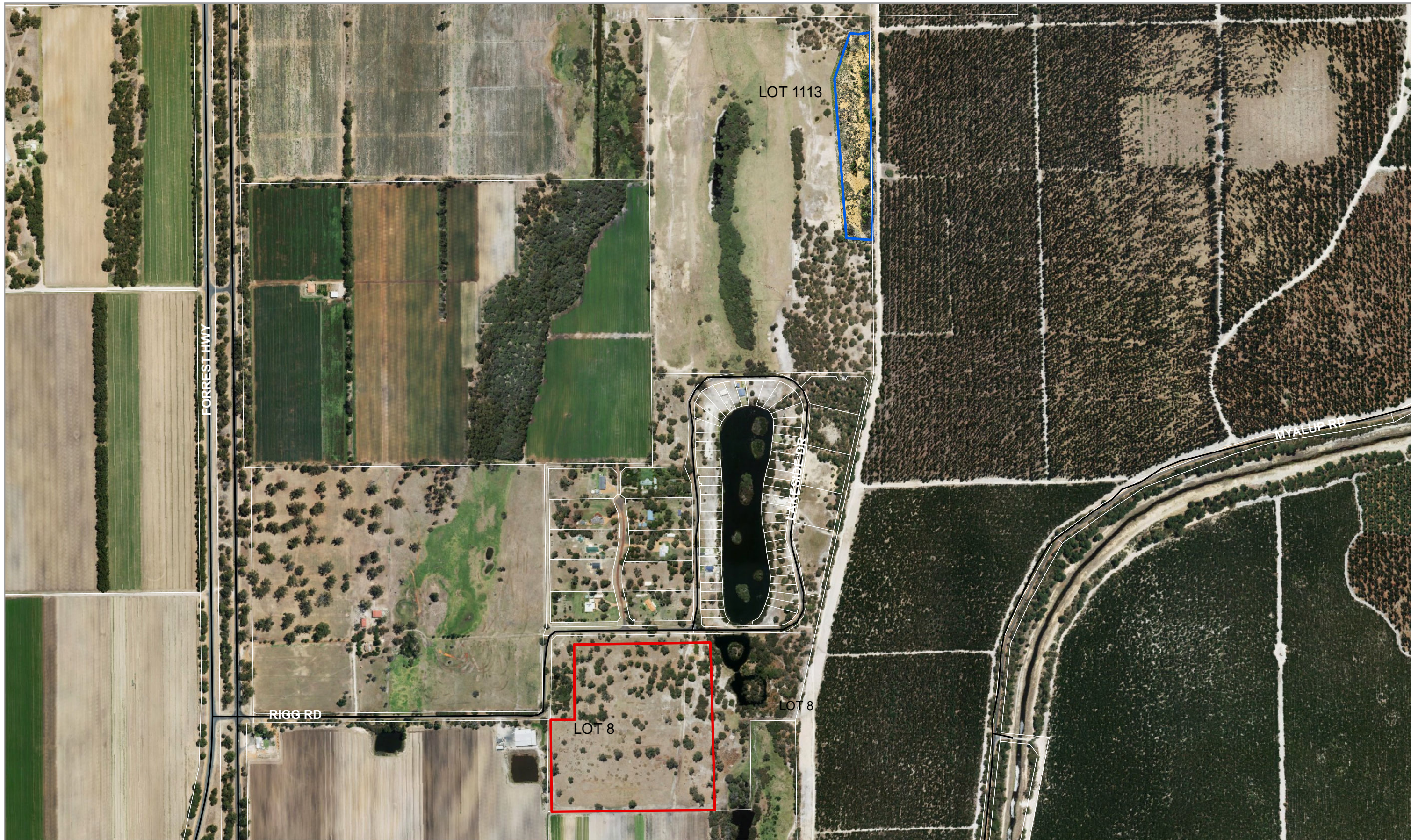
Figure 2 Clearing Location

Figure 3 Revegetation Management Plan Study Area at Lot 1113, West Break Road, Myalup

Figure 4 Soil Mapping of the Revegetation Management Plan Study Area

Figure 5 Vegetation Complexes of the Revegetation Management Plan Study Area



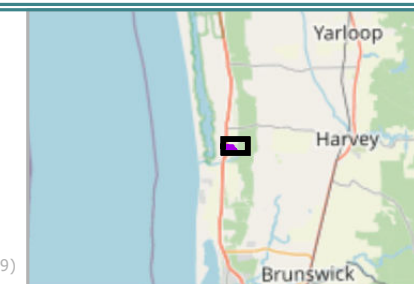


**FIGURE 1 LOCATION MAP OF CLEARING AND OFFSET SITES**

- CPS 9881/1 Application area
- Proposed revegetation 2023 (3.19 ha)

**LOTS 8 AND 1113 RIGG ROAD, MYALUP**

Ref: SW416 Clearing permit reveg\_  
Date: 27/07/2024 Author: SP

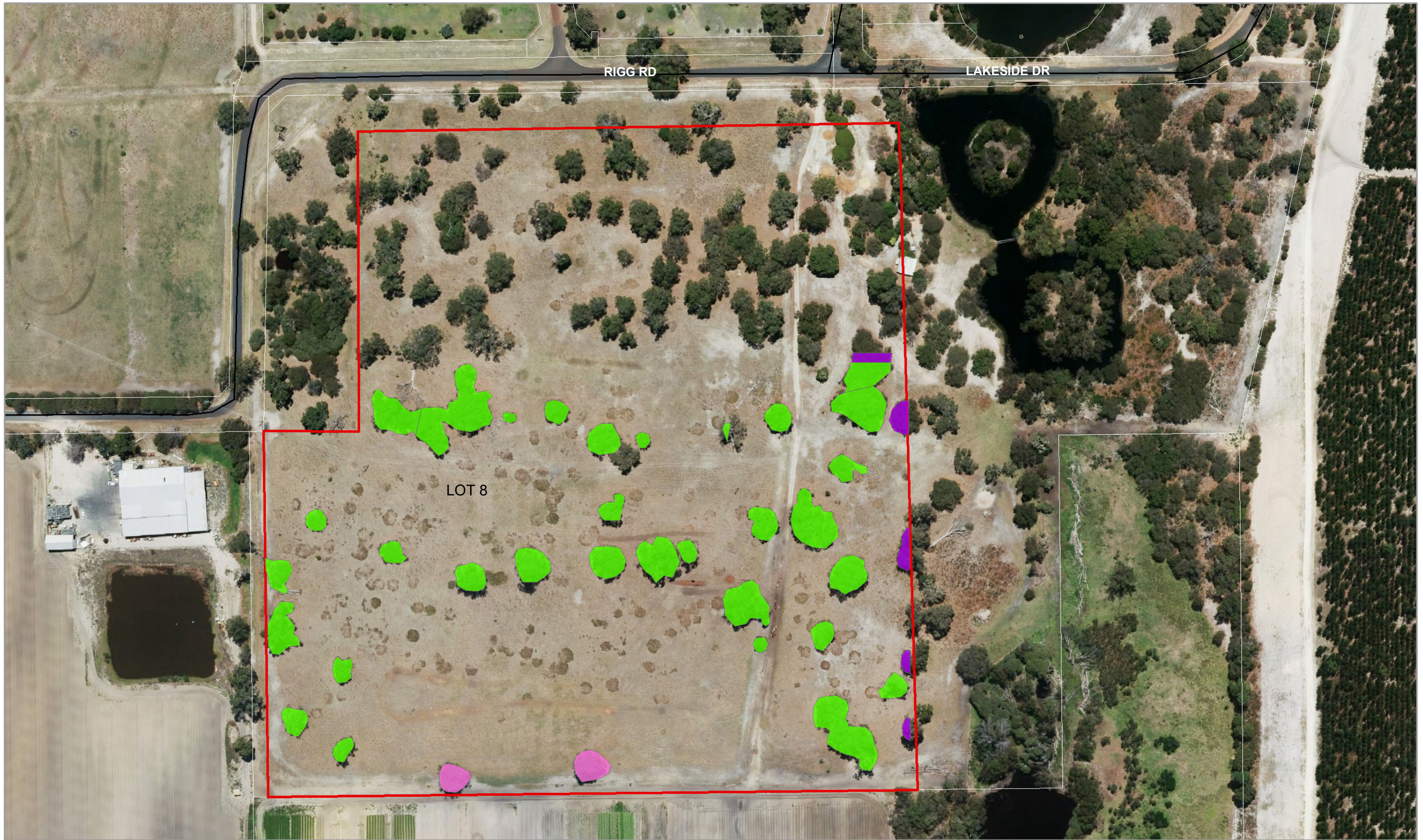


A3 @ 1:8000  
0 50 100 200 m  
GRID: GDA zone 50



Source: Base map © Esri and its data suppliers. SLIP Landgate (2019)



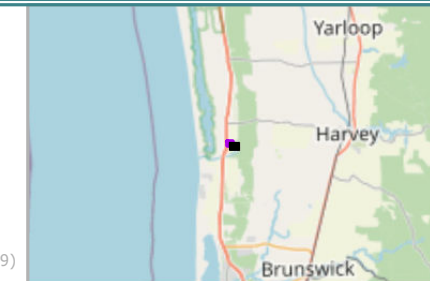


**FIGURE 2 CLEARING SITE**

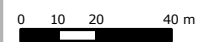
- Vegetation under application (0.9 ha)
- Exempt: Regulation 5 Item 10 Clearing for fence line` (0.05 ha)
- Exempt: Regulation 5 Item 19 Clearing of isolated trees (0.05 ha)
- CPS 9881/1 Application area

**LOT 8 RIGG ROAD, MYALUP**

Ref: SW416 Clearing permit reveg\_  
Date: 27/07/2024 Author: SP



A3 @ 1:2009



GRID: GDA zone 50



Source: Base map © Esri and its data suppliers. SLIP Landgate (2019)



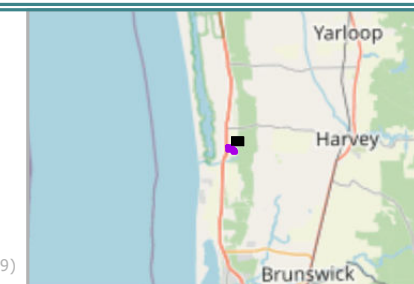


**FIGURE 3 REVEGETATION MANAGEMENT PLAN STUDY AREA AT LOT 1113**

**LOT 1113 RIGG ROAD, MYALUP**

Ref: SW416 Clearing permit reveg\_  
Date: 27/07/2024 Author: SP

- Proposed revegetation 2023 (3.19 ha)
- Existing vegetation**
- Mostly cleared or *Pinus spp.* (2.63 ha)
- Patchy native vegetation with scattered *Pinus spp.* (0.56 ha)



A3 @ 1:2500

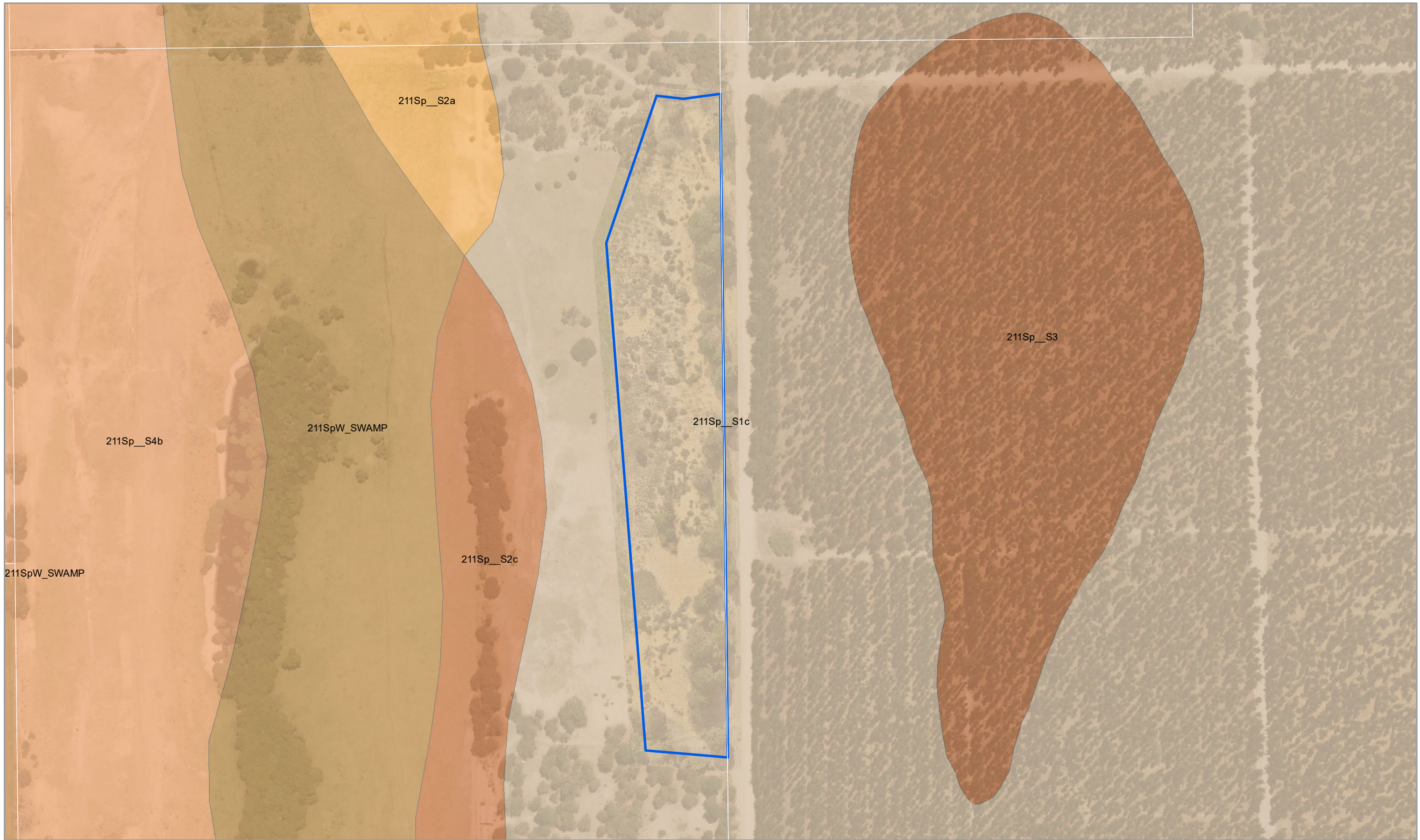


GRID: GDA zone 50



Source: Base map © Esri and its data suppliers. SLIP Landgate (2019)





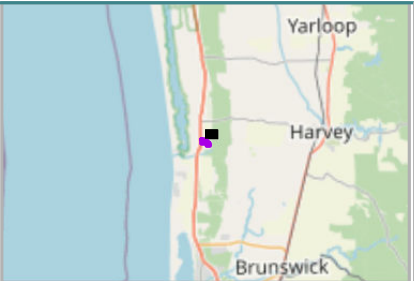
**FIGURE 4 SOIL MAPPING**

**LOT 1113 RIGG ROAD, MYALUP**

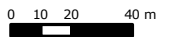
Ref: SW416 Clearing permit reveg\_  
Date: 27/07/2024 Author: SP

- Proposed revegetation 2023 (3.19 ha)
- 211Sp\_\_S3
- 211Sp\_\_S4b
- 211SpW\_SWAMP
- 211Sp\_\_S1c
- 211Sp\_\_S2a
- 211Sp\_\_S2c

Source: Base map © Esri and its data suppliers. SLIP Landgate (2019)



A3 @ 1:2500



GRID: GDA zone 50







Yoongarillup Complex 56

Karrakatta Complex-Central and South 49

**FIGURE 5 VEGETATION COMPLEX**

Proposed revegetation 2023 (3.19 ha)

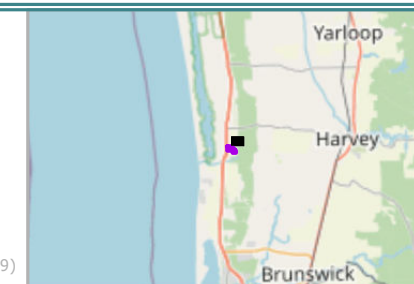
**Vegetation complex (SLIP 2024)**

49

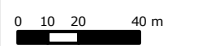
56

**LOT 1113 RIGG ROAD, MYALUP**

Ref: SW416 Clearing permit reveg\_  
Date: 27/07/2024 Author: SP



A3 @ 1:2500



GRID: GDA zone 50



Source: Base map © Esri and its data suppliers. SLIP Landgate (2019)



## Appendix B Revegetation species list and seed rates

	Planting			Seeding	
	Per Ha (Stems)	Total (Stems)	Plant Size	Per Ha	Total (g)
<b>Canopy</b>					
<i>Agonis flexuosa</i>	300	<b>900</b>	1ltr	100	<b>300</b>
<i>Allocasuarina fraseriana</i>	100	<b>300</b>	1ltr	250	<b>750</b>
<i>Banksia attenuata</i>	100	<b>300</b>	1ltr	150	<b>450</b>
<i>Corymbia calophylla</i>	300	<b>900</b>	1ltr	350	<b>1050</b>
<i>Eucalyptus gomphocephala</i>	200	<b>600</b>	1ltr	-	-
<i>Eucalyptus marginata</i>	100	<b>300</b>	1ltr	125	<b>375</b>
<b>Mid Story</b>					
<i>Anigozanthus manglesii</i>	200	<b>600</b>	Forestry Tubes	150	<b>350</b>
<i>Acacia pulchella</i>	-	-	-	125	<b>375</b>
<i>Acacia cochlearis</i>	-	-	-	250	<b>750</b>
<i>Acacia divergens</i>	-	-	-	80	<b>240</b>
<i>Acacia saligna</i>	100	<b>300</b>	Forestry Tubes	-	-
<i>Calothamnus sanguineus</i>	250	<b>750</b>	Forestry Tubes	150	<b>350</b>
<i>Hakea prostrata</i>	250	<b>750</b>	Forestry Tubes	-	-
<i>Hypocalymma angustifolium</i>	-	-	-	250	<b>250</b>
<i>Hakea trifurcata</i>	200	<b>600</b>	Forestry Tubes	-	-
<i>Jacksonia furcellata</i>	200	<b>600</b>	Forestry Tubes	80	<b>240</b>
<i>Kunzea glabrescens</i>	-	-	-	350	<b>1050</b>
<i>Melaleuca systema</i>	-	-	-	350	<b>1050</b>
<i>Melaleuca huegelii</i>	-	-	-	100	<b>300</b>

<i>Spyridium globulosum</i>	-	-	-	250	<b>750</b>
<b>Ground Cover</b>					
<i>Hardenbergia comptoniana</i>	-	-	-	100	<b>300</b>
<i>Kennedia prostrata</i>	-	-	-	250	<b>750</b>
<i>Rhagodia baccata</i>	-	-	-	150	<b>350</b>
<i>Trachymene coerulea</i>	-	-	-	400	<b>1200</b>
<i>Lepidosperma gladiatum</i>	400	-	Forestry Tubes	-	-
<b>Total</b>	<b>(Stems) 2700</b>	<b>6900</b>	<b>(Grams) 4010</b>	<b>11230</b>	

## Appendix C Relevant local suppliers and contractors

### **Potential local plant/seed stockists**

***Note early ordering of plant/seed is of high importance. Ordering from multiple suppliers as opposed to just one may decrease the risk of not obtaining stock.***

Carramar Coastal Nursery: 1834 Mandurah Road, Port Kennedy, Ph: 0407 472 894

Hamel Nursery: 178 Attein Road, West Coolup, Ph: 0439 769 379

Leschenault Landcare Community Nursery: 114 Johnston Road, Bunbury, Ph: 0477 799 900

Geographe Community Landcare Nursery: Queen Elizabeth Ave, Busselton, Ph: 0429 644 885

The Tube Nursery: Blond St, Cowaramup, Ph: 9755 5509

Everyday Potted Plants: Sebbes Rd, Forest Grove, Ph: 9757 7424

Boyanup Botanical: South West Highway, Boyanup, Ph: 9731 5470

APACE: 1 Johanna St, Fremantle, Ph: 93361262

### **Potential local revegetation contractors**

CapeLife Environmental Services: 57 Kevill Road, Margaret River, Ph: 0422 428 884

Tranen Revegetation Southwest: 20 Possum Place, City of Busselton, Ph: 9754 2643

### **Potential local pest control contractors**

Animal Pest Management Services: 4/2 Lot 103 Estuary Drive, Bunbury, Ph: 9726 2537



## Appendix D Plant hygiene

Activity	Requirement
All site access – personnel	<p>Ensure shoes and gloves are clean. Sterilize if known to have recently visited a site where pathogens are present (e.g. <i>Phytophthora spp</i>), or working in wet areas. This can be achieved by first scraping boots clear of mud, then standing the soles in a disinfecting solution that contains benzalkonium chloride. The remainder of the boot should be rinsed or sprayed with disinfecting solution. Note: disinfecting solutions should be prevented from entering any water bodies.</p> <p>Use of rubber boots (gumboots) is recommended because of the ease of cleaning these.</p>
Use of tools and machinery	<p>All tools and machinery should be adequately cleaned, and if necessary, disinfected, prior to use on the site, especially if previously used in a damp area or where disease is known to be present.</p>
Mulch	<p>Mulch should be sourced locally (preferably from the clearing stages), from a weed and disease-free area, if possible.</p>
Tubestock acquisition	<p>Ensure stock has no signs of disease, e.g. no withered or discoloured leaves, deformed growth, discolouration, shrivelled or insufficient looking quantity of roots; no visible pests on foliage, stems or roots; and no weeds growing in pots.</p>