

**Lot 1857 (No. 653)  
Monjebup Road,  
Monjebup**

## **Revegetation Plan for CPS 9260-1**



Bio Diverse Solutions

Final v1

21/10/2021

**DOCUMENT CONTROL****TITLE**

Revegetation Plan for CPS 9260-1 - Lot 1857 (No. 653) Monjebup Road, Monjebup

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**REVISION RECORD**

Revision	Summary	Prepared By	Reviewed By	Date
Draft v. 1	Internal QA Review	K. White	C. van der Mescht	29/09/2021
Draft v. 1	Internal Technical Review	K. White	K. Kinnear	21/10/2021
Final V1	Issued to DWER for approval	K. White		29/10/2021
Final V2	DWER feedback	K. White		08/12/2021



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# 1. Introduction

Bio Diverse Solutions (Environmental Consultants) was commissioned by Peter Ruland and Peter Hassell of D V Farming Co (“The Client”) as environmental consultants to prepare a Revegetation Plan for the revegetation of approximately 4.67ha of native vegetation at Lot 1857 (No. 653) Monjebup Road, Monjebup within the Shire of Gnowangerup. The Revegetation Plan is a requirement for the application of a clearing permit (CPS 9260-1) through Department of Water and Environmental Regulation (DWER). The aim of this Revegetation Plan is to guide the revegetation activities on site, and therein comply with Item 4, Schedule 1 of CPS 9260-1 issued by DWER for this site on the 25<sup>th</sup> May 2021 (Gannaway, 2021). This revegetation plan has been developed in line with DWER’s *Guide to Preparing Revegetation Plans for Clearing Permits* (DWER, 2018a).

## 1.1. Site Details

The subject site is defined as the 4.76ha area located within Lot 1857 (No. 653) Monjebup Road, Monjebup (here on in referred to as “the property”) within the Local Government Area of Gnowangerup. Refer to Figure 1.

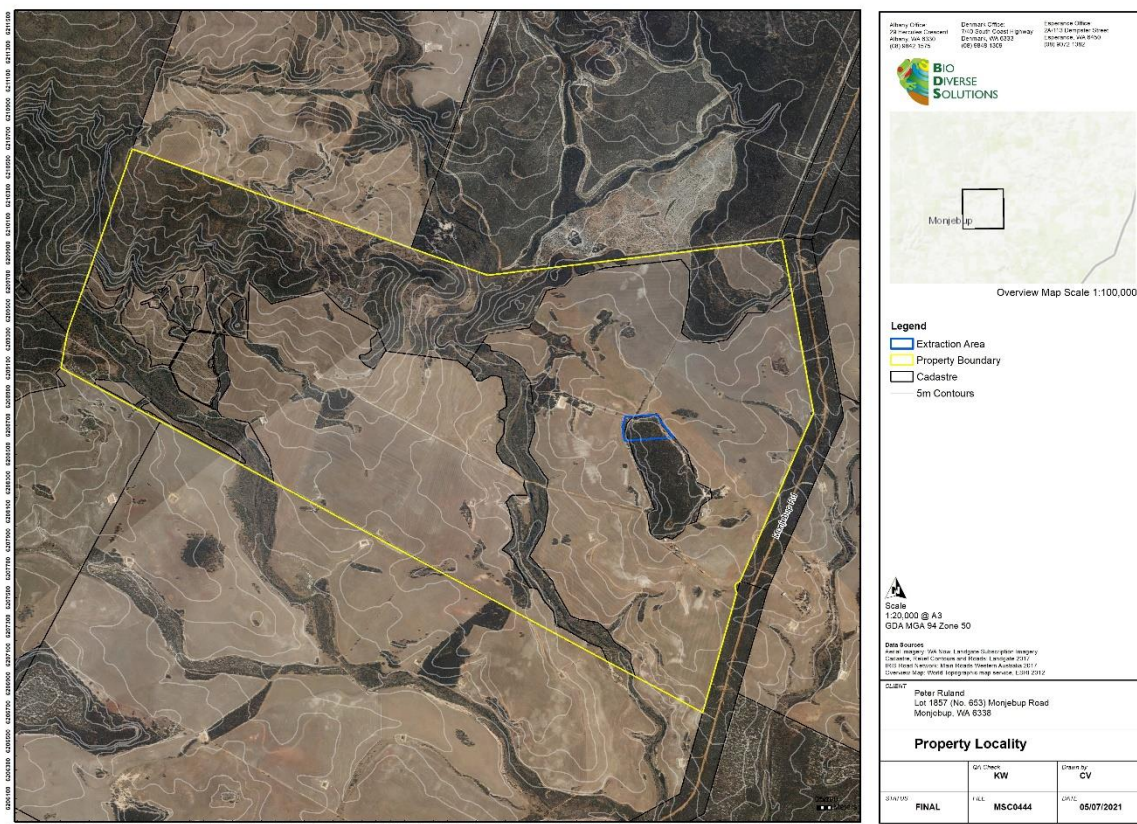


Figure 1: Property locality and Extraction Area (subject site)

## 1.2. Aims of this plan

The aim of this plan is to:

- Re-establish a functional landscape, representing pre-clearing vegetation types through structure and composition;
- Reinstatement of the biodiversity of the area with local, endemic species;
- Maintain the high condition value of the area, with revegetated area returned to a minimum of very good conditions, with limited presence of non-native species and need for future weed management; and
- Minimise the environmental impact of extractive activities by return of the ecosystem.

The extraction area is proposed to be revegetated through stabilisation of the site by returning native plants to the area, and re-establishing a functional landscape representing the pre-clearing vegetation types through structure and composition. This will be achieved through the utilisation of broad revegetation principles and methods. Micro habitats for fauna will also need to be reintroduced in revegetation areas. The use of large logs (trees removed during the clearing process) and large rocks that aren't crushed during extraction activities should be placed in revegetation areas to provide micro habitats for fauna. This will encourage ground-based fauna (e.g., lizards, echidna etc.) to return to the area as the vegetation becomes more established. The success of the revegetation will be monitored and a contingency plan is proposed to be enacted if a functional and sustainable landscape is not established.

The topsoil is known to be a source of viable seed, from the natural soil seed bank developed over numerous years within the subject site. Similarly, seed is known to be stored on some species in the brushing vegetative material (mulch) following clearing, and therefore also acts as a source of viable seed. However, seed viability decreases incrementally the longer it sits in stockpiling, therefore it is imperative that seed be returned to the revegetation areas as soon as feasible. Given the availability of seed supplies already at the site, no supplementary tubestock plantings or direct seeding is currently proposed, monitoring plan Section 6, as not providing a functional level of plant coverage and species diversity - the contingency plan will be enacted and implemented, see Section 6.1.

## 2. Background information

### 2.1. Existing land use and adjacent tenure

The property is currently being utilised for general agriculture, primarily broad acre cropping. A single residential dwelling is present on-site but is currently unoccupied. The property is 1108 hectares in total and is zoned as “General Agriculture” under the Shire of Gnowangerup Local Planning Scheme No. 2 (DPLH, 1990). The subject site (extraction area) is currently covered by native vegetation and was previously covered under a ‘Conservation Covenant’ under the *Soil and Land Conservation Act 1945*, with an ‘Agreement To Reserve’ (ATR; McConnell, 2021). Appendix C provides an approved request from the Commissioner of Soil and Land Conservation to amend ATR specified for the purpose of extracting raw materials.

The subject site is located within an agricultural area, with agricultural properties to the north, east and south. The vast majority of these properties are used for broad acre cropping or for pastoral purposes. The Monjebup Reserve is located directly to the west, adjacent to the property and ~4.5 km from the subject site. There are two other nature reserves within a 5 km radius of the property, including Corackerup Nature Reserve and Greaves Road Nature Reserve. Additionally, Bush Heritage Australia manage a private property to the southeast of the property, as part of the Gondwana Link program. The property lies on the boundary between the Shire of Gnowangerup to the north (local authorities for the subject site) and the Shire of Jerramungup to the south of Monjebup Road.

### 2.2. Geology and soils

Database searches shows the property lies within the Middle Pallinup System (243Mp) and the Jerramungup Zone. The Middle Pallinup System is described as “*Gently undulating rises, in the Jerramungup Sandplain Zone, with alkaline grey shallow duplex (sandy and loamy), grey sandy duplex (shallow and deep) and red shallow loamy duplex. Mallee scrub and yate woodland.*” (DPIRD, 2018a). The Jerramungup Zone is described as having “*Level to gently undulating plain dissected by a number of short rivers flowing south. On Eocene marine sediments overlying Proterozoic granitic and metamorphic rocks. Soils are alkaline sandy duplex soils with some clays, sands and gravels.*” (DPIRD, 2017a).

### 2.3. Climate

The nearest Bureau of Meteorology (BoM) operational station is Ongerup (Site No. 010622). The average maximum temperature is 22.0°C whilst the average minimum temperature is 9.7°C. The average annual rainfall for the station is 387.5mm, with the majority of rainfall occurring between May and September (BoM, 2021).

### 2.4. Water

The property lies within the Beaufort Inlet Pallinup River Catchment area and the Jerramungup Plain Hydrological Zone (HZ23\_JS) which is describes as “*Level to gently undulating plain dissected by a number of short rivers flowing south. On Eocene marine sediments overlying Proterozoic granitic and metamorphic rocks. Soils are alkaline sandy duplex soils with some clays, sands and gravels.*” (DPIRD, 2018b). The Monjebup Creek is a significant stream that runs through the property, to the west of the extraction area (DPIRD, 2018b). It does not intersect the “extraction area”. No other wetland areas were identified as being present within the extraction area during the desktop assessment.

The property is not located in a Public Drinking Water Source Area (DWER, 2018b).

### 2.5. Remnant Vegetation

The survey area lies within the Esperance Plains Bioregion and Fitzgerald (ESP01) subregion. Comer *et al* (2001) describes the Fitzgerald subregion as “*variable relief, comprising subdued relief on the sandplains of the coastal region, punctuated with metamorphosed granite and quartzite ranges both inland and on the coastal plain. It lies mainly on the Bremer Sedimentary Basin and the eastern and western sections of the ESP1 subregion within the Albany-Fraser Orogen of the Yilgarn Craton. It has extensive western plains over Eocene marine sediment basement with small areas of Gneiss outcropping. Archaean greenstones – sand sheets with varying levels of lateritisation with gravel soils also occurs. The region is dominated by duplex soils and deep and shallow sands on the plains and dissected areas and by shallow sandy soils on the mountain ranges.*”

The vegetation has been mapped on a broad scale by J.S. Beard (Shepherd *et al.* 2002) in the 1970's, where a system was devised for state-wide mapping and vegetation classification based on geographic, geological, soil, climate structure, life form and vegetation characteristics (Sandiford and Barrett, 2010). Vegetation units were regarded as associations and were grouped into Vegetation Systems representing a particular pattern of association distribution within a given area. A GIS search of J.S. Beard's (Beard *et al.* 2013) vegetation classification places the survey area within one System and Vegetation Association (DPIRD, 2017b):

- **System Association Name:** Jerramungup
- **Vegetation Association Number:** 516
- **Structure Description:** Mallee
- **Floristic Description:** Eucalypt shrubland *Eucalyptus eremophila*, *E. redunca*, *E. spp.*
- **Remnant Vegetation by Beard Association Rarity in LGA:** 11.01 % remaining (GoWA, 2019).
- **Remnant Vegetation by Beard Association Rarity in IBRA Region:** 68.96% remaining (GoWA, 2019).

### 3. Reference Site: Survey of area pre-clearing

#### 3.1. Vegetation Units

Two vegetation types were identified during the survey period, vegetation descriptions can be found in the following sections. For further information, see reconnaissance flora, vegetation and basic fauna survey report (BDS, 2021a), including collection of data through relevé sampling. The reconnaissance survey acts as the reference site for this revegetation plan, including baseline data such as species diversity, species composition, functional traits of fauna usage, vegetation condition and vegetation communities present. Refer to Figures 2 – 3 for photographs of vegetation units and Map 1 in Appendix A for location of vegetation types.

##### **Vegetation Type A: Mallee Forest on slope at base of Breakaway**

Vegetation Description (NVIS): U+ *Eucalyptus platypus*, +/- *Eucalyptus sporadica* Mallee; M *Cyathostemon ambiguus*, +/- *Melaleuca bracteosa*, *Melaleuca torquata* Shrub<sup>2,3</sup>; G +/- *Hibbertia pulchra*, *Grevillea huegelii* Shrub<sup>1</sup>r.

Vegetation Description (Muir): *Eucalyptus platypus* and *Eucalyptus sporadica* Open Mallee Forest, over *Cyathostemon ambiguus*, *Melaleuca bracteosa* and *Melaleuca torquata* shrubland, over *Hibbertia pulchra* and *Grevillea huegelii* sparse heathland.

Area: 1.84ha

Site description: Steep slope at end of breakaway, with seasonally wet, dark brown clay-sand, and underlying lateritic/spongelite geology.

Condition: Very Good – Excellent.

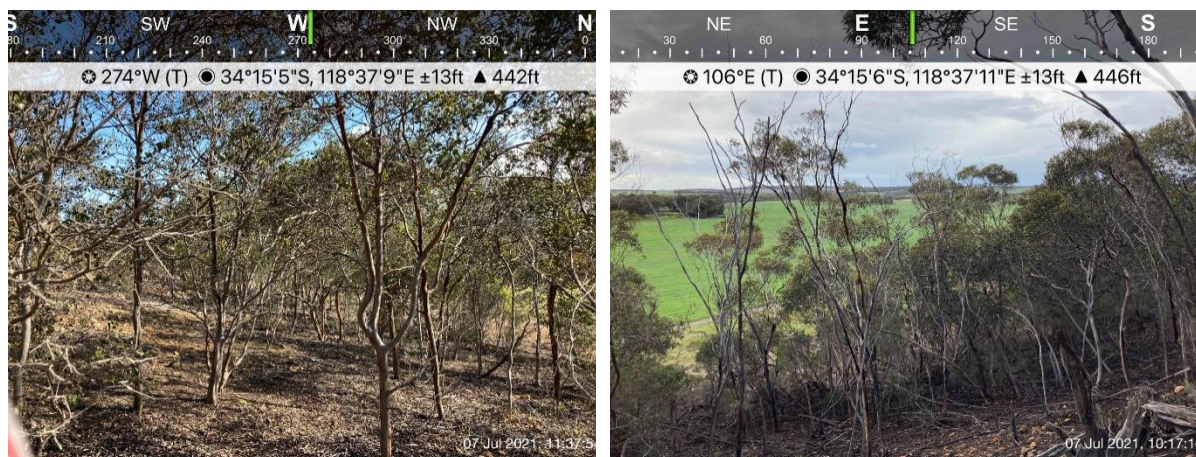


Figure 2: Vegetation Type A, Mallee Forest on slope at base of Breakaway, present within the survey area

##### **Vegetation Type B: Mixed Paperbark, Melaleuca, Callitris and Mallee Woodland on top of plateau of Breakaway**

Vegetation Description (NVIS): U +/- *Eucalyptus phenax* subsp. *phenax*, *Eucalyptus sporadica*, *Eucalyptus redunca* Mallee<sup>7</sup>; M+ *Melaleuca carrii*, *Callitris preissii*, +/- *Kunzea* sp, Shrub<sup>4,3</sup>; G+ *Lepidosperma squamatum*, *Lepidosperma pubisquameum*, *Drosera glanduligera*, *Drosera macrantha*, Orchid sp. sedge, forb<sup>1</sup>i.

Vegetation Description (Muir): *Eucalyptus phenax* subsp. *phenax*, *Eucalyptus sporadica*, *Eucalyptus redunca* Mallee Woodland, over *Melaleuca carrii*, *Callitris preissii* and *Kunzea newbeyi* (P1) shrubland, over *Lepidosperma squamatum*, *Lepidosperma pubisquameum* open sedgeland, over *Drosera glanduligera*, *Drosera macrantha* and Orchid open forbland.

Area: 2.72ha

Site description: Flat plateau on top of lateritic breakaway, with orange/brown, seasonally wet clay sand.

Condition: Pristine.





**Figure 3: Vegetation Type B, Mixed Paperbark, Melaleuca, Callitris and Mallee woodland on top of plateau of Breakaway present within the survey area.**

### 3.2. Vegetation Condition

The vegetation condition was assessed during a site visit, on the 7<sup>th</sup> July 2021. The vegetation condition for the survey area (Table 3) has been mapped using the condition rating scale (adapted from Keighery 1994) outlined in EPA *Flora and Vegetation Survey Guidelines* (2016).

The vegetation ranged from very good to pristine condition throughout the survey area. These classification levels are related to degradation of structure and vegetation integrity by processes such as clearing, fire, weeds, grazing, *Phytophthora Dieback* and vehicle tracks. The 'Vegetation Type A (Mal For at base of breakaway)' unit is classified as being in very good to excellent condition and 'Vegetation Type B (Mixed WL at top of breakaway)' unit is in pristine condition (Table 1). The degradation observed on the periphery of the subject site could be considered as 'edge effects' with minor agricultural weed invasion and evidence of historical disturbance through loss of understory and observance of previous vehicle tracks in the area.

**Table 1: Vegetation condition rating**

Vegetation type	Condition rating	Area (ha)
Veg Unit A	Very Good	0.33
	Excellent	1.38
Veg Unit B	Pristine	2.72
<b>Total</b>		<b>4.43</b>

### 3.1. Fauna Considerations

A basic fauna survey was conducted by Bianca Theyer (Wildlife Biologist) on the 7<sup>th</sup> of July 2021 to map the fauna habitat within the survey area, assess the likelihood of conservation fauna species utilising the general area and/or particular vegetation types, recording actual presence of conservation fauna taxa (if present), and undertake opportunistic inventory of vertebrate species encountered whilst traversing the survey area on foot. During the survey, 13 species of fauna were recorded, of these 13 species, 10 were birds and three were mammals.

No conservation species were identified during the survey period. However, there is suitable habitat for tammar wallaby (P4), western brush wallaby (P4), chuditch (VU), malleefowl (VU), grey falcon (VU), and marginal habitat for western whipbird (EN) western heath whipbird (EN) and western wheatbelt whipbird (P4). The survey area (5ha) lies within the northern portion of the main area of remnant vegetation (approx. 29ha).

The purpose of this fauna survey was to gather detailed information to assist with the planning of a resource extraction project. Part of this project will include revegetation of the subject site post-extraction. If rehabilitation efforts are successful and replicate existing vegetation composition and structure, the impact on conservation significant taxa is unlikely to be significant. Clearing of habitat areas is planned to occur in a staged manner, ensuring there are areas of habitat preserved within the subject site throughout the life of the extraction project. There may be some loss of micro habitat as a result of proposed activities (e.g. rock ledges). This is not expected to have a significant impact on fauna within the subject site in the long-term.

### **3.2. Weeds and Disturbance**

The 'Veg Unit A (Mal For at base of breakaway)' unit is classified as being in very Good to excellent condition and 'Vegetation Type B (Mixed WL at top of breakaway)' unit is in pristine condition. The degradation observed on the periphery of the subject site could be considered as 'edge effects' with minor agricultural weed invasion and evidence of historical disturbance through loss of understorey and observance of previous vehicle tracks in the area. Of the 64 species identified, none were considered non-native or invasive. In areas of good condition (on the boundaries of the subject site) some invasion of common agricultural weeds and crops present in the surrounding paddocks were observed. No weeds were classified as 'Declared Pests' under s22(2) of the *Biosecurity and Agricultural Management Act 2007*.

## 4. Revegetation methodology

The following section outlines the detailed steps for successful revegetation for the closed pits post excavation activities. Table 2 outlines a Schedule for actions and management of revegetation plan. Four stockpiled material will be managed on the site, the environmental consultant is to assist the client prior to clearing operations, to ensure stockpiled material is undertaken according to this plan.

Stockpiled areas are to be defined as follows:

- Mulched vegetation unit A see map 1 Appendix A;
- Mulched vegetation unit B see map 1 Appendix B;
- Stored topsoil unit A; and
- Stored topsoil unit B.

The storage of separate stockpiles for the vegetation units is known to increase the success of the revegetation through different types of seed stored separately (eg. Geo-sporous compared to serotinous seed storage mechanisms). The methodology has been defined to enable the successful revegetation of the two vegetation types present on the site. Overburden material (excess soil matter is to be used for batters to the pit to reduce wind and noise issues.

### 4.1. Clearing and topsoil management

The current topsoil will have seedstock of the two vegetation types present on site and careful storage of the material will assist in the final revegetation of the site. Management of the topsoil at the commencement of clearing operations is to be undertaken as per the following steps:

1. Vegetative material in the two vegetation units will be mulched and stored in a stockpile.
2. Two stockpiles are to be maintained, one for Vegetation Unit A and one for Vegetation Unit B.
3. Mulched stockpiles are to be stored adjacent to the site (away from pit area), these stockpiles are to be no higher than 1.5m and located >20m from remnant vegetation areas.
4. The topsoil is to be removed to a depth of 150-200 mm, capturing the dominant layer of soil seed bank. Topsoil should be stored no higher than 1.5 m in windrows adjacent to the pit area.
5. Topsoil and excess soil material (known as 'overburden') should be separated into separate stockpiles.
6. The overburden will be stored within the pit areas approved for excavation and clearing. The overburden will be stockpiled in piles no greater than 4 metres and in windrows of 5-8 m wide. Overburden is likely to remain in stockpiles for an expected 6 months, and at a maximum 12 months.

### 4.2. Weed management

Small areas of infestation of common agricultural and cropping species were present on the periphery of the area. It is recommended that any areas that vehicles or extractive machinery were to traverse or be stored within the farm is treated prior to any clearing occurring. This is to ensure that weeds are not further dispersed by the machinery and activity on site. Avoid herbicide drift or overspray as this will impact the health, vigour and fecundity of the native vegetation and potentially impact the revegetation success.

Also refer to Table 2 and Section 4.6 of this report.

### 4.3. Site Preparation

Following excavation, the overburden will be returned to the area, releasing the stored seed as a tool for revegetation. Post staged excavation activities, the open (material exhausted) pits are to be "closed" and ready for revegetation efforts. The following is to apply for site preparation:

1. The overburden material is to be returned to the excavated areas as soon as possible to avoid erosion and wind drift.
2. Pit areas are recontoured with any overburden material. Recontouring via site machines is to occur similar to the adjacent land contours is to be undertaken by machines.

3. Shaping and ripping to reduce compaction. Batters in reshaping should not exceed 1:5 m slopes. The ripped area to provide potential plant niches, release any seeds retained in serotinous or woody propagules and prevent wind or soil erosion.
4. Batters involved in re-shaping of area should not exceed 1:5 m slopes.

#### **4.4. Spreading of seed stock**

1. After site preparations are complete the mulch of vegetation unit is spread over the prepared site to the extent of previous coverage of the vegetation unit.
2. Spreading of the topsoil and overburden material is undertaken via shaping and ripping parallel to the contour of the land to a depth of 300-400mm to reduce compaction.
3. Once Vegetation unit A material is completed the machine is to be brushed down of any topsoil and loose material and then Vegetation unit A is to be spread from stored topsoil and mulch areas. Clean down is imperative to ensure material is not transported from one vegetation unit to another.
4. Mulched material is inspected and respread for uniformity across site. The mulch is spread over the ripped area to provide potential plant niches, release any seeds retained in serotinous or woody propagules and prevent wind or soil erosion.
5. Monitor and measure – see Section 6.

#### **4.5. Reduce disturbances**

The revegetation process will occur from the stored topsoils and mulch from clearing operations with native seed stock regenerating on the closed pits. To ensure the site can regenerate the proponent is to exclude and limit disturbances to the revegetation area, including fire and grazing. Currently the surrounding land use is pastoral cropping. If agricultural practices were to be changed to livestock, it is recommended that fencing surrounding the area remain and all livestock are excluded from the area in perpetuity.

**Table 2: Schedule for actions and management of revegetation plan**

Topic	Action	Responsibility	Timing
Pre-clearing vegetation	Reference site and baseline data collected through Reconnaissance flora and vegetation and basic fauna survey.	Bio Diverse Solutions (BDS, 2021a) - engaged as Environmental Consultants	Completed - July 2021
	Develop Revegetation Plan.	Bio Diverse Solutions (BDS) - engaged as Environmental Consultants	Completed – August 2021
	Priority species consideration – <i>Kunzea newbeyi</i> , P1	Environmental Consultant or licenced seed collector	Prior to clearing – recommended to occur during Jan-Feb post-flowering. Due to fruit not being retained on the plant, more than one visit is likely required by seed collectors.
	Vegetation Unit A and Vegetation Unit B clearly defined on site prior to clearing operations	Environmental Consultant	Prior to clearing and mulching operations
Site Preparation	Treatment of any invasive species on the periphery of the revegetation area that vehicles will be traversing during extraction activities.	Project Manager	Prior to clearing
Clearing of Vegetation	Clearing of vegetation through mulching; stored as Mulch in vegetation units	Project Manager	As per staging plan
	Removal of 150-200 mm of topsoil stored as stockpile 1.5m high as mulch for later use in revegetation plan. Stored for maximum of three years.	Project Manager	As per staging plan
	Overburden removed and put to windrows for noise reduction and wind reduction to pit areas. stockpiles stored no greater than 4m and in windrows of 5-8m wide,	Project Manager	As per staging plan
Vegetation Establishment and Active Revegetation	Staged excavation to ensure clearing activities above continues through life of pit.	Project Manager	At beginning of any stages of revegetation
	Topsoil is firstly spread over the revegetation area, shaping and ripping to reduce compaction. Batters in reshaping should not exceed 1:5 m slopes.	Project Manager / Environmental Consultant if required	At beginning of any stages of revegetation – Recommended from April to June
	Mulch is secondly spread over the area.	Project Manager / Environmental Consultant if required	At beginning of any stages of revegetation– Recommended from April to June
	Exclusion of stock or other disturbances likely to effect success of revegetation.	Project Manager	At beginning of any stages of revegetation – Recommended from April to June

Table 2 continued.

Topic	Action	Responsibility	Timing
Dieback management plan	Implement Dieback Management Plan, as outlined in Section 4.7.	Project Manager	Ongoing
	Visual inspection of all items involved in extraction and revegetation with the capacity for transferring infected soil material into the site.	Project Manager	Ongoing
	All items involved in extraction and revegetation are required to be 'cleaned' prior to entering site.	Project Manager	Ongoing
	Control of site during excavation to prevent machinery with unknown 'clean' status to enter.	Project Manager	Ongoing
	All vehicles and traffic to use defined road reserves and formalised accessed routes within the private property.	Project Manager	Ongoing
	Reshaping of overburden to meet natural contours and prevent wet or waterlogged soils.	Project Manager	During Revegetation activities
	Material used during revegetation only from the on-site stockpiled material and not external sites.	Project Manager	During Revegetation activities
Weed control Plan	Implement Weed Management Plan, as outlined in Section 4.6.	Project Manager	Ongoing
	Weed control, as required upon detection of weed species.	Project Manager	Ongoing
Contingency measures	Undertake contingency measures, where triggered as outlined in Section 5.	Project Manager / Environmental Consultant if required	If required following revegetation completion
Monitoring: Completion Criteria and Targets	Implement monitoring program, as outlined in Section 6.	Project Manager	At commencement of revegetation strategies
	Incidental records of photos, notes etc.	Project Manager	Ongoing
	Formal monitoring to meet completion criteria and targets.	Project Manager / Environmental Consultant if required	Annual following revegetation completion
Record keeping	Dates of revegetation activities.	Project Manager	Ongoing
	Location of revegetation activities (including an ESRI shapefile).	Project Manager	Ongoing
	Description of revegetation activities undertaken.	Project Manager	Ongoing

#### 4.6. Consideration of Priority Flora within Revegetation Plan

A single species of conservation-listed flora is present within the area proposed to be cleared and subsequently revegetated – *Kunzea newbeyi*, Priority One. Species within the *Kunzea* genera are commonly known to germinate readily from seed. The plants present are large and deemed mature, of 1.5-2m in height, with a soil seed bank therefore likely to have developed. The fruit (and therefore seed) is not retained in *Kunzea* species, with the collection likely to be highly reliant on timing. It is recommended that a licenced seed collector be engaged for this process.

To safeguard against the possibility of seed reduction in viability, destruction or other adverse effects of the clearing, extraction and revegetation process, it is recommended that seed is collected from all plants. This can then be used to reintroduce the species back onto the site through handcasting of the seed.

#### 4.7. Weed Control

Weed management is to be used in conjunction with Dieback hygiene management to address the biosecurity considerations of the project (See Section 4.7). The following Weed Management Plan is to apply to all aspects of site operations. All operations shall conform to this Weed Management Plan, and monitoring to occur post construction for any infestations. Weed management will primarily be undertaken through avoiding introducing new weeds to the site, to protect the high condition and lack of weed infestations currently present.

##### Aims of Weed Management Plan

The aims of the weed management program will be:

- Maintain a weed free environment, with the area currently predominately in Excellent to Pristine condition;
- Ensure all vehicles are clean on entry prior to any soil or vegetation movement;
- All weeds on site removed promptly on discovery;
- Do not use weed affected soils for rehabilitation (the only soil to be used during rehabilitation is the weed free topsoil); and
- Regularly monitor the site for invasive species.

If weeds are discovered on site, they will be treated using the following methodology:

- Large woody weeds will be burned, poisoned or removed from site and disposed to approved green waste;
- Small weeds will be sprayed by a licensed contractor or landholder; and
- Initial follow up spraying will be undertaken at 6 months and 18 months and repeated as necessary.

##### Program for Weed Control

The following program for weed management will be implemented prior to commencement of extractive activities, during extractive activities, and post extraction monitoring activities. Table 3 (over the page) is a guide for aggressive common species (adapted from Department of Agriculture and Food and Department of Biodiversity Conservation and Attractions (Moore & Wheeler, 2008; FloraBase; WAH, 1998 - ) recommended technique) and should be used as a guide to treat relevant species within the proposal area. Further information for any species and recommended treatment not listed in Table 3 should be gained from the Department of Primary Industry and Regional Development (DPIRD).

**Table 3: Generalised Weed Management Program for Common Species**

Species	Treatment
<b>Grasses</b>	
Kikuyu <i>Cenchrus clandestinus</i>	Control with herbicides whilst growing.
African Love Grass <i>Eragrostis curvula</i>	Removal of small plants/infestations Annual Spray during winter, small infestations all year round as required.
Flat weed <i>Hypochaeris sp.</i>	Annual Spray during winter, small infestations all year round as required.
Hare's-tail Grass <i>Lagurus ovatus</i>	Prevent seed set for 2-3 years by the removal of the topsoil through civil works. Hand removal of small infestations. Annual spray during winter
Perennial Grasses <i>Phalaris sp.</i>	Selective control can be achieved with 800mL/ha Verdict®520 plus 1% spray oil. Or use 10mL Verdict®520 plus 100mL of spray oil per 10L water for hand sprays.
<b>Woody Weeds</b>	
Golden wattle <i>Acacia longifolia</i>	Hand pull seedlings. Fell mature plants, apply herbicides and diesel to trunk, or cut and paste or inject with Glyphosate
Tayloriana <i>Psoralea pinnata</i>	Treat seedlings early summer with Glyphosate, juveniles can be hand pulled. Fire not recommended. Slash or doze large trees.
## Blackberry <i>Rubus ulmifolius</i>	Mechanical control difficult. Annual summer applications of Grazon, 3 applications required, use Glyphosate in sensitive areas (i.e. creek lines).
Ink weed <i>Phytolacca octandra</i>	Uproot heavy infestations and cut remaining plants 5cm below ground. Spraying is effective.
Kangaroo Apple <i>Solanum laciniatum</i>	Herbicide treatment of 150mL Access® in 10L diesel to the lower 50cm of the trunk of the plant. Young growing seedlings can be sprayed with 1L/ha Starane® or hand pulled. Control spread for a radius of 5km. Plant perennial species to provide a good mulch on the soil.
<b>Herbs</b>	
Spear thistle <i>Cirsium vulgare</i>	Spray control effective for seedlings and adults. Manual control by eliminating seed production by close mowing/cutting twice per season
## Arum Lily <i>Zantedeschia aethiopica</i>	Mechanical control only effective if all root fragments removed. Multiple rotary hoeing over a few years provides control. Herbicides are most effective use 1g chlorsulfuron(750g/kg) plus 10mL 2,4-D amine(500g/L) plus 25mL Pulse® per 10L of water. Or use 1g metsulfuron(600g/L) plus 25mL Pulse® per 10L of water.
Curled Dock <i>Rumex crispus</i>	Remove isolated plants by cutting their roots at least 20cm below ground level. Small infestations 0.5g chlorsulfuron(600g/kg) plus 100mL Tordon®75-D in 10L of water in winter will control existing plants and seedlings for about a year.
Cape Weed <i>Arctotheca calendula</i>	Manual removal before flowering effective. For large infestations apply Lontrel® 6 ml/10 L (300 ml/ha) in early growth stages. Glyphosate at 0.2% will provide some selective control if the plants are young or at the budding stage, otherwise spot spraying glyphosate at 10 ml/L. Introduction of native species which provide shade.
## Paterson's Curse <i>Echium plantagineum</i>	Isolated plants can be manually removed and burnt if flowering or seeding. Graze heavily with weathers (castrated ram) over spring to reduce seed production. Spray graze pasture with 500mL/ha Tigrex® in early winter before the weed has reached the 6-leaf stage and repeat if necessary.
Penny Royal <i>Mentha pulegium</i>	Improve drainage, spray with 40 g/ha metsulfuron before flowering, establish a vigorous perennial pasture such as kikuyu then spray graze annually in early winter with 750 mL/ha 2,4-D amine.
Smooth Cats-ear <i>Hypochaeris glabra</i>	Mowing and grazing ineffective. Hand remove small infestations and/or isolated plants, ensuring the taproot is removed. For dense infestations, apply Lontrel® and wetting agent. Introduction of native species which provide shade.

Note: ## indicates weeds which are a 'Declared Pests' under s22(2) of the *Biosecurity and Agricultural Management Act 2007*.



#### 4.8. Dieback Management

Over 40% of native flora species are susceptible to *Phytophthora cinnamomi*, with infection causing rapid and mass plant deaths. It also affects many agricultural crops (such as Avocados and citrus) and garden plants (such as roses), representing a significant biosecurity threat for the horticultural, agricultural and conservation industry. Often presence of *P. cinnamomi* is cryptic and difficult to ascertain. It is primarily spread through the movement of infected soil and mud, through vehicles/machinery and footwear, and naturally through free water and root-to-root plant contact. There are numerous other native plant pathogens or fungi active in Western Australia, and more broadly Australia, representing a biosecurity concern, and basic hygiene management principles should be applied in general regardless of the site.

The area of native vegetation present is primarily uninterpretable, with only 12 of the 65 species susceptible to *P. cinnamomi*. However, given the pristine nature of the site and the lack of any signs of plant deaths, it is likely the site remains free of non-native plant pathogens. The focus of the Dieback Hygiene Management Plan should be on preventing the introduction of dieback or other plant pathogens from outside areas.

The aims of the dieback and hygiene management are to:

- To ensure there is zero spread of *Phytophthora* and other plant pathogens or diseases into and out of the area; and
- Implement measures for successful completion of the project in terms of education to personnel, decontaminating equipment, and defining access measures.

The following will apply to all aspects of operations and will form part of the hygiene management briefing to all site workers:

- Visual inspections on vehicles, plant, equipment and footwear are clean (free of any clods or patches of dirt or mud across the entire site,) when entering the site;
- Earth moving vehicles and equipment are to be cleaned prior to entering site with attention to:
  - Tyres: tread, trim, hub, wheel arches wheels;
  - Body: external areas, crevices, chassis, bumpers, side steps etc.
  - Internal: footwells of vehicles, engine bay, grill, radiator etc.
- Access to the site during excavation will be controlled (fenced and gated and locked when unattended);
- Completed areas will be rehabilitated as soon as practicable;
- The rehabilitated surface will be free draining and not contain wet or waterlogged soils;
- Materials used in rehabilitation will be from on-site stockpiled material; and
- Road and transport vehicles are to be restricted to defined road reserve, loading and turn around areas.

##### **Clean down specification:**

A visual inspection is necessary of in-coming and out-going vehicles to determine whether or not vehicles, machinery or equipment is free of a build-up of:

- Clods of soil and plant material and / or slurry consisting of a mixture of soil, plant and water;
- Dust and grime adhering to the sides of vehicles need not be removed before entering the site;
- Records of inspections and clean downs are to be maintained; and
- As a contingency measure, if vehicle or plant are entering the site and require a clean down, a wash down facility with hard-stand bunding should be used that does not allow run-off of the washdown to infect the surrounding area.

## 5. Completion Criteria and Targets

Completion targets and criteria for consideration of successful revegetation of the area are displayed in Table 4, as guided by DWER (2018a) *A Guide to Preparing Revegetation Plans for Clearing Permits*. Revegetation is an emerging science, and there is large amounts of research and debate on what consists of a 'self-sustaining' ecological state following restoration. For example, if a disturbance such as fire were to occur, the revegetated area would be considered self-sustaining if able to regenerate and return as an ever-present community. Generally, for this to occur, disturbances should be limited until the soil seed bank and seed stored in the vegetative material (eg. Serotinous material) is sufficient to naturally regenerate. It is estimated that in the area of Lot 1857 (No. 653) would require between 10-35 years. Disturbance should be protected for this time period to allow for a self-sufficient ecosystem to develop in the revegetated area. Measurables address return of functional traits of ecological community as a proxy indicative of having capacity to become a self-sustaining ecosystem.

Revegetation measurables generally focus on floristic composition and structure, with limited knowledge present on return of use by fauna. It is presumed that the return of vegetation community, a relative level of floristic diversity along with micro habitats (rocks, logs etc.) will in the long-term result in return of fauna to the area. The timeframe of rehabilitation of cleared areas in regards to fauna component is significantly longer.

**Table 4: Completion targets and criteria for the subject site**

Criterion	Baseline Floristic data	Completion targets	Completion criteria
A (i)	Species richness of 65 species recorded across the entire area.	Minimum of 30% of floristic diversity returned, based on pre-clearing survey as reference site.	The revegetation site contains a minimum of 20 species across Vegetation A and B combined.
A (ii)	NVIS Level 5 Descriptions, including dominance of species, for Vegetation A and B of pre-clearing composition are outlined in Section 3.1.	Return of dominant species per stratum (upper, middle and ground storey).	A minimum of a single species from across each stratum (upper, middle, ground storey) as identified in the pre-clearing Reconnaissance Survey (reference site), are required to be recorded for both Vegetation A and Vegetation B separately.
A (iii)	Consideration of priority species.	<i>Kunzea newbeyi</i> , P1, population remains post extraction.	Presence of <i>K. newbeyi</i> detected in revegetation.
B (i)	NVIS Level 5 Descriptions and relevés collected at Vegetation A and B indicate that maximum cover (indicative of density) for a strata layer was 30-70% across strata.	Cover (as indicative of density of stems) returns to pre-clearing extent, as reference site.	Revegetation site will return to cover levels of 30-70% in the long-term.
D (i)	The area pre-clearing vegetation condition ranged from very good to pristine, with the majority of the area in excellent to pristine condition.	Vegetation condition is maintained at lowest condition threshold of pre-clearing vegetation, as reference site.	Revegetation area as a whole is considered to be in very good condition at a minimum.
D (ii)	Negligible weed infestations recorded on the periphery of the revegetated area prior to clearing, recorded as edge effects from surrounded agricultural uses.	Minimum weed infestation occurs.	Weed cover is <5%.
D (iii)	No declared weeds are present.	Managed as required by the <i>Biosecurity and Agriculture Management Regulations 2013</i> .	Absent from the revegetated area.
F (i)	Two vegetation types (A and B, Section 3.1) were identified within the site prior to clearing.	Return of both ecological communities to the revegetation site.	Areas representing a similar composition and structure of both Vegetation Type One and Two are identified in the revegetated area at a minimum area of 0.25 ha.

## 6. Monitoring

Completed sections of revegetation are to be incrementally monitored, recorded and assessed as per Table 5. Following the approval of CPS 9260-1, an Annual Environmental Report (AER) will possibly be required to formally monitor the progression of the rehabilitation, over the life of the Clearing Permit. Data for monitoring is to be collected at quadrats and across the revegetation site as a whole to measure completion criteria and targets, allowing for weed cover estimates, floristic diversity, return of priority species (*Kunzea newbeyi*, P1), presence of different vegetation types and cover to be monitored. This is displayed in Table 5. Additionally, fixed photo-point monitoring should be used to provide a visual comparison of vegetation change over time.

It is expected that a minimum of 3 years will be required to meet completion criteria and targets. However, determination of the area to be 'on track' to meet measurables can be recorded as indicative of success in future years. If the subject area revegetated is considered to not be 'on track' to meet measurables of success within 12 months, the contingency plan (Section 6.1) will be enacted. If after 24 months of enacting the contingency plan revegetation the area is considered to not be 'on track' to meet measurables of success, this revegetation plan is required to be reviewed, with a more detailed analysis of other revegetation mechanisms.

**Table 5: Monitoring requirements and environmental data to be collected to measure success, through completion criteria and targets**

Data collection type	Aim of monitoring	Output	Frequency	Duration
Site-level	A(i) Species richness across entire site	Floristic survey data, incidental species list	Annual	For the lifetime of clearing permit CPS 9260-1 or until the revegetation is considered successful and met all completion target and criteria.
	A (iii) Presence of priority species ( <i>Kunzea newbeyi</i> , P1)	Presence/absence data of priority species, analysis, discussion		
	D (i) Vegetation condition	Data and map		
	D (iii) Declared weed presence	Data and map		
	F (i) Vegetation Type A and B present	Data, analysis and discussion		
Quadrat-level	A (ii) Dominant species per strata	Floristic survey data, analysis and discussions		
	B (i) Cover levels	Floristic survey data, analysis and discussions		
	D (ii) Weed infestation cover	Floristic survey data, analysis and discussions		
	F (i) Vegetation Type A and B present	Floristic survey data, analysis and discussions		

### 6.1. Contingency Plan: Direct Seeding and Tubestock Planting

The contingency plan will only be enacted if key measurables listed in Section 5 were considered to not be 'on track' to meet measurables of success within 12 months. If after 24 months of enacting the contingency plan revegetation the area is considered to not be 'on track' to meet measurables of success, this revegetation plan is required to be reviewed, with a more detailed analysis of other revegetation mechanisms.

Suitable species to be considered for either direct seeding or tubestock planting are displayed in Table 6, as determined by the recorded species prior to clearing (effectively the reference site) to ensure return to pre-clearing composition (Table A1, Appendix B). Recommendations are made on determining whether species should be returned through the use of seed or tubestock seedlings based off availability, cost and technical expertise. Seed to be used in direct seeding may be collected from the surrounding remnant vegetation, by an experienced and licenced seed collector or purchased from a seed supplier. Where possible, local provenance collection of seed is preferred. Nurseries specialising in large scale growing programs and native species are recommended for the purchasing of tubestock seedlings.

Following DWER's *A Guide to Preparing Revegetation Plans for Clearing Permits* (2018a) optimal time for direct or broadcast seeding in the South West region is April to June and optimal time for undertaking tubestock planting is May to June.

Collected and/or purchased seeds will require some pre-treatment prior to broad cast seeding. Generally, a smoke treatment will be required to increase germination rates of the *Banksia* sp., *Calothamnus* sp., *Conostylis* sp., and *Melaleuca* species (Ralph, 2003). Some species require scarification (nicking the seed coat), and or heat treatment (placing seed in hot water) to increase the germination, such as *Acacia* sp., *Jacksonia* sp., and *Templetonia* species (Ralph, 2003). It is likely the process of excavation of the vegetation will abrade and scarify some of the seed and therefore act as a treatment (allow water to imbibe the seed coat). The Western Australian, Botanic Gardens and Parks Authority (<https://www.bgpa.wa.gov.au/>) has some additional information of seed treatment or alternatively ask the supplier. Direct seeding can be implemented in numerous manners, through seeders specifically tailored for native seeds and contracted through Native Ecologist Agronomists or hand casting implemented by specialists, with a variety of additives or fillers to ensure even and random mix of species.

It is recommended if tubestock planting occurs that additives of Australian native fertiliser tablets and/or tree guards for protection from grazing (such as rabbits or kangaroos) are incorporated into the planting program. Additionally, plantings should be random, without distinct patterns in species composition (e.g. lines or clumps of a single species) to mimic the natural variety within natural ecological communities. Tubestock planting should aim for a stem/1m<sup>2</sup>.

**Table 6: Species to be considered for contingency revegetation works through broadcasting of seed or tubestock planting, as determined by the pre-clearing native vegetation composition.**

Species	Vegetation Type A (base of breakaway)	Vegetation Type B (top of breakaway)	Dominant - identified in the NVIS L5 description	Tubestock	Seed
<i>Carpobrotus modestus</i>	X			X	
<i>Enchylaena tomentosa</i>	X			X	
<i>Maireana brevifolia</i>	X			X	
<i>Rhagodia baccata</i>	X			X	
<i>Callitris preissii</i>	X	X	X	X	X
<i>Hibbertia pulchra</i>	X	X	X		X
<i>Hibbertia verrucosa</i>	X				X
<i>Styphelia epacridis</i>	X	X			X
<i>Styphelia lasianthoides</i>		X			X
<i>Acacia chrysellia</i>	X				X
<i>Acacia glaucoptera</i>	X			X	X
<i>Acacia mutabilis</i> subsp. <i>mutabilis</i>		X		X	X
<i>Daviesia aphylla</i>	X				X
<i>Daviesia argillacea</i>	X				X
<i>Gastrolobium musaceum</i>		X			X
<i>Jacksonia ramosa</i>	X				X
<i>Dampiera sacculata</i>		X		X	
<i>Dianella brevicaulis</i>	X			X	
<i>Cyathostemon blackettii</i>	X				X
<i>Cyathostemon tenuifolius</i>	X	X			X
<i>Eucalyptus phenax</i> subsp. <i>phenax</i>	X	X	X		X
<i>Eucalyptus platypus</i>	X	X	X	X	X
<i>Eucalyptus redunca</i>		X	X		X

Table 6 continued.

Species	Vegetation Type A (base of breakaway)	Vegetation Type B (top of breakaway)	Dominant - identified in the NVIS L5 description	Tubestock	Seed
<i>Eucalyptus sporadica</i>	X	X	X		X
<i>Hypocalymma angustifolium</i>		X		X	X
<i>Kunzea newbeyi</i> , P1		X	X		X
<i>Melaleuca acuminata</i>	X				X
<i>Melaleuca bracteosa</i>	X		X		X
<i>Melaleuca carrii</i>	X	X	X	X	X
<i>Melaleuca hamata</i>	X	X			X
<i>Melaleuca torquata</i>	X		X		X
<i>Chamelaucium ciliatum</i>		X		X	X
<i>Tetrapora verrucosa</i>		X			X
<i>Banksia media</i>		X		X	X
<i>Grevillea huegellii</i>	X		X	X	X
<i>Hakea commutata</i>	X				X
<i>Hakea laurina</i>	X	X		X	X
<i>Persoonia teretifolia</i>	X				X
<i>Acacia assimilis</i> subsp. <i>atroviridis</i>		X			X
<i>Pimelea cracens</i>	X	X			X

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## **8. Appendices**

Appendix A: Maps

Appendix B: Species List

Appendix C: Amendment to Agree to Reserve (ATR)

Appendix D: Checklist on Recommended Content for a Revegetation Plan



# Appendix A

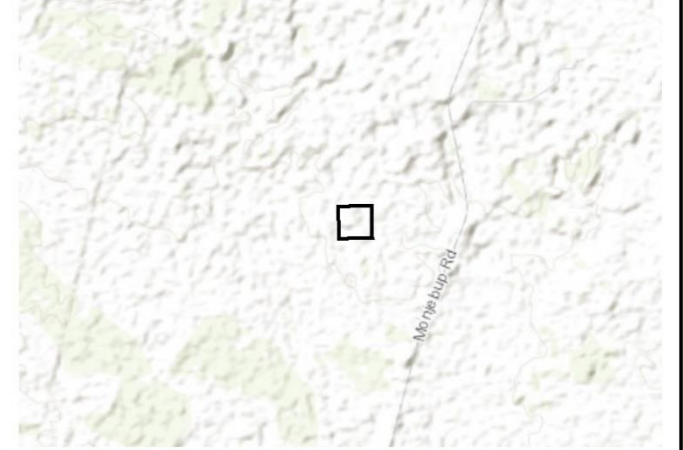
## Maps



Albany Office:  
29 Hercules Crescent  
Albany, WA 6330  
(08) 9842 1575

Denmark Office:  
7/40 South Coast Highway  
Denmark, WA 6333  
(08) 9848 1309

Esperance Office:  
2A/113 Dempster Street  
Esperance, WA 6450  
(08) 9072 1382



Overview Map Scale 1:100,000

**Legend**

- Survey Area
- Releve Sites
- Vegetation Units**
- Veg Unit A
- Veg Unit B



Scale  
1:1,250 @ A3  
GDA MGA 94 Zone 50

**Data Sources**  
Aerial Imagery: WA Now, Landgate Subscription Imagery  
Cadastre, Relief Contours and Roads: Landgate 2017  
IRIS Road Network: Main Roads Western Australia 2017  
Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
Peter Ruland  
Lot 1857 (No. 653) Monjebup Road  
Monjebup, WA 6338

**Map 1: Vegetation Units & Releve sites**

	QA Check <b>BT</b>	Drawn by <b>CV</b>
STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>14/07/2021</b>



Albany Office: 29 Hercules Crescent, Albany, WA 6330, (08) 9842 1575  
 Denmark Office: 7/40 South Coast Highway, Denmark, WA 6333, (08) 9848 1309  
 Esperance Office: 2A/113 Dempster Street, Esperance, WA 6450, (08) 9072 1382

Overview Map Scale 1:100,000

**Legend**  
 Property Boundary  
 Extraction Area  
 Cadastre  
 Extraction Area GPS Points  
 Access route  
 Pits

**Stages**  
 1  
 2  
 3  
 4

Scale  
 1:5,000 @ A3  
 GDA MGA 94 Zone 50

**Data Sources**  
 Aerial Imagery: WA Now, Landgate Subscription Imagery  
 Cadastre, Relief Contours and Roads: Landgate 2017  
 IRIS Road Network: Main Roads Western Australia 2017  
 Overview Map: World Topographic map service, ESRI 2012

**CLIENT**  
 D V Faming Co  
 Lot 1857 (No. 653) Monjebup Road  
 Monjebup, WA 6338

**Staging Plan**

	QA Check <b>KK</b>	Drawn by <b>BT</b>
STATUS <b>FINAL</b>	FILE <b>MSC0444</b>	DATE <b>11/08/2021</b>

# Appendix B

## Species Lists

Table A1: Flora Species List recorded within survey area.

Family	Species	Common Name	Conservation Status	Veg A - bottom of breakaway	Veg B - top of breakaway
Aizoaceae	<i>Carpobrotus modestus</i>	Inland Pigface		X	
Apiaceae	<i>Daucus glochidiatus</i>	Australian Carrot		X	X
Apiaceae	<i>Xanthosia huegelii</i>				X
Araliaceae	<i>Hydrocotyle intertexta</i>	Pennywort			X
Asteraceae	<i>Asteridea nivea</i>				X
Chenopodiaceae	<i>Enchylaena tomentosa</i>	Barrier Salt Bush		X	
Chenopodiaceae	<i>Maireana brevifolia</i>			X	
Chenopodiaceae	<i>Rhagodia baccata</i>	Ruby Salt Bush		X	
Cupressaceae	<i>Callitris preissii</i>	Rottnest Island Pine		X	X
Cyperaceae	<i>Lepidosperma pubisquameum</i>	Sedge		X	
Dilleniaceae	<i>Hibbertia pulchra</i>			X	X
Dilleniaceae	<i>Hibbertia verrucosa</i>	Spiky Australian Butter Cup		X	
Droseraceae	<i>Drosera glanduligera</i>	Pimpernel Sundew			X
Droseraceae	<i>Drosera macrantha</i>	Bold Sundew			X
Ericaceae	<i>Styphelia epacridis</i>			X	X
Ericaceae	<i>Styphelia lissanthoides</i>				X
Fabaceae	<i>Acacia assimilis</i> subsp. <i>atroviridis</i>			X	
Fabaceae	<i>Acacia chrysellia</i>			X	
Fabaceae	<i>Acacia glaucoptera</i>	Clay Wattle; Flat Wattle		X	
Fabaceae	<i>Acacia mutabilis</i> subsp. <i>mutabilis</i>				X
Fabaceae	<i>Daviesia aphylla</i>			X	
Fabaceae	<i>Daviesia argillacea</i>			X	
Fabaceae	<i>Gastrolobium musaceum</i>	Box Poison			X
Fabaceae	<i>Jacksonia ramosa</i>			X	
Goodeniaceae	<i>Cooperookia polygalacea</i>			X	
Goodeniaceae	<i>Dampiera sacculata</i>	Pouched Dampiera			X
Hemerocallidaceae	<i>Dianella brevicaulis</i>	Australian Blueberry; Flax Lilly		X	
Lauraceae	<i>Cassytha</i> sp.	Dodder Laurel		X	
Malvaceae	<i>Lasiopetalum compactum</i>			X	X
Myrtaceae	<i>Chamelaucium ciliatum</i>				X

Table A1 Continued

Family	Species	Common Name	Conservation Status	Veg A - bottom of breakaway	Veg B - top of breakaway
Myrtaceae	<i>Cyathostemon blackettii</i>			X	
Myrtaceae	<i>Cyathostemon tenuifolius</i>			X	X
Myrtaceae	<i>Eucalyptus phenax</i> subsp. <i>phenax</i>	Green Dumosa Mallee		X	X
Myrtaceae	<i>Eucalyptus platypus</i>	Moort		X	X
Myrtaceae	<i>Eucalyptus redunca</i>	Black Marlock			X
Myrtaceae	<i>Eucalyptus sporadica</i>	Burngup Mallee		X	X

Myrtaceae	<i>Hypocalymma angustifolium</i>	White Myrtle			X
Myrtaceae	<i>Kunzea newbeyi</i>		P1 – KW154, Acc 9059		X
Myrtaceae	<i>Melaleuca acuminata</i>			X	
Myrtaceae	<i>Melaleuca bracteosa</i>			X	
Myrtaceae	<i>Melaleuca carrii</i>	Soccer Ball Melaleuca		X	X
Myrtaceae	<i>Melaleuca hamata</i>	Broom Bush		X	X
Myrtaceae	<i>Melaleuca torquata</i>			X	
Myrtaceae	<i>Tetrapora verrucosa</i>				X
Orchidaceae	<i>Pterostylis sanguinea</i>	Dark Banded Green Hood			X
Orchidaceae	<i>Pterostylis vittata</i>	Banded Green Hood			X
Poaceae	<i>Austrostipa flavescens</i>	Native Feather Grass			X
Proteaceae	<i>Banksia media</i>	Southern Plains Banksia			X
Proteaceae	<i>Grevillea huegelii</i>			X	
Proteaceae	<i>Hakea commutata</i>			X	
Proteaceae	<i>Hakea laurina</i>	Pin Cushion Hakea		X	X
Proteaceae	<i>Persoonia teretifolia</i>	Wild Pear		X	
Rutaceae	<i>Cyanothamnus crassifolia</i>			X	
Rutaceae	<i>Cyanothamnus subsp. anethifolius</i>			X	X
Rutaceae	<i>Phebalium microphyllum</i>				X
Rutaceae	<i>Phebalium tuberculatum</i>				X
Rutaceae	<i>Rhadinothamnus rudis</i> subsp. <i>rudis</i>			X	X
Santalaceae	<i>Choretrum glomeratum</i>	Common Sour Bush			X

Table A1 continued.

Family	Species	Common Name	Conservation Status	Veg A - bottom of breakaway	Veg B - top of breakaway
Santalaceae	<i>Leptomeria pachyclada</i>	Currant Bush		X	
Sapindaceae	<i>Dodonaea viscosa</i>	Sticky Hopbush		X	
Stylidiaceae	<i>Stylidium hirsutum</i>	Hairy Trigger Plant			X
Thymelaeaceae	<i>Pimelea cracens</i>	Yellow Banje			X
Unknown	Herb sp.				X
Unknown	Herb sp.				X

## **Appendix C**

### Agreement to Vary Reserve



## **Appendix D**

### Checklist on Recommended Content for Revegetation Plan



Department of  
**Primary Industries and  
Regional Development**

Our Ref: 040533V01  
Enquiries: Monica Coates  
Telephone: 9368 3282  
Date: 19 February 2021

Mr Peter Ruland  
16 Anchorage Vista  
ALBANY WA 6330

Dear Mr Ruland

**REQUEST TO VARY AGREEMENT TO RESERVE ON LOT 151 ON DEPOSITED PLAN 49854 ON THE CERTIFICATE OF TITLE VOLUME 2658, FOLIO 898. MEMORIAL K082472**

I refer your request to vary the Agreement to Reserve dated 6 February 2007, in respect of areas of land within Lot 151 On Deposited Plan 49854 on the Certificate Of Title Volume 2658, (formerly Lot 1857 on Deposited Plan 209448), which were set aside for the purpose of protection and management of vegetation in accordance with section 30B of the *Soil and Land Conservation Act 1945 (WA)* (**the ATR**).

Specifically, you are seeking to amend the ATR to release an area of land of approximately 5 hectares from the ATR marked in purple as shown on the attached plan (**specified land**) (see **Attachment 1**).

I understand that you are seeking to release the specified land from the obligations of the ATR in order to extract raw materials from that specified land.

Having considered your request, in this instance, I am willing to exercise my discretion and not enforce the terms of the ATR in relation to that specified land as marked in Attachment 1, subject to the continued use of that specified land for that purpose (i.e. to extract raw materials) or as otherwise being notified by the Commissioner. The ATR shall otherwise remain in full force and effect.

If, alternatively, you still wish to formally vary the ATR to release that area, I would be prepared to consider discharging the ATR and entering into a replacement ATR over the amended area, subject to you agreeing to pay the costs of the required survey, and any other incidental costs that may arise.

Please note that if you accept this proposal, you will need to liaise with the Department of Water and Environmental Regulation to obtain permission to clear the specified land on grounds other than land degradation.

Please contact my office on 9368 3282 or if you would like to discuss this further.

Yours sincerely

Ms Cecilia McConnell  
COMMISSIONER OF SOIL  
AND LAND CONSERVATION

## Appendix B: Recommended Content for Monitoring

PERMIT HOLDER MUST COMPLETE THIS CHECKLIST AND SUBMIT TO DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION (DWER) TOGETHER WITH THE MONITORING REPORT.

Relevant boxes should be ticked to demonstrate that the information has been provided within the submitted revegetation annual report.

- Title which clearly outlines the name of the revegetation project and its location
- Table of contents. Suggested headings include:
  - Introduction
  - Summary of revegetation site:
    - background of revegetation site;
    - current disturbances and threats;
    - site preparation; and
    - initial vegetation establishment.
  - Monitoring outcomes
  - Progress against completion criteria:
    - data analysis;
    - results; and
    - discussion.
  - Maintenance and contingency measures
  - Updated schedule and budget
  - References and appendices

### Introduction

The following should be included, but not limited to:

- Purpose of the report.
- Section explaining how the proposed revegetation addresses the impacts of the clearing.
- Clearing permit number (CPS xxx/x) that the revegetation plan relates to.
- Key contacts and details of person who wrote the report.
- Level of qualification and experience of person who wrote the report.
- Location of clearing, property details, clearing size and purpose.
- Location of revegetation site, property details and size of revegetation site.
- Map outlining the boundary of the clearing area, the revegetation site, aerial photography, cadastral boundaries, roads and other relevant factors (include areas in hectares).
- Associated spatial data for the clearing area is provided in GIS format (for example shapefile).

### Summary of revegetation site

This section should include the components below which are from the original revegetation plan:

- The background of the revegetation site.
- Current disturbances and threats.
- Summary of initial site preparation.
- Summary of initial vegetation establishment.
- Revegetation sites and/or activities that have occurred should be illustrated on a detailed site plan and provided in GIS format (for example shapefile).

### Monitoring outcomes

This section should state the monitoring outcomes and include:

- A description of monitoring methods to be used (particularly if changed from what was suggested in the revegetation plan).
- A description of the monitoring frequency and timing (month/year).
- The monitoring data sets (electronically), monitoring summaries, analysis and interpretation of findings for data outlined in table below.
- Records of the weed density or cover. Provide weed map in report and GIS format (for example shapefile).
- A vegetation condition map in the report and in GIS format (for example shapefile).
- Disease mapping (if relevant) in the report and in GIS format (for example shapefile).
- The success of additional actions, for example weed control, fencing and rabbit control.

### **Progress against completion criteria**

This section should comprise data analysis, results and discussion on changes in the revegetation over time. This includes:

- Who completed the analysis?
- The data analysis methods used and justification for their use.
- Why/why not data pretreatment was/was not undertaken.
- The type of pretreatment used.
- Results and discussion.

### **Maintenance and contingency measures**

This section should outline the maintenance and contingency measures that are required based on monitoring results and progress against completion criteria, including:

#### Maintenance measures

- A list of the maintenance measures.
- The trigger for maintenance measures.
- Timing.
- How often these measures will be undertaken.

#### Contingency measures

- A list of the contingency measures
- The trigger for contingency measures.
- Timing.
- How often these measures will be undertaken.

## Updated schedule and budget

This section should include any modifications to the original detailed work plan.

- Schedule of actions (timeline) in table format (see Table 4) showing actions to be undertaken per month/season and per year of the project. Highlight any changes from the original revegetation management plan and provide explanation.
- The entity or person responsible to implement each action outlined in the schedule of actions.
- Budget and costing of actions (see examples in Appendix E).
- Source of funding.

## References and appendices

This section should include references used to create the plan and any appendices.

- References used to create the revegetation plan.
- Aerial photographs.
- Onsite photographs (photopoints).
- Required monitoring datasets in entirety.
- Maps of fence boundary, dieback mapping, vegetation condition mapping, photopoint locations and monitoring quadrat locations.
- Associated spatial data of the revegetation site features is provided in GIS format (for example shapefile). Shapefiles are to be clearly named to reflect content.
- Copy of written agreement with landowner (if not the owner of the revegetation site).