Revegetation Plan

Bamess Holdings Pty Ltd T/A Bamess Farms

Lots 11219, 8, 12017 and 12742 Churches Road, Jardee

April 2020

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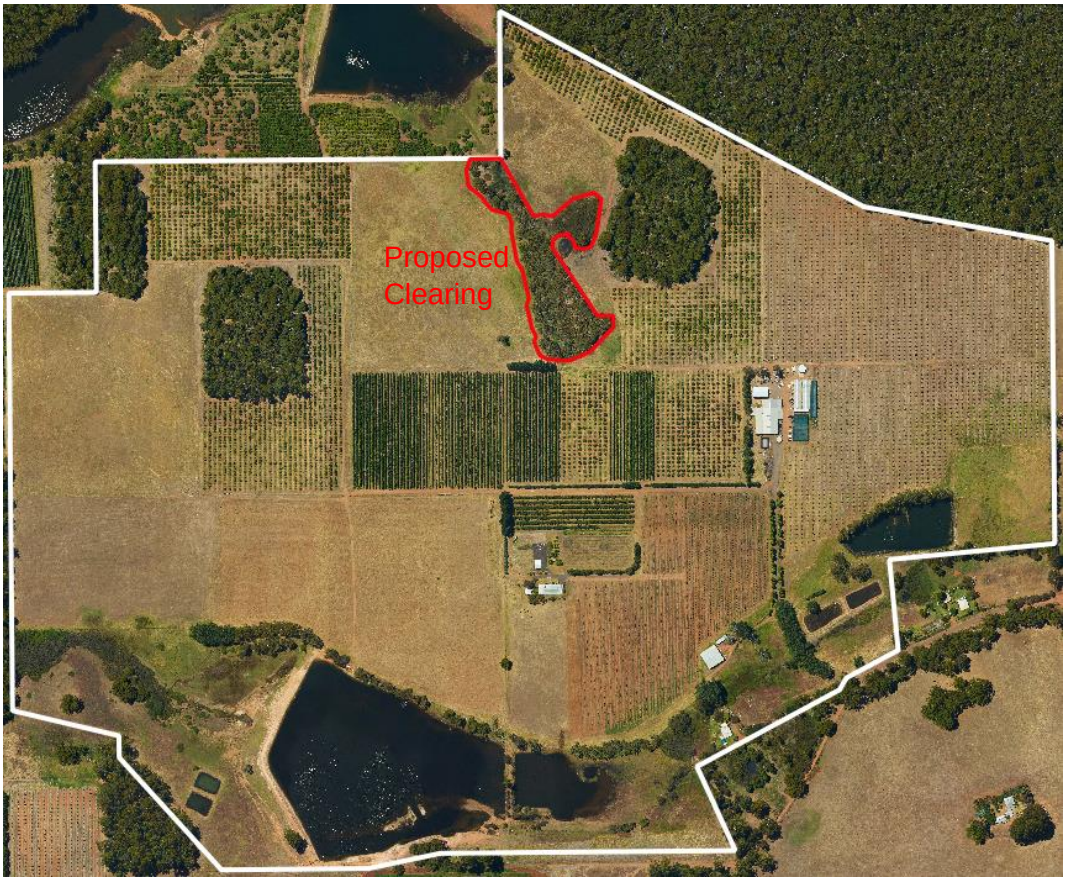
1 Introduction, Background and Revegetation Commitments

The land holding is comprised of four lots, with the registered proprietor of Bamess Holdings Pty Ltd, being a total of 120.6531 hectares as follows:

Lot	Deposited Plan	Area (hectares)	Certificate of Title
11219	204912	59.5407	1487/466
8	41879	59.8483	2564/966
12017	204912	0.5110	1440/28
12742	204912	0.7531	1319/954

Greater than 10 percent native vegetation, being 12.07 hectares, is to be retained over the land holding to satisfy stipulations within the *Country Areas Water Supply Act 1947*.

Clearing permit CPS 8767/1 proposes clearing of 2.283 hectares for the purpose of dam construction to support the horticulture activities on the land holding. The purpose of this revegetation plan is to demonstrate 12.6 hectares of native vegetation will be retained on the land holding, comprised of 9.25 hectares of existing native vegetation and 3.35 hectares to be re-established. The revegetation plan, prepared by the proprietor, includes site preparation and vegetation methods, monitoring, maintenance and contingency measures. The proprietors have prior experience in farm and horticulture management and contract tree plantation planting (blue gum, karri and pine plantations), with sufficient resources to undertake establishment of the revegetation and ongoing monitoring and maintenance.



The location of the native vegetation areas to be retained are identified in the following table and map:

Area label	Existing vegetation (hectares)	Revegetation (hectares)	Description
A	1.31		Subject to Agreement to Reserve I689960 under the *Soil and Land Conservation Act 1945.*
B	2.53		Subject to Agreement to Reserve I689960 under the *Soil and Land Conservation Act 1945.*
C	2.69		Subject to Agreement to Reserve I689960 under the *Soil and Land Conservation Act 1945.*
D	1.32		Existing native vegetation.
E	1.4	2	Revegetation site with existing scattered remnant native vegetation.
F		1.35	Revegetation site

The following photos show the condition of existing vegetation in each designated area:

Photo: 'Area A'

Photo: 'Area B'

Photo: 'Area C'

Photo: 'Area D'

Photo: 'Area E'

'Area E' is bordered by existing fences and dams and contains 1.4 hectares (40%) of existing scattered remnant vegetation. Planting additional seedlings around the existing vegetation will improve the density of the vegetation and increase it to 3.4 hectares.

'Area F' adjacent to the clearing area has been selected as a suitable site for re-establishment of vegetation. It will support similar vegetation to the clearing area. Bordered by boundary and internal fences, proposed dam wall, native vegetation 'Area C' and a small area of horticulture orchard, it will be protected from erosion, stock or other disturbances.

Historically the land holding was used for grazing, however grazing is no longer occurring on the revegetation areas. There are no current disturbances or threats expected to significantly impact the revegetation.

Soils and landform mapping undertaken by the Department of Agriculture and Food Western Australia (DAFWA 1993) indicates the land holding is situated upon the following soil type: Pemberton PM, which is Darling Plateau on Crystalline Rocks. Min. drainage. Red Duplex Soils, Gravelly Sandy Loam.

Topography and hydrology of the landholding is shown below. There is a ridge running west-east through the centre of the landholding, with the revegetation areas north and south of this being relatively flat to gently sloping and within or nearby water courses or catchment areas.

The vegetation establishment, maintenance and monitoring in the first four years will aim to establish vegetation that is resilient and self-sustaining thereafter. There will continue to be monitoring and management after this time for the long-term protection of the revegetation.

2 Revegetation Methodology

2.1 Site Preparation

Weed control will be undertaken on the revegetation area in May/June prior to planting with a suitable herbicide by broadcast application or spot treatment where required.

Ripping will be used to loosen compacted soil to provide a softer surface for the establishment of plant roots. This method will aerate the soil and promote breakdown of organic matter and water infiltration.

Topsoil and mulched vegetation from the clearing site will be moved and spread over the revegetation areas during the associated dam construction project. This will contain seed to regenerate and nutrients and organic matter that will benefit the revegetation and also assist in preventing soil erosion.

There are minimal weeds in the clearing site; any weeds that present after revegetation will be manageable with the weed control program.

2.2 Vegetation Establishment

Seedlings will be used for revegetation rather than direct seeding to be more successful. Planting of seedlings will occur in late June to July when sufficient soil moisture levels and expected rainfall will support the establishment of seedlings and optimal conditions for successful revegetation.

The following species have been selected:

Species	Common Name	Quantity
Eucalyptus Rudis	WA Flooded Gum	448
Eucalyptus diversicolor	Karri	448
Eucalyptus Wandoo	Wandoo	448
Eucalyptus patens	Blackbutt	576
Melaleuca Rhaphiophylla	Swamp Paperbark	576
Eucalyptus megacarpa	Bullich	576
Taxandria Juniperina	Juniper Myrle	576
Callistachys lanceolata	Wonnich (Native Willow)	576
Allocasuarina decussata	Karri oak / Karri Sheoak	512
Agonis Linearifolia	Swamp Peppermint	576
Agonis Flexuosa	WA Peppermint	512
Hardenbergia Comptoniana	Native Wisteria	448
Hypocalymma cordifolium		448
	Total	6720

There is no evidence of dieback in existing native vegetation on the land holding or the revegetation sites. The species selected for planting are dieback resistant and the nursery stock selected will be dieback free.

If any seedlings are not available from the nursery they will be sourced from another accredited nursery, may be replaced with another suitable species, or planted in the following year.

Seedlings will be planted by hand using pottiputki tools. Seedlings will be planted upright, firmly, to a depth of 15mm above the rootball with care taken not to damage the roots, stem or leaves. The planting distances between seedlings will meet the density of 2000 stems per hectare with an average variation no greater than 10%. Plots/quadrats of 10m x 10m will be measured during planting to attain this.

Tree guards will be installed around seedlings for protection to increase the success rate.

Fertilising will be undertaken two to three months after planting. This will be by hand using a pottiputki tool, placed in a hole near each seedling then covered with soil lightly compacted by foot.

3 Monitoring

Monitoring of the revegetation area after establishment will determine maintenance measures required to increase success rate and determine if infill planting will be required. A specific site inspection be undertaken annually. As farming operations are undertaken on the land holding with activity year-round, there will also be visual observations in-between the annual site inspections.

Survival counts of the seedlings will evaluate the success of the revegetation work. If required, seedlings will be purchased and planted in year two and/or year three.

Maintenance works to be undertaken will be identified by the health of the revegetation, presence of weeds, evidence of pests or other threats or disturbances.

4 Maintenance and Contingency Measures

4.1 Fencing

Existing boundary and internal fencing will prevent stock from entering the revegetation sites. Fencing will be inspected as part of general farm management and maintenance completed where required. Surrounding dams and orchard further define and protect the revegetation areas. The location of fencing relevant to the revegetation areas is shown below:

4.2 Erosion

Initial site preparation and revegetation methods will reduce potential for erosion. However, if erosion occurs this will be addressed by additional planting, mulching, forming drainage channels or other appropriate methods.

4.3 Weed Control

Weed control will be undertaken as required, generally in spring and/or autumn, using herbicides by spot treatment or hand weeding if necessary.

Herbicides will only be used when weather conditions are suitable. The least toxic and most suitable herbicide for the weed species present will be selected and used at the appropriate application rate.

It is expected that the growth of the revegetation will eventually shade out weed species, reducing the use of herbicides.

4.4 Pest Management

Monitoring will include checking tree guards remain in place and identifying any damage caused by fauna, such as rabbits, and if any additional protection measures need to be installed.

4.5 Dieback Management

Should any evidence of dieback appear in the revegetation, appropriate dieback treatment will be undertaken as required.

4.6 Watering

Supplement watering will be carried out on an as needs basis if winter rainfall is less than expected or seedlings show evidence of excessive heat stress. If required watering of seedlings can be undertaken using mobile farm equipment and water tank.

4.7 Infill Planting

The revegetation sites will be inspected in April following the initial planting to assess if infill plantings are required depending on survival rates of the seedlings combined with germination of seeds from the topsoil.

Survival counts will determine if the revegetation has a minimum of 1500 stems per hectare (75% survival) and at least five different species per $100m^2$. If the density or species diversity has diminished significantly below this, seedlings for infill planting will be purchased for replanting in June/July of year two and/or year three.

5 Schedule and Budget

Stage	Actions	Timing	Year 1	Year 2	Year 3	Year 4	Estimate Cost
Site Preparation	Weed control	May	X				$500
	Ripping	May	X				$1,000
	Clearing under permit CPS 8767/1	May	X				Included in dam construction project
	Topsoil and mulch spreading	May	X				Included in dam construction project
Vegetation Establishment	Purchase seedlings	May	X				$5,000
	Planting seedlings	June/July	X				$3,000
	Fertilising seedlings	September	X				$1,000
Monitoring	Vegetation monitoring and overall site inspection	Spring/Autumn	X	X	X	X	
	Survival counts	April		X	X		
Maintenance and Contingency	Weed control	Spring/Autumn as required	X	X	X	X	$500 / year
	Infill seedling purchase	May		X if required	X if required		Pro rata of purchase if required
	Infill planting	June/July		X if required	X if required		Pro rata of planting if required