REHABILITATION PLAN

Fitzgibbon Urban Development Area: Precinct 4

Report prepared for ULDA

Biodiversity Assessment AND MANAGEMENT PTY LTD

FAUNA AND HABITAT SPECIALISTS

REHABILITATION PLAN
PRECINCT 4
FITZGIBBON URBAN DEVELOPMENT AREA

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BAAM	Biodiversity Assessment and Management Pty Ltd
FFMP	Flora and Fauna Management Plan
QPIF	Queensland Primary Industries & Fisheries (within the Department of Employment, Economic Development and Innovation)
LP Act	Queensland Land Protection (Pest and Stock Route Management) Act 2002
UDA	Fitzgibbon Urban Development Area
ULDA	Urban Land Development Authority

1.0 INTRODUCTION

This Rehabilitation Plan together with the Flora and Fauna Management Plan (BAAM 2009) forms an integral part in the conservation of the ecological values of the Precinct 4 of the Fitzgibbon Urban Development Area (subject site). The site supports significant remnant bushland and fauna habitat, as well as open eucalypt regrowth forest and large areas of rank pasture.

This Rehabilitation Plan prescribes actions necessary to manage and enhance the ecological values of the site's natural areas (incl. stormwater detention areas) post construction works through active management of identified areas to increase the site's biodiversity values over time. Prescriptive recommendations to preserve the site's vegetation values during construction activities are detailed in the FFMP (BAAM 2009). This plan also recognises that there will be a requirement to disturb areas within the designated Bushland and open space area (i.e. areas north of Rogan Road) for management of vegetation for bushfire and public access and safety issues. Although disturbance associated with these issues is beyond the scope if this management plan and will be detailed in specific management plans (e.g. Bushfire Management Plan), this Rehabilitation Plan highlights fire-retardant vegetation.

2.0 RESPONSIBILITIES AND TIMING

All rehabilitation works are to be undertaken by qualified, experienced bush regenerators. All contract staff are to undertake a site induction prior to commencement of rehabilitation works to familiarise visitors with the site's ecological values and rehabilitation strategies.

Any major proposed changes to the Rehabilitation Plan, including changes to the planting schedule or scheduled species, are to be approved by ULDA.

This Rehabilitation Plan is to be implemented and completed to the satisfaction of the ULDA.

3.0 AIMS AND OBJECTIVES

3.1 AIMS

The Rehabilitation Plan aims to provide:

- Maps identifying and delineating areas of the Site requiring rehabilitation;
- Proposed rehabilitation works, methods, objectives and desired outcomes;
- Rehabilitation schedules including staging, plant species, stock size, quantities and locations;
- Maintenance program for the works;
- Stabilisation methods for all areas of exposed soil surface and stormwater detention areas;
- Habitat features to be provided for enhancement of habitat values in the rehabilitation area; and
- Weed management strategies, planting methods, mulching and site preparation including mechanisms to reduce the incidence of mosquito breeding site by reducing the availability of standing water within rehabilitation areas.

The desired outcomes (i.e. climax vegetation communities) for rehabilitation of retained bushland and open space areas are shown in **Figure 2.1**.

3.2 OBJECTIVES

The broad objectives of the Rehabilitation Plan are to rehabilitate degraded areas and improve ecological functions through enhanced ecological connection and condition of extant and revegetated communities across Precinct 4 of the UDA (particularly areas to the north of Rogan Road). This will be achieved through the specific rehabilitation objectives, listed in Table 1, and delivered through an intensive rehabilitation strategy and management recommendations presented in Tables 2 and 3.

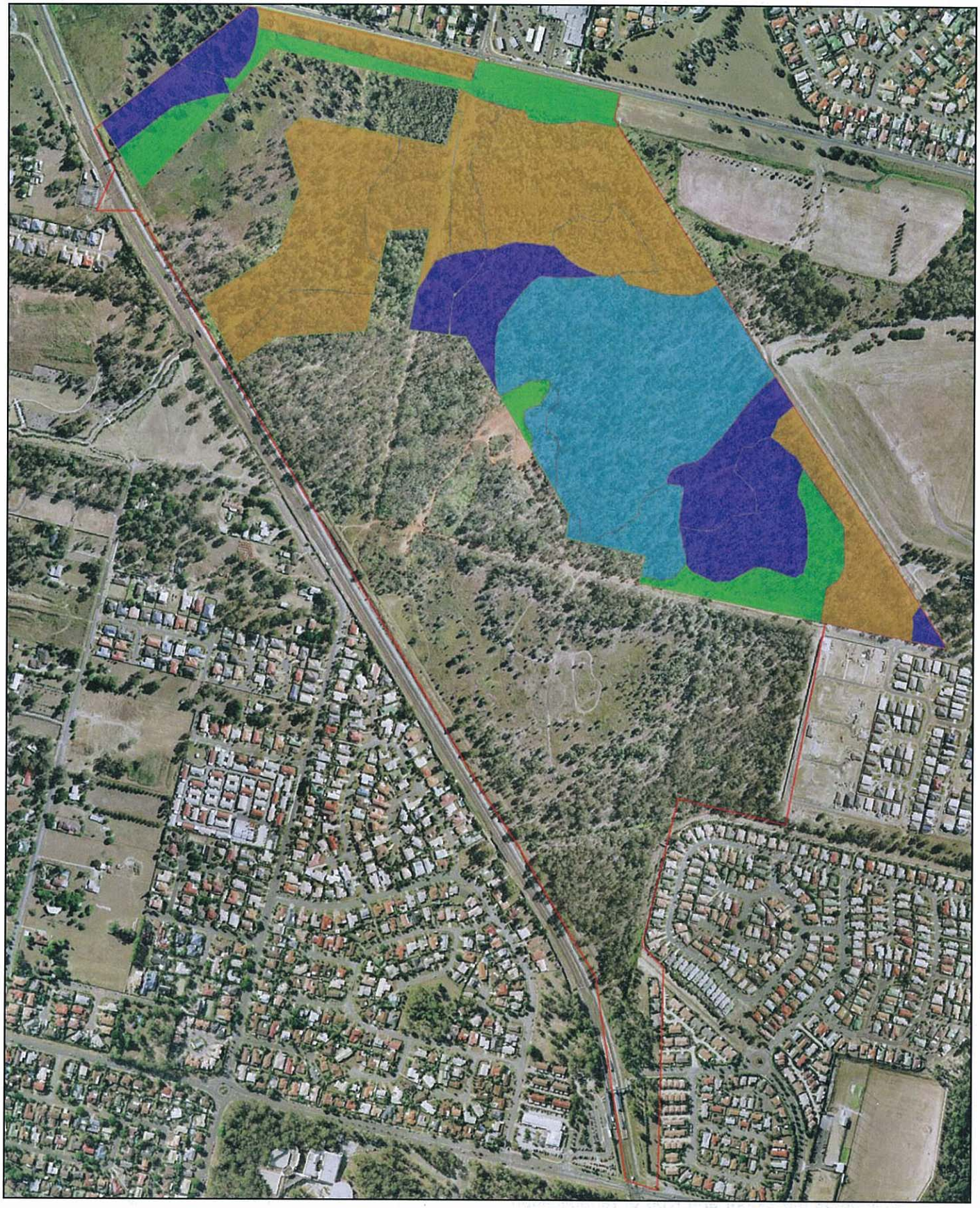


Figure 2.1:

Target Climax Communities

Rehabilitation Plan-Precinct 4, Fitzgibbon Urban Development Area

Table 1 – Rehabilitation Objectives

	Objective	Details
1	Identify and delineate rehabilitation and revegetation areas	Base-line studies have identified the condition and extent of vegetation communities across the Site. Ecological modelling has delineated bushland and open space areas and fauna movement corridors. This plan identifies areas within this conservation network that require rehabilitation in order to increase the functionality of this conservation network.
2	Prioritise and schedule rehabilitation works	Highly degraded areas within the bushland and open space area (i.e. Areas to be retained to the north of Rogan Road) or areas of retained vegetation requiring immediate action are prioritised whilst the development of the complete rehabilitation works is staged in response to the development. Areas of retained vegetation within the development area sill be credited to reduce the rehabilitation requirement within the bushland and open space area.
3	Control and eradicate declared and invasive weeds	Control and eradicate (where practical) state declared weeds (as listed under the *Land Protection (Pest and Stock Route) Management Act 2002*) (LP Act) and priority environmental weeds on the site through appropriate weed control methods.
4	Conserve and enhance existing native vegetation	Identify native vegetation to be retained, control weed species and undertake supplementary planting with native species to support existing native vegetation.
5	Conserve and enhance ecological process and habitat values	Conserve and identify existing habitat values, introduce suitable habitat features such as hollow logs and nesting boxes, control weeds to encourage a diversity of wildlife, remove barriers to fauna movement (see also FFMP Plan (BAAM 2009)).

4.0 REHABILITATION STRATEGY

4.1 EXISTING SITE CONDITIONS

Precinct 4 of the UDA is located in the north-eastern suburbs of Brisbane City approximately 12 km from the Central Business District. The total area of Precinct 4 is approximately 120 hectares. Much of the vegetation contained within Precinct 4 has been highly disturbed and has been subject to land clearing, although Remnant stands still remain on site although it is particularly abundant north of Rogan Road.

4.2 REHABILITATION PLAN

The desired outcomes of the Rehabilitation Plan are presented in **Figure 2.1**. This figure delineates the extent and type of rehabilitation according to the existing condition and the intended climax community. All areas that are located outside of the development footprint are *bushland and open space areas*. These areas will be the primary focus of this Rehabilitation Plan.

There are 4 rehabilitation area types (i.e. Target Climax Communities) distributed across the Site. This plan presents:

- A Summary of the current condition;
- The Intended climax community
- General management requirements;
- Specific rehabilitation/revegetation requirements (including priority weeds); and
- Species schedule and planting intensities recommended.

4.3 REHABILITATION TECHNIQUES

All existing native species, including mature and regrowth trees and saplings, shrubs, grasses and forbs identified within the bushland and open space areas of the site, are to be retained and managed as part of the

rehabilitation phase and maintenance. Where planting of tube stock is required within the drip zone of retained vegetation all works are to be carried out by hand.

Recommendations regarding size of planting stock, mulch specifications and any other necessary treatments, such as weed control, are detailed in **Table 4** '*Rehabilitation Methodology*'. Recommended weed control methods are outlined in **Table 6** '*Invasive Weed Species on Site*' with reference to specific weed control techniques in **Appendix B**.

For all Rehabilitation Zones, habitat features such as rocks, fallen branches and dead trees and shrubs in all zones are to be retained *in situ* unless they pose a safety risk to workers.

In addition to the designated bushland and open space area, rehabilitation of areas abutting each of the 4 residential zones (Stages D, E, F and G) and tracks and trails contained within Precinct 4 will occur. Site specific rehabilitation information relating to these areas is provided in **Appendix A**.

Rehabilitation activities are to cease during flooding events and are to resume once flood waters have subsided. Any areas containing standing water that are not part of a natural drainage system are to be drained or filled to eliminate the area becoming a mosquito breeding site. Areas directly adjacent to stormwater management areas are to be planted with species that will consolidate the soil. Such species are highlighted in **Table 3**.

4.4 General Rehabilitation Requirements

All weed and exotic species are to be removed according to the methods provided in **Appendices B** and **C**. All weed species listed in **Table 6** are to be eradicated from the rehabilitation area prior to the planting of tube stock. Other exotic and environmental weed species are to be controlled as necessary to protect rehabilitation plantings and to encourage natural regeneration of native species.

Spot spraying methods are to be employed to control exotic grasses. Particular care must be taken to avoid spraying native grasses, forbs and regenerating trees and shrubs. Two weeks following spraying of rank exotic grasses these are to be knocked down by brushcutting. Particular care must be taken to avoid slashing native grasses and forbs.

Where woody trees and shrubs are removed their roots shall be left to rot *in situ* as the roots help to prevent erosion.

4.5 Management and Maintenance Requirements of Vegetation Communities

The four (4) target climax vegetation communities within the bushland and open space area (i.e. areas outside of the development footprint and to the north of Rogan Road) are identified in **Figure 2.1**. Seven (7) vegetation communities currently exist outside of the development footprint (BAAM 2008). These communities are illustrated in **Figure 4.1**. **Table 2** outlines the general management, revegetation, monitoring and maintenance requirements for each of the Target Climax Communities as indicated in **Figure 2.1**. To achieve the desired climax community, recommended planting schedules and densities for each climax community are provided in **Table 3**.

4.6 Estimated Costs Associated with Rehabilitation and/or Revegetation

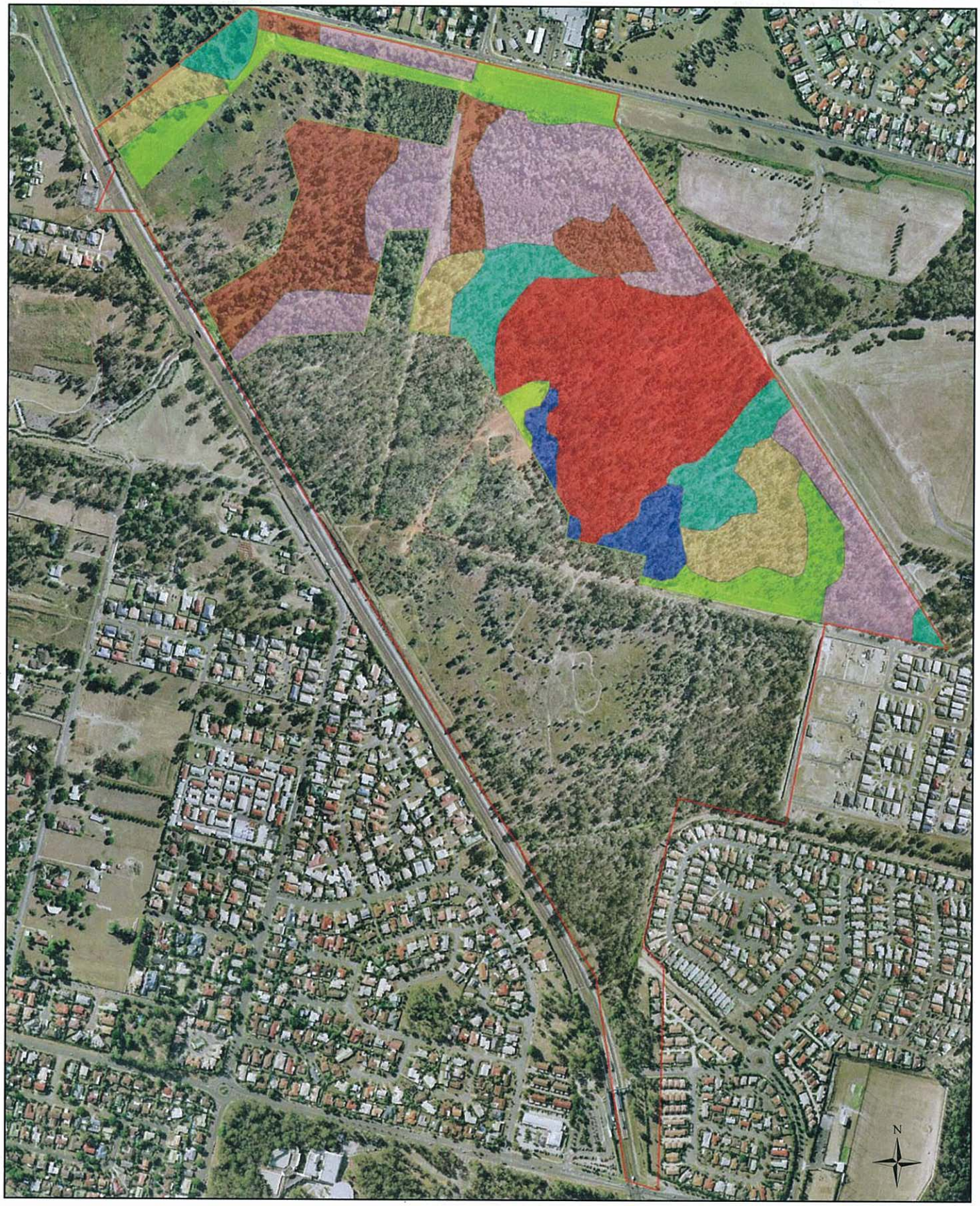
Approximations regarding the average cost of Rehabilitation and Revegetation of Precinct 4 are provided below:

Weed management (incl. labour): Herbicide - $7.00/L (Glyphosate), Spraying / brush-cutting and labour - $200/ha;

Revegetation: Tube stock - $1.50/ea, Labour - $800/ha;

Mulching: Free (sourced from site); and

Monitoring and Maintenance: $200/ha over a 12 month period.



Legend

- Precinct 4
- Bushland Area
- Grassy areas with scattered Trees
- Melaleuca Open Forest
- Melaleuca regrowth
- Queensland Blue-gum Open Forest
- Queensland Blue-gum and Bloodwood Open Forest
- Queensland Blue-gum and Bloodwood regrowth
- Queensland Blue-gum regrowth

0 50 100 200 300 400 Meters

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Figure 4.1: Extant Vegetation Communities

Rehabilitation Plan-Precinct 4, Fitzgibbon Urban Development Area

Table 2: Management and Maintenance Requirements of Vegetation Communities

Vegetation Management Climax Community (Figure 2.1)	Existing Vegetation Communities (Figure 3.1)	Current Condition Summary	General Management Requirements and Potential Threats	Species schedule	Monitoring and Maintenance	Desired Outcomes and Performance Indicators
***Melaleuca* Open Forest**	***Melaleuca* regrowth;** ***Melaleuca* Open Forest.**	Generally in good condition this community shows high species diversity in the mid and upper stratum. However, in many areas the understorey is dominated by rank grasses (e.g. signal grass *Urochloa mutica*). Other weeds such as Chinese Elm *Celtis sinensis,* Groundsel Bush *Baccharis halimifolia* and Camphor Laurel *Cinnamomum camphor* are common along tracks and other disturbed areas within this community. Portions of this community (regrowth areas) are currently a source of weed seeds threatening the condition of neighbouring native communities.	Weeds currently present include Slash pine *Pinus elliottii*, Groundsel Bush *Baccharis halimifolia* and Broad-leaved pepper tree *Schinus terebinthifolius* (see weed control techniques provided in **Appendices B** and **C**). A weed eradication programme within this area is required. This will enhance the ecological values of the area by promoting recruitment of *Melaleuca* regrowth, reducing the spread of weeds into adjoining areas and increasing cover and foraging resources for native fauna species.	Implement initial weed eradication and control. No revegetation requirements for this area unless canopy gaps (measured from the drip zone) exceed 50m.	Monitoring and maintenance schedule for revegetated areas: - Monthly for the first 12 months; - Every three months for the second 12 months; - Bi-annually for following 3 years; and - Annually there-after.	Improve vegetation community condition by eradication of weed infestations. Performance indicators include: - No evidence of dieback of canopy species. - Continued evidence of canopy species seedling recruitment. - No weed infestations.

Vegetation Management Climax Community (Figure 2.1)	Existing Vegetation Communities (Figure 3.1)	Current Condition Summary	General Management Requirements and Potential Threats	Species schedule	Monitoring and Maintenance	Desired Outcomes and Performance Indicators
Queensland Blue-gum Open Forest	**Queensland Blue-gum Open Forest;** **Queensland Blue-gum Regrowth**	Generally in good condition, this community shows high species diversity and condition in all layers. Some minor weed infestations currently degrade the condition of this community.	There is no requirement for revegetation within this community. Rehabilitation requirements include control of existing nuisance weeds including Signal Grass (*Urochloa mutica)*, Mickey mouse bush (*Ochna serrulata*), Yellow bells (*Tecoma stans*), Cadagi (*Corymbia torelliana*) and Camphor laurel (*Cinnamomum camphora*) (see weed control techniques provided in **Appendices B** and **C**). Removal of weeds will maintain and enhance the integrity of the habitat and facilitate the natural recruitment of locally endemic species that form forage for native fauna species (including Squirrel Gliders).	Implement initial weed eradication and control. No revegetation requirements for this area unless canopy gaps (measured from the drip zone) exceed 50m.	Monitoring on a bi-annual basis for the first two years to ensure natural regeneration processes are taking place. Outbreaks of weeds are to be controlled in accordance with **Appendices B** and **C** when identified. Monitoring annually there-after.	Improve vegetation community condition by eradication of weed infestations. Performance indicators include: - No evidence of dieback of canopy species. - Continued evidence of canopy species seedling recruitment. - No weed infestations.
Queensland Blue-gum and Bloodwood Open Forest	**Queensland Blue-gum and Bloodwood Open Forest;** **Queensland Blue-gum and Bloodwood Open Forest regrowth.**	Generally in good condition this community shows high species diversity and condition in all layers. Some minor weed infestations currently degrade the condition of this community, particularly along the interface of disturbance areas.	Weeds present include Lantana (*Lantana camara*), Signal Grass (*Urochloa mutica)*, Mickey mouse bush (*Ochna serrulata*), Yellow bells (*Tecoma stans*), Cadagi (*Corymbia torelliana*) and Camphor laurel (*Cinnamomum camphora*). These species are to be controlled (see weed control techniques provided in **Appendices B** and **C**).	Implement initial weed eradication and control. No revegetation requirements for this area unless canopy gaps (measured from the drip zone) exceed	Monitoring on a bi-annual basis for the first two years to ensure natural regeneration processes are taking place. Outbreaks of weeds are to be controlled when identified. Monitoring annually there-after.	Improve vegetation community condition by eradication of weed infestations. Performance indicators include: - No evidence of dieback of canopy species. - Continued evidence of canopy species

Vegetation Management Climax Community (Figure 2.1)	Existing Vegetation Communities (Figure 3.1)	Current Condition Summary	General Management Requirements and Potential Threats	Species schedule	Monitoring and Maintenance	Desired Outcomes and Performance Indicators
			There is no requirement for revegetation within this community. Rehabilitation requirements include control of existing nuisance weeds. Removal of weeds will maintain and enhance the integrity of the habitat and facilitate the natural recruitment of locally endemic species that form forage for native fauna species (including Squirrel Gliders).	50m.		seedling recruitment. - No weed infestations.
Woodland with native grassy understorey	**Grassy areas with scattered trees.**	Currently degraded with loss of much of the structure associated vegetation endemic to the area. This area has been cleared and currently contains exotic grass and forb species which have reduced the levels of native species recruitment. Portions of this community (regrowth areas) are currently a source of weed seeds threatening the condition of neighbouring native communities.	These areas require revegetation to reduce the size of canopy gaps. Such revegetation will enhance the environmental values of this area in the long term by providing increased forage and cover for native fauna and reduced resources for weed species. However, trees or plants that grow in excess of 4m are not to be planted within the electricity easements that run parallel to Telegraph Road within the northern portion of Precinct 4. All exotic species (including weeds) within this area should be controlled as per the recommendations provided within **Appendix B** and **C**.	See **Tables 3** and **4**.	Monitoring and maintenance schedule for revegetated areas: - Monthly for the first 12 months; - Every three months for the second 12 months; - Bi-annually for following 3 years; and - Annually thereafter.	Re-creation of a woodland community dominated by Queensland Blue-gum and Grey Ironbark with a native grassy understorey. A reduction in the abundance and diversity of exotic species is a performance requirement.

Table 3 – Species Planting Schedule

Community Stratum Species	Common Name	Density*	Notes
***Melaleuca* Open Forest**			
Tree layer			**In general, this community does not require revegetation**. However, where weeds are eradicated supplementary plantings may be required to prevent re-invasion. Weed control of this community will enhance the natural recruitment of locally endemic flora species.
Melaleuca quinquenervia [1]	Broad-leaved Paperbark	2m centres	
Eucalyptus tereticornis [1]	Queensland Blue-gum	2m centres	
Lophostemon suaveolens [1]	Swamp Box	2m centres	
Shrub Layer			
Alphitonia excelsa [1 2]	Red Ash	2m centres	
Glochidion ferdinandi [1]	Cheese Tree	2m centres	
Callistemon salignus [1]	Willow bottle brush	2m centres	
Queensland Blue-gum Open Forest			
Tree layer			**In general, this community does not require revegetation**. However, where weeds are eradicated supplementary plantings may be required to prevent re-invasion when canopy gaps exceed 50m (measured from the drip zone). Weed control of this community will enhance the natural recruitment of locally endemic flora species.
Eucalyptus tereticornis [1]	Queensland Blue-gum	2m centres	
Eucalyptus seeana	Narrow-leaved Queensland Blue-gum	2m centres	
Lophostemon suaveolens [1]	Swamp Box	2m centres	
Eucalyptus siderophloia	Broad-leaved Grey Ironbark	2m centres	
Corymbia intermedia	Pink Bloodwood	2m centres	
Sub-canopy			
Allocasuarina litoralis	Black She Oak	2m centres	
Alphitonia excelsa [1 2]	Red Ash	2m centres	
Melaleuca quinquenervia [1]	Broad-leaved Paperbark	2m centres	
Shrub Layer			
Acacia disparrima	Hickory Wattle	2m centres	
Acacia leiocalyx	Black Wattle	2m centres	
Acacia fimbriata [1]	Brisbane Golden Wattle	2m centres	
Dodonaea triquetra [1 2]	Hop Bush	2 m centres	
Ground Layer			
Hibbertia stricta	Guinea Flower	1m centres	
Hibbertia vestita	Guinea Flower	1m centres	
Lomandra longifolia [1 2]	Matrush	1m centres	
Hardenbergia violacea [2]	Native Sarsaparilla	1m centres	
Dianella caerulea [1 2]	Blue Flax Lily	1m centres	

Community Stratum Species	Common Name	Density*	Notes
Queensland Blue-gum and Bloodwood Open Forest			
Tree layer			**In general, this community does not require revegetation**. However, where weeds are eradicated supplementary plantings may be required to prevent re-invasion when canopy gaps exceed 50m (measured from the drip zone). Weed control of this community will enhance the natural recruitment of locally endemic flora species.
Eucalyptus tereticornis [1]	Queensland Blue-gum	2m centres	
Eucalyptus seeana	Narrow Leaved Queensland Blue-gum	2m centres	
Eucalyptus siderophloia	Broad-leaved Grey Ironbark	2m centres	
Corymbia intermedia	Pink Bloodwood	2m centres	
Sub-canopy			
Allocasuarina litoralis	Black She Oak	2m centres	
Alphitonia excelsa [1 2]	Red Ash	2m centres	
Trema tomentosa	Poison Peach	2m centres	
Breynia oblongifolia [2]	Breynia	2m centres	
Dodonaea triquetra [2]	Hop Bush	2 m centres	
Ground Layer			
Lomandra longifolia [1 2]	Matrush	1m centres	
Hardenbergia violaceae [2]	Native Sarsaparilla	1m centres	
Hibbertia stricta	Guinea Flower	1m centres	
Hibbertia vestita	Guinea Flower	1m centres	
Imperata cylindrica	Blady Grass	1m centres	
Dianella caerulea [2]	Blue Flax Lily	1m centres	
Woodland with native grassy understorey			
Tree layer			Trees are not to be planted within areas associated with high voltage power lines (i.e. within powerlines easements). **Revegetation of this community is to occur** at the recommended densities.
Eucalyptus tereticornis [1]	Queensland Blue-gum	4m centres	
Eucalyptus siderophloia	Broad-leaved Grey Ironbark	4m centres	
Shrub Layer			
Acacia disparrima	Hickory Wattle	4m centres	
Acacia leiocalyx	Black Wattle	4m centres	
Acacia fimbriata [1]	Brisbane Golden Wattle	2m centres	
Alphitonia excelsa [1 2]	Red Ash	4m centres	
Dodonaea triquetra [1 2]	Hop Bush	4 m centres	
Ground Layer			
Hardenbergia Violaceae [2]	Native Sarsaparilla	1m centres	
Dianella caerulea [2]	Blue Flax Lily	1m centres	
Imperata cylindrica	Blady Grass	1m centres	
Cymbopogon refractus	Barb-wire Grass	1m centres	

Community Stratum Species	Common Name	Density*	Notes
Themeda triandra	Kangaroo Grass	1m centres	
Hibbertia stricta	Guinea Flower	1m centres	
Hibbertia vestita	Guinea Flower	1m centres	

[1] Indicate species recommended for planting directly adjacent to stormwater management areas.

[2] Indicate fire-retardant species. Note that none of these provide food for Squirrel Gliders.

* A schematic indicating spacing is provided in **Plate 1**

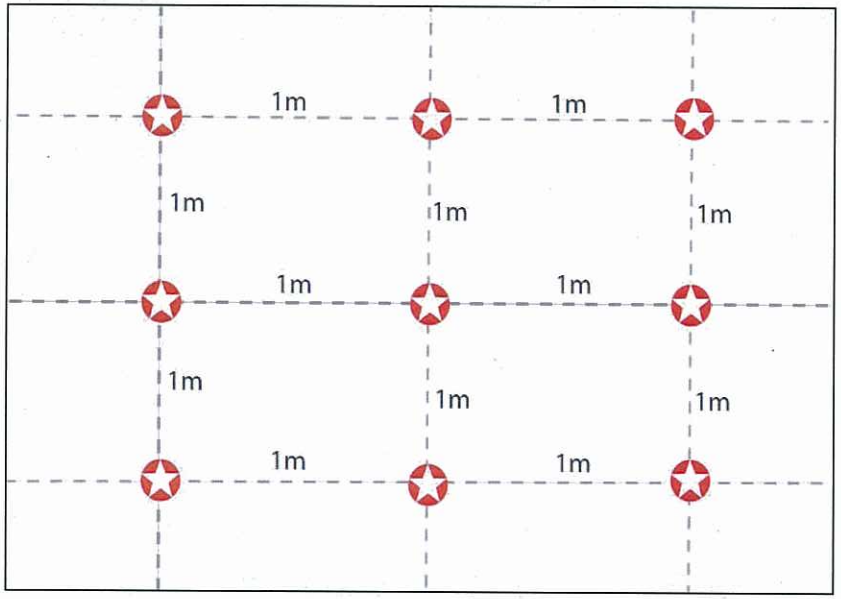

Plate 1: Schematic indicating the planting arrangement for planting at 1m centres (location of plants is indicated by stars encircled by red).

Table 4: Rehabilitation Methodology

Task	Recommendations
Delineate Rehabilitation Areas	Rehabilitation areas are to be clearly delineated on the ground with fencing where necessary.
Weed and Exotic Plant Removal and Control	Priority and environmental weeds are listed in **Table 6** and control methods for grassy, herbaceous and woody weed species are illustrated in **Appendices B** and **C**. Hand removal is the preferred method of weed control near creeks and waterways, however, where this is ineffective Round-Up Bioactive ®, or a similar product suitable for use near waterways, may be used. Particular care must be taken to avoid poisoning native species, particularly young saplings, native grasses and herbaceous species. Exotic grasses are to be treated (by spraying) 2-3 weeks prior to planting – particular care must be taken to avoid spraying native grasses. Woody and herbaceous species are also to be treated prior to planting. Two weeks following spraying of rank exotic grasses these are to be knocked down by brushcutting – particular care must be taken to avoid slashing native species. For specific control requirements for priority weeds see **Appendices B** and **C.**
Site Preparation	Any rubbish will need to be collected and disposed of offsite at a Council approved location or rubbish disposal depot. No ripping is required.
Mulch	Mulching will be undertaken across the rehabilitation site. A weed free mulch is to be applied to a depth of 100mm across the rehabilitation area.
Plant Supply	Seedlings shall be sourced from local provenance stock (where possible). Species and numbers are scheduled in **Table 3**. Planting stock shall be provided in forestry tubes with a minimum plant height of 20cm and a well developed root system. Seedlings are to be healthy and displaying signs of active growth – any plants displaying yellowing, disease, root curling or are root bound are not to be planted, nor are any plants with weeds growing in the pot.
Planting	Tubestock Planting Plant in a slight shallow twice the size of the tube container, ensuring rootball is just below soil surface. Fertiliser tablet to be placed adjacent to, but not touching, the rootball. Soil to be backfilled to the same level as when the plant was in the container Mulch to a depth of 100mm to surround plant, but not touch the stem. Seedlings are to be randomly arranged at the minimum densities identified in **Table 3**. Seedlings must be moist at time of planting, if necessary water stock prior to planting.
Watering	Seedlings are to be watered with a minimum of 5 – 10 litres of water each at the time of planting and then watered as part of general maintenance requirements.
Habitat Features	For all Rehabilitation Zones, habitat features such as rocks, fallen branches and dead trees and shrubs in all zones are to be retained in situ unless they pose a safety risk.
Maintenance and Monitoring	Plantings will be maintained for a period of 24 months during the rehabilitation phase. Subsequent management will then be as per **Table 2**. In order to reduce an increase in the mosquito population, fill or drain any areas of standing water within rehabilitation areas that may act as mosquito breeding sites.

4.6 REHABILITATION TARGETS

Rehabilitation and revegetation efforts conducted within Precinct 4 of the UDA aim to re-establish vegetation communities that are predicted to have occurred onsite prior to human disturbance and modification. To achieve this target, each of the vegetation communities currently on site (**Figure 3.1**) have been assigned a Target Climax Community designation (**Table 5** and **Figure 2.1**).

Recommendations regarding the species to be used within each of the management units and methodologies are provided in **Tables 3** and **4**. These recommendations have been prepared to achieve each of the climax communities listed in **Table 5** and indicated in **Figure 2.1** with the long term target of each community reaching remnant status under the provisions of the Queensland *Vegetation Management Act 1999*.

Performance indicators and targets for each of the Target Climax Communities are contained in **Table 5**.

4.7 WEED MANAGEMENT

Of the 38 invasive weed species identified or predicted to occur within the rehabilitation areas of Precinct 4 (**Table 6**), three species are declared as Class 2 and eight species are declared as Class 3 under the LP Act.

Landholders must take reasonable steps to keep land free of Class 2 pests, whilst it is illegal to sell Class 3 plant or its seed anywhere in Queensland without permission from the Minister for Natural Resources and Mines.

Specific management requirements for declared plant species are provided within **Appendices B** and **C**.

Table 5: Rehabilitation Targets

Target Climax Community (see Figure 2.1)	Extant Vegetation Community (see Figure 3.1)	Performance indicators/targets
***Melaleuca quinquenervia* Open Forest**	*Melaleuca* regrowth	• Eradicate extant weeds; • Maintain community condition; • Promote natural regeneration; and • Revegetation as per **Table 3** where required to close gaps in canopy. Where revegetation has occurred the following Targets are to be achieved: • 70% survival of canopy species outlined in Table 3 after 5 years; and • 50% survival of shrub and ground layer species outlined in **Table 3** after 5 years.
	Melaleuca Open Forest	• Eradicate extant weeds; • Maintain community condition; and • Promote natural regeneration.
Queensland Blue-gum Open Forest	Queensland Blue-gum Regrowth	• Eradicate extant weeds; • Maintain community condition; • Promote natural regeneration; and • Revegetation as per **Table 3** where required to close gaps in canopy. Where revegetation has occurred the following Targets are to be achieved: • 70% survival of canopy species outlined in Table 3 after 5 years; and • 50% survival of shrub and ground layer species outlined in **Table 3** after 5 years.
	Queensland Blue-gum Open Forest	• Eradicate extant weeds; • Maintain community condition; and • Promote natural regeneration.

Target Climax Community (see Figure 2.1)	Extant Vegetation Community (see Figure 3.1)	Performance indicators/targets
Queensland Blue-gum and Bloodwood Open Forest	Queensland Blue-gum and Bloodwood regrowth	• Eradicate extant weeds; • Maintain community condition; • Promote natural regeneration; and • Revegetation as per Table 3 where required to close gaps in canopy. Where revegetation has occurred the following Targets are to be achieved: • 70% survival of canopy species outlined in Table 3 after 5 years; and 50% survival of shrub and ground layer species outlined in **Table 3** after 5 years.
	Queensland Blue-gum and Bloodwood Open Forest	• Eradicate extant weeds; • Maintain community condition; and • Promote natural regeneration.
Woodland with native grassy understorey	Grassy areas with scattered trees	Aim: Sparse canopy of mixed Eucalypt species at 70% original canopy Height, 50% of original canopy cover with an understorey consisting of native grass species Targets: • 70% survival of canopy species outlined in Table 3 after 5 years. • 50% survival of shrub and ground layer species outlined in **Table 3** after 5 years. • No woody weeds. • <10% herbaceous weeds.

Table 6: Invasive Weed Species on the Site

Family	Scientific Name	Common Name	Status (LP Act 2002)	Recommended Control Techniques
Amaranthaceae	*Gomphrena celosioides*	Gomphrena Weed	Environmental weed	QPIF website
Anacardiaceae	*Schinus terebinthifolius**	Broad-Leaved Pepper	Class 3	Appendices B and C
Asparagaceae	*Asparagus aethiopicus*	Asparagus Fern	Class 3	Appendices B and C
Asteraceae	*Ageratum houstonianum*	Blue Billygoat Weed	Environmental weed	Appendices B and C
Asteraceae	*Ambrosia artemisiifolia**	Annual Ragweed	Class 2	Appendices B and C
Asteraceae	*Baccharis halimifolia**	Groundsel Bush	Class 2	Appendices B and C
Asteraceae	*Bidens pilosa*	Cobbler's Pegs	Environmental weed	QPIF website
Asteraceae	*Conyza bonariensis*	Fleabane	Environmental weed	QPIF website
Asteraceae	*Crassocephalum crepidioides*	Thickhead	Environmental weed	QPIF website
Asteraceae	*Hypochaeris radicata*	Catsear	Environmental weed	QPIF website
Asteraceae	*Senecio madagascariensis**	Fireweed	Class 2	Appendices B and C
Asteraceae	*Sphagneticola trilobata**	Singapore Daisy	Class 3	Appendices B and C
Bignoniaceae	*Tecoma stans**	Yellow Bells	Class 3	Appendices B and C
Fabaceae	*Crotalaria lanceolata*	Rattlepod	Environmental weed	QPIF website
Fabaceae	*Desmodium uncinatum*	Silver-Leaf Desmodium	Environmental weed	QPIF website
Fabaceae	*Macroptilium atropurpureum*	Siratro	Environmental weed	QPIF website
Lauraceae	*Cinnamomum camphora*	Camphor Laurel	Class 3	Appendices B and C
Ochnaceae	*Ochna serrulata*	Ochna	Environmental weed	QPIF website
Passifloraceae	*Passiflora suberosa*	Corky Passion Flower	Environmental weed	QPIF website
Passifloraceae	*Passiflora subpeltata*	White Passion Flower	Environmental weed	QPIF website
Pineacea	*Pinus elliottii*	Slash Pine	Environmental weed	QPIF website
Poaceae	*Andropogon virginicus*	Whiskey Grass	Environmental weed	QPIF website
Poaceae	*Avena sativa*	Common Oats	Environmental weed	QPIF website
Poaceae	*Cynodon dactylon*	Couch Grass	Environmental weed	QPIF website
Poaceae	*Echinochloa colona*	Awnless Barnyard Grass	Environmental weed	QPIF website
Poaceae	*Eragrostis mexicana*	Mexican Lovegrass	Environmental weed	QPIF website
Poaceae	*Megathyrsus maximus*	Green Panic	Environmental weed	QPIF website
Poaceae	*Paspalum dilatatum*	Paspalum	Environmental weed	See QPIF website
Poaceae	*Phalaris canariensis*	Canary Grass	Environmental weed	QPIF website
Poaceae	*Setaria parviflora*	Slender Pigeon Grass	Environmental weed	QPIF website
Poaceae	*Setaria sphacelata*	Pigeon Grass	Environmental weed	QPIF website
Poaceae	*Urochloa mutica*	Signal Grass	Environmental weed	QPIF website

Family	Scientific Name	Common Name	Status (LP Act 2002)	Recommended Control Techniques
Solanaceae	*Datura stramonium*	Common Thornapple	Environmental weed	QPIF website
Solanaceae	*Solanum seaforthianum*	Brazilian Nightshade	Environmental weed	QPIF website
Ulmaceae	*Celtis sinensis**	Chinese Elm	Class 3	Appendices B and C
Verbenaceae	*Lantana camara**	Lantana	Class 3	Appendices B and C
Verbenaceae	*Lantana montevidensis**	Creeping Lantana	Class 3	Appendices B and C
Verbenaceae	*Verbena bonariensis*	Purpletop	Environmental weed	QPIF website

*Status under LP Act:
Class 2 Plant – Landholders must take reasonable steps to keep land free of Class 2 pests.
Class 3 Plant – It is illegal to sell a declared plant or its seed anywhere in Queensland without permission from the Minister for Natural Resources and Mines.

4.7 MAINTENANCE

The maintenance plan provided in **Table 7** is applicable for a total of five years following commencement of rehabilitation.

. Table 7: Maintenance Plan for Rehabilitation Works

Timing	Recommended Action
First three months after planting	**Control weeds** – Check for weeds monthly and control by hand removal, spot spraying e.g. of grasses, taking care not to damage planted and regenerating native species, including grasses and forbs. **Watering** – Water each seedling with a minimum of 8 – 10 litres of water weekly during the first month depending upon prevailing weather conditions and then monthly or as necessary until seedlings are established (approximately 3 – 6 months). **General Site Maintenance** – e.g. Remove any rubbish dumped on site; check for signs of erosion; replace mulch as required. Fill or drain any areas of standing water within the rehabilitation areas that may increase the incidence of mosquitoes. **Replacement Planting** – Replace dead or senescent plants according to the methods detailed in **Table 4**. **Monitoring** – Undertake regular monitoring.
3-24 months after planting	**Control weeds** – Continue monthly weed checks and control as required as specified for first three months. **Watering** – Continue to water each seedling as necessary until seedlings are established (approximately 3 – 6 months). Any replacement seedlings should be watered weekly during the first month following planting, then water as necessary until seedlings are established (approximately 3 – 6 months after planting). **Replacement Planting** – Replace dead or senescent plants according to the methods detailed in **Table 4**; and continue replacement planting until 95% survival rate achieved. **Mulching** – If mulch is depleted thereby allowing significant weed growth, replace mulch around affected plants with coarse forest mulch or sugar cane to a depth of 100mm and diameter of 1m, ensuring mulch does not contact any stems/trunks of native species. **General Site Maintenance** – e.g. Remove any rubbish dumped on site; check for signs of erosion; replace mulch as required. Fill or drain any areas of standing water within the rehabilitation areas that may increase the incidence of mosquitoes. **Monitoring** – Undertake regular site monitoring tasks and photos.