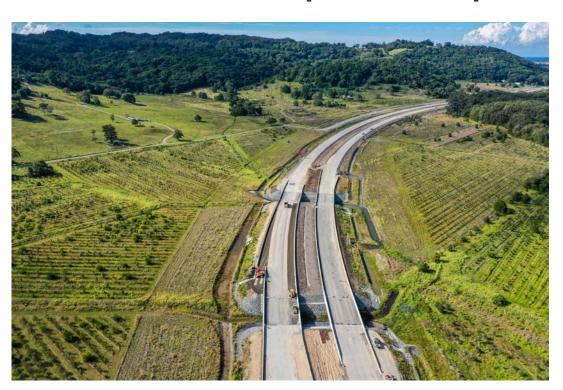


GMC ENVIRONMENTAL CONSULTING

HW10 Pacific Highway Upgrade, Woolgoolga to Ballina – Koala Revegetation, Section 10

2018/19 Annual Inspection Report



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Contents

1.	Ko	pala Revegetation Works description	3
	1.1	Planting areas	3
	1.2	Koala tree species	3
	1.3	Planting regime	3
	1.4	Planting management	4
	1.5	Project progress summary to date	4
2.	Re	evegetation Inspection Report Details	5
3.	20	17-19 Project Revegetation Planting	7
;	3.1	Project plant source	7
;	3.2	Project Revegetation Planting	8
4.	An	nual Inspection - Observations	12
5.	Pro	oject Weed Issues	15
į	5.1	Project Weed Species	15
į	5.2	Project Weed Control Strategies Utilised 2018-19	15
6.	20	18-19 Maintenance Activities	16
(3.1	Replanting	16
(5.2	Weed Control	16
6	5.3	Wallaby Grazing Control	16
7.	Up	ocoming Works – 2019-20	17
8.	Аp	pendix 1 - 2019 Annual Inspection Record Sheets	19
9.	Аp	pendix 2 – Project Weed Species	20
10	. Do	ocument Control	29

Page 2 of 29

1. Koala Revegetation Works description

The NSW Government committed to plant 130 hectares of new habitat for the koala along Section 10 of the W2B highway alignment. These planting areas consisted of various combinations of cleared land used for grazing or sugar cane production. A Koala Revegetation Strategy was developed and identified approximately 130 hectares of cleared land for new Koala habitat across 21 sites.

The three main objectives of this revegetation include:

- Establish new habitat for Koala using preferred Koala food trees to compensate for habitat loss.
- Improve habitat connectivity within the fragmented landscape.
- To guide movement of Koalas towards the road connectivity structures that will be provided to ensure safe passage for dispersing Koalas.

An overview of the Koala Revegetation areas is provided in Figures 3 - 6. An additional planting area was included in 2018. This area is illustrated in Figure 6 is 0.44 hectares and located along Wardell Rd, Wardell.

The current progress of the project is summarised in Section 1.5.

1.1 Planting areas

A total of 22 sites have been identified for the Koala Revegetation Works. An overview of the Koala Revegetation Works is provided in Figures 3 - 6. Planting areas within the sites range in size from around 0.22 hectares to 7.1 hectares.

The planting areas have been identified into five broad categories reflecting the physical nature of the sites:

- Type A: flat low-lying topography pastoral grasses.
- Type B: flat low-lying topography cane fields (high water table).
- Type C: lower to mid slopes pastoral grasses.
- Type D: flat low-lying topography sandy soils with pastoral grasses.
- Type E: flat low-lying topography to upper slopes planting between existing vegetation.

1.2 Koala tree species

A combination of primary/secondary Koala food trees and some shelter trees was planted out in the revegetation areas. Tree species proposed across the varied planting areas reflect site specific soil types, drainage conditions and topographical positions.

Swamp Mahogany (*Eucalyptus robusta*) and Broad-leaved Paperbark (*Melaleuca quinquenervia*) are planted on lower slopes and flats as these species are particularly suited to poorly-drained, and seasonally-inundated, boggy areas. Forest Red Gum (*Eucalyptus tereticornis*), Forest Oak (*Allocasuarina torulosa*), Flooded Gum (*Eucalyptus grandis*), Small-leaved Red Gum (*Eucalyptus seeana*) and Red Mahogany (*Eucalyptus resinifera*) are planted on lower slopes on fertile soils. Tallowwood (*Eucalyptus microcorys*), and Forest Oak (*Allocasuarina torulosa*) are planted on midupper slopes.

A 'cover crop' of fast-growing Acacias was also planted within eucalypts in locations of drier, rocky or sandy soils growing on mid-upper slopes. The purpose of the Acacia species is to develop microbial (nitrogen fixing) communities within the soil through symbiont mycorrhiza and increase the growth rate of Eucalypt species. Acacia species include *Acacia irrorate*. *Acacia melanoxylon* and *Acacia fimbriata*.

1.3 Planting regime

Seedlings were sourced locally (local provenance). A stocking rate of 300-400 trees per hectare after 10 years post establishment is proposed. Koala food and shelter tree species are planted at a density of around 625 plants per hectare.

Page 3 of 29

1.4 Planting management

An initial planting density of 650 plants per hectare, with 5 per cent replacement of Koala food tree tube-stock annually for three years due to losses is proposed. Replacement of Acacia cover-crop species is not proposed. After three years, the stand of planted eucalypts should be considered "established" and any further losses regarded as part of natural stand thinning due to competition with other planted trees. A stocking rate of 300-400 trees per hectare is expected after several decades following plantation establishment.

1.5 Project progress summary to date

- 2017 project planting commenced 17 March 2017
- 2017 project planting competed (113 hectares / 79,129 plants) 18 October 2017
- Project maintenance commenced 19 October 2017
- First Annual Inspection Audit June 2018
- Additional project planting area completed Wardell Rd (0.44 hectares / 385 plants) 21 August 2018
- PacificComplete identification of additional revegetation areas 17.8 hectares / 12,015 plants 14
 May 2019 (to be planted in October/November 2019), made up of:
 - o Area 1 Kays Rd (Chainage 156300) 6.6 hectares / 4,455 plants
 - o Area 2 Lumleys lane (Chainage 152300) 11.2 hectares / 7,560 plants.
- Nursery order of 12,015 plants for final 17.8 hectares of revegetation works 21 May 2019
- Second Annual Inspection Audit (this report) 27 June to 8 July 2019.



Page 4 of 29

2. Revegetation Inspection Report Details

Site Revegetation Inspection -

o Completed By:

Guy Corbett – Bach.App.Sci. (Resource Management) & Grad.Dip. (Catchment Management) – Director GMC Environmental Consulting PTY LTD

o Inspection Dates:

27 June to 8 July 2019

o Aim:

Koala Revegetation Monitoring -

The koala revegetation monitoring was generally undertaken as per the Ballina Koala Revegetation Strategy and Koala Management Plan, specifically section 8.6 Monitoring.

The BKRSKMP asked for monitoring of the success of the revegetation to occur across all field sites monitoring one plot per two hectares of revegetation on each occasion. Monitoring should occur at the same period each year. Each site should be marked with a star picket and flagging tape and the location should also be recorded with a GPS. Annual monitoring should occur at each site from year 1, where the following variables are recorded within a 50 x 20 m (0.1 ha) quadrat. Annual monitoring will occur at each site where the following variables are recorded:

- Density of Koala food trees and shelter trees, their average height and number of visible dead stems.
- · Presence and dominance of any environmental weeds, including exotic grasses.
- Presence and condition of Acacia cover-crop, if planted.
- One photo taken at the star picket, facing south (on a 180^o degree bearing).

These observations will identify if any large infestations of environmental weeds are occurring and their location, if any large-scale plant deaths have occurred and if any other environmental issues are developing, such as sheet or gully erosion.

The survey method utilised for this report was undertaken as per the BKRSKMP **except** that the observations where increased to cover 100% of each revegetation area (in most instances) rather than a plot every 2 hectares of 0.1ha. This was undertaken by the surveyor to provide a more complete picture of the revegetation works progress across all planting sites completed to date.

Timing -

Annual monitoring of the success of the plantings will occur at each site. Monitoring will occur at the same period each year. The monitoring should continue for at least five years, and/ or until plantings across 90% of plots have an average height of eight metres (unless otherwise agreed with the EPA).

Inspection Sheets -

Completed 2019 Project Site Revegetation Inspection Forms are provided in Appendix 1 of this report.

Page 5 of 29

Site Revegetation Inspection Report -

o Completed by:

Guy Corbett.

o Date:

23 July 2019

o Aim:

The results of the annual field surveys to be summarised in an annual report provided within two months of the completion of the field surveys. The monitoring should continue for at least five years, and/ or until plantings across 90% of plots have an average height of eight metres.

. Page 6 of 29

3. 2017-19 Project Revegetation Planting

3.1 Project plant source

2017 Seed collection

All seed was collected by Mullum Creek Native Nursery.

Eucalyptus robusta, Eucalyptus tereticornis, Eucalyptus Seeana, Eucalyptus resinifera, and Melaleuca quinquenervia seed was collected around Meerschaum Vale along Wardell Road, Old Bagotville Road, Bogotville Road, and around Wardell along Lumleys Lane, River Drive and around Pimlico along Pimlico Road. This seed was collected from 2010 and stored at the Mullum Creek Nursery. Further project seed was collected from June 2016 onwards to add to the existing seed.

Eucalyptus grandis, Eucalyptus microcory's and Allocasuarina torulosa was collected from June 2016 onwards for the project. These were collected from the Bagotville/Wardell area at the same locations as above.

A. melanoxylon, A. irrorata and A. fimbriata seed was collected from June 2016 in the Brunswick Heads/Tweed area.

2018 Seed collection

All seed collected by Eastern Forest Nursery.

Seed supply from Northern NSW regional zone.

2017 Project Plant Supply Nursery

All project plants were propagated, grown and sourced from Mullum Creek Nursery – 110 Yankee Creek Rd Mullumbimby NSW.





Figure 1. Project plant propagation

2018 Project Plant Supply Nursery

All project plants were propagated, grown and sourced from Eastern Forest Nursery – 848 Bruxner Highway Gundurimba (via Lismore) NSW.





Figure 2. Eastern Forest Nursery

3.2 Project Revegetation Planting

2017 Planting

The project revegetation planting was undertaken from March 2017 through to October 2017. The total area planted was 113 hectares with around 79,000 trees planted as summarised in Table 1. Tree species and numbers of trees planted (not including replanting activities) is summarised in Table 2. The planting areas are illustrated in Figures 3 to 6.

It should be noted that while generally the original planting program was followed, because of the identification of Hairy Joint Grass species in some of the planting areas, some planned revegetation planting was not undertaken. The main areas affected by Hairy Joint Grass presence is in Planting Areas 16, 17.1, and 18.2-4.

2018 Planting

The project revegetation planting was undertaken from 15 August 2018 to 21 August. The total area planted was 0.44 hectares with around 385 trees planted as summarised in Table 1. Tree species and numbers of trees planted (not including replanting activities) is summarised in Table 3. The planting areas are illustrated in Figure 7.

Table 1. Project 2017/18 Revegetation Planting and Hectares Planted

Planting Dates	Koala Food Trees / Other Plants	Cover Crop	Area
2017 Planting	72,171	6,958	113 Ha
2018 Planting	385		0.44 Ha
Planned 2019 Planting Remaining	11,125	890	17.8 Ha
Total at Completion	83,681	7,848	131.24 Ha

Page 8 of 29

Table 2. Project 2017 Revegetation Species Planted

Project Planted Species	Number Planted
Eucalyptus robusta	20,861
Melaleuca quinquenervia	3,911
Eucalyptus tereeticornis	19,891
Eucalyptus seeana	139
Eucalyptus resinifera	3,306
Eucalyptus grandis	2,868
Eucalyptus microcorys	17,980
Allocasuarina torulosa	3,215
Acacia irrorata	3,559
Acacia fimbriata	3,050
Acacia melanoxylon	349
Number of trees (not including replanting activities)	79,129

Table 3. Project 2018 Revegetation Species Planted

Project Planted Species	Number Planted
Eucalyptus robusta	55
Melaleuca quinquenervia	45
Banksia aemula	45
Baekea frutescens	55
Lomandar longifolia	85
Dianella caerulea	50
Baloskion tetrapphyllum	50
Number of trees (not including replanting activities)	385

Page 9 of 29



Figure 3. Planting Areas along Thurgates Lane, Wardell



Figure 4. Planting Areas along Lumleys Lane Wardell

Page 10 of 29



Figure 5. Planting Areas around Bagotville



Figure 6. Planting Areas Bingal Creek

. Page 11 of 29



Figure 7. 2018 Planting Areas Wardell Road

4. Annual Inspection - Observations

As detailed in Section 1 of this report, an annual inspection of all the project revegetation planting areas was undertaken. As part of this inspection, an inspection record and site photo were recorded for each planting area. These inspection records are provided in Appendix 1 of this report.

A summary of the main observations from these inspections are discussed below:

Plant Survival and Growth

Generally, plant survival across the whole project continues to be very good. The trees across most planting sites are growing very well with average heights ranging between 2m to 4m. The tallest tree observed and measured was approximately 6 metres in height. In most instances trees have double in size and in some instances tripled in size since the 2018 inspection. Observation during the annual inspection indicated there is a small amount of replacement planting required and the planned undertaking of these works is detailed in Section 6 of this report. Some of the best growth areas include Planting Areas 1, 6-8, 9, 10-15, and 19-20.

Across the project to date there has been approximately 6% project replanting due to natural causes and a further 8% replanting due to external pressures outside of the control of the project. Since the last inspection approximately 1,000 replacement plants were replanted across a number of planting areas. Section 6.1 of this report details replanting activities that have been undertaken to date.

In the previous annual inspection report it identified Planting Area 16.6 as where the assessor believed the site had failed (50% survival). Some replanting activities have been undertaken but with increased weed control a large number of the original plants have recovered and have now become well established.

The main issues identified again in this year's inspection, project wide, that is affecting plant survival and growth includes low area soil saturation, weed competition and site access constraints.

Page 12 of 29



Figure 8. Tree Growth Across Project

Soil Saturation

Soil saturation was observed to be a key feature in regard to plant growth and some species survival. A large portion of the project revegetation area is located in low lying areas that are subject to prolonged soil inundation/saturation. In these areas, project wide, it was observed that acacia survival was non-existent to below average. The acacia cover crop did not respond well to these wet soil conditions. Some eucalypts and Forest Oak also did not grow or survive well within these conditions or took a longer period of time to adjust. In planting areas with even a slight elevation that allowed soil drainage, the affected species especially the acacias are doing significantly better and demonstrated strong growth and survival.

Soil drainage has also shown to considerably affect tree growth. In lower lying zones, tree growth has been observed to be up to 50% slower than better draining areas. While growth was observed to be slower, tree establishment and survival is generally not affected.

. Page 13 of 29



Figure 9. Saturated Soil Area - PA13's

Weed Competition

The BKRSKMP asks that where woody weeds are present, weeds should be reduced to a density of less than 5% across the revegetation site, while exotic grasses should not be visibly affecting the growth of tube-stock. Weed competition is discussed fully in Section 5 of this report, but generally, weed competition is now much less of an issue than the previous inspection. Continual herbicide spraying, slashing and row mowing now has weeds generally under control across most planting zones. The areas requiring additional weed control works are identified in Section 5.

Tree heights are now also reducing the impact of weeds. Most tree heights across all planting zones are now above weed height and thus not competing as much for sunlight. Greater tree heights is also making weed control herbicide spraying more effective and easier to undertake.



Figure 10. Weed Control

Access Issues

Access into some planting sites for maintenance activities because of road works has continued to be an issue. The main areas of issue are –

- Planting areas 13.1-3
- Planting Area 3-4

Maintenance activities in these areas continues to be restricted to manual activities due to restricted access but tree establishment and growth generally is not being affected with tree heights now exceeding weed/grass heights.

5. Project Weed Issues

5.1 Project Weed Species

The mid-North Coast climate is very suitable for the growth of competitive weed and grass species especially in disturbed or cultivated soils.

A summary and photographic record of the main competitive weed / grass species the project has being managing is provided in Appendix 2.

5.2 Project Weed Control Strategies Utilised 2018-19

At Project inception its was planned to mulch each tree with project site won-mulch. Prior to revegetation works it was identified that the proposed mulch would not be available. To manage post planting weed issues, GMC and Pacific Complete agreed to a revised maintenance weed strategy involving post planting weed maintenance consisting of herbicide spraying and increased site mowing/slashing.

During 2018-19, weed/grass suppression activities have focused on continuous tractor slashing of tree rows followed by row spray with a non-selective herbicide. This years inspection has shown that compared to last year weed control is far more effective and as are result tree growth has generally doubled in most planting zones in the last 12 months.

Weed control methodology used in 2018-19:

Row Mowing and Row Spraying Chemical Control -

- Type Row mowing (Tractor/Razorback Mower) Chemical row spraying around planted trees
- Chemical Basta Active Ingredient: Glufosinate Ammonium Target: Non-Selective Grasses/Weeds
- Methods/Issues –

GMC in association with a local agronomist undertook a comprehensive literature review of the use of Basta spray around native plants and then undertook a limited row spraying trial prior to full scale row spraying across the whole project.

Basta spraying has proved very effective in controlling the changed weed mix that the Project experienced in early 2018. Basta works by killing plants on leaf contact rather than killing the plant by taking up the chemically internally such as Roundup (Glyphosate). Basta's herbicide action is a lot safer for use around trees than Roundup in regard to any overspray onto trees.

The approach implemented on-site involves moving to remove weeds/grasses around trees and then Basta spraying around trees and along rows two weeks later. This process allows better Basta application closer to the planted trees.

Planting zones requiring additional weed control management in 2019/20:

- Planting area's 12's
- Planting area's 16's
- Planting area's 8's

6. 2018-19 Maintenance Activities

6.1 Replanting

Replanting activities have been on-going since project planting commenced. Replanting has occurred because of:

Natural causes – weed completion, saturated ground, inappropriate species planting and general losses

External Pressures – Cattle grazing, floods and bush fire.

Natural Cause Replanting:

The Project has been undertaking natural cause plant replacement. To date approximately 5,500 plants have been replanted which is about 6% replacement. Of these replacements, approximately 1000 were replanted during 2018-19. The main reasons for replacement have been weed completion, saturated soils and species selection.

Weed Competition:

Weed competition is discussed in Section 5 of this report.

Saturated Soils:

The Project area is generally in lower slope areas and are subject to prolonged saturated soils. Some tree species have responded well to these conditions - *E. robust & M. quinquenervia*, and some responding well with time – *E. tereeticornis*, but some species especially the acacias have not responded well to poorly drained saturated soils but have done well in elevated slopes.

Species Selection:

The main species suffering from poor site selection is *Allocasuarina torulosa* – Forest Oak. Forest Oak is generally an upper slope species. This species was planted in most of the lower slope areas of the project and the plant species has not survived well in these lower saturated soil situations

External Pressure Replanting:

The Project has been undertaking external pressure plant replacement as required. To date approximately 6,500 plants have been replanted which is about 8% replacement. In the 20118-19 period no additional replanting has been required due to external pressures. The main areas for replacement have included:

- Planting Areas 1 & 2 Bushfire
- Planting Areas 6 8 Cattle Grazing
- Planting Areas 10.1 & 11.1 Cattle Grazing
- Planting Areas 13.1-3 Cattle Grazing
- Planting Areas 19 -21 Flooding

6.2 Weed Control

Project weed control issues and controls is detailed in Section 5 of this Report.

6.3 Wallaby Grazing Control

Wallaby Fence

22km of wallaby fence was installed project wide to protect planted trees from wallaby grazing.

With most planting zones tree heights now average between 2-4m in height, as such the risk of wallaby grazing in these zones is minimal. Wallaby fence removal has now commenced to allow koala access to the planting areas.

The only areas where fence removal is not planned is in Planting Area 5's as the trees in these zones are still quite small (sandy soils) and thus still vulnerable to wallaby grazing as well as other planting zones abutting the new landscape plantings along Section 10 & 11 of the highway alignment to protect the new trees from grazing.

Core Flute Guards

The 2018, an additional planting was undertaken along Wardell Road (Figure 6) which is an area that was identified as a high wallaby grazing risk area. Rather than fencing this site, 900mm core flute guards were utilised to protect trees from wallaby grazing.

The guards have been effective in grazing control and in June 2019 these guards started to be removed as tree heights have started to exceed the guard height. Continued guard removal will proceed through 2019.



Figure 11. Core flute guards

7. Upcoming Works - 2019-20

Project upcoming works for 2019-20 include continued project maintenance activities, replanting and finalisation of replanting works.

Maintenance Activities

Continued weed /grass control will continue as detailed in Section 6 of this report. GMC has a full-time site team undertaking these maintenance works.

Replacement Tree Replanting

From the annual inspection, additional tree replacement has been identified and is planned to be undertaken in the spring months of 2019. Replacement details are documented in the planting area inspection sheets provided in Appendix 1.

Final Project Replanting Requirements

As detailed in Section 3 of this report, of the planned 130 hectares to be revegetated as part of this project only 113 hectares was available for planting.

RMS has now finalised the availability and planning for an additional 17.8 hectares of land to complete the remaining planting works. It is expected that this additional area will be available for planting in October/November 2019.

The details of the additional planting areas include:

Plant Supply List - Additional Koala Tree Planting Areas - Wardell

Planting Area		Area	Koala Trees at 625/hec	Acacia Cover Crop at 8%	Total Trees
Area 1 - Kays Rd Chainage 156300	6.6	Hec	4125	330	4,455
Area 2 - Lumleys Chainage 152300	11.2	Hec	7000	560	7,560
Total	17.8	Hec	11,125	890	12,015

Species	Kays Rd	Lumleys	Total Project Plantings	Percentage
Eucalyptus robusta	980	1663	2,643	22%
Melaleuca Quinquenervia	446	756	1,202	10%
Eucalyptus tereeticornis	891	1512	2,403	20%
Eucalyptus Resinifera	446	756	1,202	10%
Eucalyptus grandis	446	756	1,202	10%
Eucalyptus microcorys	891	1512	2,403	20%
Acacia irrorata (cover crop)	178	302	481	4%
Acacia fimbriata (cover crop)	178	302	481	4%
Acacia melanoxylon (cover crop)	0	0	0	0%
Total	4,455	7,560	12,015	100%

. Page 18 of 29

8. Appendix 1 - 2019 Annual Inspection Record Sheets

Page 19 of 29



Site 1									
Planting Area:	19.1	GPS Location:	-28.55.651S/153.27.265E	Quadrant Area:	4hec	Planting Date:	23/3/17	Date:	27 June 2019
Density of Trees:	1/16m2	Average Tree Height:	2 - 4m	No. of Visible Dead Stems:	3			W. F. F.	1
Environmental Weeds:				ue is volunteer suga spraying and row					
Acacia Survival:	Very few aca	cias evident							140
Comments:	control. In Ja spell resulted with only a co	nuary/February su I in potential tree o ouple of losses.	ipplementary wate leaths. Watering v	oth assisted by achie ering was undertake was able to sustain a llaby fencing has be	n as a very dry affected trees				THE STATE OF
Site 2									
Planting Area:	19.2	GPS Location:	-28.55.910S/153.27.359E	Quadrant Area:	2 hec	Planting Date:	24/3/17	Date:	27 June 2019
Density of Trees:	1/16m2	Average Tree Height:	1.5 - 3m	No. of Visible Dead Stems:	1				
Environmental Weeds:				well controlled with				160	Charles .
Acacia Survival:	Very few aca	cias evident							
Comments:	_			ea, but good tree su ome quite small tree					
	Wallaby fenc	e has been remov	ed from PA.			100			



Good stem growth - PA19.1



Good weed control - PA19.1



PA19.1 from Lumleys Lane



Good tree structure PA19.1



Site 3												
Planting Area:	19.3	GPS Location:	-28.55.873S/153.27.418E	Quadrant Area:	0.3hec	Planting Date:	24/3/17	Date:	27 June 2019			
Density of Trees:	1/16m2	Average Tree Height:	2 - 3m	No. of Visible Dead Stems:	0							
Environmental Weeds:	observed. Th	Generally very good weed control now being achieved with only some Verbena observed. Three monthly Glufosinate Ammonium spraying and row slashing being utilised for weed control.										
Acacia Survival:	Very few aca	cias evident										
Comments:	could be und			9.2. Replanting of	about 12 plants				497			
Site 4												
Planting Area:	19.5	GPS Location:		Quadrant Area:	4.5 hec	Planting Date:	17/3/17	Date:	27 June 2019			
Density of Trees:	1/16m2	Average Tree Height:	2 - 4m	No. of Visible Dead Stems:	1		13					
Environmental Weeds:		ne and Cotton We lled with regular Gl		reed issues but thes	se are generally	Mile			MAR.			
Acacia Survival:	Very few aca	cias evident			44 114							
Comments:	watering. Thi Tree growth Wallaby fend	is affected by a sur is watering kept the and survival in this se was removed thi ents required.	e trees alive with re PA is very good.		mentary							

GMC-QA-Form-02 Released on April 2018 - Version 1.0



PA19.5 Staff pole at 5m



PA19.5 tree growth



Volunteer sugar cane in PA19.5



PA19.5 Staff pole at 5m



Site 5									
Planting Area:	19.6	GPS Location:	-28.55.958S/153.27.585E	Quadrant Area:	2.7	Planting Date:	21/3/17	Date:	27 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5-4m	0		35			
Environmental Weeds:	Good weed o	control							
Acacia Survival:	Very average	acacia survival					J. Comment		The said
Comments:	control. No replanting	survival and growth g activities planned ing has been remo	I for this area.						
Site 6									
Planting Area:	20.1	GPS Location:	28.55.57\$/153.27.35E	Quadrant Area:	1.5 hec	Planting Date:	28/3/17	Date:	27 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5-4m	No. of Visible Dead Stems:	6			Militar.	
Environmental Weeds:	Good weed o	control - very few were removed	veeds under trees						
Acacia Survival:	Very average	e survival							
Comments:	12 months. Weed contro experienced	I working well. Dea	ad stems occurred ary. With the sand	t report - approx 4m I through a very dry dy soils in this area w did not.	spell the region				



Site 7											
Planting Area:	21.1	GPS Location:	28.55.55S/153.27.13E	Quadrant Area:	3 hec	Planting Date:	29/3/17	Date:	27 June 2019		
Density of Trees:	1/16/m2	Average Tree Height:	2.9m	No. of Visible Dead Stems:	3	-	-	-			
Environmental Weeds:	Sugar cane	Sugar cane Sugar cane									
Acacia Survival:	Some survive	ed but generally ve	ry poor survival ra	ate			11	70			
Comments:	growth and so Weed control is next to an	area have general urvival. The remail I is generally good established tree be his area are now v ned.	ning acacias are of but volunteer sug ecause of the issu	o control when it spray.							
Site 8											
Planting Area:	21.3	GPS Location:	28.56.1S/153.27.4E	Quadrant Area:	3hec	Planting Date:	28/4/17	Date:	27 June 2019		
Density of Trees:	1/16/m2	Average Tree Height:	1.6-2m	No. of Visible Dead Stems:	0						
Environmental Weeds:	Pasture gras	s and Billy Goat W	/eed			4			4.000		
Acacia Survival:	Very poor								1		
Comments:	restrict weed c looking well es The trees look	ontrol activities but t tablished.	he trees in this area e growing well. With	er above ground level a are now above grass of the high soil moisture of draining areas.	s height and are						



PA21.3 Saturated soils with water sitting above ground level across site



PA 20.1



PA 20.1



Weed Control PA 20.1



Site 9												
Planting Area:	11.8	GPS Location:	28.55.40S/153.26.47E	Quadrant Area:	1 hec	Planting Date:	4/4/17	Date:	29 June 2019			
Density of Trees:	1/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0							
Environmental Weeds:	control.	Setaria Grass under trees but continuous spraying and slashing keeping it under control. Wallaby fence still in place.										
Acacia Survival:	Excellent sur	vival in higher are	as but poorer gro	owth in lower inunda	ated zones							
Comments:		s with poor drainag reas with better dra		ablished but a lot sl	ower growth				Sanga			
	Weed contro		e but with the wet	ter soils more spayi	ng is required	Section 1						
Site 10												
Planting Area:	11.7	GPS Location:	28.55.41S/153.26.47E	Quadrant Area:	1.1 hec	Planting Date:	10/4/17	Date:	29 June 2019			
Density of Trees:	1/4m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0	23	SET .					
Environmental Weeds:	control.	s under trees but o	continuous sprayir	ng and slashing kee	ping it under							
Acacia Survival:	Very good su	Very good survival and growth at higher areas out of inundation										
Comments:		Very wet soils with poor drainage compared with PA11.8. Trees well established but lot slower growth than those areas with better drainage.										
	Weed contro		e but with the wet	ter soils more spayi	ng is required							



Looking east over PA11.3



Weed control PA11.6



PA 11.6



Looking south over PA's 11.6/7/3



Site 11									
Planting Area:	14.2	GPS Location:	28.55.47S/153.26.46E	Quadrant Area:	1.4 hec	Planting Date:	6/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	1.9m	No. of Visible Dead Stems:	0			-	369
Environmental Weeds:	Continuous weed control effectively suppressing weeds Wallaby fence has been removed.								
Acacia Survival:	Good acacia	survival in elevate	d areas but poor	survival in lower we	et areas				
Comments:	This is a wetter slower draining area and as a result tree growth is slower here than in other more elevated planting areas. Good continuous weed suppression has resulted in good tree establishment and survival.								
Site 12									
Planting Area:	14.1	GPS Location:	28.55.50S/153.26.46E	Quadrant Area:	2 hec	Planting Date:	6/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2m	No. of Visible Dead Stems:	0	Maria inc.	- Mar.		-
Environmental Weeds:		weed control effect e has been remov							
Acacia Survival:	Very poor su	rvival as planting a	rea in lower grou						
Comments:	in othe more	ter slower drawing elevated planting ood tree establishn	areas. Good cont						



Site 13									
Planting Area:	14.4	GPS Location:	28.55.50S/153.26.46E	Quadrant Area:	0.6 hec	Planting Date:	7/4/17	Date:	29 June 20
Density of Trees:	1/16/m2	Average Tree Height:	2.8m	No. of Visible Dead Stems:	0	4			
Environmental Weeds:		control with genera e has been remov		ompetition					
Acacia Survival:	Average acad	cia survival in high	er areas but not i	Mar.					
Comments:	Generally a lower wetter area that has meant lower tree heights than other higher better draining areas. While growth rates are slower, the trees have generally doubled in height in 12 months and look well established. Continued good survival and establishment.								16
Site 14									
Planting Area:	14.3	GPS Location:	28.55.49S/153.26.50E	Quadrant Area:	0.9 hec	Planting Date:	7/4/17	Date:	29 June 20 ⁻
Density of Trees:	1/16/m2	Average Tree Height:	2.8m	No. of Visible Dead Stems:	0	2			A
Environmental Weeds:		control with genera e has been remov			A	1.3			
Acacia Survival:	No acacias a	s area very wet an							
Comments:	better drainin	ng areas. While gro eight in 12 months	wth rates are slow	ver tree heights thar wer, the trees have eablished. Continued	generally				



Site 15									
Planting Area:	15.1	GPS Location:	28.55.50S/153.26.49E	Quadrant Area:	1 hec	Planting Date:	7/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0				-
Environmental Weeds:		under control unde e has been remov				The second			
Acacia Survival:	Good acacia	survival - Area is i	n higher ground						
Comments:	Generally a lower wetter area that has meant lower tree heights than other higher better draining areas. While growth rates are slower, the trees have generally doubled in height in 12 months and look well established. Continued good survival and establishment.								
Site 16									
Planting Area:	13.5	GPS Location:	28.55.51E/153.26.38S	Quadrant Area:	1.2 hec	Planting Date:	5/10/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3.5m	No. of Visible Dead Stems:	0				a Hiv-
Environmental Weeds:		suppression occurre has been remov				4			
Acacia Survival:	Average aca	cia survival							
Comments:	weed control well draining the site.	is now being effect	tively managed. ⁻ h rates reducing t	ure grasses and Wo Free growth is stron o about half in wetto	gest on higher				

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PA 15.1 Weed control



PA 14.3 Melalucca Tree



PA 15.1 Acacia Tree



PA 13.5 Tree Growth



Site 17									
Planting Area:	13.4	GPS Location:	28.55.53S/153.26.45E	Quadrant Area:	5.1 hec	Planting Date:	5/10/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0				-3
Environmental Weeds:	generally abo	growth of pasture ove grass/weed he e has been remov	ight.	g Dew. Trees		M)			
Acacia Survival:	Very poor su	rvival due to very v	vet ground and co	ontinual soaked soil		000			
Comments:	Soils saturated with water above ground level. Continuous wet soils makes it difficult to get weed suppression equipment into most parts of the site. Tree establishment has generally not been affected by grass/weed competition as most of the trees are above grass/weed height. Slower growth is being experienced in wetter soils but generally good establishment.								
Site 18									
Planting Area:	11.6	GPS Location:	28.55.38\$/153.26.35E	Quadrant Area:	1.5 hec	Planting Date:	10/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3.5m	No. of Visible Dead Stems:	2		4	No.	Mir.
Environmental Weeds:	Weed control very effective								San.
Acacia Survival:	Excellent aca	acia survival and g	rowth on higher a	ter areas	THE RESERVE OF THE PARTY OF THE				
Comments:		ee growth and esta		alyptus and acacias nd slashing.	. Weed control				
	Wallaby fenc	e still in place.							



Site 19									
Planting Area:	11.3	GPS Location:	28.55.38S/153.26.35E	Quadrant Area:	3.8 hec	Planting Date:	4/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3.5m	No. of Visible Dead Stems:	2		-	A.	
Environmental Weeds:	Setaria grass - continuous weed spraying and slashing is controlling most weeds but Setaria Grass continues to be a nuisance. Most trees are above grass height so ites influence is reducing.								
Acacia Survival:	Very good su	rvival and growth i	n higher areas ar	areas	111				
Comments:	grass remains	ablishment and gro s a nuisance even grow very well in t	with continued sp	ne trees are					
Site 20									
Planting Area:	10.3/4, 11.4	GPS Location:	28.55.43S/153.26.25E	Quadrant Area:	3 hec	Planting Date:	5/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3.5m	No. of Visible Dead Stems:	0	100	Win take		do.
Environmental Weeds:	Sugar cane, I	out generally well	controlled under t						
Acacia Survival:	Very good su	rvival and growth	- acacias up to 3.					1	
Comments:		cellent growth rate n very fast growth		neasured at 6m. Ele establishment.	evated position			No.	
	Weed control forest canopy	effective with tree in places.	s well above wee						



PA10.3/4-11.4 - Staff pole at 5m .





PA11.3



PA11.3



PA11.3 Forest Oak



PA11.3



Site 21									
Planting Area:	10.5 - 11.5	GPS Location:	28.55.47S/153.26.35E	Quadrant Area:	0.5 hec	Planting Date:	5/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.8m	No. of Visible Dead Stems:	1				
Environmental Weeds:		ses. Generally rea nerally all above gr		I slashing but					
Acacia Survival:	Good acacia	survival and grow	h as planting is o		7				
Comments:		r draining soil area ared to elevated si		slows tree					
		tablishment and greestill in place.	owth.			a de la composición dela composición de la composición dela composición de la compos			
Site 22									
Planting Area:	12.1	GPS Location:	28.55.56S/153.26.46E	Quadrant Area:	0.4 hec	Planting Date:	18/10/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	1.5m	No. of Visible Dead Stems:	0	12	MAN P		
Environmental Weeds:	Pasture grass								
Acacia Survival:	Average acad	cia growth and sur	vival which match						
Comments:	soil and gene	erally a rocky base	As such tree est	be an old quarry sit ablishment and gro placement planting	wth have been				



Site 23									
Planting Area:	12.2	GPS Location:	28.55.56S/153.26.46E	Quadrant Area:	1.8 hec	Planting Date:	25/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2m	No. of Visible Dead Stems:	0				
Environmental Weeds:	Setaria Gras	s						V/45	
Acacia Survival:	Nil survival					4	L. L.		
Comments:	rocky slopes spraying.	. Setaria Grass cor	ntinues to affect tr	ne slope but slower gree growth even with	continuous	* 4		/ //	
Site 24									
Planting Area:	12.3	GPS Location:	28.55.37\$/153.26.20E	Quadrant Area:	0.2 hec	Planting Date:	25/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2m	No. of Visible Dead Stems:	0	400			
Environmental Weeds:	Setaria Gras	s							The second
Acacia Survival:	Nil								
Comments:	with continuo	ous spraying.		continues to affect to	_				



Site 25									
Planting Area:	10.1	GPS Location:	28.55.45S/153.26.13S	Quadrant Area:	2.5 hec	Planting Date:	10/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2-3.0m	No. of Visible Dead Stems:	0	#3	ilia.	-	Ď.
Environmental Weeds:	Good weed s	suppression - no de	ominant weeds				1000		+ (1)
Acacia Survival:	Good acacia	survival and grow	th				一		W.
Comments:	and trees loo		strong. Low wee	Plant establishmen d competition throu			Novin		
	Wallaby fend	e still in place but	will be removed s	oon.			au Mix	4	A STATE OF THE STA
Site 26									
Planting Area:	11.1	GPS Location:	28.55.45S/153.26.13E	Quadrant Area:	1 hec	Planting Date:	11/4/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0		40		
Environmental Weeds:	Pasture gras	ses, Billy Goat we	ed, cobbers peg						
Acacia Survival:	Good surviva	ıl							
Comments:	Good establi Continuous v trees above o	veed control under	n especially in the neath the trees h	higher well drained as been effective w	l areas. ith most of the				
	Wallaby fenc	e still in place but	expected to be re	moved soon.					



Site 26								
Planting Area:	11.2	GPS Location:	28.55.45\$/153.26.13E	Quadrant Area:	1.7	Planting Date:	Planting Date: 10/4/17	Planting Date: 10/4/17 Date:
Density of Trees:	1/16/m2	Average Tree Height:	2.4m	No. of Visible Dead Stems:	0		it is	
Environmental Weeds:	Pasture gras	ses, Billy Goat wee	ed, cobbers peg	,				
Acacia Survival:	Acacia surviv	val and growth goo	d.					
Comments:		weed control under		higher well drained as been effective wi				
	Wallaby fend	e still in place but e	expected to be re	moved soon.		7	+	+
Site 27								
Planting Area:	10.2	GPS Location:	28.55.41S/153.26.8E	Quadrant Area:	2 hec	Planting Date:	Planting Date: 10/4/17	Planting Date: 10/4/17 Date:
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0			
Environmental Weeds:	Good weed	suppression - no do	ominant weeds	,				
Acacia Survival:	Average aca	cia survival - wette	r paddock than 1°	1.1/2		nte		
Comments:	and trees loc		strong. Low wee	Plant establishment d competition throu				
	Wallaby fend	e still in place but v	will be removed s	oon.		3		



PA 11.2



PA 10.2



Acacia Tree PA 11.2



View of PA 11.1 & 10.2 from Wardell Rd



Site 28									
Planting Area:	9.1-3	GPS Location:	28.55.50S/153.26.7E	Quadrant Area:	2.5 hec	Planting Date:	29/3/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	3-4m	No. of Visible Dead Stems:	0		E mail		
Environmental Weeds:	Weeds well u	under control							
Acacia Survival:	Good acacia	survival and grow	th on upper slopes	s but less so in wett	er areas	Al-			
Comments:		_	•	establishment and					
Site 29									
Planting Area:	13.3	GPS Location:	28.55.56.85\$/153.26.27.60B	Quadrant Area:	1 hec	Planting Date:	20/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0			35	- 100
Environmental Weeds:	Nil dominant	weeds							
Acacia Survival:	Very good su	· · · · · · · · · · · · · · · · · · ·							
Comments:				ees well established ion affecting trees.	and growing		-		
	Nil replacem	ents required.						-	



PA9.2 - Acacia



Weed control PA9's



PA9's looking towards Wardell Rd



PA9's looking from Wardell Rd



Site 30									
Planting Area:	13.2	GPS Location:	28.55.54.38S/153.26.30.44E	Quadrant Area:	0.75 hec	Planting Date:	19/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0			33	W. 10
Environmental Weeds:	Nil dominant Wallaby fend	weeds e still in place							
Acacia Survival:	Ok on edges	but no survival in	middle inundated	areas					
Comments:	well in very w			es well established on affecting trees.	and growing		THE CONTRACTOR OF THE CONTRACT		
Site 31									
Planting Area:	13.1	GPS Location:	28.55.50.69\$/153.26.33.88	Quadrant Area:	0.5 hec	Planting Date:	9/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0			25	
	A								
	Nil dominant	weeas							
		e still in place					a de la constante		
Environmental Weeds: Acacia Survival:		e still in place							



Looking at PA13's from the Alignment



PA11's from the Alignment



PA10/11's from the Alignment



PA14/15's from the Alignment



Site 32									
Planting Area:	5.5	GPS Location:	28.56.50S/153.26.4E	Quadrant Area:	0.6 hec	Planting Date:	1/6/17	Date:	1 July 201
Density of Trees:	1/16/m2	Average Tree Height:	1.0 - 2m	No. of Visible Dead Stems:	5			044	12
Environmental Weeds:		ses - under contro							
	Wallaby fenc	e still in place.							Section 1
Acacia Survival:	Poor survival							4	
Comments:	holding capa Weed contro	I on sandy soils. As bilities, tree growth I working well. Dry t planting recomme							
Site 33									
Planting Area:	5.6-8	GPS Location:	28.56.47\$/153.26.2E	Quadrant Area:	1.5 hec	Planting Date:	27/6/17	Date:	1 July 201
Density of Trees:	1/16/m2	Average Tree Height:	2m	No. of Visible Dead Stems:	5	_	3000	1	
Environmental	Pasture gras	ses - under contro					and the		
Weeds:	Wallaby fenc	e still in place.					ind at 1		1 U
Acacia Survival:	Average surv	rival					DAY TO		The second
Comments:	soils poor nu compared to Weed contro	trient and moisture the rest of the proj I working well. Dry	holding capabilit ect. hot period in Dec	on sandy soils. As si ies, tree growth is v c/Jan did result in so density of planting	ery slow ome losses.				

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Site 34									
Planting Area:	5.1	GPS Location:	28.56.47S/153.26.2E	Quadrant Area:	0.5 hec	Planting Date:	27/6/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2-2.5m	No. of Visible Dead Stems:	0	(Alle and	lateral	98.0	2
Environmental Weeds:		ses - under contro e still in place.	ı						
Acacia Survival:	Only a few ol	bserved						To de	
Comments:	capabilities, t	ree growth is very I working well. Dry	slow compared to hot period in Dec	e poor nutrient and root the rest of the projection of the projection of the projection of planting of planting	ject. ome losses.				
Site 35									
Planting Area:	6.1	GPS Location:	28.56.54\$/153.25.51E	Quadrant Area:	3 hec	Planting Date:	1/5/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2m	No. of Visible Dead Stems:	1	3			See Land
Environmental Weeds:	slashing requ		ep under control i	increased continual	spraying and		With Mr.		
Acacia Survival:	Good acacia	a survival					11		i
Comments:	grasses is ca this site. Whi area are grow	using a slower gro	wth rate in compart there is good tre are around 4m ta	nd continued battle varison to other area e establishment. Th	s surrounding				

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PA6.1 Plant losses from prolonged dry/hot period - Dec/Jan



PA6.1 Weed control



PA6.1 Plant recovery after dry/hot period



PA6.2 Acacia growth



Site 36									
Planting Area:	6.2	GPS Location:	28.56.53E/153.25.47S	Quadrant Area:	3 hec	Planting Date:	2/5/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	1			1	THE PERSON NAMED IN COLUMN TWO
Environmental Weeds:	Pasture gras control. Wallaby fenc	•	aying and slashin	g keeping grass and	d weeds under				4
Acacia Survival:	Good surviva	al							
Comments:	Weed control One isolated	ee growth and esta I effective but need death following su ent planting requir	ds to be on-going. Immer dry spell.	n eucalyptus and ac	acias.				
Site 37									
Planting Area:	7.2	GPS Location:	28.56.48\$/153.25.45E	Quadrant Area:	2.7 hec	Planting Date:	8/5/17	Date:	8 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	3.5m	No. of Visible Dead Stems:	0				
Environmental Weeds:	control.	ses - continual spr	aying and slashin	g keeping grass and	d weeds under	We Mark		13	
Acacia Survival:	Very good su	ırvival							
Comments:		owth and establish I effective but need		calyptus and acacias	S.				
	No replacement	ent planting requir	ed.						多的情



Site 38									
Planting Area:	7.3	GPS Location:	28.56.49S/153.25.40E	Quadrant Area:	2.4 hec	Planting Date:	5/5/17	Date:	8 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0	A YE	ALL MARKET		
Environmental Weeds:	Pasture gras	ses - well under co	ontrol			The second carl			
Acacia Survival:	Good surviva	ıl							1
Comments:	establishmer Nil replaceme		_	ree growth slower t	than PA 6's but				1
Site 39									
Planting Area:	6.4	GPS Location:	28.56.52S/153.25.36E	Quadrant Area:	0.7 hec	Planting Date:	3/5/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	1.2m	No. of Visible Dead Stems:	20				
Environmental Weeds:	Pasture gras Wallaby fenc		with continual sp	praying and slashing].	2		a Maria	
Acacia Survival:	Very few - qu	iite a wet paddock							
Comments:	this time a fe section of PA areas which	w areas across the 6.1 experienced the saved a number of	e project experien his. Supplementar trees. Even thos	ed a prolonged hot ced tree stress and y watering was under considered lost case is well established	deaths. A sandy lertaken in these an be seen to be				



Site 40									
Planting Area:	6.5	GPS Location:	28.56.46S/153.25.55E	Quadrant Area:	2.4 hec	Planting Date:	3/5/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	5				1
Environmental Weeds:	Pasture grass control. Wallaby fence	·	aying and slashin	g keeping grass an	d weeds under			3,2	
Acacia Survival:	Very good								
Comments:	Very good tre	ee growth and esta	blishment by both	n eucalyptus and ac	acias.	1944		7	
	Weed control	l effective but need	ls to be on-going.						dy Wes
	Some isolate	d deaths following	summer dry spel	l.					
Site 41									
Planting Area:	8.1/2	GPS Location:	28.56.40S/153.25.56E	Quadrant Area:	4.4 hec	Planting Date:	9/5/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	3		400		, alasti
Environmental Weeds:	slashing requ		ep under control i	increased continual	spraying and				
Acacia Survival:	Very good						200		
Comments:	Very good tre	ee growth and esta	blishment by both	n eucalyptus and ac	acias.		1		
	Weed control	l only just effective	and needs to be	on-going.					



PA 8.1/2 PA8.1/



Accacia Growth PA8.1/2



Site 42									
Planting Area:	8.3	GPS Location:	28.56.40S/153.25.52E	Quadrant Area:	2.4 hec	Planting Date:	11/5/17	Date:	29June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	1		Šķ.	1	4
Environmental Weeds:	control.	ses - continual spr	aying and slashin	g keeping grass an	d weeds under		3	Order Street	
Acacia Survival:	Below averag	je							
Comments:	Very good tre	e growth and esta	blishment by both	n eucalyptus and ac	acias.				
	Weed control	only just effective	and needs to be	on-going.					May /
Site 43									
Planting Area:	7.1	GPS Location:	28.56.51S/153.25.30E	Quadrant Area:	7 hec	Planting Date:	10-14/10/17	Date:	8 July 2019
Density of Trees:	1/16m2	Average Tree Height:	1-1.8m	No. of Visible Dead Stems:	0	-			
Environmental Weeds:	Pasture grass	ses		1					A.le
Acacia Survival:	Below averag	ge				- 4-			-
Comments:	main issues in grazing arour	n regard to tree mand the trees. The c	aintenance is rest attle are not eatin	ly well in the upper stricted access and cong the trees but have keeping grass und	continual cattle e physically				



PA 6/7/8 looking south along the Alignment



Site 46									
Planting Area:	8.4	GPS Location:	28.56.40S/153.25.45E	Quadrant Area:	2.7 hec	Planting Date:	28/8/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3.5m	No. of Visible Dead Stems:	1				
Environmental Weeds:	Good effective	ve weed/grass con	trol via regular sla	ashing and spraying	-			JE JE	
Acacia Survival:	Very good								
Comments:	Very good gr	owth and establish	ment in this high	er free draining site.		- Park 1		17	
	Wallaby fenc	e still in place.							
Site 47									
Planting Area:	8.5	GPS Location:	28.56.40S/153.25.45E	Quadrant Area:	2 hec	Planting Date:	28/8/17	Date:	29 June 2019
Density of Trees:	1/16/m2	Average Tree Height:	4m	No. of Visible Dead Stems:	2		è		-
Environmental Weeds:	Good effective	ve weed/grass con	trol via regular sla	ashing and spraying		19.0			
Acacia Survival:	Very good								
Comments:	Very good gr	owth and establish	ment in this high	er free draining site.				-	
	Wallaby fenc	e still in place.							



Site 44									
Planting Area:	16.1/2	GPS Location:	28.55.34S/153.26.53E	Quadrant Area:	1.4 hec	Planting Date:	27/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0	200		in the second	No.
Environmental Weeds:	Seteria grass	3						Ziak	
Acacia Survival:	Good surviva	ıl							
Comments:	greater emph	ee growth and estanasis needed in the greater height than	ese areas as Sete					A John	
	Wallaby fenc	e still in place.					BANK IN		
Site 45									
Planting Area:	16.3/4	GPS Location:	28.55.23S/153.26.54E	Quadrant Area:	3 hec	Planting Date:	7/9/17	Date:	1 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5-5m	No. of Visible Dead Stems:	0			1	
Environmental Weeds:	Seteria grass	s - but well under c	ontrol.						and the second
Acacia Survival:	Good							CANCE TO	
Comments:		growth (>5m in place growth especially no		e established very wel	ll in this area with				
	Weed control r Wallaby fence	managing the Seteria till in place.	a grass well.				t (



PA16.3/4 looking from Wardell Rd



Acacia PA16.2



PA16.1



PA16.3/4



Site 46											
Planting Area:	16.5	GPS Location:	28.55.34\$/153.26.53E	Quadrant Area:	1.9 hec	Planting Date:	3/10/17	Date:	1 July 2019		
Density of Trees:	1/16/m2	Average Tree Height:	1.8m	No. of Visible Dead Stems:	0	70	W. F. E.		1		
Environmental Weeds:	Seteria grass crossing	s - very difficult acc	ess to site for mo	Agriculture of the second	1						
Acacia Survival:	Very good	/ery good									
Comments:	Seteria grass i	e established very we is competing with the when access is avail	trees. Most of the	ights greater than							
	Wallaby fence	till in place.						观			
Site 47											
Planting Area:	16.6/7	GPS Location:	28.55.34\$153.26.53	Quadrant Area:	2.5 hec	Planting Date:	3/9/17	Date:	1 July 2019		
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0			No. of			
Environmental Weeds:		s - not much can be slope this area is in		use of the very		1	TANK				
Acacia Survival:	Average			2001	The Roberts						
Comments:	area had faile grass and are	s recovered well oved as a tree replane e now growing and planted, the estables	ting area. The tre I established well.	*/							



Site 48											
Planting Area:	17.2	GPS Location:	28.55.33S/153.26.53E	Quadrant Area:	0.5 hec	Planting Date:	3/10/17	Date:	June 2019		
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0		1915				
Environmental Weeds:	Seteria grass Wallaby fenc	e still in place				2	1110	11			
Acacia Survival:	Low survival	Low survival - very wet planting area									
Comments:	with continuo	and establishmen ous spraying. ement planting cou									
Site 47											
Planting Area:	17.3/4	GPS Location:	28.55.34S/153.26.53E	Quadrant Area:	1 hec	Planting Date:	18/9/17	Date:	1 July 2019		
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	3			A			
Environmental Weeds:	Seteria grass Wallaby fenc	e still in place			Mr.						
Acacia Survival:	Average survival										
Comments:	rocky slopes spraying.	. Setaria Grass cor	ntinues to affect tr	e slope but slower ee growth even with in this section to in	n continuous						

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Site 46											
Planting Area:	18.1	GPS Location:	28.55.36S/153.26.58E	Quadrant Area:	0.5 hec	Planting Date:	20/10/17	Date:	8 July 2019		
Density of Trees:	1/16/m2	Average Tree Height:	1.5m	No. of Visible Dead Stems:	0	10. A.A.O.					
Environmental Weeds:	Pasture gras	eses									
Acacia Survival:	Poor surviva	I					-				
Comments:		ss to area off align d growth (if somew		around trees is							
	Good establi	shment with nil nee	ed for replanting								
Site 47											
Planting Area:	3/4	GPS Location:	28.57.26S/153.25.42E	Quadrant Area:	3.7 hec	Planting Date:	18/917	Date:	8 July 2019		
Density of Trees:	1/16/m2	Average Tree Height:	2.5-3.5m	No. of Visible Dead Stems:	0		A WAS				
Environmental Weeds:	Pasture Gras	sses			,	-		- Allegia			
Acacia Survival:	Average surv	vival									
Comments:		ccess to area off ald		pack spraying arou	nd trees is		-117 1	, _n , d	d . A . 10.1		
	Good establi	shment with nil nee	ed for replanting			almost gar					



Site 46									
Planting Area:	2.1	GPS Location:	28.58.46S/153.26.9E	Quadrant Area:	0.4 hec	Planting Date:	21/9/17	Date:	8 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2 m	No. of Visible Dead Stems:	2		*		
Environmental Weeds:	Trees well ab	pove grass ground	cover and not inf	luencing growth					
Acacia Survival:	None visible								
Comments:		h fires discussed in ents required		paper bark establis	hment from seed				
Site 47									
Planting Area:	2.2	GPS Location:	28.58.47S/153.26.9	Quadrant Area:	1.2 hec	Planting Date:	21/9/17	Date:	June 2019
Density of Trees:	1/16/m2	Average Tree Height:	2.5m	No. of Visible Dead Stems:	0	-			
Environmental Weeds:	Trees well ab	pove grass ground	cover and not inf						
Acacia Survival:	Below average	је							
Comments:	Good tree grownil replacement Wallaby fence		nt.						



Site 46									
Planting Area:	2.3	GPS Location:	28.58.40S/153.26.7E	Quadrant Area:	0.7 hec	Planting Date:	21/9/17	Date:	June 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0			1	1
Environmental Weeds:	Pasture gras	ses - all under con	itrol						
Acacia Survival:	Good					相關國			
Comments:		oil has slowed grov		well. Nil issues	mak and the				
	Wallaby fend	e still in place.							
Site 47									
Planting Area:	1.2	GPS Location:	28.58.47\$/153.26.928.58.4°	Quadrant Area:	1.2 hec	Planting Date:	21/9/17	Date:	2 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	2m	No. of Visible Dead Stems:	0		41.50	A. A.	
Environmental Weeds:	Pasture gras	ses - all under con	itrol						
Acacia Survival:	Below average	ge							
Comments:		oil has slowed grov nil replanting requi		s have established v	well. Nil issues				
	Wallaby fenc	e still in place.						1	



Site 46									
Planting Area:	1.1	GPS Location:	28.58.53S/153.26.5E	Quadrant Area:	0.5 hec	Planting Date:	21/9/17	Date:	2 July 2019
Density of Trees:	1/16/m2	Average Tree Height:	3m	No. of Visible Dead Stems:	0				
Environmental Weeds:	Grasses and	weeds well under	control				The state of the s		
Acacia Survival:	Average surv	rival					region les co		
Comments:	Continued go	ood solid growth ar	nd establishment.						
	Weed/grasse	s under control. N	o replanting requi	red.					
	Wallaby fence	e still in place.					TALL D		
Site 47									
Planting Area:	Wardell Rd	GPS Location:	28.56.35S/153.26.36E	Quadrant Area:	0.5 hec	Planting Date:	21/8/18	Date:	8 July 2019
Density of Trees:	1/4 & 16m2	Average Tree Height:	1.5m	No. of Visible Dead Stems:	0	X		116	20
Environmental Weeds:	Bracken and	pasture grasses						*	140
Acacia Survival:	Not applicable	e					No.		
Comments:	Guards are n individual pla	ow starting to be r	emoved and brac as found that keep	ards to control walla ken control is limite bing bracken in plac	d to around				

9. Appendix 2 – Project Weed Species

Biden pilosa (Farmer's Friend) (Cobblers Peg)



Conyza albida (Fleabane)



Page 20 of 29

Sida rhombifolia (Paddy's Lucerne)



Verbena bonariensis (Purpletops)



Page 21 of 29

Keinus communis (Castor Oil Plant)



Baccharis halimifolia (Groundsel Bush)



Trifolium repens (White Clover)



Page 22 of 29

Cassia bicapsularis (Butterfly Bush)



Taraxacum officinale (Dandelion)



Polygonum aviculare (Wire Weed)



Page 23 of 29

Portulaca oleracea (Pigweed)



Persicaria capitata (Knotweed)



Hypochoeris radicata (Catsear)



Page 24 of 29

Gomplocarpus fruticosa (Cotton Bush)

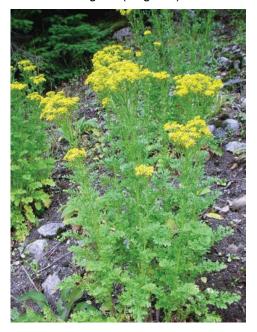


Ageratum houstonianum (Blue Billy Goat weed)



Page 25 of 29

Jacobaea vulgaris (Ragwort)



Senecio madagascariensis (Fire weed)



Page 26 of 29

Tradescantia fluminensis (Wondering Jew)



Cuphea carthagensis (Colombian wax weed)



Cyperus polystachyos (Bunchy Sedge)



Page 27 of 29

Phragmites spp (Reeds)



Setaria sphacelate (Setaria)



Ludwigia octovalvis - (Willow Primrose)



Page 28 of 29

10. Document Control

Author (To whom any changes are to be recommended)								
Project Systems S	Guy Corbett							
Stakeholders an	d other contributors							
Project Director					Guy Corbett			
Reviewed by								
Project Director				Guy Corbet	t	23/7/19		
Client - RMS				Simon Wils	on	22/8/19		
Client – RMS/PC								
Approved by								
Project Director				Guy Corbet	t	24/8/19		
History								
Date	Author	Ve	rsion	Nature of	change	•		
23/7/19	Guy Corbett	Dr	aft					
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