

# BSA 352 Annual Management Report 2020-21

Prepared by: Sandy Pimm, Earthscapes Consulting Pty Ltd

Date: 27 July 2021

## Introduction

Biodiversity Stewardship Agreement (BSA) 352 – Lilli Pilli Biobank site located at Lilli Pilli Road, Byron Bay. The Biodiversity Stewardship Site (BSS) encompasses Lot 7 DP 809005, Lot 24 DP 845454, Lot 46 DP 848543, Lot 46 DP 860353, Lot 47 DP 854800 and Lot 66 DP 863772.

The BSA commenced on 31 July 2018. The first Annual Management Payment (AMP) was made on 27 June 2019.

The purpose of this report is to address the monitoring, reporting and record keeping requirements specified in Annexure D of the BSA. The reporting period covered by this report extends from 27 June 2020 to 27 June 2021, which represents Year 2 of active site management.

The structure of this report is loosely based on the 14 management actions specified in section 1 (standard management actions) and section 2 (additional management actions) of the BSA. Where possible, some management actions have been addressed as a group (e.g. site inspection tasks).

## Photo points

The photo points were sampled on 31 October 2020 in accordance with Annexure D, sections 1.1 and 1.2 of the BSA. The photos are provided in Plates 1 to 3.

- Please see attached monitoring report for 2020 monitoring photos with reference to baseline condition.
- Note that three additional monitoring photo points were added in 2019, named as D, E and F, to capture additional areas not encompassed in the three original points.



**Plate 1: Photo point A sampled on 31/10/20. Photo direction 90 degrees.**



**Plate 2: Photo point B sampled on 31/10/20. Photo direction 90 degrees.**



**Plate 3: Photo point C sampled on 31/10/21. Photo direction 180 degrees.**



**Plate 4: Photo point D sampled on 31/10/21. Photo direction 0/ 360 degrees.**



**Plate 5: Photo point E sampled on 31/10/21. Photo direction 180 degrees.**



**Plate 6: Photo point F sampled on 31/10/21. Photo direction 180 degrees.**

A separate Photo Monitoring Report is attached to the Annual Report.

## Site inspections

Annexure D, section 1.3 of the BSA provides a site inspection and monitoring schedule to be followed during each annual reporting period. The frequency and timing of site inspections are summarised in Table 1 below.

**Table 1: Frequency and timing of site inspections undertaken during the reporting period.**

Management Action	Inspection No.	Inspection date	Observer Name
Exclusion of stock (3 monthly)	1	19/8/20	BSC Bush regen Team Leader Dave Filipczyk
	2	31/10/20	Greg Shanahan Earthscapes
	3	21/1/21	Dave Filipczyk
	4	23/4/21	Sandy Pimm, Earthscapes
Physical condition of fencing and gates (12 monthly)	1	Fence not erected; signage erected & in place as agreed with BCT last visit.	Dave Filipczyk
Excluding adverse human disturbance (6 monthly)	1	31/10/20	Greg Shanahan
	2	23/4/21	Sandy Pimm
Evidence of erosion (6 monthly)	1	31/10/20	Greg Shanahan

	2	23/4/21	Sandy Pimm
Evidence of waste (6 monthly)	1	31/10/20	Greg Shanahan
	2	23/4/21	Sandy Pimm

## Standard management actions

### 1. Management of grazing for conservation

#### *Management item 1.1 – exclusion of stock*

The BSS was inspected for evidence of stock activity every three months (i.e. quarterly) during the reporting period. The inspection dates are provided in Table 1.

No stock or evidence of stock activity were recorded on the BSS during the reporting period.

#### *Management item 1.4 – take necessary measures to remove stock if present*

No stock or evidence of stock activity were recorded on the BSS during the reporting period.

### 2. Weed control

#### *Management item 2.1 – implement and comply with the weed management plan*

A summary of the weed management and monitoring actions completed in each management zone during the reporting period is provided in Table 2.

**Table 2: Summary of weed management and monitoring actions undertaken in each management zone during the reporting period.**

Management zone	Target weed species	Required Actions	Required Timing & Frequency	Description of actions completed For each management zone list the control actions used for each weed species, along with the date/s of application and approximate size of each treated area (e.g. 04/02/21 – MZ1 - lantana – herbicide Roundup Biactive applied to 100m <sup>2</sup> ).	Observations and assessment of monitoring For each management zone provide the following information: <ul style="list-style-type: none"> <li>• success of weed control actions</li> <li>• a description of the current condition of the zone (i.e. presence of native regeneration or dieback in canopy, shrub and groundcover layer);</li> <li>• type and locations of any new weed infestations; and</li> <li>• any recommended changes to weed controls being applied.</li> </ul>
<p><b>Comment</b> - We find the way these two tables below are set out of little relevance to the way works are undertaken on site by the qualified and experienced Council bush regeneration team. Generally, all weeds encountered are treated, moving together in a horizontal line some 5-10m between team members (usually 3-4 persons) across the site. For the first two years, works are concentrating on the more invasive weeds (many of which are not listed below – see attached Weed Reduction Table). BL Paspalum is only hand weeded, while other grasses occur in patches unless specifically targeted. Salvinia and Sagittaria are within very wet areas that are inaccessible in wet times, forming part of the creek, including Jan- April 2021.</p>					
MZ1	Broadleaf paspalum	<p><b>Control methods:</b> Spot spraying, use of 'wick wiper' and hand pulling.</p> <p><b>Performance Measures:</b> 1. Reduce Paspalum to less than 10% of its original distribution by the end of year 3 2. Maintain paspalum at less than 10% of original distribution in perpetuity.</p>	Three sessions per year from year 1 to year 3.	This section completed in Annual Report	
	Other exotic grasses	<p><b>Control methods:</b> Spot spray and wick-wiper application of herbicide.</p> <p><b>Performance Measures:</b></p>	Four sessions per year from year 1 to year 3.	Small patches - harder	



		<p>1. Reduce other introduced grasses to less than 10% of its original distribution by the end of year 3.</p> <p>2. Maintain other introduced grasses at less than 10% of original distribution in perpetuity.</p>			
	Sagittaria	<p><b>Controls methods:</b> Cut and paint and hand pulling.</p> <p><b>Performance measures:</b> 1. Individuals of mature Sagittaria removed by the end of year 3. 2. Biobank site managed so that no mature individuals establish in perpetuity.</p>	Four sessions per year from year 1 to year 3.	Will release weevil	
	<i>Archontophoenix</i> sp.	<p><b>Controls methods:</b> Cut and paint and hand pulling.</p> <p><b>Performance measures:</b> 1. Individuals of <i>Archontophoenix</i> sp. removed by the end of year 3. 2. Biobank site managed so that no mature individuals establish in perpetuity.</p>	Three sessions per year from year 1 to year 3.		
	Coral berry and winter senna	<p><b>Controls methods:</b> Cut and paint and hand pulling.</p> <p><b>Performance measures:</b> 1. Individuals of coral berry and winter senna removed by the end of year 3. 2. Biobank site managed so that no mature individuals establish in perpetuity.</p>	Four sessions per year from year 1 to year 3.		
	White passionflower	<p><b>Controls methods:</b> Cut/scrape and paint, spot spraying and hand pulling.</p> <p><b>Performance measures:</b> 1. Individuals of white passionflower removed by the end of year 3. 2. Biobank site managed so that no mature individuals establish in perpetuity.</p>	Four sessions per year from year 1 to year 3.		
MZ2	Bamboo	<p><b>Control methods:</b> Hand removal and cut and paint stems with undiluted glyphosate.</p>	Four sessions per year in year 1 and year 2.		

		<b>Performance measures:</b> 1. Small stand of Bamboo treated by the end of year 2. 2. Biobank site managed so that no mature individuals establish in perpetuity.			
	Broadleaf paspalum	<b>Control methods:</b> Spot spraying, use of 'wick wiper' and hand pulling.  <b>Performance Measures:</b> 1. Reduce Paspalum to less than 10% of its original distribution by the end of year 3 2. Maintain paspalum at less than 10% of original distribution in perpetuity.	Three sessions per year from year 1 to year 3.		
	Other exotic grasses	<b>Control methods:</b> Spot spray and wick-wiper application of herbicide.  <b>Performance Measures:</b> 1. Reduce other introduced grasses to less than 10% of its original distribution by the end of year 3. 2. Maintain other introduced grasses at less than 10% of original distribution in perpetuity.	Four sessions per year from year 1 to year 3.		
	<i>Archontophoenix</i> sp.	<b>Controls methods:</b> Cut and paint and hand pulling.  <b>Performance measures:</b> Weed control work will aim to achieve the following outcomes: 1. Individuals of <i>Archontophoenix</i> sp. removed by the end of year 3. 2. Biobank site managed so that no mature individuals establish in perpetuity.	Four sessions per year from year 1 to year 3.		
	Coral berry and winter senna	<b>Controls methods:</b> Cut and paint and hand pulling.  <b>Performance measures:</b>	Four sessions per year from year 1 to year 3.		

		<p>Weed control work will aim to achieve the following outcomes:</p> <ol style="list-style-type: none"> <li>1. Individuals of coral berry and winter senna removed by the end of year 3.</li> <li>2. Biobank site managed so that no mature individuals establish in perpetuity.</li> </ol>			
--	--	---	--	--	--



### *Management item 2.2 – review the weed management plan*

The weed management plan does not require review prior to year 4 of active management. The 2020-21 annual reporting period spanned year 2 of active management. Therefore, a review of the weed management plan was not required.

## 3. Management of fire for conservation

### *Management item 3.1 – implement the fire for conservation management plan*

Fire is to be excluded from the Biobank site.

### *Management item 3.2 – review the fire for conservation management plan*

The fire for conservation management plan does not require review prior to year 4 of active management. The 2020-21 annual reporting period spanned year 2 of active management. Therefore, a review of the fire for conservation management plan was not required.

### *Management item 3.3 – fires must not be lit on the BSS*

No evidence of deliberate or unintentional fire was recorded on the BSS during the reporting period.

## 4. Management of human disturbance

### *Management items 4.1 to 4.5 – excluding adverse human activities and waste dumping*

The BSS was inspected at six monthly intervals to detect evidence of adverse human activity and/or waste dumping during the reporting period. The inspection dates are provided in Table 1.

I saw what looked like a kids BMX track or skate bowl at one point – did you notice or do anything about? Near bamboo, drainage area on Lilli Pilli. - Covered with palm leaves, not re-visited since.

If evidence of adverse human activity or waste dumping **was** recorded on the BSS, describe the evidence observed (e.g. tracks, waste dumping, damage to vegetation, individuals etc.) and describe the actions you implemented to remediate the damage (e.g. rubbish removal) and/or prevent further human disturbance on the BSS (e.g. installed additional signage). You could also provide photos of the evidence of human disturbance here (optional).



Biodiversity Stewardship signs installed January 2021.

Rubbish collected from within the reserve and piled for Council collection.

#### *Management item 4.6 – installation and maintenance of fencing and signage*

Provide details of all fencing and/or signage installation undertaken during the reporting period. Check to make sure any completed works are consistent with what is illustrated on the Management Actions map (i.e. refer to page 24 of the agreement).

- BSA Signs installed as above.
- Wildlife Protected area (with reserve shape) signs installed.
- Proposed Interpretative Sign sent to BCT for review.

#### **5. Retention of native vegetation**

##### *Management item 5.1 – retention of native vegetation on the BSS*

No native vegetation has been removed from the BSS other than where required as part of the BSA management actions.

*Management item 5.2 – native vegetation on the BBS must not be burnt*

Refer to the landowner response for management item 3.3 above.

## 6. Supplementary planting

This management item is not applicable to the BSA.

## 7. Retention of dead timber

*Management item 7.1 – Retention of dead timber on the BSS*

No dead timber was removed from the BSS during the reporting period.

*Management item 7.2 – documenting introduction of dead timber onto the BSS*

No dead timber was brought onto the BSS during the reporting period.

## 8. Erosion control

*Management item 8.1 – prevent, control and remedy erosion on the BSS*

Small BMX track constructed by kids near drainage line was covered over by palm fronds and no further use has been observed. Interpretative Signage to be placed.

## 9. Retention of rocks

*Management item 9.1 – retention of rocks on the BSS*

No rocks were removed from the BSS during the reporting period.

*Management item 9.2 – documenting introduction of rocks onto the BSS*

No rocks were brought onto the BSS during the reporting period.

## **Additional management actions**

## 10. Control of feral and overabundant native herbivores

*Management item 10.1 – implement the herbivore management plan*

The Biobanking Agreement does not contain a management plan to control feral and overabundant native herbivores. Therefore, this management action is not applicable to the BSA.

*Management item 10.2 – review of the herbivore management plan*

The Biobanking Agreement does not contain a management plan to control feral and overabundant native herbivores. Therefore, this management action is not applicable to the BSA.

## 11. Vertebrate pest management

*Management item 11.1 – implement and comply with the vertebrate pest management plan*

A summary of the vertebrate pest management and monitoring actions completed in each management zone during the reporting period is provided in Table 3.

**Table 3: Summary of vertebrate pest management and monitoring actions undertaken during the reporting period.**

Management zone	Species name	Required action/s	Required frequency and timing	Description of actions completed	Observations and assessment of monitoring
All zones	Fox, cat	Nocturnal walk over the site	Once annually	Nocturnal walk around site perimeter and into tracks and access areas for visual surveillance, April 2021.	No pest activity observed Swamp Wallaby congregation area in use in the reserve at night
	Fox, cat	Record visual evidence of pest activity	Once annually	Observations taken during photo and other monitoring. Diggings attributable to native Bandicoot and Echnida present. Wallaby and Koala scats present.	No pest activity observed
	Fox, cat	Ground baiting program	As required in response to monitoring outcomes.	Not required.	N/A.

*Management item 11.2 – review of the vertebrate pest management plan*

The vertebrate pest management plan does not require review prior to year 4 of active management. The 2020-21 annual reporting period spanned year 2 of active management. Therefore, a review of the plan was not required.

12. Nutrient control

*Management item 12.1 – limited use of fertilisers, pesticides and herbicides on the BSS*

No fertilisers or pesticides have been used in the BSS. Herbicides has been limited to amounts necessary for undertaking BSA management actions. All chemicals have been applied in accordance with manufacturers specifications.

13. Control of exotic fish species

This management item is not applicable to the BSA.

14. Maintenance or reintroduction of natural flow regimes

*Management item 14.3 – construction of artificial structures*

No artificial structures such as dams or levee banks have been constructed on the BSS during the reporting period.



# Lilli Pilli Photo Monitoring

Year one

31-10-2020

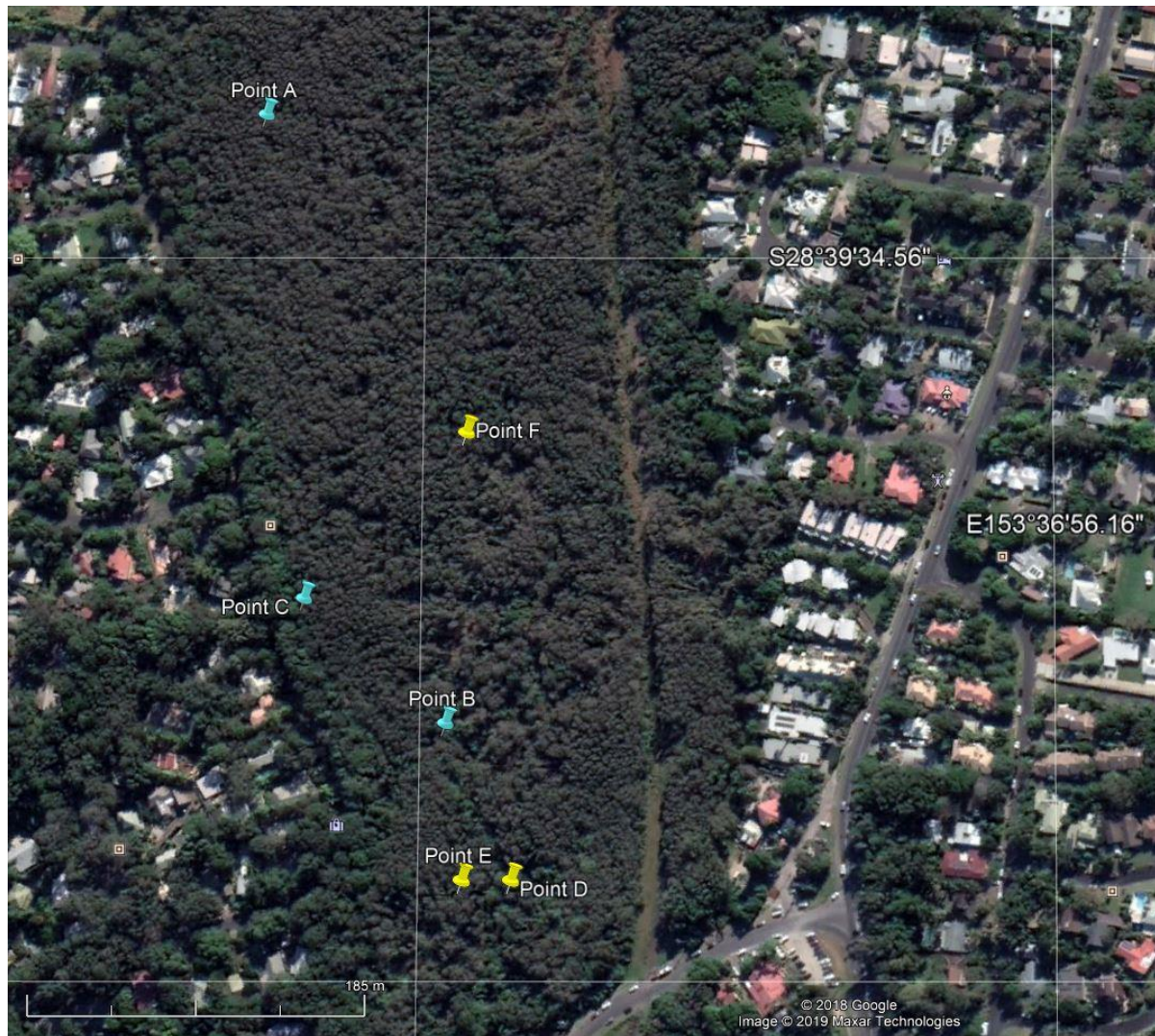
11 Tristran Parade, Mullumbimby Creek NSW 2482

Jane: 0404 050 361 Jo: 0458 127 107 Alison 0422 994 338 Greg: 0411 844 415

[www.earthscapes.com.au](http://www.earthscapes.com.au)

ABN: 58631637600





**Figure 1:** The site, with the six monitoring points identified.

Projected coordinate system: GDA94					
Photo point reference	Easting	Northing	Latitude	Longitude	Direction of photo (magnetic degrees)
A	559711	6829647	-28° 39' 32"	153° 36' 40"	East (90)
B	559814	6829307	-28° 39' 43"	153° 36' 44"	East (90)
C	559735	6829376	-28° 39' 41"	153° 36' 41"	South (180)
D	559851	6829221	-28° 39' 46"	153° 36' 45"	North (360)
E	559824	6829221	-28° 39' 46"	153° 36' 44"	South (180)
F	559825	6829468	-28° 39' 38"	153° 36' 44"	South (180)



## Point A

Time	Conditions	Ground cover (%)	Notes
9.53am	Light cloud	60 – 70%	<i>Melaleuca quinquenervia</i> dominant canopy, minimal weed infestations. Baseline observations occurred during the exceptionally dry spring in 2019, with the 6 month occurring after minor flooding. One year monitoring saw conditions after slightly higher than average rainfall through winter and spring, with an increasing La Nina influence.



**Figure 2a:** Point A 31-10-20



**Figure 2b:** Point A 26-09-19 (included for reference to baseline conditions).



## Point B

Time	Conditions	Ground cover (%)	Notes
10.23am	Sunny	80%	Adjacent a watercourse, with vine growth and sunlight penetration. With significant rainfall since the initial monitoring, plant growth has responded strongly.



**Figure 3a:** Point B 31-10-20



**Figure 3b:** Point B 26-09-19 (included for reference to baseline conditions).



## Point C

Time	Conditions	Ground cover (%)	Notes
10.07am	Sunny	30%	This monitoring point is nearest road verge. Rubbish and light weeds were no longer present.



**Figure 4a:** Point C 31-10-20



**Figure 4b:** Point C 26-09-19 (included for reference to baseline conditions).



## Point D

Time	Conditions	Ground cover (%)	Notes
10.52am	Sunny	60 - 70%	The weed species at baseline monitoring, including Cassia ( <i>Senna pendula</i> var. <i>glabrata</i> ) and Night Scented Jasmine ( <i>Cestrum nocturnum</i> ), together with the litter, have largely been removed. Surrounding areas also looked to be well maintained.



**Figure 5a:** Point D 31-10-20



**Figure 5b:** Point D 26-09-19 (included for reference to baseline conditions).



## Point E

Time	Conditions	Ground cover (%)	Notes
11.04am	Sunny	70 - 80%	The photo point E captures one of a number of open water sections toward the southern end of the site. The <i>Sagittaria</i> ( <i>Sagittaria platyphylla</i> ) had largely been removed, however significant regrowth has subsequently occurred. Additional photos available.



**Figure 6a:** Point E 31-10-20



**Figure 6b:** Point E 22-10-19 (included for reference to baseline conditions).



## Point F

Time	Conditions	Ground cover (%)	Notes
11.22am	Light cloud/ sunny	60 -70%	The photo point F represents many of the permanent water sections through the middle of the site. Baseline monitoring revealed <i>Salvinia</i> ( <i>Salvinia molesta</i> ) becoming established. Year one monitoring failed to find any remaining plants, with the search extended beyond the monitoring point.



**Figure 7a:** Point F 31-10-20



**Figure 7b:** Point F 22-10-19 (included for reference to baseline conditions).

# Site record sheet - Lilli Pilli Swamp

Date	Hours	Hours	Hours	Hours Total	Glyphosate Used Millilitres	Gly Total Millilitres	Metsulfuron Used Grams	Metsul Total Grams	Site/ Zone Complete	Hrs To Complete	Gly To Complete	Metsul To Complete
23-07-20	Dave 7	Ben 7.5		29.5	Hand 80	80	Hand 0.2	0.2	NO	240	1780	7.2
	Curtis	Nelson			Spray		Spray					
	John 7.5	Alex 7.5			Drill		Drill					
24-07-20	Dave	Ben		7.5	Hand	/	Hand	/	rubbish removal			
	Curtis	Nelson			Spray		Spray					
	John	Alex 7.5			Drill		Drill					
10-08-20	Dave 8	Ben	Curtis 7.5	23	Hand	/	Hand	/	rubbish removal			
	Curtis	Nelson			Spray		Spray					
	John	Alex 7.5			Drill		Drill					
14-08-20	Dave 2	Ben		2	Hand	/	Hand	/				
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
	Dave	Ben			Hand		Hand					
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
	Dave	Ben			Hand		Hand					
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
	Dave	Ben			Hand		Hand					
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
	Dave	Ben			Hand		Hand					
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
	Dave	Ben			Hand		Hand					
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
	Dave	Ben			Hand		Hand					
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					

year 1  
hrs completed



# Site record sheet - Lilli Pilli Swamp

Date	Hours	Hours	Hours	Hours Total	Glyphosate Used Millilitres	Gly Total Millilitres	Metsulfuron Used Grams	Metsul Total Grams	Site/ Zone Complete	Hrs To Complete	Gly To Complete	Metsul To Complete
23-09-20	Dave 8	Ben	curtis 7.5	23	Hand	<del>200</del>	Hand	200	NO			
	Curtis	Nelson			Spray		Spray 2					
	John 7.5	Alex			Drill		Drill					
06-10-20	Dave 4	Ben		4	Hand	/	Hand	/	NO			
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
07-11-20	Dave 8	Ben		8	Hand	/	Hand	/	NO			
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
25-11-20	Dave 3	Ben		3	Hand	/	Hand	/	NO			
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
07-01-21	Dave	Ben		15	Hand	/	Hand	/	NO			
	Curtis	Nelson			Spray		Spray					
	John 7.5	Alex 7.5			Drill		Drill					
21-01-21	Dave 8	Ben		8	Hand	/	Hand	/	NO			
	Curtis	Nelson			Spray		Spray					
	John	Alex			Drill		Drill					
16-06-21	Dave 8	Ben	clay 7.5	30.5	Hand	250	Hand	2.5	NO			
	Curtis 7.5	Nelson			Spray 500		Spray 2.5					
	John 7.5	Alex			Drill		Drill					
17-06-21	Dave 8	Ben	clay 7.5	30.5	Hand	300	Hand	3	NO			
	Curtis 7.5	Nelson			Spray 600		Spray 3					
	John 7.5	Alex			Drill		Drill					
18-06-21	Dave 4	Ben	clay 7.5	19	Hand 100	100	Hand 0.5	0.5	NO			
	Curtis	Nelson			Spray		Spray					
	John 7.5	Alex			Drill		Drill					
21-06-21	Dave 8	Ben	clay 7.5	30.5	Hand	100	Hand	1	NO			
	Curtis 7.5	Nelson			Spray 200		Spray 1					
	John 7.5	Alex			Drill		Drill					

[illegible]

[illegible]

Date	Observations and Notes
23-09-20	Mits only spray for Singapore Daisy, Annals, crofton, Mick flower, Billy weed - along train line & Bangalow rd edge (C.S.P. weedy weeds)
06-10-20	Paperwork, meetings & phone calls, Sandy
12-11-20	" " " " "
25-11-20	Site inspection
07-01-21	Created Bio banking signs x 4 Removed some star pickets
21-01-21	Handweeded
11-06-21	Hand weed around natives & spray along western edge of site
17-06-21	Spray behind house & railway line C.S.P. Honey suckle
18-06-21	Handweeded Honey suckle
21-06-21	Honey suckle Spray honey suckle area rubbery collecting

[illegible]

[illegible]