

## PROJECT REPORT

# "PROTECTION AND EXPANSION OF CASSOWARY HABITAT AT MOSSMAN GORGE"



SAVING OUR ENDANGERED FLORA & FAUNA

### DEVELOPED BY

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## BRIEF

This project was delivered with two distinct outcomes, both with a focus on supporting the endangered Southern Cassowary (*Casuarius casuarius johnsonii*).

Firstly, there existed several cleared tracks throughout the tourist area of the Mossman Gorge, Far North Queensland that were fragmenting Cassowary habitat and increasing their direct contact with people. The issue with direct human contact, particularly with travellers is that the Cassowaries are fed and become semi-domesticated. It has been noted that semi-domestication of Cassowaries leads them out of the forest, through human access tracks/roads and into contact with two of their three highest vectors for death - car strike and dog attack. ReForest Now has now closed 601 metres of tracks through the Mossman Gorge tourist area by planting 507 rainforest trees, these tracks are now chained off by Queensland Parks and Wildlife Service to fully regenerate.

Secondly, restricted habitat area for Cassowaries is a considerable issue in the Wet Tropics National Parks of Far North Queensland and one recommendation has been to increase total Cassowary habitat area. RN sought out a second site in illegally cleared riparian rainforest also within the Mossman Gorge National Park. The land had been severely degraded due to failed attempts to reshape and cane farm it some time ago. 0.52 ha of this area was restored by RN, with drainage swales of 221 metres installed to allow mega litres of water logged soils to drain into the creek that the planting abuts.

A total 2,493 trees were planted to restore the site and 3, 000 trees planted across both sites.

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## OUTCOMES

Mossman Gorge  
South

Mossman Gorge  
North

Total

507  
Trees

2493  
Trees

3000  
Trees

0.12 ha  
Restored

0.52 ha  
Restored

0.64 ha  
Restored

6 walking and site  
access tracks  
closed

Two riparian  
zones restored

480 tones  
C02 sequestered

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## Tree Sourcing

We were able to source all of our trees from the Mossman Gorge Indigenous Community Nursery. This is situation just meters from the waterflow and is between 1 – 4kms from any planting location, marked on our maps.

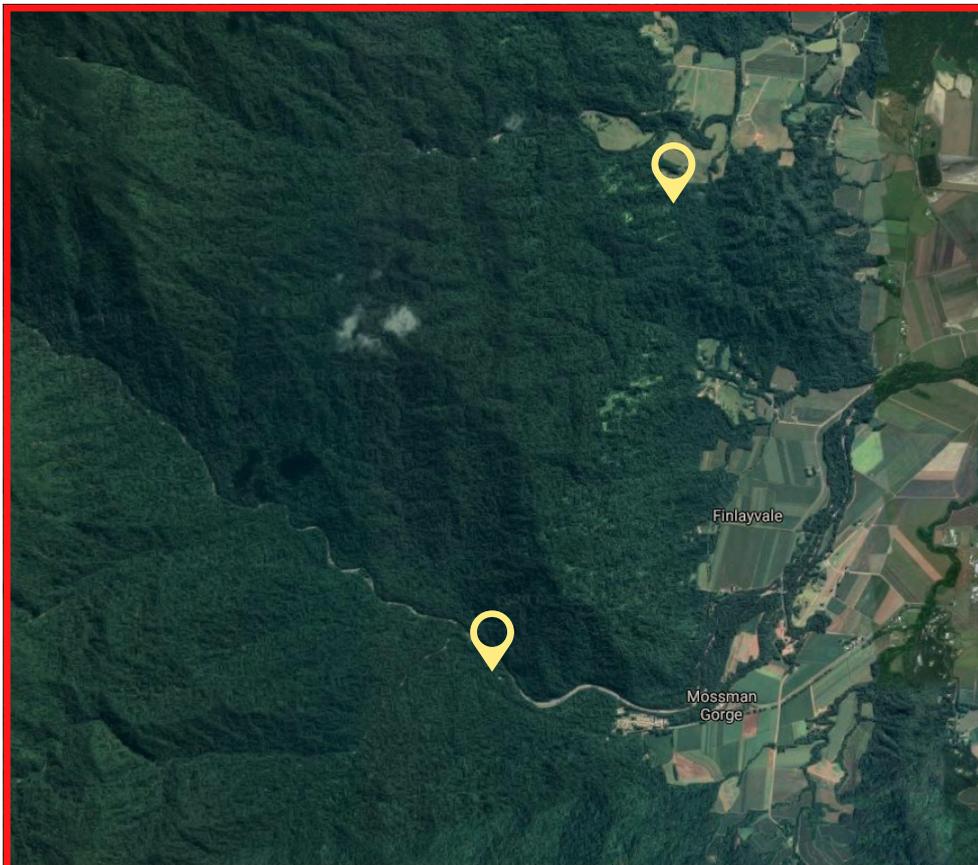
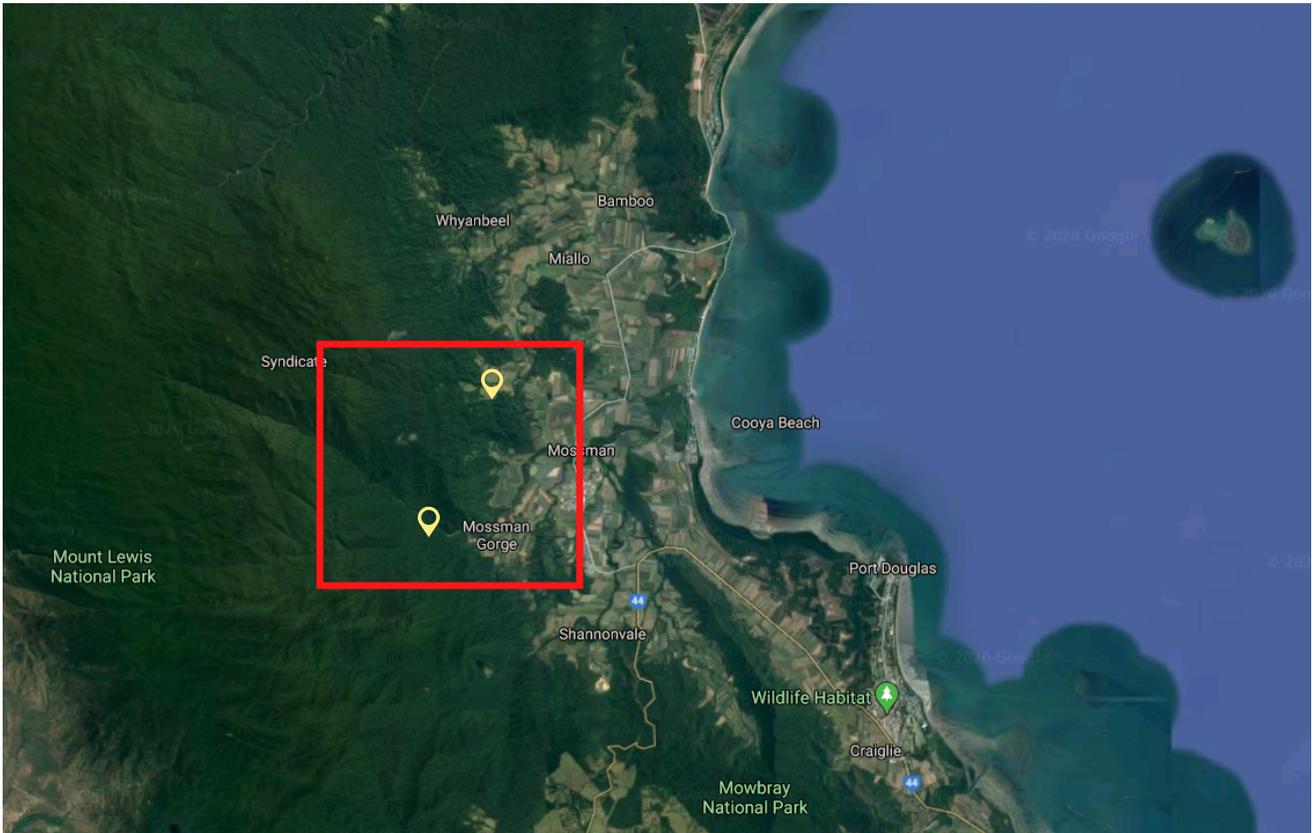


Conan (Reforest Now) with Loretta from the Mossman Gorge Community Nursery outside the nursery

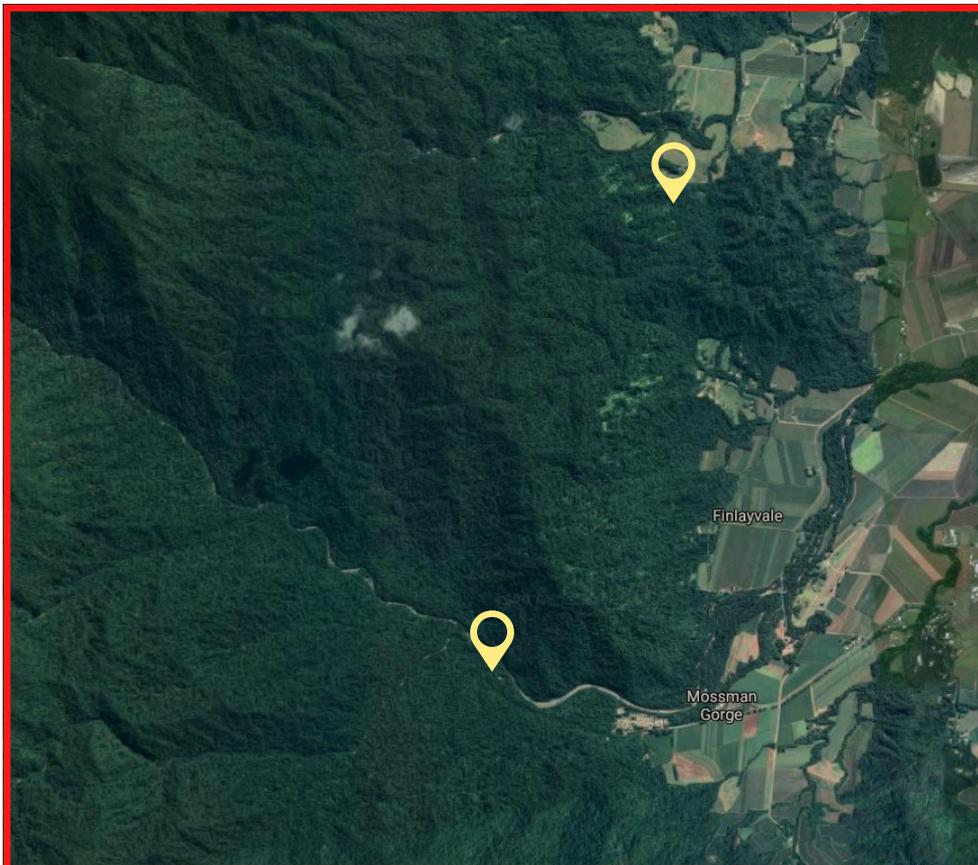


Inside the Mossman Gorge Indigenous Community Nursery

# PLANTING SITES

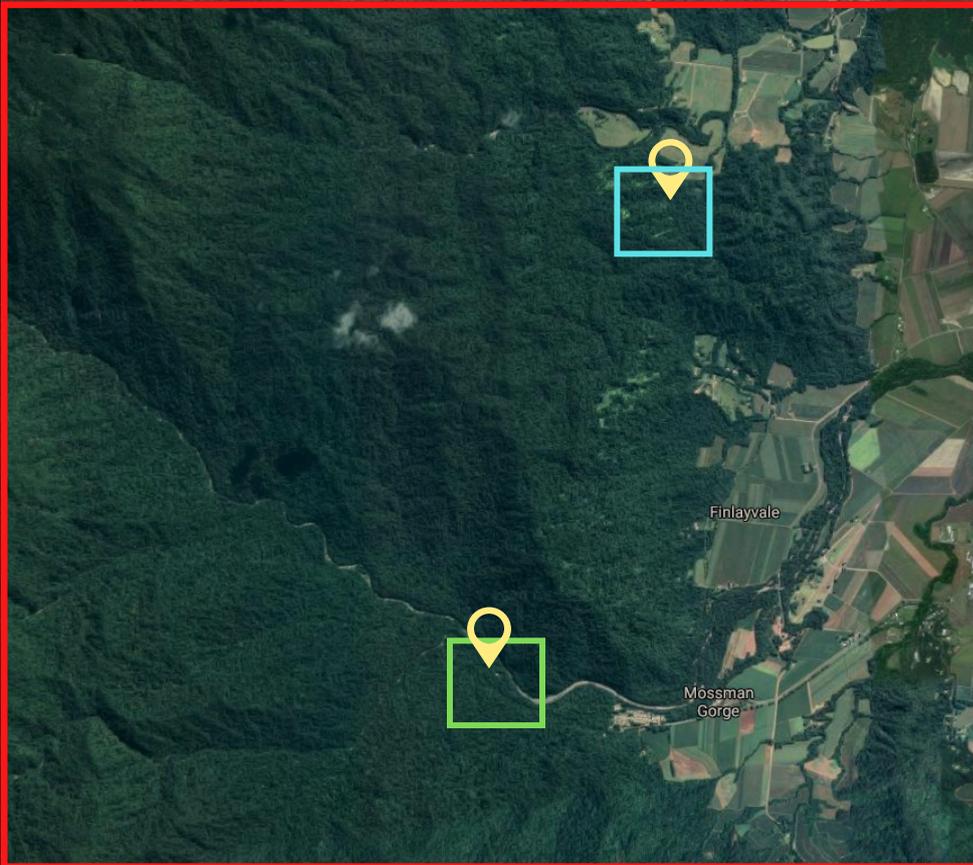


Mossman Gorge North



Mossman Gorge South

# PLANTING SITES



Mossman Gorge North

Mossman Gorge South



Above: Mossman Gorge South  
Tracks marked in yellow.

Below: Mossman Gorge North

The blue line shows an 8 meter deep creek that has self-dug through paddock, The red lines show drainage swales we dug into the ground about one foot deep, to drain the waterlogged site via two primary outlets.



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## PLANTING SITE - Mossman Gorge South

Our first site was offered to us by the Queensland Parks and Wildlife Service as they were having long term issues closing tracks that existed throughout the Mossman Gorge. ReForest Now worked to permanently close six tracks within the Mossman Gorge tourist area, track lengths were; 150m, 56m, 150m, 25m, 51m and 169m. A total of 601 metres of tracks were closed in total, with 507 trees planted. This will help reduce tourist incursion into Cassowary habitat and other endangered wildlife that live at the Mossman Gorge.



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## PLANTING SITE - Mossman Gorge North

Our second and larger site was also acquired through partnership with the QPWS. This site was illegally cleared some time ago for sugar cane farming, the site and surrounding area appears to have been considerably altered by machinery, creating conditions of ecological damage we don't often see.

Note the thick blue line in our mapping, this shows an 8 meter deep creek that has self-dug through paddock on the property recently, as the farmer noted. There must've been creek lines that were destroyed for such a massive diversion of water to have recently occurred. This issues also affected the site itself, shown in the white polygon area for Mossman Gorge North.

### The planting area – Site access strategy and challenges

Apon visitation of the site during heavy rainfall, it became apparent that regular 4x4 access routes would not be effective in approximating the work area. We were able to unload 2 ute loads of materials before we recognized each day of work would require walk ins of gear, using our team of five. The Jabalbina Aboriginal Corporation suffered similar difficulties in assessing the site for maintenance and were forced to call for a backup vehicle to extract their National Parks truck from the creek crossing into the site (the thick blue line on the mapping for Mossman Gorge North). Until the very end of the project, hand ferrying of 2,500 trees, brushcutters, augers, water and other materials was chosen to overcome this.

### The planting area – weeds, rainfall and farming damage

The planting area itself was no longer being used for cane farming and was fully waterlogged during the tropical rainfall month of February. QPWS had successfully killed off the weeds in the area, but due to considerable land degradation and flooding, access with machinery to slash or remove the dead weeds did not occur as planned before RN

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## PLANTING SITE - Mossman Gorge North

arrived. As a result we were forced to find a method of 4-6ft weed removal that could be done with a 150 meter walk in and no suitability for machinery or vehicle access. We redirected labour towards bladed brushcutting of the half a hectare area to bring dead weeds down to ground level.

### The planting area – water logging

As a result of a history of machinery being used in land reshaping, the site had lost its natural drainage contours into the creek on which it abuts. The red lines show drainage swales we dug into the ground about one foot deep, to drain the waterlogged site via two primary outlets that run off the edge of the shows polygon. These swales were; 54m, 51m, 22.4m, 24.9m, 21.6m, 24.4m and 29.8m. A total length of 228.1 meters of swales were dug at a depth of 30cms to create effective drainage, these were designed to self-deepen during heavy rainfall. We estimated this was draining over 3,500 liters of water from the site per hour at peak and only as low as 1,900 liters of water per hour in the drier days. We were able to clear 20 or more large pools of hot water that had accumulated over almost the entire site using this swale method. A considerable portion of our labour time was redirected towards these site preparation tasks as can be seen in the budget.

### Planting

Planting of 2,493 trees (to complete the total outcome) was completed in just 3 days as the muddy soil made for fast and easy hole digging. At a total project area of 0.52 of a hectare our spacing was around 1.4m x 1.4m spacing. This was in line with requests from QPWS that the site be densely planted to reduce difficulties in maintaining such an inaccessible site.

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## **PLANTING SITE - Mossman Gorge North**

### **Extraction and completion**

Finally, the extract of all our materials, was completed with the assistance of QPWS, who sent us a 4x4 buggy that could manage the extreme terrain and return materials for us. We expect our self-deepening swales and use of the wettest season will mean that water logging is controlled over the wet season and that the plants will have at least 3 months to send down deeper roots before the heavy clay soil dries out and cracks up in the dry season.

### **Maintenance - Both Sites**

ReForest Now is currently under contract with the Jabalbina Aboriginal Corporation for management of the site at Mossman Gorge North and QPWS will manage the survival of our tracks at the Mossman Gorge South. At 1.4m meter spacing, we expect maintenance cycles of be complete within two years.

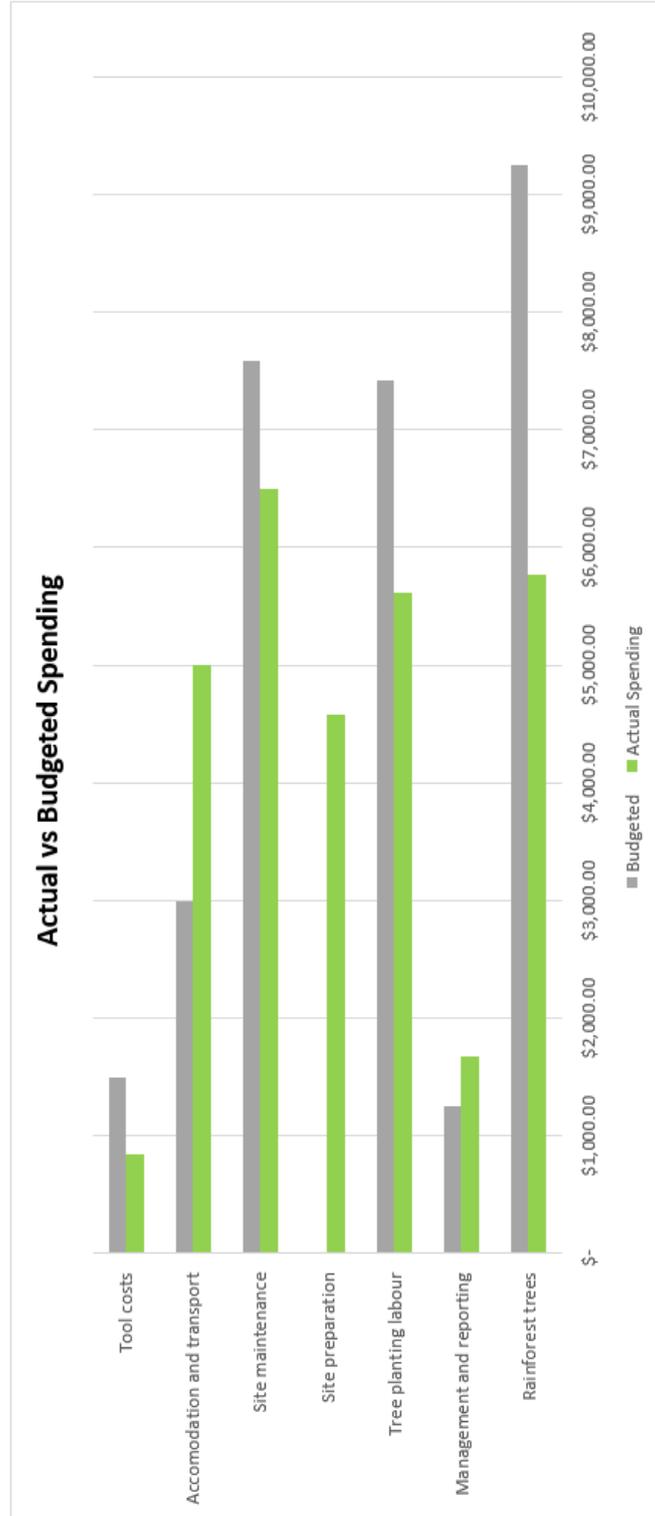
# BUDGET EXPENDITURE

## BUDGET EXPENDITURE

(20th Feb '20 - 6th March '20)

Rainforest trees			SPENT	BUDGETED
3,000	trees	\$ 1.93	\$ 5,775.00	\$ 9,242.70
		per unit cost	(reduced due to reduced cost of trees)	
Management and reporting				
RN Project manager		Planting Management Reporting and site checks for 3 years	\$ 800.00	\$ 500.00
			\$ 879.76	\$ 750.00
Tree planting labour				
Tree Planting Labour			\$ 5,620.00	\$ 7,425.00
Site preparation				
Brushcutting, swale digging and site repair			\$ 4,580.00	\$ -
Site maintenance				
Jabalbina rangers for 3 years		(retained)	\$ 6,500.00	\$ 7,590.00
Accommodation and transport				
Transport by air			\$ 1,575.02	\$ 1,292.30
By vehicle			\$ 1,365.00	\$ 1,200.00
Hostel stay			\$ 2,064.00	\$ 500.00
Tool costs				
Auger transport (2x machines from NNSW to FNQ), Auger hire (first day), 120mm auger head for larger pots at Indig Nursery)			\$ 711.44	\$ 700.00
Fuel & oil (mostly covered by QPWS)			\$ 20.99	\$ 300.00
Fuel (vehicle) and trailer			\$ 108.79	\$ 500.00
			Allocated by FAME	\$ 30,000.00
			Spent	\$ 23,500.00
			Maintenance funds retained for Jabalbina Rangers)	\$ 6,500.00

# BUDGET EXPENDITURE



Note a significant portion of all labour was redirected to site preparation and repair of water flow.



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Maximo Bottaro  
President



Zia Flook  
Partnerships and  
Communication

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