

Final Evaluation Report

Your Details	
Full Name	Rebecca Smith
Project Title	Saving the Hooded Capuchin through Restoration and Conservation of the Upper Paraná Atlantic Forest in Eastern Paraguay
Application ID	39042-1
Date of this Report	21-05-2024

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
1. Economically beneficial reforestation			X	We passed our target number of saplings and hectares and have so far planted 18,500 saplings (9 ha). By the end of 2024 we will have planted a further 15,000 saplings taking it to a total of 33,500 saplings and reforested 16 ha of historically cleared land.
2. Capacity building for community members			X	
3. Educational lesson in 20 schools once per month.		X		While we visited as many schools as we could as often as we could we were severely hampered by bad weather, particularly when the El Niño phenomenon started. Schools in rural Paraguay are closed during rain and the roads become impassable. We will continue this part of the project until we have completed the number of visits we had planned for in all 20 schools.
4. Forest Monitoring in Nueva Gambach, the closet intact forest to Mberu Pirapo'i at the southern tip of San Rafael		X		We intended to monitor the forest with camera traps, the heatscope and drones. The camera trap survey was very successful, with the results being prepared for publication. The heatscope was very useful in tracking the capuchin monkeys in the dark but overall, it was too

				<p>hot to use it and we hypothesise that it is a more useful tool in the winter due to Paraguay's extreme summer heat. The drone surveys were unable to be completed due to adverse weather conditions – our drone cannot be flown in wet weather and most of the time when it was dry the winds were too high to fly it. We continue to take it to the forest on each trip and will attempt monitoring whenever possible.</p>
--	--	--	--	--

2. Describe the three most important outcomes of your project.

- a) With the Mberu Pirapo'i community we have planted 18,500 saplings – 11,000 yerba mate and 7,500 saplings of a mix of 14 different Atlantic Forest species. 20 families (including two single-mother families, one of whom the mother is a 14 year old girl) have a reforestation plot on their land and in total 9 ha has been reforested. In 2023, during the first round of planting we planted 13,500 saplings and by April 2024 we had a more than 75% survival rate. The main losses were two plots, one of which was affected by an out-of-control fire and one that was too exposed, and the saplings suffered during the extreme heat of the summer.



Saplings planted in April and May 2024 have grown exceptionally well during the last year. Some plots are now beginning to look like early stage forests – such as single mother Maria's (19 years old) who planted nearly 1 ha with her 6 year old son.

- b)** We have trained four members of the Mberu Pirapo'i community how to give tours of the reforestation area for tourists. With Paul Smith, the director of Paraguay's leading eco-tour company Fauna Paraguay, we held two training sessions and two practice tours for Roberto, Martin, Sixto and Cristian. Roberto has really seized the opportunity. Since July 2023, the guides have delivered 10 tours for tourist groups ranging from one to 25 people. The programme has significantly increased the monthly income for the families involved as well as enthusiasm for the reforestation project.



Director Reina Rodriguez, "Head" tour guide Roberto Brizuela Gonzalez and Dr. Rebecca Smith in November 2023 with one of the saplings planted in April 2023.

- c)** The camera trap survey of the Nueva Gambach property recorded 20 species of medium to large size mammals. Of these two were Near Threatened – the Neotropical otter and the margay – and two were Vulnerable – the hooded capuchin and the oncilla (or southern tiger cat). The most common mammal captured was the Azara's agouti. Having a healthy population of agoutis is important for a forest as they are important seed dispersers. There are species that we know are present in the area that we did not capture (yet) on the camera traps such as the black and gold howler monkey and other species that we have seen in the past on the property including pumas, white lipped peccary, collared peccary and capybara. The camera trapping will continue for ten days per month. We did capture footage of domestic dogs and had two camera traps stolen by illegal hunters but overall, the loss of traps and the incidences of domestic animals being captured in photographs was less than we had expected at the start of the project. The cameras that were stolen

were both near the lake, suggesting that people may have been fishing illegally rather than hunting for wild mammals.



Photos from the camera traps. In Nueva Gambach.

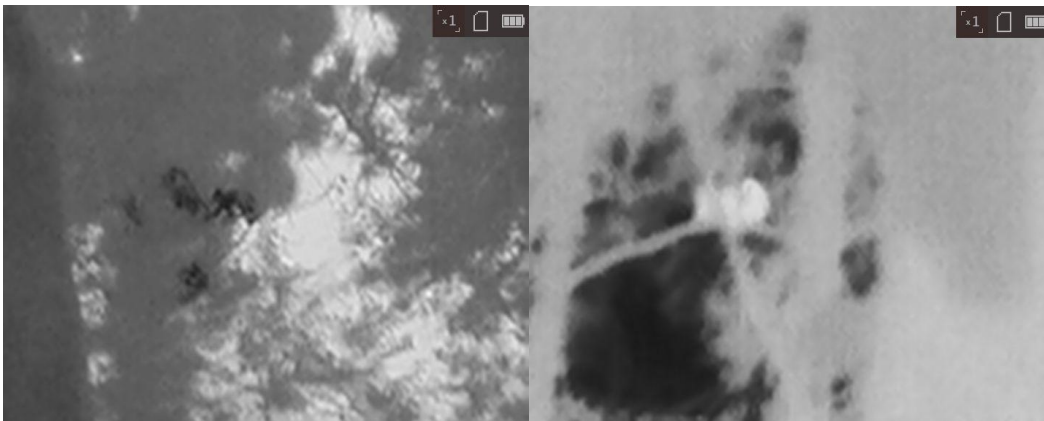
3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

The biggest difficulty that we faced during this project was the extreme weather. Paraguay had been in a drought for 3 years and the El Niño event brought this to an end in 2023 and 2024. The amount of rain in the Alto Vera area was almost unprecedented and it had a negative impact on the project. When it rains in this area the roads become completely impassable and schools are closed (sometimes even at the threat of rain). This meant that we could not visit every school as frequently as we had planned to, often having to cancel, or being cancelled on, at the last minute because of the weather. However, our relationship with the schools is very strong and we will continue visiting each school, past the end of this part of the project, whenever the weather allows. The rain also impacted the second round of planting in April and May 2024 with the road into the Mberu Pirapo'i community almost completely collapsing due to the rain. We tackled this issue by being on stand-by with everything ready to go and getting into the community as soon as the rain stopped (and having to get out as fast as possible when the rain started again!). While this made planting difficult and increased our diesel usage we were able to hit and surpass our goal for number of saplings planted.



The road into Mberu Pirapo'i almost completely collapsed due to the rain and it was impossible to pass safely even in a 4x4 truck.

The heatscope surveys in the reforestation plots did not reveal any major results but this may be the results of the extreme heat lasting for longer than normal during the spring and summer months and the environment was just too hot for the heatscope to note a difference. As we are now coming into winter again, we will continue the heatscope surveys to determine whether the equipment is more useful in the winter months.



The heatscope was excellent for spotting wildlife in the forest that was difficult to see but worked better at night as during the day in the spring and summer months was just too hot. These photographs from the heatscope show A) the capuchin monkeys coming into their sleeping site and B) howler monkeys sleeping.

4. Describe the involvement of local communities and how they have benefitted from the project.

Almost every part of this project involved local communities. More than 1000 children across 20 schools – 15 in the district of Alto Vera (five Mbya Guaraní and 10 *campesino*) and five in the district of Itapúa Poty – benefitted from environmental education visits. Though we were not able to visit every school, every month because of the rain all the schools received visits and the programme will continue in the long-term, visiting once a month where possible. As there is very little environmental education in the standard Paraguayan curriculum these visits give the children a chance to learn new information and build a connection to their natural heritage, something that they are as disconnected from as children from big cities despite living so close to the last remaining forest. Teachers at all the participating schools joined in the lessons, learning about the benefits of participatory education methods.



Participatory lessons in schools across Alto Vera and Itapúa Poty districts.

17,000 of the 18,500 saplings were purchased from local tree nurseries so that the investment stayed in the local community of Alto Vera.



Picking up native tree saplings at a local family-run tree nursery in Alto Vera.

The reforestation was a completely collaborative effort with the Mberu Pirapo'I community. This programme is not only beginning to restore the lost Upper Paraná Atlantic Forest, the traditional lands of the Mbya Guaraní people, but is also providing a long-term, sustainable income for families in Mberu Pirapo'I, an invaluable tool in tackling the extreme level of poverty suffered by the people living there.



Education director Jorge Ayala teaching a child in Mberu how to plant a sapling.



Drone footage of the reforestation plots in May 2023.



Drone footage of the reforestation plots in May 2023.



Reforestation in Mberu Pirapo'i.

Training community members to give tours of the yerba has provided a vital income for four families and shown the community that there is an interest in the community and their situation from the "outside world". The training was opened to anyone who was interested, and the community decides who will give tours each time.



Roberto and Sixto giving tours of the reforestation plots.

5. Are there any plans to continue this work?

Yes. This is a long-term project. We will continue to work with all 20 schools each month (when the weather allows!), the monitoring of the forest via camera traps and behavioural data collection will continue 10 days per month and in August and September 2024 we plan to plant another 15,000 saplings with the people of Mberu Pirapo'i.

6. How do you plan to share the results of your work with others?

I will share the results of this project through several different methods. Updates from the project are shared at regular intervals through all Fundación's social media platforms (tagging The Rufford Foundation wherever possible) reaching around 8600 followers. This will continue and a project update is included in our quarterly newsletter to the member so Fundación Para La Tierra (~650 subscribers). I will share the results with the scientific community through submitting manuscripts to peer-reviewed, international journals. At present one publication about the environmental education programme is currently under review at *Folia Primatologia* and I am writing up the results of the camera trap monitoring, with a plan to submit this manuscript by July 2024.

7. Looking ahead, what do you feel are the important next steps?

We are continuing most aspects of this project. We will continue to visit the 20 schools once a month (when the weather and road conditions allow). The camera trap monitoring of the forest will continue monthly, as will the behavioural data collection on the focal capuchin monkey group. In terms of our capuchin research the next

research aims are looking at forest strata use and social behaviours (from our previous 11-year dataset and continuing data collection).

For the economically beneficial reforestation we will continue to expand the project while funding is available. Two more Mbya Guaraní communities wish to join the programme with us. To make the programme more self-sustainable, and less reliant on continuous external funding, our next goal will be to create a tree nursery in Mberu Pirapo'i managed by the community members. This will create a sustainable source of saplings that can be planted, expanding the reforestation area, as well as developing another sustainable income for community members as they can also sell the saplings. While it will require significant investment to achieve this goal, we will begin looking for funding to begin this project as soon as possible.

8. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

Yes. The Rufford Foundation was credited (with the logo where possible / appropriate but also the name where the logo could not be used) in several instances throughout the year. The Rufford Foundation's name has been added to the Para La Tierra website as a supporter of the Atlantic Forest conservation project. The logo was used in presentations in Pilar for university students (and the general public), the Global Biodiversity Festival (2023), two presentations and a poster at the International Primatology Society conference (2023), a presentation for the Cupar Rotary Club in Dundee, Scotland and for Myerscough College & University Centre. The logo was also used in presentations for course students for Para La Tierra's Field Methods in Primatology and for the students of the master's programme for University of Miami Ohio. The Rufford Foundation's support was acknowledged in a video made for the National Geographic Explorer Spotlight which was premiered at an online event in April 2024.

9. Provide a full list of all the members of your team and their role in the project.

Main team:

Dr. Rebecca Smith – project leader. Roles: project coordination, camera trap and hooded capuchin monitoring, environmental education teacher.

Jorge Ayala – education director at Para La Tierra and reforestation coordinator. Roles: assisting with school lesson design and managing the implementation of the reforestation.

Paul Smith – ecotourism expert. Roles: training the local tour guides.

Reina Rodriguez – head of Mberu Pirapo'i school and main contact with the community for coordinating activities. Roles: coordination with the Mberu Pirapo'i community.

Roberto Brizuela Gonzalez – Mberu Pirapo'i community member and now “head” tour guide. Roles: once the tour training was complete Roberto has been responsible for organising who will give the tours on what days.

Olivia Zickgraf – marketing and communications director at Para La Tierra. Roles: publicising the project through Para La Tierra's social media outlets and photographing the project.

Important contributors:

Though these were not official “team members” we believe that they all deserve to be mentioned as our collaborations are what made this project successful.

Directors, teachers and students of schools: Ynambu, Perlita, Mariscal Lopez, Esperanza, Jovere, Mbatovi, Arroyo Moroti, Potrero Guaraní, Santa Ana, Oga Ita, Mboi Ka'e, Caronay, San Obrero, Pirapo, Taguato 5 linea, Santa Domingo, Tacuapi and Francis de Asisi for welcoming us into their schools.

All the volunteers and staff of Fundación Para La Tierra for assisting with the reforestation.

The Hostettler family and Hostettler S.A for allowing us to work on their property of Nueva Gambach.

10. Any other comments?

This was a project several years in the making and on behalf of everyone involved I would like to extend our sincerest appreciation to The Rufford Foundation for supporting this project. We look forward to continuing to work with Mberu Pirapo'i to improve the conditions in the community and to work towards restoring the Atlantic Forest to its former glory.