

Final Evaluation Report

Your Details	
Full Name	Mónica Emilia Torres Almazán
Project Title	Creation of biological corridors using family plots, for the conservation of <i>Abronia campbelli</i> , within a new distribution zone for the species
Application ID	31835-1
Grant Amount	£ 6000
Email Address	1monicatorres@gmail.com
Date of this Report	05 November 2021

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
Raise awareness, educate and train 60 families to implement food production and firewood practices that will reduce the main threat for <i>Abronia campbelli</i> as they will promote the recovery of the species and its habitat.				The modifications made to the methodology of this objective due to the COVID 19 disease, ended up favouring the quality of the results achieved. The house-to-house modality facilitated the conversations necessary to design and implement conservation strategies with the community. This objective is the foundation on which the other results of the project are sustained, since it is through these interactions that the necessary alliances, commitments and plans were built.
Close 50% of the gap between two of the 3 distribution zones known for <i>Abronia campbelli</i> , by creating biological corridors				Through the planting of 20,000 trees of a key species for <i>A. campbelli</i> , 100,000 m ² of land were restored for biodiversity conservation. This created 8 km of biological corridors within private agricultural family plots that now, in addition to providing food, also create additional habitat that will be protected until maturity and beyond by local families.
Reintroduction of 50 <i>A. campbelli</i> neonates to their natural habitat, to support the resilience of the population.				The majority of the <i>A. campbelli</i> habitat consists of highly isolated trees; our breeding programme collects gravid females from isolated trees outside of any habitat restoration programme site providing an opportunity for the neonates of these litters to access high quality habitat where they can exhibit natural behavior, dispersal and home range. This provides a real opportunity for the genetic health of the species and increasing the population numbers of the species, both crucial factors for the resilience of <i>A. campbelli</i> .

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

This project was designed to be implemented using awareness education as the main tool to break paradigms, create solutions, build allies and execute conservation actions, so the limitation of access to people due to the COVID-19 pandemic was initially a great difficulty for the project. Faced with this challenge, the methodology was modified to access families in the community in a safe manner. Instead of holding meetings that the entire community could attend, house-to-house visits were conducted to achieve the project goals.

This greatly multiplied the efforts needed to raise awareness among families but it also multiplied the results. Visiting each of the 60 families directly in their homes allowed us to engage in longer and deeper conversations, resulting in a highly personalised and effective outreach activity that created the strong and lasting alliances needed for the creation of the biological corridors.

3. Briefly describe the three most important outcomes of your project.

- The habitat restoration actions carried out in this project resulted in the reforestation of 20,000 seedlings of a key forest species, covering 100,000 m². The subsequent maturity of these trees in the next decade will create over 8 km of biological corridors that will reduce by half the existing gap between one of the new distribution zones recently discovered for the species and its original description zone. These corridors will increase the quality, quantity and connectivity of habitat available for *A. campbelli* and its associated biodiversity, reducing the main threat for the species. The implementation of these biological corridors translates into the creation of new habitat capable of allowing the species to increase its population and mobility patterns. This will increase the resilience of *A. campbelli* and its ability to thrive for the long-term.
- The project impacted 60 families that make up the entire population of the community that lives around the last high conservation status forest remnant, in which *A. campbelli* lives. The successful awareness of these families resulted in the enthusiasm and commitment of the community required to design, plan and create biological corridors within their own family farm plots. In addition, these families now have the necessary information to monitor and reduce or stop the illegal trafficking of the species in their area, as well as to stop the fear-based killing of the species. These families are incorporating a conservation plan for *A. campbelli* into their daily practices, actively reconciling their livelihoods with biodiversity conservation.
- The reintroduction of 50 *A. campbelli* neonates within their natural habitat with the participation of local families is a result from our breeding programme which collects gravid females from isolated trees outside of any habitat restoration programme site, bringing these isolated, remnant populations from these "tree islands" that are at present totally isolated from habitat patches into the genetic pool. If these females were not part of the

programme they would give birth to their litter in an isolated tree, where neonates have little chance of survival due to high competition with adults and if they survive are doomed to reproduce with close genetic lines. Our breeding programme gives a chance to these neonates to access high quality habitat where they can exhibit natural behaviour, dispersal and home range. This provides a real opportunity for the genetic health of the species and increasing the population number of the species. By making families part of this activity, they can experience firsthand what the biological corridors are about, helping reinforce that the reforestation is to support wildlife. Also because of the myths around the species a lot of local people fear them and kill them, direct interaction with *A. campbelli* neonates and their mothers is key as it completely changes the perception that local people have of the species. The "cute factor" of an *A. campbelli* neonate lures them to engage with the specimen in a new way, without the fear there is room for amazement and empathy.

4. What do you consider to be the most significant achievement of this work?

Adoption of a permanent landscape-level conservation strategy by an entire key community, building a family conservation legacy.

The most significant achievement of this project is the transcendence of the work carried out during the duration of the project, the biological corridors created are a permanent conservation strategy. This in turn highlights the high level of fully voluntary commitment on the part of families. Each family that decided to act in favor of the conservation of *A. campbelli* is aware that is a sustained effort that will start with them but will continue with their descendants. These families have the will to protect these trees and the species for generations. This project was not an ephemeral family activity, it is a lifestyle change towards biodiversity friendly daily practices. It is the beginning of a new culture that harmonises human development with the protection of biodiversity.

By focusing the dynamics of the project at the family level, it means that we have multigenerational family teams, for which the values, practices and conservation commitments acquired, implemented, and led by today's adults, will be consolidated in the younger generations, who will grow with a new culture and with the memory of what they built with their grandparents and parents. This creates a sense of family legacy that will eventually link biological corridors with the will of the ancestors and hope for their descendants, causing each family to treasure the trees within their family lands for generations.

5. Briefly describe the involvement of local communities and how they have benefited from the project.

The community is the central axis of the project - not only did they participate in the design and planning of the project, but they are also the ones who executed it and will maintain it into the future. The community itself played a vital role in their own awareness journey - during the house to house visits the elderly had the opportunity to tell the youngest of their family about the forest of their childhood the one that

had centennial trees and was overflowing with resources and life. They also told how the habitat was lost and the consequences that they themselves have been able to experience from that loss throughout their lives.

Besides being essential for the conservation of *A. campbelli*, this habitat restoration programme will also be beneficial for the local biodiversity and the maintenance of the environmental resources and capacities of the ecosystem, which in turn is very important for the surrounding human population whose agriculturally centric economy depends directly on the goods and services provided by the forest.

6. Are there any plans to continue this work?

Yes, with the efforts made during this project it was possible to close 50% of the gap between the original distribution area and one of the new ones that means that there is still work to be done to achieve 100% connectivity between the two areas. Also, because two new distribution zones were recently discovered for the species, work still needs to be done on connectivity and habitat restoration in the second area that was not addressed during this project.

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

We aim to publish our results in a peer-reviewed journal. Also, we formally report all our work to the National Council of Protected Areas (Consejo Nacional de Áreas Protegidas CONAP), the entity in charge of supervising wildlife conservation in Guatemala. We are also participating in the Rufford Conference El Salvador 2021 where we will be sharing our results with other scientists.

8. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

The grant was used throughout a year, which was the anticipated timescale for the project.

9. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount £	Actual Amount £	Difference	Comments
Nursery operation expenses	1200	1902	+702	Covid 19 disease fluctuated prices more than expected
Reforestation Kit	4000	4765	+4765	

Travel expenses	800	2635	+1835	Covid 19 disease fluctuated prices more than expected, especially for fuel
Acknowledgement of participation plaque	1800	1805	+5	
SUB-TOTAL	6000	11107	+5107	
Project Director		4800		
Project Assistant		4560		
Nursery manager		4200		
Printed materials workbook		1124		
TOTAL	6000	25791	+19791	

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

To achieve our conservation goals our next step would be to scale up the results obtained during this project using new planning tools through a territorial analysis that will allow the planning of habitat restoration efforts for the next years. Next, we would continue to work with local communities to completely close the gap between the *A. campbelli* distribution area worked during this project and the original one. After that we would work on the connectivity of the other remaining distribution zone, in order to link the three distribution known zones for *A. campbelli* that currently are not connected due to severe habitat fragmentation.

11. 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?

We used the logo in tote bags that were part of the reforestation kit for the families that participated in the project.

The project did not received publicity during the course of our work.

12. Please provide a full list of all the members of your team and briefly what was their role in the project.

Thomas Schrei: Biologist with more than 10 years of experience in reptile conservation. Expert in protected area management, habitat restoration and environmental education in rural communities. His role in this project was awareness and field activities assistant.

Cristian Ramirez: Nursery manager, he has developed and perfected the methodology to collect, sow and germinate the specific native tree species we use for the creation of the biological corridors. His role in the project was the production of the 20,000 trees used in the restoration of the project's habitat. Additionally, because he lives in the area, he acted as direct contact with local leaders who

sometimes do not have the means of communication because they live in a remote rural area.

13. Any other comments?

This project is a real example of how conservation can be accomplished in scenarios in which there seems to be no room for habitat protection, much less generating new habitat and connecting it. In the national and global context of the environmental impact of food production, this type of project deserves to be implemented and replicated. Due to the widespread agricultural land use in the country, reconciling biodiversity conservation and food production in Guatemalan agricultural landscapes, has enormous conservation potential, this project can become a model to replicate in other areas of the country to protect more endangered species. Through these habitat restoration efforts smallholdings that in the past were the reason for habitat destruction to grow food for a family, now will harbor wildlife again, reconciling local support of families with conservation.