

Final Evaluation Report

Your Details	
Full Name	Edith Andrea Navarro Tiznado
Project Title	Wetland restoration at La Mision: phase one: removal of the exotic American bullfrog
Application ID	33299-1
Date of this Report	£ 5,883

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
Removal of the bullfrog in Baja California wetlands				We had made 10 visits to the site, in the last two field visits, the presence of bullfrogs was not observed. Therefore, we consider that the eradication of bullfrogs has been successful.
Increase native species abundance				For an increase in native species to be observed, at least 1 year must pass without the presence of bullfrogs. However, we have been able to observe a slight increase in these species based on auditory monitoring and direct surveys of native fauna.

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

a). Document the consumption of native species in the diet of bullfrogs. This allows us to have more evidence of the effects on native fauna and gives us the guidelines to continue working, seeking to increase the presence of native species, once the exotic species have been extirpated.

b). A moderate increase in native species. At the beginning of the project, it was rare to observe a native amphibian, let alone find them vocalising. In the last few months of the project, we have been hearing the song of a native species and observed a greater number of amphibians and reptiles. This change is moderate, but we hope that with time these populations, which were affected by the exotics, will achieve stability.

c). To have a society that is more informed and aware of the problems related to exotic species. The training offered to students and landowners helps to avoid new reintroductions or the introduction of another invasive exotic species in the study site.

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

During the implementation of this project, we encountered two problems that were not contemplated within our plans.

1) The owners of the land. Before starting the project, we had the consent of the landowners. However, 1 month before starting the activities, there was a change of landowners, who were not interested in the project. The problem was solved with

several informative talks, visits to the site so that they could see the activities to be carried out and better communication between everyone.

2) The start-up period of the project. The original plan was to start activities at the end of February and to carry out 10 monitoring activities during the same year. However, due to the COVID-19 pandemic, the start of the project had to be postponed until the sanitary conditions were adequate. This meant that the bullfrog brumation season had to be crossed and the Project had to be paused during the winter.

Another aspect not considered is the drought faced by the state of Baja California. The lands surrounding the project are used for growing vegetables or flowers, and with the extreme drought, the landowners have had to dig deep wells to ensure water for their crops. This has resulted in less connectivity between the ponds and reduced bullfrog habitat, which has helped us to have better results.

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

The local participation of the community has been limited because it is a project that involves the sacrifice of organisms, which although it is an exotic species, we wanted to avoid that this would trigger actions that could harm other native species.

Monthly talks were held with the landowners every time we visited the locality, to make them aware of the direct impact of the exotic species, inviting them to get involved in the project and encourage joint work.

The direct authorities are also aware of the work being done and encourage others to get involved.

We involved the community by providing them with environmental education talks on exotic species, and how they can help stop their spread in their local town.

5. Are there any plans to continue this work?

Based on the results obtained, we can understand first-hand the negative implications of a single exotic species in the region, not to mention that the results obtained do not fully reflect the situation in which Baja California finds itself with regard to exotic species.

Therefore, we would like to continue working on this project. The steps would be the following:

- 1) Continue with post-eradication monitoring of bullfrogs to ensure that bullfrogs are no longer present in the Mission locality.
- 2) If any bullfrogs are found, they will be eliminated. These actions are intended to be carried out for at least 1 year.

- 3) Establish rapid response protocols to prevent this exotic species from re-establishing itself in the Mission.
- 4) At the same time, we will seek to replicate the actions carried out in the Mission locality. Another locality will be selected based on the bullfrog eradication rate. In Baja California, we have 21 localities with bullfrogs. Therefore, there is still much to be done.

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

1. Immediately a publication will be made in the local newspaper, to share the activities carried out and the results obtained. In addition, a summary of the project will be given to each owner and authority.
2. A scientific publication of the case study carried out in La Misión is expected to be published in the future.

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

The issue of exotic species is complicated, because there is no regulation at the state level that allows society to be informed of the effects caused by the entry of a new exotic species, and this has caused an increase in the last 10 years in the number of localities with bullfrogs, as well as other exotic species. That is why we consider that the following steps should be taken:

1. Environmental education campaign. A strong environmental education campaign should be carried out at the state level so that each person is aware of the effects that could occur if animals are released into the wild.
2. Continue to seek support so that the eradication of bullfrogs in Baja California can become a reality, and thus continue to remove exotic species that affect our ecosystems.
3. Work hand in hand with the government. We seek to collaborate with the government to prevent the entry of new exotic species. Require veterinarians and aquariums to obtain permits to have exotic species, and to have brochures with information on the effects of introducing an exotic species into the wild.
4. Create an action program for exotic species in Baja California. Because the national strategy that would be implemented from 2010-2020 did not contemplate concrete actions for Baja California, and in the lists of national exotic species, there is a lack of information on the species that we really have in Baja California.

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?

During the environmental education activities, two schools were visited. A middle school and a high school. The Rufford Foundation logo was added to the presentations, and emphasis was placed on the support received from the organisation.

In addition, a summary of the work being done at the site was given to the landowners and direct authorities, where the support received from the foundation was also included in the description.

Due to the subject matter of the project, we decided not to mention it on social networks. We limited ourselves to sending information on the progress of the project through the organisation's electronic newsletter, once the final report is completed we will acknowledge The Rufford Foundation for the funding provided.

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

Edith Andrea Navarro Tiznado. Project leader. She was in charge of everything related to logistics, permits, conceptualization and execution of the project, and the drafting of results reports.

Anny Peralta García. Supervisor. She was in charge of checking that the activities were carried out properly. Supported in the scheduling of monitoring, review of reports, and administration of the resources granted.

Jorge H. Valdez Villavicencio. Field assistant. Support in field trips with bullfrog monitoring.

Jeff Alvarez and Jeff Wilcox. Project advisors. They provided information and methodology to develop the project.

The following is a list of volunteers who supported the field work: **Nicodemo González Morales, Ana Karina Hernández Álvarez, José Alfredo Ceseña, Edgar Orozco Leal, Tonatiuh Gaona Melo, Mayra L. Flores Cota, Elisa Luna Sotelo, Esteban Esquivias, Francisco Javier Valenzuela, Miguel Ángel Valenzuela and Francisco Ramírez.**

We also received photographic support from **Liliana Ortiz Serrato, Elia Benitez and Andrea Navarro.**

10. Any other comments?

Bullfrog eradication activities were planned to be carried out from February to November 2021. However, due to COVID-19 issues and official regulations in Baja California, the activities began in June 2021 and will end in July 2022.

The original project did not contemplate the months in which the species is in the dormant stage (December to February), however, because the project began in June, the species goes through the winter when it is in dormancy. And the project the activities began in March 2022, to comply with the 10 monitoring activities that were originally considered.

The most significant achievement of this work was the eradication of an invasive exotic species. A total of 124 frogs were removed along the entire length of the creek and surrounding sites. During the year of work, we observed a decrease in the number of individuals of this species.

Based on the evidence found in the stomach contents of bullfrogs, we are certain that these exotic species cause negative impacts on the local native fauna. Therefore, its elimination is already a victory for the preservation of wildlife with affinity to water bodies.

Thank you very much to the entire Rufford Foundation team for their support throughout this year, your support allows us to continue training on the subject of exotic species, improve our eradication protocols and add collaborators who are in favour of conservation in Baja California.